FINAL

ENVIRONMENTAL ASSESSMENT FOR THE MC-12 TRAINING SQUADRON BEDDOWN

Prepared by
U.S. Air Force
Headquarters, Air Combat Command
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MARCH 2011

FINDING OF NO SIGNIFICANT IMPACT

1.0 NAME OF PROPOSED ACTION

MC-12 Squadron Beddown, Beale Air Force Base (AFB), California; Robins AFB, Georgia; and Whiteman AFB, Missouri

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The U.S. Air Force (USAF), Headquarters Air Combat Command (ACC), proposes to beddown two MC-12 squadrons and 42 MC-12 aircraft at a permanent location (Proposed Action). Currently, there is a temporary mission qualification training (MQT) detachment for the MC-12 aircraft at Key Field Air National Guard Base (ANGB) in Meridian, Mississippi. There are 30 MC-12 aircraft deployed in the U.S. Central Command's (USCENTCOM) Area of Responsibility (AOR). Five additional aircraft have been purchased and will be delivered to the AOR in the near future. The remaining seven MC-12 aircraft are stationed at the temporary MQT detachment at Key Field ANGB and would be moved to the permanent installation once it is selected. The beddown will consist of up to 874 personnel (711 staff and 163 contract support). The Proposed Action would also involve construction and renovation of facilities to support the beddown.

Four alternatives, including the No Action Alternative, were analyzed in detail in the environmental assessment (EA). Under any of the three action alternatives, two squadrons, consisting of 711 permanent party personnel, would beddown at the installation, supported by 163 contractor personnel. One squadron would consist of 22 primary aircraft and approximately 270 personnel and would include operations, training, and testing functions. The second squadron would consist of 15 primary aircraft and approximately 242 personnel and would include operations functions only. In addition, there would be five backup aircraft. The force structure would therefore consist of 37 primary MC-12 aircraft along with 5 backup aircraft, for a total of 42 MC-12 aircraft. Annual sorties anticipated for MC-12 training would be approximately 3,420 daytime sorties and 900 nighttime sorties for a total of 4,320 sorties per year. Annual airfield operations are anticipated to be approximately 15,000 operations per year. The MC-12 aircraft would carry M-211 flares and annual munitions expenditures (flare drops) are an anticipated requirement for the MC-12 training. The flare drops would include approximately 4,694 daytime and 2,346 nighttime expenditures per year. It is anticipated that each crew would drop flares once per quarter as a training requirement.

The Preferred Alternative is to implement the beddown at Beale AFB, California. Beale AFB has excess squadron operations facilities, maintenance facilities and hangars, and ramp space that would initially support the MC-12 beddown. Some of these are existing, unoccupied buildings available for immediate use. However, some of the existing facilities would eventually require renovations to bring them up to standards for long-term viability. Renovations would be required for Buildings 1076, 1086, 1243, and 11703 in order to satisfy the functional space requirements. Military construction (MILCON) would be required for a new dormitory at Beale AFB. The runway/taxiway facilities at Beale AFB are adequate for the MC-12 beddown. The air traffic capacity at Beale AFB is capable of absorbing 15,000 additional operations per year, given sufficient manning and, thus, is adequate to support the MC-12 training mission.

Alternative 1 would involve the implementation of the beddown at Robins AFB, Georgia. Robins AFB has excess squadron operations facilities, maintenance facilities and hangars, and ramp space that would initially support the MC-12 beddown. Some of these are existing, unoccupied

buildings available for immediate use. However, some of the existing facilities would eventually require renovations to bring them up to standards for long-term viability. Renovations would be required for Buildings 12, 2316, 2336 and 2350 in order to satisfy the functional space requirements. No MILCON would be required at Robins AFB. The runway/taxiway facilities at Robins AFB are adequate for the MC-12 beddown. The air traffic capacity at Robins AFB is capable of absorbing 15,000 additional operations per year, given sufficient manning and, thus, is adequate to support the MC-12 training mission.

Alternative 2 would involve the implementation of the beddown at Whiteman AFB, Missouri. Whiteman AFB has excess squadron operations facilities, maintenance facilities, and hangars and ramp space that would initially support the MC-12 beddown. Some of these are existing, unoccupied buildings available for immediate use. However, some of the existing facilities would eventually require renovations to bring them up to standards for long-term viability. Renovations would be required for Buildings 4, 44, 52, 115, 604, and 706 in order to satisfy the functional space requirements. MILCON would be required for a new dormitory at Whiteman AFB. The runway/taxiway facilities at Whiteman AFB are adequate for the MC-12 beddown. The air traffic capacity at Whiteman AFB is capable of absorbing 15,000 additional operations per year, given sufficient manning, and thus, is adequate to support the MC-12 training mission.

3.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

The EA provides an analysis of potential environmental impacts of the Proposed Action within the region of influence, which includes Beale AFB, Robins AFB, and Whiteman AFB and the associated restricted airspace and Air Traffic Controlled Assigned Airspace above, surrounding, and near the three bases. No impacts were identified on land use, climate, geology, safety and health, and environmental justice. Insignificant impacts would be incurred on local transportation, visual resources, infrastructure, soils, noise, air quality, water resources, cultural resources, biological resources, hazardous material/waste management, socioeconomics, and airspace. The No Action Alternative would result in no change to existing conditions at any of the installations.

Transportation: The Proposed Action at any of the bases would result in minor to moderate increases in on-base traffic during daily commute of the permanent staff. Off-base transportation systems are in good condition. The impacts on transportation would be insignificant.

Visual Resources: Temporary and minor impacts would occur on the areas' visual resources during any construction activities but would be less than significant. The visual signature of the MC-12 aircraft during training missions would be negligible compared to the other aircraft on the bases. The small aircraft would not create a significant impact on visual resources during training exercises.

Infrastructure: The Proposed Action would result in minor increases to utility (power, communication, and wastewater) demands, but these increases would be easily absorbed by the excess capacity available on each of the bases. Demands on water supplies would be increased during beddown activities, but these increases would be temporary and negligible. The increased staff would also result in additional demands on water supplies; however, the amount of increase would be within the current capacity of the water supply systems. The impacts on infrastructure would be less than significant.

Noise: Noise emissions from proposed aircraft operations would be insignificant compared to historic and existing operations at Beale AFB, Robins AFB, or Whiteman AFB. Noise generated during construction activities would be attenuated before reaching the base boundaries and would not affect the general public. No significant impact on the ambient noise levels would occur at any of the installations.

Air Quality: Air emissions from construction activities would be temporary and well below Federal *de minimis* thresholds. The additional annual emissions from commuter traffic and MC-12 operations are also minor and below *de minimis* thresholds. Beale AFB is in non-attainment for PM-2.5 at the Federal level. However, the emissions from the Proposed Action would not exceed Federal *de minimis* thresholds and, therefore, a Conformity Analysis would not be required. Both Robins AFB and Whiteman AFB are in attainment for all National Ambient Air Quality Standards. There would be no significant impacts on air quality from the implementation of the beddown.

Water Resources: No significant impacts on the region's water supply or water quality would occur at Beale AFB or Whiteman AFB. No potentially jurisdictional wetlands or floodplains occur at the proposed beddown areas on Beale AFB or Whiteman AFB. Building 12 at Robins AFB is an existing building that would be used for the beddown and is located within the 500-year floodplain, but significant impacts are not expected to occur.

Cultural Resources: One building at Beale AFB (Building 1322) that is proposed to be used for the beddown is considered eligible for the National Register of Historic Places (NRHP). However, this facility is only proposed to be used as a storage area for additional flare buildup, which is the current use of this building. No modifications would be required for Building 1322; therefore there would be no impacts. One building proposed for use at Robins AFB, Building 12, has been recommended eligible for listing on NRHP. If Alternative 1 is selected, the Georgia SHPO should be consulted before beginning renovations on this building. No other impacts on cultural resources at Robins AFB are expected. No impacts on any cultural resources or NRHP-eligible properties are anticipated at Whiteman AFB. The respective state SHPOs and other interested parties should be consulted if any cultural resources are discovered during construction of the dormitory at either Beale AFB or Whiteman AFB.

Biological Resources: There would be no significant impacts on biological resources at Beale AFB. There could be potential minor impacts on wildlife species that are associated with previously developed areas, such as mice, rats, and birds. Noise from MC-12 overflights would have no effect on wildlife or protected species. Federally-listed threatened and endangered (T&E) species at Beale AFB include vernal pool tadpole shrimp (*Lepidurus packardi*), chinook salmon (*Oncorhynchus tshawytscha*), vernal pool fairy shrimp (*Branchinecta lynchi*), Central Valley steelhead (*Oncorhynchus mykiss*), and valley elderberry longhorn beetle (*Desmorcerus californicus dismorphus*). The proposed new dormitory at Beale AFB would be located more than 250 feet away from the nearest vernal pools and they would be avoided during MC-12 beddown activities; therefore, there would be no effect on the species associated with the vernal pools (i.e., fairy shrimp, tadpole shrimp). There are no anticipated impacts on these vernal pool species, Central Valley steelhead, Chinook salmon, or VELB due to the renovations of the existing buildings to be used for the beddown, the proposed new dormitory, or MC-12 operations. Noise associated with MC-12 flight operations would have no impact on wildlife or protected species in the area. The proposed action is not expected to have any significant impact on biological resources. No significant impacts to biological resources are expected at either Robins AFB or Whiteman AFB. There are no Federally-listed T&E species located on either Robins AFB or Whiteman AFB.

Hazardous Materials and Waste Management: The Proposed Action at all of the bases would require the use of petroleum, oils, and lubricants, as well as other hazardous materials for operations and maintenance of the aircraft. These materials and any wastes generated by the operation and maintenance are typical occurrences at each of these installations and would be managed in accordance with U.S. Environmental Protection Agency and USAF; therefore, no significant impacts are expected.

Socioeconomics and Environmental Justice: Temporary short-term and long-term beneficial impacts due to revenue generation within the ROI would occur at each of the installations. Short-term, temporary adverse impacts on public services could occur but would not be expected to be significant or persist once these services are increased to meet the demand. The increased population and demand for housing units in the ROI would not cause significant, adverse impacts and could create long-term beneficial impacts. No significant, adverse impacts on minority or low income populations or youth are expected at any of the installations.

Airspace: The addition of 4,320 annual MC-12 sorties (15,000 annual airfield operations) would increase the total airfield operations up to 26% at Beale AFB, up to 43% at Robins AFB, and up to 22% at Whiteman AFB. However, each installation and its surrounding airspace has the capacity to absorb the additional 15,000 airfield operations, and therefore the impacts would be less than significant. Close coordination with USAF and other Department of Defense (DoD) airspace managers would be required for proper scheduling and to ensure the MC-12 mission is satisfied without conflicts with other DoD missions. The impacts on airspace management and air safety for aircraft flight operations would be less than significant. General aviation or other civil aircraft operating in the controlled airspace above or surrounding any of the installations would not be impacted. The airspace surrounding any of the installations and any of the airfields or training ranges that would be used by the MC-12 missions would not be adversely impacted.

4.0 CONCLUSION

Based on the analysis of the EA conducted in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations, and Air Force Instruction (AFI) 32-7061, which is hereby incorporated by reference, and after careful review of the potential impacts, I conclude that implementation of the proposed beddown action would not result in significant impacts on the quality of the human or natural environment. Therefore, a Finding of No Significant Impact (FONSI) is warranted, and an Environmental Impact Statement is not required for this action.

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Chief, Programs Division (ACC/A7P)
Installations and Mission Support Directorate

10 Mar 2011
Date

Cover Sheet
ENVIRONMENTAL ASSESSMENT
MC-12 SQUADRON BEDDOWN

a. *Responsible Agency:* United States Air Force (USAF)

b. *Proposals and Actions:* The USAF proposes to beddown two MC-12 squadrons and 42 MC-12 aircraft at a permanent location (Proposed Action). The Secretary of Defense (SecDef) directed the initiative for procurement of a fleet of 42 MC-12 aircraft in order to enhance the USAF intelligence gathering capabilities and to augment the unmanned aircraft systems flying reconnaissance missions. The MC-12 was identified by the SecDef Operational Intelligence, Surveillance and Reconnaissance (ISR) Task Force to increase ISR support to the United States (U.S.) Central Command's Area of Responsibility. The MC-12's primary mission is to provide ISR support directly to ground forces. Currently, there is a temporary mission qualification training (MQT) detachment for the MC-12 aircraft at Key Field Air National Guard Base (ANGB) in Meridian, Mississippi; however, this temporary MQT mission does not allow permanent party crew members to be assigned to the aircraft, thereby causing the operating experience level for the MC-12 crew force to be extremely limited. Therefore, a permanent location for the MC-12 mission is needed. The MC-12 aircraft currently stationed at Key Field ANGB would be moved to the permanent installation once it is selected. Eventually, all 42 aircraft would be stationed at the selected installation. The beddown would add a combined total of 711 permanent personnel for both squadrons. One squadron would consist of 22 primary aircraft and approximately 270 personnel and would include operations, training, and testing functions. The second squadron would consist of 15 primary aircraft and approximately 242 personnel and would include operations functions only. Additionally, there would be five backup aircraft for a total inventory of 42 MC-12 aircraft. Approximately 200 personnel would be required for the operations group, operations support services, security forces and base operating support. In addition to the 711 permanent party personnel, approximately 163 personnel for maintenance and logistics functions for the MC-12 would be contracted out. Annual sorties anticipated to be required for MC-12 training would be approximately 3,420 daytime sorties and 900 nighttime sorties for a total of 4,320 sorties per year. Annual airfield operations are anticipated to be approximately 15,000 operations per year. The MC-12 carries M-211 flares and would require flare drop training. It is anticipated that each crew would drop flares once per quarter as a training requirement. Annual munitions expenditures (flare drops) anticipated to be required for MC-12 training would be approximately 4,694 daytime and 2,346 nighttime expenditures per year. Three bases are being evaluated as potential beddown sites for this Proposed Action: Beale Air Force Base (AFB), California; Robins AFB, Georgia; and Whiteman AFB, Missouri. Beale AFB is the Preferred Alternative for the MC-12 beddown.

c. *For Additional Information:* Telephone inquiries may be made to Air Combat Command Public Affairs (757-764-5014) or locally from the respective bases being considered for the beddown: Beale AFB Public Affairs (530-634-8887), Robins AFB Public Affairs (478-926-2137), or Whiteman AFB Public Affairs (660-687-6123).

d. *Designation:* Final Environmental Assessment (EA)

e. *Abstract:* This EA has been prepared in accordance with the National Environmental Policy Act (NEPA). The EA team focused the analysis on the following environmental resources: airspace, noise, safety, air quality, physical resources, water supply/quality, biological resources, cultural resources, land use, socioeconomics, and environmental justice. Increases in operations and personnel associated with the Proposed Action would occur, but would be

equal to or less than the historic numbers of operations and personnel at each of the installations. Therefore, either no or negligible effects on the installations' airspace management, safety, water supply, air quality, and transportation systems are expected. Off-base land area would not be subjected to Day/Night Average Sound Levels greater than 65 decibels during construction activities. Noise generated by the operation of the MC-12 would not be as perceptible by the general public as other aircraft stationed on base. Renovation and construction in previously disturbed base areas would result in no significant effects on physical and biological resources. No significant impacts on cultural resources are anticipated at any of the installations. One building at Beale AFB (Building 1322) that is proposed to be used for the beddown is considered eligible for the National Register of Historic Places (NRHP). However, this facility is only proposed to be used as a storage area for additional flare buildup, which is the current use of this building. No modifications would be required for Building 1322; therefore there would be no impacts. One building at Robins AFB (Building 12) that would require renovation to accommodate the beddown is considered eligible for listing on the NRHP; any disturbance to this structure would need to be coordinated through the State Historic Preservation Office (SHPO). No NRHP properties would be impacted at Whiteman AFB. If any cultural resources are discovered or impacted during construction at either Beale AFB or Whiteman AFB, the respective SHPO and other interested parties would be consulted. Short-term regional socioeconomic stimulation is anticipated from renovation and construction. Long-term personnel and population increases are anticipated from the proposed beddown, with concomitant increases in regional income, sales volumes, and taxes. There would be no disproportionate or significant, adverse impacts upon minorities or low-income populations or upon children.

EXECUTIVE SUMMARY
ENVIRONMENTAL ASSESSMENT
FOR THE MC-12 TRAINING SQUADRON BEDDOWN

Introduction: In accordance with the National Environmental Policy Act (NEPA) of 1969, the United States (U.S.) Air Force (USAF), Air Combat Command (ACC), and the U.S. Army Corps of Engineers (USACE), Sacramento District have prepared this Environmental Assessment (EA) for the beddown of two MC-12 squadrons and 42 MC-12 aircraft. This EA discusses the potential environmental effects of the proposed construction and renovation of the MC-12 facilities and the operation and maintenance of the MC-12 aircraft.

Background/Setting: The Secretary of Defense (SecDef) directed the initiative for procurement of a fleet of 42 MC-12 aircraft in order to enhance the USAF intelligence gathering capabilities and to augment the unmanned aircraft systems flying reconnaissance missions. The MC-12 was identified by the SecDef Operational Intelligence, Surveillance and Reconnaissance (ISR) Task Force to increase ISR support to U.S. Central Command's (USCENTCOM) Area of Responsibility (AOR). The MC-12's primary mission is to provide ISR support directly to ground forces. The MC-12 aircraft is a manned, medium-to-low-altitude, ISR asset built around a C-12 aircraft, which is a modified twin-engine, turbo-prop Beechcraft King Air 350. The MC-12 is operated by a crew of four including a pilot, co-pilot, and two system sensor operators. It can loiter low and slow or cruise at 300 knots up to 35,000 feet above ground level and is equipped to perform medium-altitude surveillance for more than 7 hours with full fuel and payload.

Proposed Action: Under the Proposed Action, the USAF would beddown two MC-12 squadrons and 42 MC-12 aircraft at a permanent location. The Proposed Action would provide a continental U.S. (CONUS) based permanent beddown location for the MC-12 crews and aircraft prior to their deployment to the USCENTCOM AOR. In total, the beddown would bring in about 711 government personnel for both squadrons. One squadron would consist of 22 primary aircraft and approximately 270 personnel and would include operations, training, and testing functions. The second squadron would consist of 15 primary aircraft and approximately 242 personnel and would include operations functions only. Additionally, there would be five backup aircraft for a total inventory of 42 MC-12 aircraft. Approximately 200 personnel would be required for the operations group, operations support services, security forces and base operating support. In addition to the 711 permanent party personnel, maintenance and logistics functions for the MC-12 would be contracted out and would include approximately 163 personnel.

Currently, there is a temporary mission qualification training (MQT) detachment for the MC-12 aircraft at Key Field Air National Guard Base (ANGB) in Meridian, Mississippi. There are 30 MC-12 aircraft deployed in the USCENTCOM AOR, with five additional aircraft procured and scheduled for delivery to the AOR in the near future. The remaining seven MC-12 aircraft are stationed at the temporary MQT detachment at Key Field ANGB. However, this temporary MQT mission does not allow permanent party crew members to be assigned to the aircraft, causing the operating experience level for the MC-12 crew force to be extremely limited. Therefore, a permanent location for the MC-12 mission is needed. For the MC-12 beddown, 35 MC-12 aircraft would remain deployed for the foreseeable future and seven aircraft would be permanently based in the CONUS and used for training (five aircraft) and testing (two aircraft). The MC-12 aircraft currently stationed at Key Field ANGB would be moved to the permanent installation once it is selected. Eventually, all 42 aircraft would be stationed at the selected installation.

Annual sorties anticipated to be required for MC-12 training would be approximately 3,420 daytime sorties and 900 nighttime sorties for a total of 4,320 sorties per year. Annual airfield operations are anticipated to be approximately 15,000 operations per year. The MC-12 carries M-211 flares and would require flare drop training. It is anticipated that each crew would drop flares once per quarter, within the confines of the ranges/training centers that have been specifically approved/certified for M-211 use, as a training requirement. Annual munitions expenditures (flare drops) anticipated to be required for MC-12 training would be approximately 4,694 daytime and 2,346 nighttime expenditures per year.

Preferred Alternative – Beale AFB: Under the Preferred Alternative, the USAF would permanently beddown 42 MC-12 aircraft and two operational squadrons at Beale Air Force Base (AFB), CA. Beale AFB is the Preferred Alternative because of its access to training opportunities, synergy with existing ISR flying missions, and collocation with the distributed common ground system (DCGS) mission. Beale AFB, an ACC base, is located in Yuba County, California, in the northeastern portion of the Sacramento Valley. Beale AFB has excess squadron operations facilities, maintenance facilities, and hangars and ramp space that would initially support the MC-12 beddown. Some of these are existing, unoccupied buildings available for immediate use. However, some of the existing facilities would eventually require renovations to bring them up to standards for long-term viability. Renovations would be required for Buildings 1076, 1086, 1243, and 11703 in order to satisfy the functional space requirements. Military construction (MILCON) would be required for a new dormitory. The runway/taxiway facilities are adequate for the MC-12 beddown. Beale AFB has one runway that is 12,000 feet long and 300 feet wide, and there are two taxiways that are 75 feet wide each. Beale AFB has sufficient ramp space on the base in front of Building 11703, but the parking spaces would need to be restriped and have additional tie downs and grounding points installed.

The air traffic capacity at Beale AFB is capable of absorbing 15,000 operations per year, given sufficient manning and, thus, is adequate to support the MC-12 training mission. There are other airfields in the local area that are also capable of supporting MC-12 training, including Travis AFB and Mather Airport Field. There are three Military Operations Areas (MOA) within 20 minutes and three restricted areas within 1 hour of Beale AFB, which are scheduled and controlled by Beale AFB. China, Maxwell, and Whitmore MOAs provide optimum training availability and variety that is similar to the USCENTCOM AOR, including a mountainous terrain. Naval Air Station (NAS) Fallon is the closest laser range and is located 115 nautical miles east of Beale AFB. NAS Fallon has sufficient resources to support the MC-12 training; however utilization of these resources is dependent upon scheduling priorities and would require intense, coordinated scheduling between Beale AFB and NAS Fallon. There are joint mission training centers near Beale AFB including the Marine Corps Mountain Warfare Training Center, Fort Hunter Ligget Multipurpose Range Complex, and the Fort Irwin Army National Training Center. The weather conditions at both Beale AFB and the surrounding range area provide approximately 93% Visual Flight Rules (VFR) conditions.

Alternative 1 – Robins AFB: Under Alternative 1, the USAF would permanently beddown 42 MC-12 aircraft and two operational squadrons at Robins AFB, Georgia. Robins AFB, an Air Force Materiel Command (AFMC) base, is the home of Warner Robins Air Logistics Center (ALC), the 78th Air Base Wing (ABW), and more than 60 other units. Robins AFB is located in central Georgia, approximately 18 miles south of Macon, Georgia, and adjacent to the eastern city limits of the City of Warner Robins in Houston County. Robins AFB has excess squadron operations facilities, maintenance facilities, and hangars and ramp space that would initially support the MC-12 beddown. Some of these are existing, unoccupied buildings available for immediate use. However, some of the existing facilities would eventually require renovations to

bring them up to standards for long-term viability. Renovations would be required for Buildings 12, 2316, 2336, and 2350 in order to satisfy the functional space requirements. No MILCON would be required. The runway/taxiway facilities at Robins AFB are adequate for the MC-12 beddown, with one runway that is 8,000 feet long and 150 feet wide, and a taxiway that is 75 feet wide. Robins AFB has sufficient ramp space on the base, but the parking spaces would need to be restriped and have additional tie downs and grounding points installed.

There are currently 34,000 to 40,000 airfield operations per year at Robins AFB. The air traffic capacity is capable of absorbing the 15,000 additional operations per year, given sufficient manning and, thus, is adequate to support the MC-12 training mission. There are other adequate airfields in the vicinity of Robins AFB to support diversion, emergency recovery, and pilot transition training for the MC-12 mission. Restricted airspace area R-3002 at Fort Benning is 75 miles away, and restricted airspace area R-3005 at Fort Stewart is 100 miles away. These areas provide opportunities to train with major Army ground maneuver elements. Bulldog and Coastal MOAs are available to support aircrew training. There are no known obstacles to operating in the proximity of Robins AFB under VFR to accomplish aircrew training. The Townsend Range (R-3007) is the nearest laser capable range to Robins AFB and is located approximately 100 miles away. The range has sufficient capacity to support the MC-12 training. There are nearby joint mission training centers including Fort Benning and Fort Stewart, which are less than 100 nautical miles away. Other training ranges, including Grand Bay Range at Moody AFB and Savannah Combat Readiness Training Center managed by Georgia Air National Guard, are available to support aircrew training. Weather conditions at both Robins AFB and the surrounding range area provide approximately 82% VFR conditions.

Alternative 2 – Whiteman AFB: Under Alternative 2, the USAF would permanently beddown 42 MC-12 aircraft and two operational squadrons at Whiteman AFB, Missouri. Whiteman AFB, an Air Force Global Strike Command (AFGSC) base, is located in Johnson County, Missouri about 2 miles south of Knob Noster and 60 miles east of Kansas City. Whiteman AFB has excess squadron operations facilities, maintenance facilities, and hangars and ramp space that would initially support the MC-12 beddown. Some of these are existing, unoccupied buildings available for immediate use. However, some of the existing facilities would eventually require renovations to bring them up to standards for long-term viability. Renovations would be required for Buildings 4, 44, 52, 115, 604, and 706 in order to satisfy the functional space requirements. MILCON would be required for a new dormitory at Whiteman AFB. The runway/taxiway facilities are adequate for the MC-12 beddown, with one runway that is 12,400 feet long and 200 feet wide, and a taxiway that is 75 feet wide. Whiteman AFB has sufficient ramp space on the base, but the parking spaces would need to be restriped and have additional tie downs and grounding points installed.

The air traffic capacity at Whiteman AFB is capable of absorbing the 15,000 additional operations per year, given sufficient manning and, thus, is adequate to support the MC-12 training mission. There are adequate airfields in the vicinity to support MC-12 training missions, including Fort Leonard Wood, which is the closest Army training installation and about 90 miles southeast. The base is the scheduling authority for the Truman MOA, which is an extensive airspace complex and has sufficient capacity to support MC-12 training and operations. The Truman MOA contains the Cannon Range, located approximately 65 miles southeast of Whiteman AFB. Cannon Range is laser capable, has an urban training capability and supports lights-out night vision goggles (NVG) operations. Scheduling for the Fort Leonard Wood Complex/Cannon Range is managed by the Missouri Air National Guard. For large combined training, Fort McCoy, Wisconsin is approximately 360 miles away and Volk Field Combat Readiness Training Center, managed by the Wisconsin Air National Guard, is 364 miles away.

These would be ideal for joint/special training. The weather conditions at Whiteman AFB and the surrounding range area provide approximately 82% VFR conditions.

Other Alternatives: The Headquarters Air Force Strategic Basing-Executive Steering Committee identified six locations for the permanent beddown of the MC-12 aircraft. These locations were also approved by the Secretary and Chief of Staff of the Air Force (SecAF/CSAF) as candidate bases to be evaluated for potential MC-12 beddown. The top six installations that were identified include Langley AFB, Virginia; Whiteman AFB, Missouri; Beale AFB, California; Key Field ANGB, Mississippi; Robins AFB, Georgia; and Altus AFB, Oklahoma. Site surveys were conducted at all six installations by an ACC Site Survey Team to determine the feasibility and costs associated with the potential MC-12 beddown. The team reviewed operations, communications, facilities, logistics/maintenance, security, and services at each of the installations. Following the site surveys, the SecAF/CSAF reduced the list of potential beddown locations from six candidates to three reasonable alternatives through application of military judgment. Langley AFB, Key Field ANGB, and Altus AFB were eliminated by the SecAF/CSAF as possible alternatives to carry forward for detailed analysis. Langley AFB and Key Field ANGB required additional infrastructure, other than a dormitory, to support the MC-12 program. The costs and construction timelines associated with the deficient infrastructure were considerably greater for these two installations, so they were eliminated from further consideration. Altus AFB lacked the mission synergy criteria requirement and was, therefore, eliminated from further consideration.

Environmental Consequences: There would be no significant impacts on the region's water supply or water quality at Beale AFB, Robins AFB, or Whiteman AFB. No impacts on any potentially jurisdictional wetlands would occur at any of the proposed beddown sites as a result of building renovations to existing facilities or construction of the new dormitory. Floodplains would not be impacted at Beale AFB or Whiteman AFB. Building 12 is an existing building that would be used for the beddown at Robins AFB and is located within the 500-year floodplain, but significant impacts are not expected to occur. There would be no significant impacts on biological resources at Beale AFB, Robins AFB, or Whiteman AFB. There are no Federally-listed threatened and endangered (T&E) species at either Robins AFB or Whiteman AFB. Federally-listed T&E species at Beale AFB include vernal pool tadpole shrimp (*Lepidurus packardi*), chinook salmon (*Oncorhynchus tshawytscha*), vernal pool fairy shrimp (*Branchinecta lynchi*), Central Valley steelhead (*Oncorhynchus mykiss*), and valley elderberry longhorn beetle (VELB) (*Desmorcerus californicus dismorphus*). The proposed new dormitory at Beale AFB would be located more than 250 feet away from the nearest vernal pools and they would be avoided during MC-12 beddown activities; therefore, there would be no effect on the species associated with the vernal pools (i.e., fairy shrimp, tadpole shrimp). There are no anticipated impacts on these vernal pool species, Central Valley steelhead, Chinook salmon, or VELB due to the renovations of the existing buildings to be used for the beddown, the proposed new dormitory, or MC-12 operations. There would be no impacts on climate, geology, or prime farmland at any of the installations. There would be no significant impacts on safety and occupational health at either site. No significant additional demands would occur to the water, wastewater, electrical and gas utility infrastructure at the installations. Transportation impacts would be minor, but insignificant, at all the bases. No changes in land use are planned and the MILCON projects would be consistent with the bases' master plan. Land use would remain for military purposes on the bases.

No significant impacts on cultural resources are anticipated at any of the installations. One building at Beale AFB (Building 1322) that is proposed to be used for the beddown is considered eligible for the National Register of Historic Places (NRHP). However, this facility is

only proposed to be used as a storage area for additional flare buildup, which is the current use of this building. No modifications would be required for Building 1322; therefore there would be no impacts. One building at Robins AFB (Building 12), which would require renovation to accommodate the beddown, is considered eligible for listing on the NRHP; any disturbance to this structure would be coordinated through the Georgia State Historic Preservation Office (SHPO) to develop measures to avoid or mitigate adverse impacts. No NRHP properties would be impacted at Whiteman AFB. If any cultural resources are discovered during construction of the dormitory at either Beale AFB or Whiteman AFB, the respective SHPO and other interested parties would be consulted.

Long-term increases in revenue would be associated with an increase in expenditures from the additional 874 additional staff and contracted personnel associated with the MC-12 beddown at any of the installations. A temporary increase in demand for public services could occur. Revenue in the regions of Beale, Robins, and Whiteman AFBs would increase temporarily during any period(s) of building repairs, building renovation or conversion, and the construction of the dormitory. No long-term adverse impacts on public services or revenue are expected at any of the installations. On-going air emissions from the beddown are expected to increase due to the implementation of the MC-12 training activities and the new staff; however, no significant impacts would result from the Proposed Action at any of the installations. Noise emissions from operations or training missions using the MC-12 would not create a significant impact to the existing noise environment at any of the installations. The beddown at Beale, Robins, or Whiteman AFB would not result in a significant hazard to the public or environment regarding the transport, use, or disposal of hazardous materials or wastes. No significant impacts on general aviation, airspace, and any of the airfields and training ranges near Beale AFB, Robins AFB, or Whiteman AFB would occur as a result of the Proposed Action, as each of the installations are currently operating under capacity.

Conclusion: The data presented in the EA documents that the best available site for the proposed beddown of the MC-12 mission is at Beale AFB and that the beddown at this site would result in insignificant adverse impacts on the area's human and natural environment. Therefore, no additional environmental analysis (i.e., Environmental Impact Statement) is warranted.

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SECTION 1.0
INTRODUCTION

1.0 INTRODUCTION

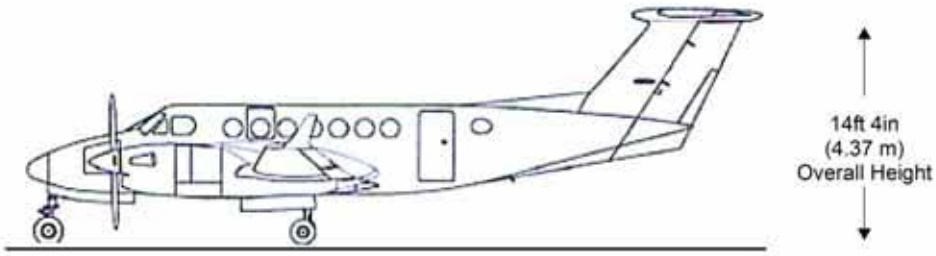
1.1 BACKGROUND

The Secretary of Defense (SecDef) directed the initiative for procurement of a fleet of 42 MC-12 aircraft in order to enhance the United States (U.S.) Air Force's (USAF) intelligence gathering capabilities and to augment the unmanned aircraft systems flying reconnaissance missions. The MC-12 was identified by the SecDef Operational Intelligence, Surveillance and Reconnaissance (ISR) Task Force to increase ISR support to U.S. Central Command's (USCENTCOM) Area of Responsibility (AOR). The MC-12's primary mission is to provide ISR support directly to ground forces. The MC-12 aircraft is a manned, medium-to-low-altitude, ISR asset built around a C-12 aircraft, which is a modified Beechcraft King Air 350 (Photograph 1).

Photograph 1. MC-12 Aircraft

The MC-12 is a twin-engine, turbo prop aircraft that is capable of coordinated air-to-ground operations, providing real-time data and information. The MC-12 is designed to provide full motion video, signals intelligence, and other intelligence data to ground forces. The MC-12 is operated by a crew of four including a pilot, co-pilot, and two system sensor operators. It can loiter low and slow or cruise at 300 knots up to 35,000 feet above ground level (AGL) and is equipped to perform medium-altitude surveillance for more than 7 hours with full fuel and payload. The MC-12s have a relatively low footprint when it comes to ramp space on a flight line and are easy to maintain and operate. Figure 1-1 shows the MC-12 aircraft dimensions.

In September 2008, the USAF and Air National Guard officials agreed to establish a temporary mission qualification training (MQT) detachment for the MC-12 aircraft at Key Field Air National Guard Base (ANGB) in Meridian, Mississippi. This mission, designated Project Liberty and conducted by the Mississippi Air National Guard, was designed to bolster the Department of Defense's (DoD) intelligence gathering capability in Operations Iraqi Freedom and Enduring Freedom. The 186th Air Refueling Wing was tasked with conducting total force MQT for this program and providing the manpower and facilities for the training unit.



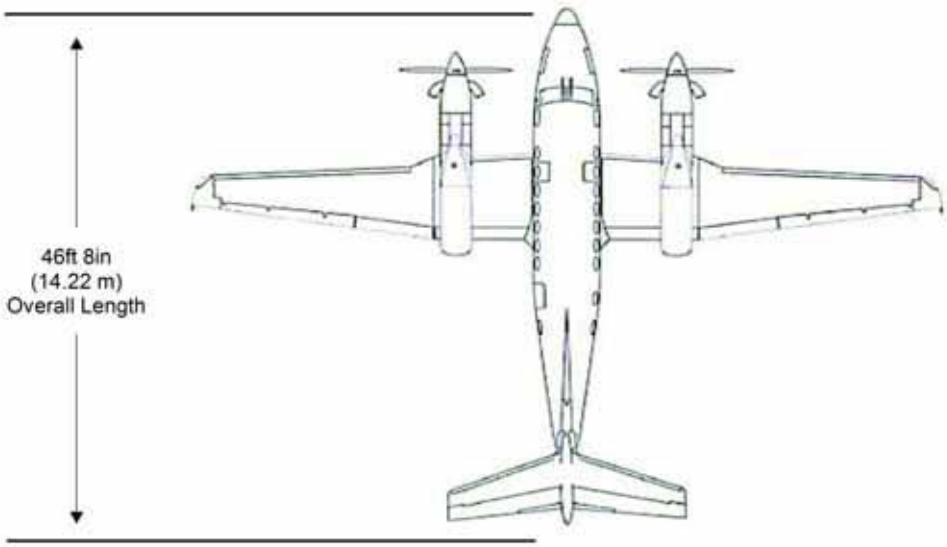


Figure 1-1: MC-12 Aircraft Dimensions

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As a new aircraft mission, a permanent beddown location within the continental U.S. (CONUS) is needed to support an operational training and testing unit for 37 MC-12 aircraft. Currently, there are 30 MC-12 aircraft deployed in the USCENTCOM AOR and five additional aircraft have been procured and would be deployed to the AOR in the near future. The remaining seven MC-12 aircraft are stationed at the temporary MQT detachment at Key Field ANGB. For the MC-12 beddown, 35 MC-12 aircraft would remain deployed for the foreseeable future and seven aircraft would be permanently based in the CONUS and used for training (five aircraft) and testing (two aircraft). The MC-12 aircraft currently stationed at Key Field ANGB would be moved to the new permanent installation once it is selected. Eventually, all 42 aircraft would be stationed at the selected installation.

Air Combat Command (ACC), the primary force provider of combat airpower to America's war fighting commands, is the lead command tasked with organizing, training, and equipping the MC-12 mission. Currently, the MC-12 mission is entirely manned by Air and Space Expeditionary Force (AEF) deployers that are trained at Key Field ANGB. Selection of a permanent MC-12 beddown location would allow permanent party crew members to be assigned to this aircraft and this would significantly reduce the number of AEF deployers required to support it, while increasing the experience level of MC-12 combat aircrews.

After analyzing the potential environmental impacts, the USAF will decide whether to implement the Proposed Action (the Preferred Alternative, Alternative 1, or Alternative 2), or select the No-Action Alternative. Approval of the Proposed Action would result in the permanent stationing of two operational MC-12 squadrons at one of the proposed installations and the development of any infrastructure required to support the mission. This Environmental Assessment (EA) will identify the actions that are proposed relative to the environmental effects associated with the USAF's Proposed Action. Details on the Proposed Action are presented in Section 2.

1.2 PURPOSE AND NEED

The purpose of the Proposed Action is to provide a permanent location for the beddown of two operational MC-12 squadrons and 42 MC-12 aircraft within the CONUS. One squadron would have 22 primary aircraft with operations, training, and testing functions. Approximately 270 personnel would be associated with this squadron. The second squadron would have 15 primary aircraft with operations functions only. Approximately 240 personnel would be associated with the second squadron. Additionally, five backup aircraft would beddown at the permanent location. Approximately 200 personnel would be required for the operations group, operations support services, security forces, and base operating support. In total, the beddown would bring in about 711 permanent party personnel for both squadrons. In addition, approximately 163 contractor logistics support (CLS) personnel, including maintenance and logistics staff, would also be required for the MC-12 beddown.

The Proposed Action is necessary so that permanent party crew members would be able to be assigned to the MC-12 aircraft, thereby increasing the experience level of MC-12 combat aircrews. MQT conducted by the MC-12 crew members, followed by the deployment of the MC-12 aircraft to the USCENTCOM AOR, would enable the USAF to provide additional intelligence in support of military missions outside the CONUS.

1.3 REGULATORY FRAMEWORK

In December 1969, the U.S. Congress passed the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321 et. seq.) which requires agencies of the Federal government to make available information on the environmental impacts of its proposed actions. The Council on Environmental Quality (CEQ) was established under NEPA to implement and

oversee Federal policy in this process. These regulations are based on NEPA, Executive Orders (EO) 11514 and 11991, the Environmental Quality Improvement Act of 1970, as amended (42 USC 4371 et seq.), and Section 309 of the Clean Air Act (CAA), as amended (42 USC 7609).

A decision on whether to proceed with the Proposed Action rests on numerous factors, such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, the USAF is guided by relevant statutes (and their implementing regulations) and EOs that establish standards and provide guidance on environmental and natural resources management and planning. This includes NEPA requirements, CEQ regulations (40 Code of Federal Regulations [CFR] 1500-1508) and Air Force Instruction (AFI) 32-7061 codified in 32 CFR 989 (The Environmental Impact Analysis Process [EIAP]). The beddown of the MC-12 aircraft requires compliance with the Federal regulations and EOs presented below in Table 1-1.

Table 1-1. Summary of Relevant Regulations Including Potential Permits or Licensing Requirements

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status	Status of Compliance with Relevant Laws and Regulations
FEDERAL				
General	National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321 *et seq.*)	Council on Environmental Quality (CEQ)	Compliance with NEPA, in accordance with CEQ regulations (40 Code of Federal Regulations [CFR] 1500-1508)	Full compliance would be achieved upon issuance of a signed Finding of No Significant Impact (FONSI) (if appropriate).
	32 CFR 989 (Environmental Impact Analysis Process [EIAP])	USAF	Compliance with regulations specified in 32 CFR 989	Full compliance would be achieved upon issuance of a signed FONSI (if appropriate).
Sound/ Noise	Noise Control Act of 1972 (42 USC 4901 et seq.), as amended by Quiet Communities of 1978 (Public Law [PL] 95-609)	U.S. Environmental Protection Agency (US EPA)	Compliance with surface carrier noise emissions	Full compliance would be achieved upon implementation of construction activities.
Air	Clean Air Act (CAA) and amendments of 1990 (42 USC 7401-7671q) 40 CFR 50, 52, 93.153(b)	USEPA	Compliance with National Ambient Air Quality Standards (NAAQS) and emission limits and/or reduction measures	Full compliance; emissions would be below *de minimis* thresholds.
Green-house Gases	EO 135414; CAA Section 202(a)	USEPA	NEPA compliance with EO 13514	Full compliance.

Table 1-1, continued

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status	Status of Compliance with Relevant Laws and Regulations
Water	Clean Water Act (CWA) of 1977 (33 USC 1342) 40 CFR 122	USEPA	Section 402(b) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges for Construction Activities-StormWater Pollution Prevention Plan (SWPPP)	SWPPP and Notice of Intent would be prepared prior to construction. Full compliance would be achieved prior to implementation of construction activities.
	EO 11988 (Floodplain Management), as amended by EO 12608	Water Resources Council, Federal Emergency Management Agency (FEMA), CEQ	Compliance	Full compliance; no floodplains would be impacted.
	Energy Independence and Security Act (EISA) Section 438 (42 USC Section 17094)	USEPA	Under these requirements, predevelopment site hydrology shall be modeled or calculated and must include site-specific factors such as soil type, ground cover, and ground slope. Site design shall incorporate stormwater retention and reuse technologies such as bioretention areas, permeable pavements, cisterns/recycling, and green roofs to the maximum extent technically feasible. Post-construction analyses shall be conducted to evaluate the effectiveness of the as-built storm water reduction features.	Full compliance
	EO 11990 (Protection of Wetlands), as amended by EO 12608	U.S. Army Corps of Engineers (USACE) and U.S. Fish and Wildlife Service (USFWS)	Compliance	Full compliance; no jurisdictional wetlands would be impacted.

Table 1-1, continued

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status	Status of Compliance with Relevant Laws and Regulations
Water (Continued)	CWA of 1977 (33 USC 1341 et seq.)	USACE	Section 401/404 Permit	Full compliance; no jurisdictional waters are located on any of the proposed beddown sites.
	Coastal Zone Management Act (CZMA) of 1972 (16 USC 1456[c]) Section 307	National Oceanic and Atmospheric Administration (NOAA)	Compliance	Full compliance; no proposed beddown sites are within the coastal zone.
Soils	Resource Conservation and Recovery Act of 1976 (42 USC 6901-6992k), as amended by Hazardous and Solid Waste Amendments of 1984 (PL 98-616; 98 Stat. 3221)	USEPA	Proper management, and in some cases, permit for remediation	Full compliance would be achieved prior to implementation of construction activities
	Comprehensive, Environmental Response, Compensation, Liability Act (CERCLA) of 1980 (42 USC 9601-9675), as amended by Emergency Planning and Community Right-To-Know-Act of 1986 (42 USC 11001 *et seq.*) Release or threatened release of a hazardous substance	USEPA	Development of emergency response plans, notification, and cleanup	Full compliance
	Farmland Protection Policy Act (FPPA) of 1981 (7 USC 4201 et seq.) 7 CFR 657-658 Prime and unique farmlands	Natural Resource Conservation Service (NRCS)	NRCS determination via Form AD-1006	Full compliance; acquisition or use of farmland by a Federal agency for national defense purposes is exempt from the FPPA

Table 1-1, continued

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status	Status of Compliance with Relevant Laws and Regulations
Natural Resources	Endangered Species Act (ESA) of 1973, as amended (16 USC 1531-1544)	USFWS	Compliance by lead agency and/or consultation to assess impacts and, if necessary, develop mitigation measures	Full compliance; no protected species are anticipated to be impacted during the renovations of the existing buildings to be used for the beddown or new dormitory construction at any of the installations.
	Migratory Bird Treaty Act of 1918	USFWS	Compliance by lead agency and/or consultation to assess impacts and, if necessary, develop mitigation measures	Full compliance would be achieved upon implementation of construction activities.
	Bald and Golden Eagle Act of 1940, as amended	USFWS	Compliance by lead agency and/or consultation to assess impacts and, if necessary, obtain permit	Full compliance; no effects on bald or golden eagles
Health and Safety	Occupational Safety and Health Act of 1970	Occupational Safety and Health Administration (OSHA)	Compliance with guidelines including Material Safety Data Sheets	Full compliance would be achieved upon implementation of construction activities.
Cultural/ Archaeo-logical	National Historic Preservation Act of 1966	Advisory Council on Historic Preservation (ACHP) through State Historic Preservation Officer (SHPO)	Section 106 Consultation	Full compliance would be achieved prior to implementation of any construction activities; coordination is on-going.
	Archaeological Resources Protection Act of 1979	Affected land-managing agency	Permits to survey and excavate/remove archaeological resources on Federal lands; Native American tribes with interests in resources must be consulted prior to issue of permits.	Full compliance
	American Indian Religious Freedom Act of 1978, as amended		Compliance	Full compliance
	Native American Graves Protection and Repatriation Act of 1990	National Park Service (NPS)	Compliance	Full compliance

Table 1-1, continued

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status	Status of Compliance with Relevant Laws and Regulations
Cultural/ Archaeo-logical (Continued)	EO 13175 (*Consultation and Coordination with Indian Tribal Governments*)	Bureau of Indian Affairs (BIA)	Coordinate directly with tribes claiming cultural affinity to project areas	Full compliance
Social/ Economic	EO 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*) of 1994	USEPA	Compliance	Full compliance; no minority or low income populations would be affected
	EO 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*)	USEPA	Compliance	Full compliance; no children would be exposed to the construction activities
	EO 13101 (*Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*)	USEPA	Compliance	Full compliance
	EO 13123 (*Greening the Government Through Efficient Energy Management*)	USEPA	Compliance	Full compliance
	EO 13148 (*Greening the Government Through Leadership in Environmental Management*)	USEPA	Compliance	Full compliance

These authorities are addressed in various sections throughout this EA when relevant to particular environmental resources and conditions.

1.4 PUBLIC INVOLVEMENT

The USAF invites public participation in the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. The USAF set forth the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) as a scoping process which informs local, state, tribal, and Federal agencies of proposed projects. All agencies, organizations, and members of the public having a potential interest in the Proposed Action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the decision-making process. IICEP responses can be found in Appendix A.

Public participation opportunities with respect to the EA and decision-making on the Proposed Action are guided by 32 CFR Part 989. The EA and Draft Finding of No Significant Impact (FONSI) were made available to the public for 30 days beginning on 26 January 2011. Notices of Availability (NOA) were published in local and regional newspapers near Beale, Robins, and Whiteman AFBs. Proofs of publications of the NOAs are contained in Appendix A. The Draft EA and FONSI were also made available for public review at local libraries near each alternative

installation. At the end of the 30-day public review period, the USAF considered any comments submitted by individuals, agencies, or organizations on the Proposed Action, the EA, or Draft FONSI. As appropriate, the USAF may execute the FONSI and proceed with implementation of the Proposed Action.

Throughout this process, the public may obtain information on the status and progress of the Proposed Action and the EA through the USAF, Headquarters (HQ) ACC by contacting Mr. Don Calder, ACC/A7PS, 129 Andrews Street, Suite 102, Langley Air Force Base, Virginia 23665-2769 or by telephone at (757) 764-6156 or through the U.S. Army Corps of Engineers (USACE), Sacramento District by contacting Mr. Josh Garcia, 1325 J Street (CESPK-PD-R), Sacramento, California, 95814-2922 or by telephone at (916) 557-6778.

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SECTION 2.0
PROPOSED ACTION AND ALTERNATIVES

2.0 PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Proposed Action and alternatives for the beddown of two operational MC-12 squadrons with their associated number of MC-12 aircraft. The Proposed Action is described in Section 2.1. The Preferred Alternative for the Proposed Action, which is Beale Air Force Base (AFB), is described in Section 2.2. Alternatives 1 and 2, which include Robins AFB and Whiteman AFB, are described in Sections 2.3 through 2.4. The No Action Alternative is described in Section 2.5. Section 2.6 discusses alternatives that were eliminated from further consideration. A comparative summary of impacts is provided in Section 2.7.

The HQ Air Force Strategic Basing-Executive Steering Committee (SB-ESG) identified six locations for the permanent beddown of the MC-12 aircraft. These locations were also approved by the Secretary and Chief of Staff of the Air Force (SecAF/CSAF) as candidate bases to be evaluated for potential MC-12 beddown. The top six installations that were identified include Langley AFB, Virginia (VA); Whiteman AFB, Missouri (MO); Beale AFB, California (CA); Key Field ANGB, Mississippi (MS); Robins AFB, Georgia (GA); and Altus AFB, Oklahoma (OK). Site surveys were conducted at all six installations by an ACC Site Survey Team to determine the feasibility and costs associated with the potential MC-12 beddown. The team reviewed operations, communications, facilities, logistics/maintenance, security, and services at each of the installations. Following the site surveys, the SecAF/CSAF reduced the list of potential beddown locations from six candidates to three reasonable alternatives through application of military judgment. The SecAF/CSAF concluded that the MC-12 beddown is reasonable at Beale AFB, Robins AFB, and Whiteman AFB, and these three installations will be carried forward for analysis in the EA (Figure 2-1).

2.1 PROPOSED ACTION

ACC has been tasked with finding a permanent beddown location for the MC-12 mission. The Proposed Action would provide a CONUS-based beddown location for MC-12 crews and aircraft prior to their deployment to the USCENTCOM AOR. The proposed location would meet the beddown criteria and provide the infrastructure and personnel to support the permanent MC-12 beddown. The following mission criteria were established for the beddown:

- **Airspace**
  - Close proximity to a laser capable range, U.S. Army ground component training location/range, and a National, combined, or joint training center
  - Range and local airfield weather must achieve at least visual meteorological conditions (3,000-foot ceilings with 3 miles visibility)
  - Tower/traffic pattern availability
    - Airfield/Tower hours of operations support MC-12 day/night/night vision goggles (NVG) operations
    - Pattern can absorb up to 15,000 additional traffic movements per year
    - Instrument (precision/non-precision) approach capability

- **Mission Synergy**
  - Collocation with deployable ground station (DGS), distributed common ground system (DCGS), and other ISR flying missions.

- **Squadron Operations Facilities**
  - Squadron operations capacity with Non-Secure Internet Protocol Router (NIPR), Secure Internet Protocol Router (SIPR), Joint Worldwide Intelligence

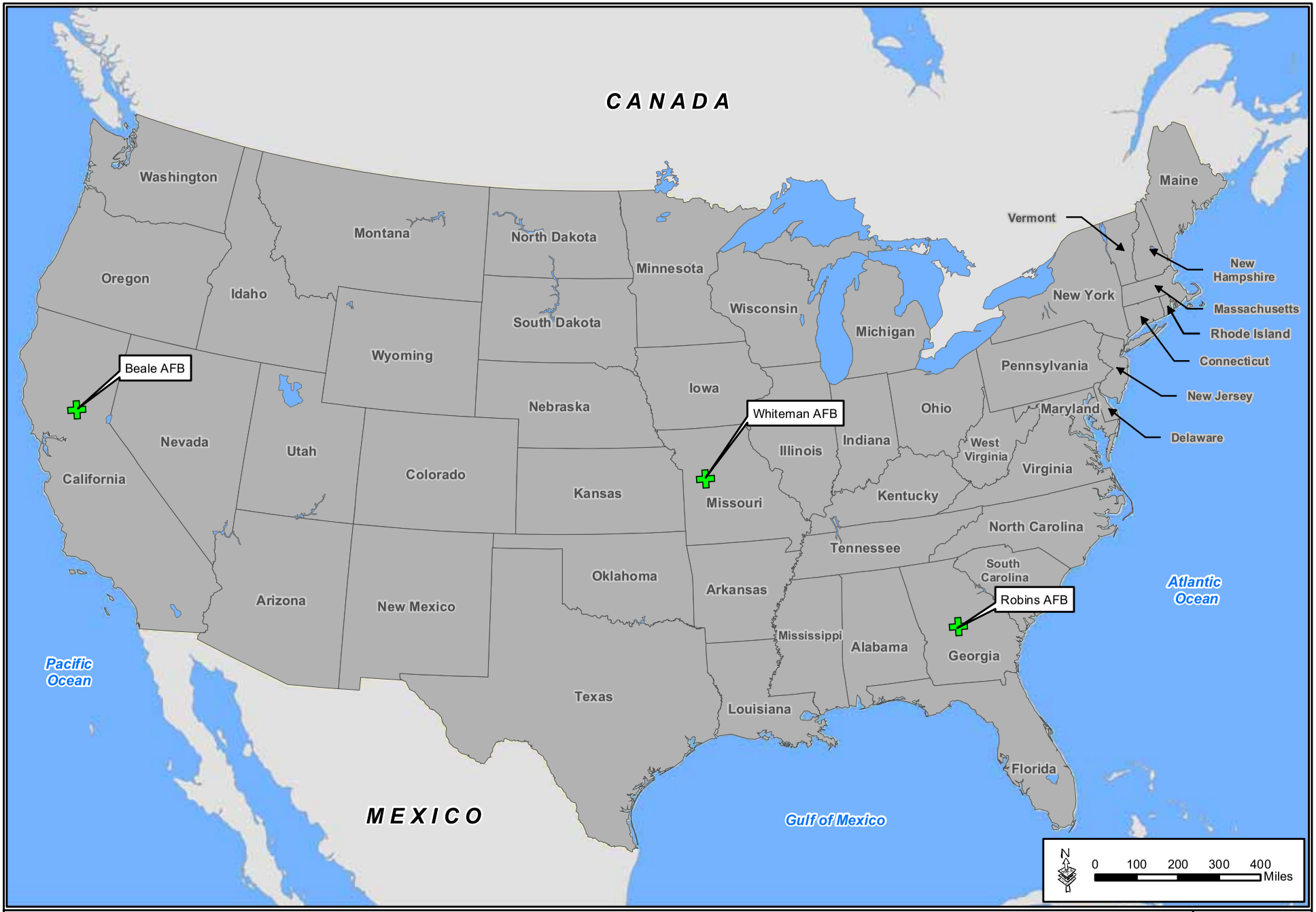

Figure 2-1: MC-12 Project Location Map

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Communications System (JWICS), standard telephone equipment (STE), Voice-Over Secure Internet Protocol (VoSIP) (available by January 2011 for first squadron, January 2013 for second squadron)
    - One squadron requires 25,000 to 30,000 square feet (SF)
  - Two-bay climate-controlled simulator capacity with mission brief/debrief rooms and appropriate climate controlled computer rooms (available by January 2013)
  - A 2,000 SF Sensitive Compartmentalized Information Facility (SCIF) (available by January 2011)

- **Logistics Facilities**
  - Hangar space available for seven MC-12 aircraft (by January 2011) and total hangar space available for all 42 aircraft (by January 2013)
    - Requires 6 spaces plus fuel cell access (24,000 SF)
  - Maintenance facility available by January 2011 for contractor logistics support (CLS) for seven aircraft and by January 2013 for all 42 aircraft
    - Facilities to support a total of 163 maintenance personnel, administration, shop, tool crib, and parts store
    - One squadron requires 7,000 to 10,000 SF
  - Non-nuclear munitions storage/properly sited explosive storage and handling areas for flare storage (required for future weaponization of the MC-12)

- **Base Operating Services (BOS) facilities**
  - Permanent Party Dormitories based on support of 82 personnel (25% of enlisted)
  - Child Development Center (CDC), Gym/Fitness Center, and Medical/Dental facility based on support of 711 personnel plus dependents

- **Airfield Facilities**
  - 8,000 feet (ft) long x 150 ft wide runway and 75 ft wide taxiway
  - Ramp space available for seven aircraft by January 2011 and for all 42 aircraft by January 2013
  - Ramp capable of supporting strategic airlift max on ground (MOG) of one or more
  - Ramp security – restricted flight line access

- **Environmental**
  - Attainment of the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide, and particulate matter
  - No incompatible development in Clear Zone/Accident Potential Zones (APZ)
  - No incompatible development in noise contours greater than 65 decibels (dB)
  - Area land use controls adopted to preserve installation's flying operations

The flying training sorties/airfield operations requirements are listed in Table 2-1:

Table 2-1. Annual Sorties/Airfield Operations for the MC-12

MC-12 – 2 squadrons	Day Operations (0700L-2159L)	Night Operations (2200L-0659L)	Total
Annual Sorties	3,420	900	4,320
Annual Airfield Operations	11,970	3,150	15,120

L=local time

This includes 285 total day sorties per month and 75 total night sorties per month for both squadrons. A sortie consists of a single military aircraft flight from initial takeoff through final landing. An airfield operation represents the single movement or individual portion of a flight in the base airspace environment, such as one departure or one arrival. An aircraft practicing multiple approaches within the airfield environment (i.e., closed patterns) accounts for at least two operations – one approach and one departure.

Typical training flights would be about three hours long. If the sortie goes to a range, the typical time spent there would be approximately one hour, although not every training flight would use the range. The typical flight would probably consist of takeoff, 30 minutes to the range, Military Operations Area (MOA), or local area, one hour activity in the range/MOA/local area, 30 minutes back to the home airfield, and one hour of pattern work at the home field.

The training altitudes would be between 10,000 and 25,000 ft AGL for most of the training events that would be accomplished at the range, in the MOA, or around the local area. Pattern work at the home airfield would be accomplished well below 10,000 ft AGL.

The MC-12 carries M-211 flares and a flare drop training requirement exists for both MQT and aircrew operational flight currency training. It is anticipated that flares would be expended fairly often. As a rule of thumb, 1 out of every 15 sorties would expend flares within the confines of the ranges/training centers that have been specifically approved/certified for M-211 use. Table 2-2 lists the approximate number of flares expended per year:

Table 2-2. Annual Munitions (Flare Drops) Use for the MC-12

	Annual Munitions Expenditures (Day) (0700L-2159L)	Annual Munitions Expenditures (Night) (2200L-0659L)	Total Annual Munitions Expenditures
MC-12 - 2 squadrons	4,694	2,346	7,040

L=local time

The M-211 flare reacts with air to give a heat signature but does not burn like a flare. The reaction would only last for a short period of time (several seconds) until all the material is used up at which point the reaction would be finished. The M-211 flare is composed of 0.9 x 0.9 inch foil material which would continue to fall to the ground after the reaction stops. The residue material of the M-211 flares consists of iron and iron oxides which are not hazardous and may be discarded.

Under the Proposed Action, the USAF would permanently beddown two operational MC-12 squadrons and 42 MC-12 aircraft at one of the three proposed installations - Beale AFB, Robins AFB, or Whiteman AFB. In total, the beddown would bring in about 711 personnel for both squadrons. One squadron would consist of 22 aircraft and approximately 270 personnel and would include operations, MQT, and testing functions. The operations function would include 15 Primary Mission Aircraft Inventory (PMAI) aircraft, which are currently deployed. The MQT function would include five Primary Training Aircraft Inventory (PTAI) aircraft, while the testing function would include two Primary Developmental/Test Aircraft Inventory (PDAI) aircraft. The second squadron would consist of 15 aircraft and approximately 242 personnel and would include operations functions only. The operations function would include 15 PMAI aircraft. Additionally, five Backup Aircraft Inventory (BAI) aircraft would also beddown at the permanent location and serve as backup for both squadrons. Approximately 199 additional personnel would be required for the operations group, operations support services, security forces, and

base operating support. In addition to the 711 permanent personnel, maintenance and logistics functions for the MC-12 mission would be contracted out and would include approximately 163 personnel.

All personnel are projected to begin arriving early in the third quarter of Fiscal Year (FY) 2011 (April 2011). Approximately seven aircraft would be brought in by April 2011 and all 42 aircraft would be brought in by January 2013. The MC-12 aircraft currently stationed at Key Field ANGB would be moved to the beddown location beginning in April 2011.

2.2 PREFERRED ALTERNATIVE – BEALE AFB

Under the Preferred Alternative, the USAF would permanently beddown 42 MC-12 aircraft and two operational squadrons at Beale AFB, CA. Beale AFB is the Preferred Alternative because of its access to training opportunities, synergy with existing ISR flying missions, and collocation with the DCGS mission. Beale AFB, an ACC base, is located in Yuba County, CA, in the northeastern portion of the Sacramento Valley and is home to the 9th Reconnaissance Wing (RW). The base is approximately 40 miles north of Sacramento, 13 miles east of Marysville, and 25 miles west of Grass Valley. Beale AFB is in the ecological and geographic transition zone between the flat agricultural lands of the Sacramento Valley and the foothills of the western slope of the Sierra Nevada Mountains. The Yuba and Bear Rivers are north and south, respectively, of Beale AFB. Beale AFB is the center for the Nation's aerial reconnaissance force, and is the home base for all USAF U-2 “Dragon Lady” and RQ-4 “Global Hawk” reconnaissance aircraft. In addition, the base is one of only three sites in the U.S. supporting the Perimeter Acquisition Vehicle Entry Phased-Array Warning System (PAVE PAWS) long-range radar. This system is vital to the defense of the country, providing an early warning system for submarine-launched and intercontinental ballistic missiles and detection of Earth-orbiting satellites.

2.2.1 Facilities

Beale AFB has excess squadron operations facilities, maintenance facilities and hangars, and ramp space that would initially support the MC-12 beddown. Some of these are existing, unoccupied buildings available for immediate use. However, some of the existing facilities would eventually require renovations to bring them up to standards for long-term viability.

Table 2-3 describes the facility plan for the beddown including squadron operations, CLS maintenance, hangar space, ramp/parking space, flight simulator, relay pod antennae/equipment room, dormitory and flare storage. Figure 2-2a depicts the location of these facilities.

2.2.1.1 Proposed Facility Renovations/Construction

Figure 2-2 illustrates the various existing facilities that would be used to satisfy the functional space requirements. In some cases, facilities and/or infrastructure are not available or are non-existent for specialized functional requirements. In those cases, new military construction (MILCON) would satisfy the shortfall. MILCON would be needed for a new dormitory at Beale AFB for the MC-12 beddown. The proposed new dormitory would be sited in a development area near the existing dormitories (Figure 2-2b). The new dormitory would be designed to qualify for Leadership in Energy and Environmental Design (LEED) certification by the U.S. Green Building Council. Table 2-4 describes the facilities that are proposed to be used for the beddown, if renovations are necessary and if minor construction or MILCON would be required.

Table 2-3. Facility Plan for Beale AFB

Functional Description	Scope	Remarks	Facilities Proposed to be Used
MC-12 Squadron Operations - Squadron #1 (with training and testing functions)	26,000 gross square feet (GSF)	Includes Air Force Intelligence, Surveillance and Reconnaissance Agency (AFISRA)/Intelligence, Surveillance and Reconnaissance Exploitation Cells (ISREC) requirements (3,500 SF), test and training	Use Building 1086 for Operations. Requires extensive reconfiguration and renovation. Use Building 1025 for Training flight. 3rd Floor of Building 2145 is an option for AFISRA
MC-12 Squadron Operations - Squadron #2	20,500 GSF		Use Building 1086. Requires extensive reconfiguration and renovation
CLS Maintenance - Squadron #1	10,000 GSF	Back shops (2,000 SF), warehouse (4,000 SF), parts store (1,000 SF), tool room (1,000 SF), office (2,000 SF)	Use Dock 5 (Building 1076) and Building 11703
CLS Maintenance - Squadron #2	10,000 GSF		Use Dock 7 (Building 1243) and Building 1086
Maintenance Hangars – Squadron #1 (3 aircraft/sq)	3 spaces	Also requires access to fuel cell hangar	Use Dock 5 for 4 aircraft
Maintenance Hangars – Squadron #2 (3 aircraft/sq)	3 spaces	Also requires access to fuel cell hangar	Use Dock 7 for two aircraft
Ramp space - Squadron #1 (15 PMAI, 5 training PTAI, 2 testing PDAI)	22 spaces	Minimum, in accordance with AFI, is dock factor minus actual hangar parking spots	Parking available in front of Building 11703
Ramp space - Squadron #2 (15 PMAI)	15 spaces		Parking available in front of Building 11703
Ramp space – 5 BAI Aircraft	5 spaces	Parking spaces for backup aircraft	Parking available in front of Building 11703
2 Bay Flight Simulator (FY 13)	5,000 GSF	Each bay is 40 ft wide x 34 ft long x 25 ft high	Use Building 1086 (High Bay Portion); Raise roof in simulator bays
AFISRA Relay node/antennae (1 for each squadron)	1,400 GSF/pod	1,000 SF for classroom/maintenance area, 250 SF for relay node pod and 150 SF for antennae area	Use old parachute drying tower for Relay node/antennae; Construct 700 SF equipment room adjacent to west end of Building 1086
Dormitory (2 squadrons)	96-Person	Drives an additional 90-person requirement	Would require MILCON near existing dormitories.
Flare Storage		Non-nuclear flare and munitions storage	Use existing munitions storage area – Building 1318; Building 1322 could be used for flare build up
Runway	1 runway and 1 taxiway	8,000 ft long x 150 ft wide runway and 75 ft wide taxiway	Use existing runway

Table 2-4. Building Renovations/Repair/MILCON at Beale AFB

Facility Description	Remarks
Dock 5 (Building 1076)	Minor renovation for squad ops and maintenance
Building 1086	Major renovation (50,000 SF) to consolidate area for squad ops; 10,000 SF renovation for maintenance; 2,000 SF renovation for SCIF; high bay area renovation for flight simulators
Building 11703	Repair for maintenance; includes flight line access, fence and jet blast deflector modifications
Dock 7 (Building 1243)	Minor renovation required
Parking Space/Ramp in front of Building 11703	Airfield markings/aircraft tie downs, jet blast deflectors removal, fence modifications
Equipment Room for Antennae	Minor construction required
Dormitory	MILCON required
Munitions Storage Area	No work required
Runway	No work required

2.2.1.2 Base Operating Services (BOS)

The BOS including gym/fitness center, CDC, dining facility, lodging, schools and medical/dental are adequate to meet the needs of 711 personnel plus their dependents. A new CDC began construction in May 2010 and is expected to increase the current child care spaces by 100. A new 62,150 SF fitness center is the number two MILCON priority for 9 RW. Manning for these services would likely need to be increased.

2.2.2 Operations

2.2.2.1 Airspace/Airfield Facilities and Operations

The U-2 “Dragon Lady”, RQ-4 “Global Hawk”, and T-38 training jet aircraft are currently stationed at Beale AFB. The U-2 is a high-altitude, manned reconnaissance aircraft while the RQ-4 is a high-altitude, unmanned reconnaissance aircraft. Table 2-5 lists the average daily airfield operations occurring in the airspace near Beale AFB:

Table 2-5. Average Daily Airfield Operations at Beale AFB

Aircraft	Average Daily Airfield Operations
U-2	79
RQ-4	10
T-38	71
Total Daily Operations	**160**

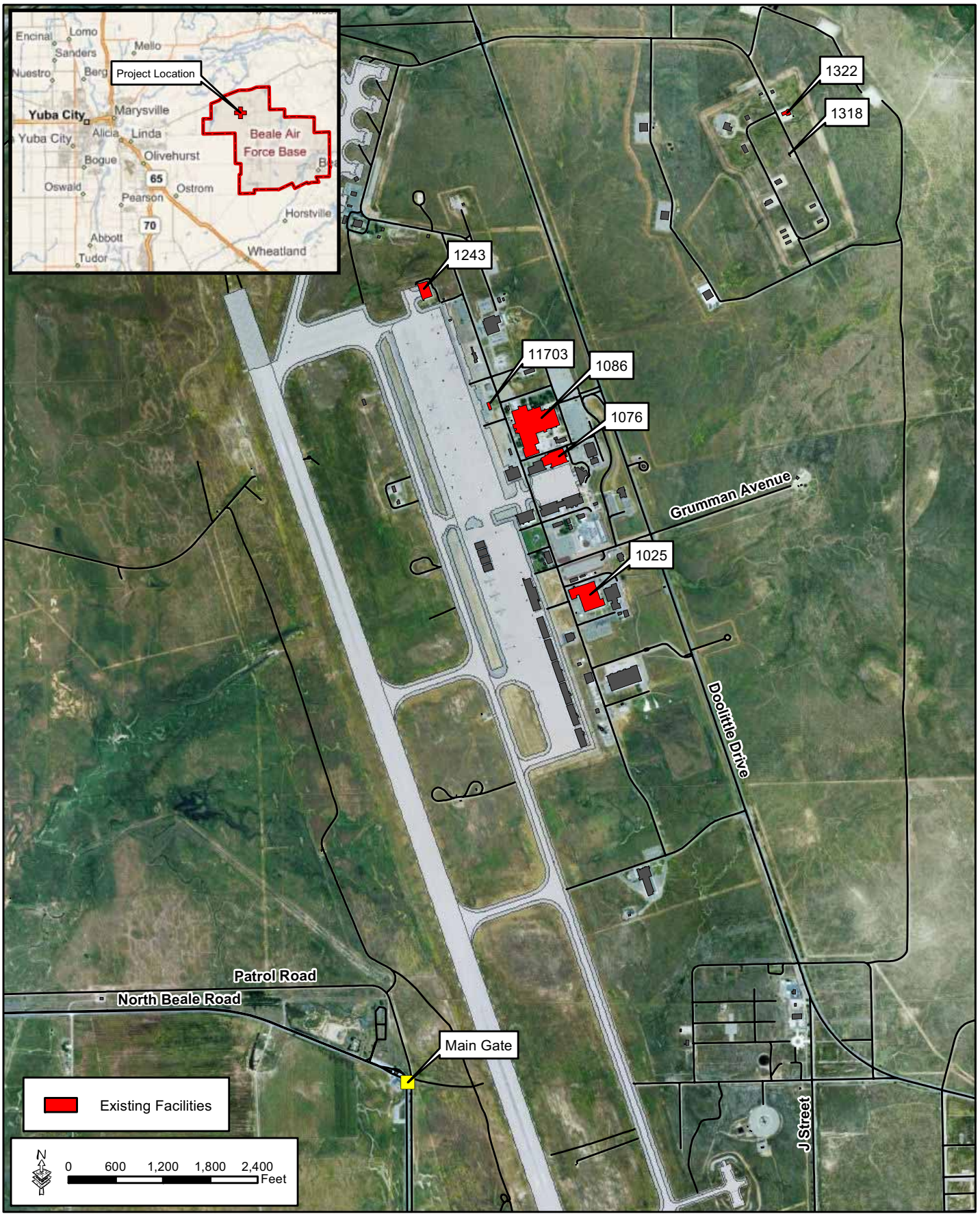

Figure 2-2a: Existing Facilities Proposed to be used for the MC-12 Beddown at Beale AFB

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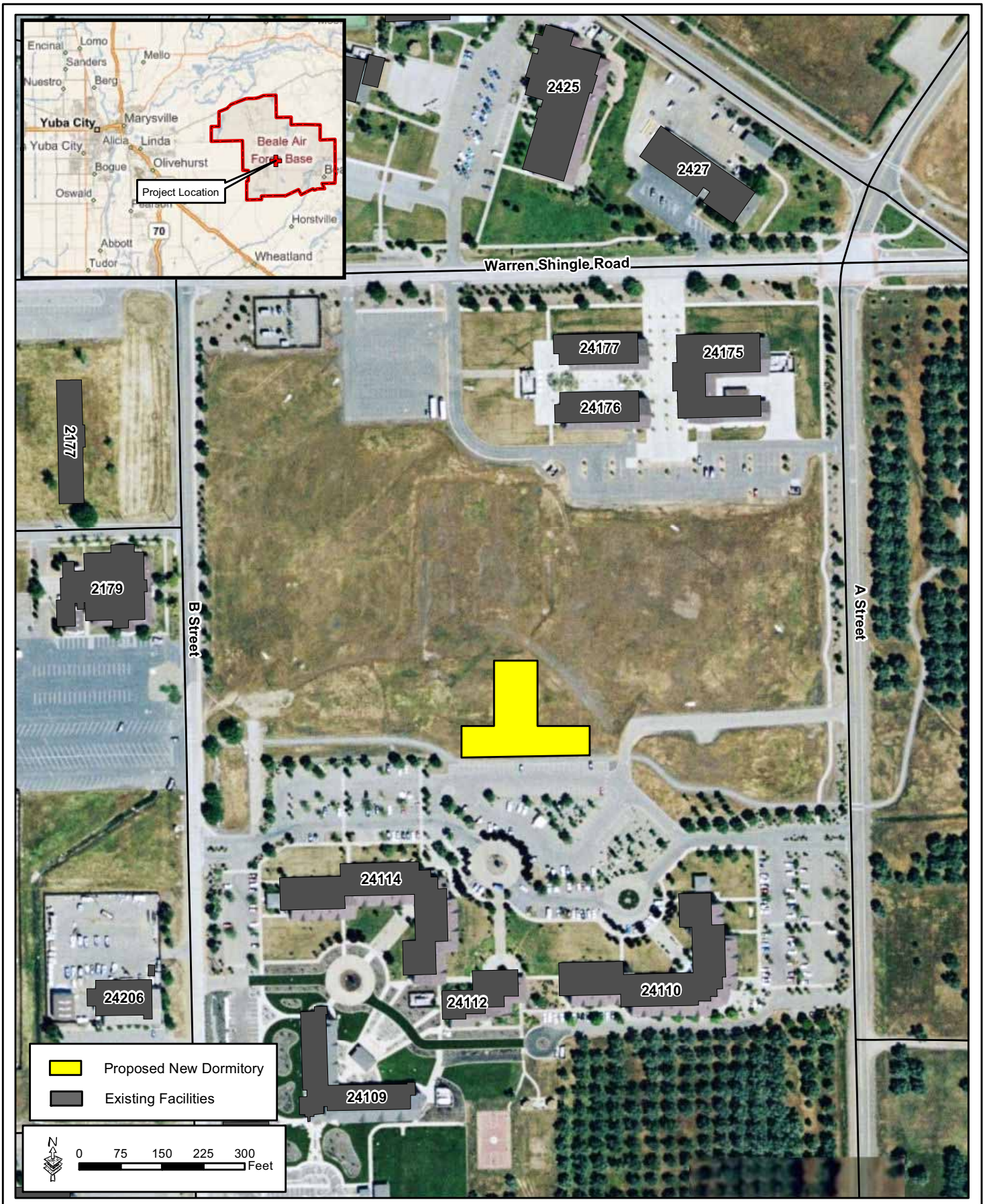

Figure 2-2b: Proposed New Dormitory for the MC-12 Beddown at Beale AFB

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The air traffic capacity at Beale AFB is capable of absorbing 15,000 operations per year, given sufficient manning, and thus is adequate to support the MC-12 training mission. Pattern work for the MC-12 would typically be accomplished at the home airfield. There are other airfields in the local area that are also capable of supporting MC-12 training, including Travis AFB and Mather Airport Field. There are three MOAs within 20 minutes and three restricted areas within one hour of Beale AFB, which are scheduled and controlled by Beale AFB. China, Maxwell, and Whitmore MOAs provide optimum training availability and variety that is similar to the USCENTCOM AOR, including mountainous terrain.

Naval Air Station (NAS) Fallon is the closest laser range to Beale AFB and is located 115 nautical miles (NM) east of Beale AFB. This laser capable range would be used to train with the MC-12 laser, which has no "eye safe" mode; it only has a combat mode, which requires a range for training. In addition to laser use, the range would also be used for flare training when necessary and if authorized for use on the range. NAS Fallon has sufficient resources to support the MC-12 training; however utilization of these resources is dependent upon scheduling priorities and would require intense, coordinated scheduling between Beale AFB and NAS Fallon.

There are joint mission training centers near Beale AFB including the Marine Corps Mountain Warfare Training Center, Fort Hunter Ligget Multipurpose Range Complex, and the Fort Irwin Army National Training Center. The Army ranges and training centers would be used to train with Army and USAF ground personnel such as USAF Joint Tactical Air Controllers (JTACS) and their Army counterparts the Joint Fires Observers (JFOs). The JTACs and JFOs would work with and direct the MC-12 aircraft in the AOR. The MC-12 aircraft would exercise with its primary users, the JTACS, JFOs, and other ground personnel on the range or training center. Typically, each training sortie would use the range or training center for one hour. The laser and flares would not be used when the aircraft works with the ground personnel on the ranges or training centers. Flight scheduling/range scheduling would be accomplished through the Operations Support Squadron (OSS) at Beale AFB. The OSS scheduling function would work with the scheduling function at the respective range(s) and schedule training time as required. The weather conditions at both Beale AFB and the surrounding range area provide approximately 93% Visual Flight Rules (VFR) conditions.

The runway/taxiway facilities at Beale AFB are adequate for the MC-12 beddown, with one runway that is 12,000 ft long and 300 ft wide, and two taxiways that are 75 ft wide each. The runways at the ranges would not be used on a regular basis but would be used in the event that the range is far enough away and any activity on that range lasts long enough that the MC-12 aircraft would need to land and refuel.

Beale AFB has sufficient ramp space on the base in front of Building 11703, but the parking spaces would need to be restriped and have additional tie downs and grounding points installed.

2.2.2.2 Munitions

Non-nuclear munitions would eventually be required for the MC-12 mission, but are not currently included on the MC-12 aircraft. The MC-12 aircraft would use M-211 flares, with each aircraft holding two magazines with 30 flares each. It is anticipated that each crew would drop flares once per quarter on the ranges or training centers as a training requirement. Beale AFB could support the MC-12 flare storage requirement within its munitions storage area, Building 1318. Building 1322 can be used for flare storage and could be shared with the existing mission.

2.2.3 Communications and Information Systems

All facilities located at Beale AFB would receive communications and information service through the 9 Communication Services/Standard Computer Exchange (CS/SCX). The communications requirements include 50 NIPR drops, 15 SIPR drops, 15 STE lines, 15 VoSIP lines and 15 JWICS connectivity access for each squadron. The 9 CS/SCX can support all identified communication requirements including communication infrastructure and common user equipment (e.g., desktop computers, laptops, telephones, copiers, land mobile radios, STE). An area in Building 1086 would be used to support SCIF requirements. Some copper and fiber optic cable wiring modifications would be required in Docks 5 and 7 and Buildings 1086 and 11703 due to building renovations.

2.3 ALTERNATIVE 1 – ROBINS AFB

Under Alternative 1, the USAF would permanently beddown 42 MC-12 aircraft and two operational squadrons at Robins AFB, GA. Robins AFB, an Air Force Materiel Command (AFMC) base, is the home of Warner Robins Air Logistics Center (ALC), the 78th Air Base Wing (ABW), and more than 60 other units. Robins AFB is located in central Georgia, approximately 18 miles south of Macon, GA, and adjacent to the eastern city limits of the City of Warner Robins in Houston County. It is Georgia's largest industrial complex. Robins AFB carries out repair, maintenance, supply, and other related logistics functions. The primary mission emphasis for associate organizations on Robins AFB also relates to aircraft maintenance and flight operations support.

2.3.1 Facilities

Robins AFB has excess squadron operations facilities, maintenance facilities and hangars and ramp space that would initially support the MC-12 beddown. Some of these are existing, unoccupied buildings available for immediate use. However, some of these existing facilities would eventually require renovations to bring them up to standards for long-term viability.

Table 2-6 describes the facility plan for the beddown including squadron operations, CLS maintenance, hangar space, ramp/parking space, flight simulator, relay pod antennae/equipment room, dormitory and flare storage. Figure 2-3 depicts the location of these facilities.

2.3.1.1 Proposed Facility Renovation/Construction

Figure 2-3 illustrates the various existing facilities that would be used to satisfy the functional space requirements. Table 2-7 describes the facilities that are proposed to be used for the beddown, if renovations are necessary, and if minor construction or MILCON would be required.

2.3.1.2 Base Operating Services

The BOS including dormitory, gym/fitness center, dining facility, lodging, schools, and medical/dental are adequate to meet the needs of 711 personnel plus their dependents. Manning for these services would likely need to be increased. The two CDCs at Robins AFB are currently at maximum occupancy rate with a waiting list of 25 children. A construction project request has been submitted to construct a new/larger CDC to replace one of the facilities that was built in 1968.

Table 2-6. Facility Plan for Robins AFB

Functional Description	Scope	Remarks	Facilities Proposed to be Used
MC-12 Squadron Operations - Squadron #1 (with training and testing functions)	26,000 GSF	Includes AFISRA/ISREC requirements (3,500 SF), test and training	Use Buildings 2336 and 2350
MC-12 Squadron Operations - Squadron #2	20,500 GSF		Use Building 12
CLS Maintenance - Squadron #1	10,000 GSF	Back shops (2,000 SF), warehouse (4,000 SF), parts store (1,000 SF), tool room (1,000 SF), office (2,000 SF)	Use Building 2316
CLS Maintenance - Squadron #2	10,000 GSF		Use Building 2316
Maintenance Hangars – Squadron #1 (3 aircraft/squadron)	3 spaces	Also requires access to fuel cell hangar	Use Building 2316
Maintenance Hangars – Squadron #2 (3 aircraft/squadron)	3 spaces	Also requires access to fuel cell hangar	Use Building 2316
Ramp space - Squadron #1 (15 PMAI, 5 training PTAI, 2 testing PDAI)	22 spaces	Minimum, in accordance with AFI, is dock factor minus actual hangar parking spots	Parking available on ramp adjacent to Building 2316; Use of the former alert aircraft parking area, next to Building 12, is an option
Ramp space - Squadron #2 (15 PMAI)	15 spaces		Parking available on ramp adjacent to Building 2316 and either Hangar 2 or 3 (Building 2316)
Ramp space – 5 BAI Aircraft	5 spaces	Parking spaces for backup aircraft	Parking available on ramp adjacent to Building 2316; Use of the former alert aircraft parking area, next to Building 12, is an option
2 Bay Flight Simulator (FY 13)	5,000 GSF	Each bay is 40 ft wide x 34 ft long x 25 ft high	Use Buildings 2350 and 2336; High bay portion of each building would need to be expanded
AFISRA Relay node/antennae (1 for each squadron)	1,400 GSF/pod	1,000 SF for classroom/maintenance area, 250 SF for relay node pod and 150 SF for antennae area	Use Building 2350
Dormitory (2 squadrons)	96-Person	Drives an additional 90-person requirement	Use existing dormitory; sufficient space available
Flare Storage		Non-nuclear flare and munitions storage	Use adjacent weapons storage area - Building 98; Building 99 could also be used for flare storage
Runway	1 runway and 1 taxiway	8,000 ft long x 150 ft wide runway and 75 ft wide taxiway	Use existing runway

Figure 2-3: Facilities Proposed to be used for the MC-12 Beddown at Robins AFB

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Table 2-7. Building Renovations/Repair/MILCON at Robins AFB

Facility Description	Remarks
Building 2336	Renovation/repair for squad operations; minor construction for flight simulator
Building 2350	Repair for squad operations and AFISRA; minor construction for antennae pad and flight simulator; minor construction for SCIF
Building 2316	Minor construction for backshop
Building 12	Repair for squad ops
Parking Space/Ramp adjacent to Building 2316	Minor project to restripe the ramp and provide aircraft tie-downs
Dormitory	No work required
Munitions Storage Area	No work required
Runway	No work required

2.3.2 Operations

2.3.2.1 Airspace/Airfield Facilities and Operations

Robins AFB is home to one of three ALCs in the USAF, and is currently tasked with management and engineering responsibility for the repair, modifications, and overhaul of the F-15 “Eagle”, C-5 “Galaxy”, and the C-130 “Hercules” aircraft. The Warner Robins ALC also modifies the C-17 “Globemaster III”. In addition, the E-8 Joint Surveillance Target Attack Radar System (J-STARS) is stationed at Robins AFB. The E-8C, a modified Boeing 707, tracks ground vehicles and some aircraft, collects imagery, and relays tactical pictures to ground and air theater commanders. Table 2-8 lists the average daily airfield operations occurring in the airspace near Robins AFB:

Table 2-8. Average Daily Airfield Operations at Robins AFB

Aircraft	Average Daily Airfield Operations
F-15	21
C-5	4
C-130	4
C-17	3
E-8	34
Other including Aero Club	30
Total Daily Operations	**96**

There are currently 34,000 to 40,000 airfield operations per year at Robins AFB. The air traffic capacity at Robins AFB is capable of absorbing 15,000 additional operations per year, given sufficient manning. Pattern work for the MC-12 would typically be accomplished at the home airfield. The airspace at Robins AFB is adequate to support the MC-12 training mission. There are other adequate airfields in the vicinity of Robins AFB to support diversion, emergency recovery, and pilot transition training for the MC-12 mission. Restricted airspace area R-3002 at Fort Benning is 75 miles away and R-3005 at Fort Stewart is 100 miles away. These areas provide opportunities to train with major Army ground maneuver elements. Bulldog and Coastal MOAs are available to support aircrew training. There are no known obstacles to operating in the proximity of Robins AFB under visual flight rules to accomplish aircrew training.

The Townsend Range (R-3007) is the nearest laser capable range to Robins AFB and is located approximately 100 miles away. This laser capable range would be used to train with the MC-12 laser, which has no "eye safe" mode; it only has a combat mode which requires a range for training. In addition to laser use, the range would also be used for flare training when necessary and if authorized for use on the range. Townsend Range has sufficient capacity to support the MC-12 training.

There are joint mission training centers near Robins AFB including Fort Benning and Fort Stewart, which are less than 100 NM away. Other training ranges, including Grand Bay Range at Moody AFB and Savannah Combat Readiness Training Center managed by Georgia Air National Guard, are available to support aircrew training. The MC-12 aircraft would exercise with its primary users, the JTACS, JFOs, and other ground personnel on the range on training center. Typically, each training sortie would use the range or training center for one hour. The laser and flares would not be used when the aircraft works with the ground personnel on the ranges or training centers. Flight scheduling/range scheduling would be accomplished through the OSS at Robins AFB. The OSS scheduling function would work with the scheduling function at the respective range(s) and schedule training time as required. Weather conditions at both Robins AFB and the surrounding range area provide approximately 82% VFR conditions.

The runway/taxiway facilities at Robins AFB are adequate for the MC-12 beddown, with one runway that is 8,000 ft long and 150 ft wide, and two taxiways that are 75 ft wide each. The runways at the ranges would not be used on a regular basis but would be used in the event that the range is far enough away and any activity on that range lasts long enough that the MC-12 aircraft would need to land and refuel.

Robins AFB has sufficient ramp space on the base, but the parking spaces would need to be restriped and have additional tie downs and grounding points installed.

2.3.2.2 Munitions

Robins AFB could support the MC-12 flare storage requirement, as described in Section 2.2.2.2, within its munitions storage area – Building 98. Storage could also be used in Building 99.

2.3.3 Communications and Information Systems

All facilities located at Robins AFB would receive communications and information service through the 78 ABW/SCX. The communications requirements include 50 NIPR drops, 15 SIPR drops, 15 STE lines, 15 VoSIP lines and 15 JWICS connectivity access for each squadron. The 78 ABW/SCX can support all identified communication requirements including communication infrastructure and common user equipment (e.g., desktop computers, laptops, telephones, copiers, land mobile radios, STE). An area in Building 2350 would be used to support SCIF requirements. Some copper and fiber-optic cable wiring modifications would be required in Buildings 12, 2316, 2336, and 2350 due to building renovations. VoSIP capability is not currently available at Robins AFB. However, the 78 CS has proactively established a plan to obtain VoSIP capability.

2.4 ALTERNATIVE 2 – WHITEMAN AFB

Under Alternative 2, the USAF would permanently beddown 42 MC-12 aircraft and two operational squadrons at Whiteman AFB, MO. Whiteman AFB, an Air Force Global Strike Command (AFGSC) base, is located in Johnson County, Missouri about 2 miles south of Knob Noster and 60 miles east of Kansas City. Whiteman AFB is the home of the 509th Bomb Wing (BW). The 509 BW is the host unit at Whiteman AFB and is the only USAF unit to operate the B-2 Spirit Stealth Bomber, which is capable of delivering both conventional and nuclear munitions.

The unit can launch combat sorties directly from Missouri to any spot on the globe. Whiteman AFB is also the home of the 131 BW (an associate unit of the 509 BW), the 442nd Fighter Wing, the Army National Guard's 1/135th Aviation Battalion and the Navy Reserve's Mobile Inshore Undersea Warfare Unit 114. Other aircraft located at Whiteman AFB include the A-10 Thunderbolt II, the T-38 Talon, and the AH-64 Apache attack helicopter.

2.4.1 Facilities

Whiteman AFB has excess squadron operations facilities, maintenance facilities, and hangars and ramp space that would initially support the MC-12 beddown. Some of these are existing, unoccupied buildings available for immediate use. However, some of these existing facilities would eventually require renovations to bring them up to standards for long-term viability.

Table 2-9 describes the facility plan for the beddown including squadron operations, CLS maintenance, hangar space, ramp/parking space, flight simulator, relay pod antennae/equipment room, dormitory, and flare storage. Figure 2-4 depicts the location of these facilities.

2.4.1.1 Proposed Facility Renovations/Construction

Figure 2-4 illustrates the various existing facilities that would be used to satisfy the functional space requirements. MILCON would be needed for a new dormitory at Whiteman AFB for the MC-12 beddown. The proposed new dormitory would be sited in a currently developed area near the existing dormitories (Figure 2-4). The new dormitory would be designed to qualify for Leadership in Energy and Environmental Design (LEED) certification by the U.S. Green Building Council. Table 2-10 describes the facilities that are proposed to be used for the beddown, if renovations are necessary, and if minor construction or MILCON would be required.

Table 2-9. Facility Plan for Whiteman AFB

Functional Description	Scope	Remarks	Facilities Proposed to be Used
MC-12 Squadron Operations - Squadron #1 (with training and testing functions)	26,000 GSF	Includes AFISRA/ISREC requirements (3,500 SF), test and training	Use Buildings 706 and 604
MC-12 Squadron Operations - Squadron #2	20,500 GSF		Use Buildings 52 and 44
CLS Maintenance - Squadron #1	10,000 GSF	Back shops (2,000 SF), warehouse (4,000 SF), parts store (1,000 SF), tool room (1,000 SF), office (2,000 SF)	Use Building 52 (In FY 13, Maintenance Squadron #1 would move out of Building 52 to make room for Squadron #2)
CLS Maintenance - Squadron #2	10,000 GSF		Use Hangar 4 and Buildings 44 and 115 (Maintenance Squadron #1 would move into these buildings also in FY 13)
Maintenance Hangars - Squadron #1 (3 aircraft/squadron)	3 spaces	Also requires access to fuel cell hangar	Use Building 52
Maintenance Hangars - Squadron #2 (3 aircraft/squadron)	3 spaces	Also requires access to fuel cell hangar	Use Hangar 4

Table 2-9, continued

Functional Description	Scope	Remarks	Facilities Proposed to be Used
Ramp space - Squadron #1 (15 PMAI, 5 training PTAI, 2 testing PDAI)	22 spaces	Minimum, in accordance with AFI, is dock factor minus actual hangar parking spots	Parking available in front of Building 52
Ramp space - Squadron #2 (15 PMAI)	15 spaces		Parking available in front of Building 52
Ramp space - 5 BAI Aircraft	5 spaces	Parking spaces for backup aircraft	Parking available in front of Building 52
2 Bay Flight Simulator (FY 13)	5,000 GSF	Each bay is 40 ft wide x 34 ft long x 25 ft high	Use Building 52 for one simulator; Space for the second simulator would require new minor construction or addition to Building 52
AFISRA Relay node/antennae (1 for each squadron)	1,400 GSF/pod	1,000 SF for classroom/maintenance area, 250 SF for relay node pod and 150 SF for antennae area	Adjacent to Building 604
Dormitory (2 squadrons)	96-Person	Drives an additional 90-person requirement	Would require MILCON near existing dormitories.
Flare Storage		Non-nuclear flare and munitions storage	Use existing munitions storage area; Building 4077 could be used for flare build up
Runway	1 runway and 1 taxiway	12,400 ft long x 200 ft wide runway and 75 ft wide taxiway	Use existing runway

Table 2-10. Building Renovations/Repair/MILCON at Whiteman AFB

Facility Description	Remarks
Building 706	Renovation/repair for squadron operations; relocation of current Building 706 users
Building 604	Renovation/repair for squadron operations and AFISRA; relocation of current Building 604 users.
Building 52	Renovation/repair for squadron operations and maintenance; repair/minor construction for flight simulator
Building 44	Renovation/repair for squadron operations and maintenance
Building 4	Renovation/repair for maintenance and hangar space
Building 115	Renovation/repair for maintenance
Parking Space/Ramp in front of Building 52	Minor project to restripe the ramp and provide aircraft tie-downs
Dormitory	MILCON required
Munitions Storage Area	No work required
Runway	No work required

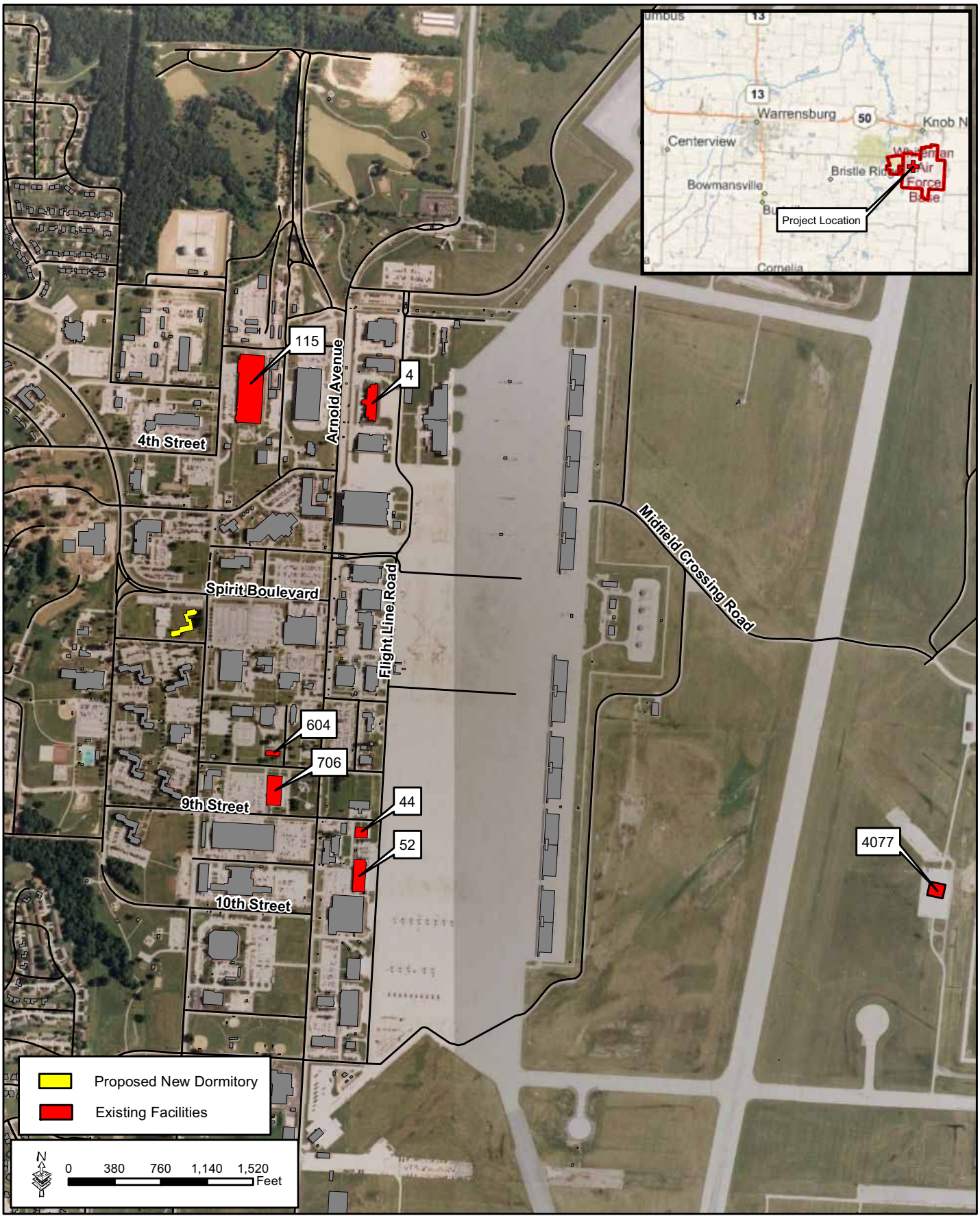

Figure 2-4: Existing Facilities and New Dormitory Proposed to be used for the MC-12 Beddown at Whiteman AFB

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2.4.1.2 Base Operating Services

The BOS including the CDC, dining facility, lodging, schools, and medical/dental are adequate to meet the needs of 711 personnel plus their dependents. Manning for these services would likely need to be increased. The gym/fitness facility at Whiteman AFB was built in 1956, comprises 47,000 SF, and has had several structural additions and modifications. A new facility is required to support the current mission at Whiteman AFB; a new 66,000 SF facility is planned but is fourth on the priority list of current projects.

2.4.2 Operations

2.4.2.1 Airspace/Airfield Facilities and Operations

Whiteman AFB is home to the B-2 Spirit Stealth Bomber, A-10 Thunderbolt II attack aircraft, T-38 Talon training aircraft and the AH-64 Apache attack helicopter. Table 2-11 lists the average daily airfield operations occurring in the airspace near Whiteman AFB:

Table 2-11. Average Daily Airfield Operations at Whiteman AFB

Aircraft	Average Daily Airfield Operations
B-2	41
A-10	27
T-38	77
AH-64	41
Total Daily Operations	**186**

The air traffic capacity at Whiteman AFB is capable of absorbing 15,000 additional operations per year, given sufficient manning and, therefore, is adequate to support the MC-12 training mission. Pattern work for the MC-12 would typically be accomplished at the home airfield. There are other adequate airfields in the vicinity of Whiteman AFB to support MC-12 MQT, including Fort Leonard Wood, which is the closest Army training installation and about 90 miles southeast. The base is the scheduling authority for the Truman MOA, which is an extensive airspace complex and has sufficient capacity to support MC-12 training and operations.

The Truman MOA contains the Cannon Range, located approximately 65 miles southeast of Whiteman AFB. Cannon Range is laser capable, has an urban training capability, and supports lights-out NVG operations. This laser-capable range would be used to train with the MC-12 laser, which has no "eye safe" mode; it only has a combat mode which requires a range for training. In addition to laser use, the range would also be used for flare training when necessary and if authorized for use on the range. Cannon Range has sufficient capacity to support the MC-12 training. Scheduling for the Fort Leonard Wood Complex/Cannon Range is managed by the Missouri Air National Guard.

For large combined training, Fort McCoy, Wisconsin is approximately 360 miles away and Volk Field Combat Readiness Training Center managed by the Wisconsin Air National Guard is 364 miles away. These would be ideal for joint/special training. The MC-12 aircraft would exercise with its primary users, the JTACS, JFOs, and other ground personnel on the range on training center. Typically, each training sortie would use the range or training center for one hour. The laser and flares would not be used when the aircraft works with the ground personnel on the ranges or training centers. Flight scheduling/range scheduling would be accomplished through the OSS at Whiteman AFB. The OSS scheduling function would work with the scheduling function at the respective range(s) and schedule training time as required. The weather conditions at Whiteman AFB and the surrounding range area provide approximately 82% VFR conditions.

The runway/taxiway facilities at Whiteman AFB are adequate for the MC-12 beddown, with one runway that is 12,400 ft long and 200 ft wide, and a taxiway that is 75 ft wide. The runways at the ranges would not be used on a regular basis but would be used in the event that the range is far enough away and any activity on that range lasts long enough that the MC-12 aircraft would need to land and refuel.

Whiteman AFB has sufficient ramp space on the base, but the parking spaces would need to be restriped and have additional tie downs and grounding points installed.

2.4.2.2 Munitions

Whiteman AFB could support the MC-12 flare storage requirement, as described in Section 2.2.2.2, within its munitions storage area. Building 4077 could be used for flare build up storage and would be shared with the existing mission.

2.4.3 Communications and Information Systems

All facilities located at Whiteman AFB would receive communications and information service through the 509 CS/SCX. The communications requirements include 50 NIPR drops, 15 SIPR drops, 15 STE lines, 15 VoSIP lines, and 15 JWICS connectivity access for each squadron. The 509 CS/SCX can support all identified communication requirements including communication infrastructure and common user equipment (e.g., desktop computers, laptops, telephones, copiers, land mobile radios, STE). An area in Building 604 would be used to support SCIF requirements. Some copper and fiber-optic cable wiring modifications would be required in Buildings 706, 604, 115, 52, 44, and 4 due to building renovations.

2.5 NO ACTION ALTERNATIVE

CEQ regulations require inclusion of the No Action Alternative as a standard to compare the environmental impacts of the proposed alternatives to the existing conditions. The No Action Alternative would maintain the environmental status quo. Under the No Action Alternative the permanent MC-12 beddown would not occur. Without a permanent beddown location, ACC would maintain the deployed MC-12 crew force through the AEF system; however this would cause the operating experience level for the MC-12 crew force to remain extremely limited. The No Action Alternative would not allow the USAF to efficiently enhance intelligence gathering capabilities and augment the unmanned aircraft systems already flying reconnaissance missions.

2.6 ALTERNATIVES CONSIDERED AND ELIMINATED FROM FURTHER CONSIDERATION

Langley AFB, Key Field ANGB, and Altus AFB were considered for the MC-12 beddown in addition to Beale AFB, Robins AFB, and Whiteman AFB. These locations were approved by the SecAF/CSAF as candidate bases to be evaluated for the MC-12 beddown. Site surveys were conducted at all six installations by an ACC Site Survey Team to determine the feasibility and costs associated with the potential MC-12 beddown. The team reviewed operations, communications, facilities, logistics/maintenance, security, and services at each of the installations. Following the site surveys, the SecAF/CSAF reduced the list of potential beddown locations from six candidates to three reasonable alternatives through application of military judgment. Langley AFB, Key Field ANGB, and Altus AFB were eliminated by the SecAF/CSAF as possible alternatives to carry forward for detailed analysis. Langley AFB and Key Field ANGB required additional infrastructure, other than a dormitory, to support the MC-12 program. The costs and construction timelines associated with the deficient infrastructure were considerably greater for these two installations, so they were eliminated from further

consideration. Altus AFB lacked the mission synergy criteria requirement and was, therefore, eliminated from further consideration.

2.7 COMPARATIVE SUMMARY OF IMPACTS

Potential environmental impacts of the Proposed Action would be those associated with the construction/renovation of the MC-12 facilities and the operation/maintenance of the MC-12 aircraft. Table 2-12 presents a summary of the potential impacts associated with the three action alternatives, compared to the No Action Alternative.

Table 2-12. Summary of the Potential Impacts of Proposed Action and No Action Alternatives

	Beale AFB	Robins AFB	Whiteman AFB	No Action
Transportation	Minor to moderate increases in on-base and off-base traffic during daily commute; impacts would be less than significant.	Impacts are expected to be the same as those described for Beale AFB.	Impacts are expected to be the same as those described for Beale AFB.	Baseline Conditions as described in Sections 3.1.1, 3.2.1, and 3.3.1 would remain unchanged, and therefore no impact would result.
Land Use	No impacts on land use; land would remain for military operations.	Impacts are expected to be the same as those described for Beale AFB.	Impacts are expected to be the same as those described for Beale AFB.	Baseline Conditions as described in Sections 3.1.1, 3.2.1, and 3.3.1 would remain unchanged, and therefore no impact would result.
Aesthetic/Visual Resources	Slight, temporary effects during construction; visual signature of MC-12 aircraft would be negligible compared to other aircraft.	Impacts are expected to be the same as those described for Beale AFB.	Impacts are expected to be the same as those described for Beale AFB.	Baseline Conditions as described in Section Sections 3.1.1, 3.2.1, and 3.3.1 would remain unchanged, and therefore no impact would result.
Infrastructure	Minor demand increases would occur to the electrical, wastewater and gas systems; however there is excess capacity among these systems to absorb the increases. The beddown would have negligible impacts on the water supply.	Impacts are expected to be the same as those described for Beale AFB.	Impacts are expected to be the same as those described for Beale AFB.	Baseline Conditions as described in Sections 3.1.2, 3.2.2, and 3.3.2 would remain unchanged, and therefore no impact would result.
Noise	Noise emissions from proposed aircraft operations would be insignificant compared to existing operations at Beale AFB. Noise emissions from construction activities are not expected to significantly impact the ambient noise levels on Beale AFB.	Impacts are expected to be the same as those described for Beale AFB.	Impacts are expected to be the same as those described for Beale AFB.	Baseline Conditions as described in Sections 3.1.11, 3.2.11, and 3.3.11 would remain unchanged, and therefore no impact would result.

Table 2-12, continued

	Beale AFB	Robins AFB	Whiteman AFB	No Action
Air Quality	Air emissions from construction activities are well below *de minimis* thresholds; the annual emissions from the increase of daily commuter traffic and MC-12 aircraft operations are minor and below *de minimis* thresholds. Beale AFB is in non-attainment for PM-2.5 at the Federal level; however the Proposed Action would not exceed Federal *de minimis* levels.	Air emissions from construction activities are well below *de minimis* thresholds; the annual emissions from the increase of daily commuter traffic and MC-12 aircraft operations are minor and below *de minimis* thresholds.	Impacts are expected to be the same as those described for Robins AFB.	Baseline Conditions as described in Sections 3.1.8, 3.2.8, and 3.3.8 would remain unchanged, and therefore no impact would result.
Water Resources	No significant impacts on the region's water supply or water quality. No potentially jurisdictional wetlands or floodplains occur at the proposed beddown site.	No significant impacts on the region's water supply or water quality. No potentially jurisdictional wetlands occur at the proposed beddown site. Building 12 is an existing building that would be used for the beddown and is located within the 500-year floodplain but significant impacts are not expected to occur.	Impacts are expected to be the same as those described for Beale AFB.	Baseline Conditions as described in Sections 3.1.7, 3.2.7, and 3.3.7 would remain unchanged, and therefore no impact would result.

Table 2-12, continued

	Beale AFB	Robins AFB	Whiteman AFB	No Action
Cultural Resources	No impacts on cultural resources anticipated. One building at Beale AFB (Building 1322) that is proposed to be used for the beddown is considered eligible for the National Register of Historic Places (NRHP). However, this facility is only proposed to be used as a storage area for additional flare buildup, which is the current use of this building. No modifications would be required for Building 1322; therefore there would be no impacts. California SHPO and other interested parties would be consulted if any cultural resources are discovered during construction of the dormitory.	Potential to impact one NRHP-eligible property (Building 12). The Georgia SHPO and other interested parties would be consulted before beginning renovations on this building. No other impacts on cultural resources anticipated.	No impacts on cultural resources anticipated. No NRHP listed or eligible properties impacted. Missouri SHPO and other interested parties would be consulted if any cultural resources are discovered during construction of the dormitory.	Baseline Conditions as described in Sections 3.1.3, 3.2.3, and 3.3.3 would remain unchanged, and therefore no impact would result.

Table 2-12, continued

	Beale AFB	Robins AFB	Whiteman AFB	No Action
Biological Resources	No significant impacts on biological resources. There could be potential minor impacts on wildlife that is associated with previously developed areas, such as mice, rats, and birds. There are a few Federally-listed threatened and endangered (T&E) species at Beale AFB. The proposed new dormitory at Beale AFB would be located more than 250 feet away from the nearest vernal pools and they would be avoided during MC-12 beddown activities; therefore, there would be no effect on the species associated with the vernal pools (i.e., fairy shrimp, tadpole shrimp). There are no anticipated impacts on these vernal pool species, Central Valley steelhead, Chinook salmon, or VELB due to the renovations of the existing buildings to be used for the beddown, the proposed new dormitory, or MC-12 operations. Noise from MC-12 overflights would have no effect on wildlife or protected species.	No significant impacts on biological resources are expected. There are no Federally-listed T&E species located on Robins AFB. There could be potential minor impacts on wildlife that is associated with previously developed areas, such as mice, rats, and birds. Noise from MC-12 overflights would have no effect on wildlife or protected species.	Impacts are expected to be the same as those described for Robins AFB.	Baseline Conditions as described in Sections 3.1.5, 3.2.5, and 3.3.5 would remain unchanged, and therefore no impact would result.

Table 2-12, continued

	Beale AFB	Robins AFB	Whiteman AFB	No Action
Earth Resources	No significant impacts on climate, geology, or prime farmland.	Impacts are expected to be the same as those described for Beale AFB.	No significant impacts on climate or geology. Buildings 604, 706, and the new dormitory are located on soils which are classified as prime farmland. However, acquisition or use of farmland by a Federal agency for national defense purposes is exempt from the FPPA, therefore, no impacts on prime farmland soils are anticipated.	Baseline Conditions as described in Sections 3.1.6, 3.2.6, and 3.3.6 would remain unchanged, and therefore no impact would result.
Hazardous Material/Waste Management	Hazardous materials and wastes would be managed in accordance with USEPA and USAF Regulations; no significant impacts are expected.	Impacts are expected to be the same as those described for Beale AFB.	Impacts are expected to be the same as those described for Beale AFB.	Baseline Conditions as described in Sections 3.1.9, 3.2.9, and 3.3.9 would remain unchanged, and therefore no impact would result.

Table 2-12, continued

	Beale AFB	Robins AFB	Whiteman AFB	No Action
Socioeconomics and Environmental Justice	Temporary short-term and long-term beneficial impacts on revenue in the region of influence (ROI) would occur. Short-term, temporary adverse impacts on public services could occur but would not be expected to persist. The increased population and demand for housing units at Beale AFB and in the ROI would not cause significant impacts on either of these resources. No significant adverse impacts on minority or low income populations or youth are expected.	Impacts are expected to be the same as those described for Beale AFB.	Impacts are expected to be the same as those described for Beale AFB.	Baseline Conditions as described in Sections 3.1.4, 3.2.4, and 3.3.4 would remain unchanged, and therefore no impact would result.
Safety and Occupational Health	No significant impacts on safety and occupational health.	Impacts are expected to be the same as those described for Beale AFB.	Impacts are expected to be the same as those described for Beale AFB.	Baseline Conditions as described in Sections 3.1.10, 3.2.10, and 3.3.10 would remain unchanged, and therefore no impact would result.

Table 2-12, continued

	Beale AFB	Robins AFB	Whiteman AFB	No Action
Airspace	Increased number of sorties would be able to be absorbed by Beale AFB and the surrounding airspace; close coordination with USAF and other Department of Defense (DoD) airspace managers (NAS Fallon, Marine Corps Mt. Warfare, Fort Hunter Liggett, Fort Irwin) required for proper scheduling. The impacts on airspace management and air safety for aircraft flight operations would be less than significant and no conflicts with on-going test and training missions would be expected. General aviation or other civil aircraft operating in the controlled airspace above or surrounding Beale AFB would not be impacted. The airspace surrounding Beale AFB and any of the airfields or training ranges that would be used by the MC-12 missions would not be adversely impacted.	Increased number of sorties would be able to be absorbed by Robins AFB and the surrounding airspace; close coordination with USAF and other Department of DoD airspace managers (Townsend Range, Fort Benning, Fort Stewart) required for proper scheduling. The impacts on airspace management and air safety for aircraft flight operations would be less than significant and no conflicts with on-going test and training missions would be expected. General aviation or other civil aircraft operating in the controlled airspace above or surrounding Robins AFB would not be impacted. The airspace surrounding Robins AFB and any of the airfields or training ranges that would be used by the MC-12 missions would not be adversely impacted.	Increased number of sorties would be able to be absorbed by Whiteman AFB and the surrounding airspace; close coordination with USAF and other DoD airspace managers (Cannon Range, Fort Leonard Wood) required for proper scheduling. The impacts on airspace management and air safety for aircraft flight operations would be less than significant and no conflicts with on-going test and training missions would be expected. General aviation or other civil aircraft operating in the controlled airspace above or surrounding Whiteman AFB would not be impacted. The airspace surrounding Whiteman AFB and any of the airfields or training ranges that would be used by the MC-12 missions would not be adversely impacted.	Baseline Conditions as described in Sections 3.1.12, 3.2.12, and 3.3.12 would remain unchanged, and therefore no impact would result.

SECTION 3.0
AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

3.1 PREFERRED ALTERNATIVE – BEALE AFB

3.1.1 Land Use Resources

3.1.1.1 Land Use

Beale AFB is located in Yuba County, California on 22,944 acres of land in the northeastern part of the Sacramento Valley, which, together with the San Joaquin Valley to the south, constitutes the Great Central Valley of California. The base is approximately 40 miles north of Sacramento, 13 miles east of Marysville, and 25 miles west of Grass Valley, California. Beale AFB is in the ecological and geographic transition zone between the flat agricultural lands of the Sacramento Valley and the foothills of the western slope of the Sierra Nevada Mountains. The Yuba and Bear Rivers are north and south, respectively, of Beale AFB. Beale AFB straddles the Sacramento Valley at the western base boundary and the foothills of the Sierra Nevada Mountains on the east. Yuba County, along with the counties of Sutter, Butte, Nevada, and Placer, include and surround Beale AFB. Population centers around Beale AFB include Wheatland (9 miles south), Marysville (13 miles west), Yuba City (16 miles west), Oroville (40 miles north), Grass Valley (25 miles east) and Sacramento (38 miles south).

Land uses around the base include industrial, rural residential, agricultural, wildlife management, and limited commercial. To the north of Beale's flight line is extractive industrial (i.e., mining). West and south are largely agricultural with small pockets of rural residential, commercial development and a landfill. East of Beale is the state-owned Spenceville Wildlife Management Area (WMA) (Beale AFB 2008). Until recently, development in Yuba County has been almost nonexistent. However, rapid growth and the high cost of housing in the Sacramento area have resulted in a significant increase in growth in the Yuba County area. By the year 2050, Yuba and the surrounding counties are projected to increase in population from 795,000 to 1.4 million people (Beale AFB 2008).

The base contains developed and undeveloped land. The three main developed areas are the runway and flight line in the northwest, a central cantonment area and a housing area in the southeast. Most of the base is undeveloped land, or open space, used for cattle grazing due to a successful partnership between Beale AFB and local cattle ranchers (USAF 2002).

3.1.1.2 Visual Resources

Visual resources are defined as areas of unique beauty derived from the combined characteristics of the natural aspects of land and human aspects of land use. Visual resources at Beale AFB consist of man-made landscape features and natural features. Yuba County is considered the northeastern corner of the Great Central Valley and has a varied geography, including the confluence of the Feather and Yuba Rivers, wooded mountains, streams, lakes, and agricultural croplands that vary from orchards to vineyards. Beale AFB and the surrounding areas are west of the mountains on the valley floor. The areas in and around Yuba County feature recreational areas such as Bullard's Bar dam and reservoir, Collins Lake, and over 25,000 acres of wildlife area and National Forest land. Located in a rural setting, the immediate vicinity surrounding Beale AFB consists of agricultural, industrial mining, recreation, and low-density residential land uses. Abutting the installation to the west and the south are large agricultural tracts maintained in the California Department of Conservation's Farmland Mapping and Monitoring Program inventory as "important farmland." North of the main base and housing areas is the River Highlands Community, a primarily rural residential development. A River Highlands Community Plan controls development in the area through at least 2013. The underlying planning principle for development of the area is to maintain a balance between open

space and development and to ensure that development retains the "rural foothill character and rural quality of life" of the area (Beale AFB 2008b). The Spenceville WMA, located to the east of the housing area, is managed by the State of California. The Spenceville WMA provides picnicking, fishing, hunting, and hiking.

3.1.1.3 Transportation

Three state highways connect Beale AFB to the local communities and the Interstate Highway system. California Highway 20 parallels the northern boundary and leads 20 miles eastward to Grass Valley and California Highway 49. Westward, Highway 20 leads to Marysville and Yuba City. California Highway 65/70 runs north/south to the west of Beale AFB and leads to Wheatland. California Highway 49 also runs north/south to the east of Beale AFB connecting Auburn to Grass Valley. Interstate (I)-80 is located about 40 miles east of Beale AFB via Highway 20. I-5 is located about 40 miles west of Beale AFB. Hammonton Smartville Road runs just north along the boundary of Beale AFB and connects California Hwy 65/70 with California Highway 20. Auto access through Beale AFB is attained through several primary streets that carry the majority of traffic: Doolittle Drive, J. Street, Warren Shingle Drive, Gavin Mandrey Drive, and Camp Beale Highway. Many secondary streets distribute traffic from the primary streets to the residential areas and between the residential areas and the industrial and flightline areas. A network of unpaved roads provides access to the remote undeveloped areas of the installation. The base controls access onto the installation through five gates, including the Doolittle, Main, Wheatland, Grass Valley, and Vassar Lake gates.

There is no freight service provided to the installation. The railroad track that parallels the western boundary is used exclusively for fuel delivery by military railcars. All other freight is trucked onto the installation. The closest civilian airport is Yuba County Airport, located approximately 6 miles away from Beale AFB and 3 miles south of the City of Marysville. Figure 3-1 presents the transportation infrastructure around Beale AFB.

3.1.2 Infrastructure

3.1.2.1 Electrical Distribution

The electrical supply to Beale AFB is provided by Pacific Gas & Electric (PG&E). PG&E provides electricity via three PG&E-owned 69-Kilovolt (KV) transmission lines. These lines enter the installation from the northeast at the Grass Valley Substation and exit on the south side of the installation near the Vassar Lake Substation. The electricity is routed through five substations that step incoming voltage down to the 7.2/12.0 KV on-base distribution voltage. The total normal sustained design capacity of the five substations is 44 megawatts (MW) per day. Overhead distribution lines carry electricity to most parts of the base, and pole-and-pad-mounted transformers step the distribution voltage down to various levels for use at the facilities on the base. Approximately 80% of the distribution system is located overhead. A system of generators provides backup and emergency power. At peak demand, the base is at approximately 35% of the 44 MW electrical system design capacity. In addition to ongoing maintenance and repair projects, there are several system upgrades in process, including relocating some overhead power distribution lines in the housing area to underground and also replacing some deteriorating power poles, replacing pole-mounted transformers with pad-mounted transformers, and replacing wire cabling with fiber-optic cabling (Beale AFB 2008).

3.1.2.2 Potable Water/Fire Protection System

Beale AFB obtains its water from seven active wells located on the base approximately 1 mile west of the Main Gate. These wells draw from the Laguna Formation that is recharged by the Feather and Yuba Rivers. The well source capacity is approximately 11 million gallons per day (mgd) with an aggregrate well pumping rate over 12 mgd. However, the flow is limited from the

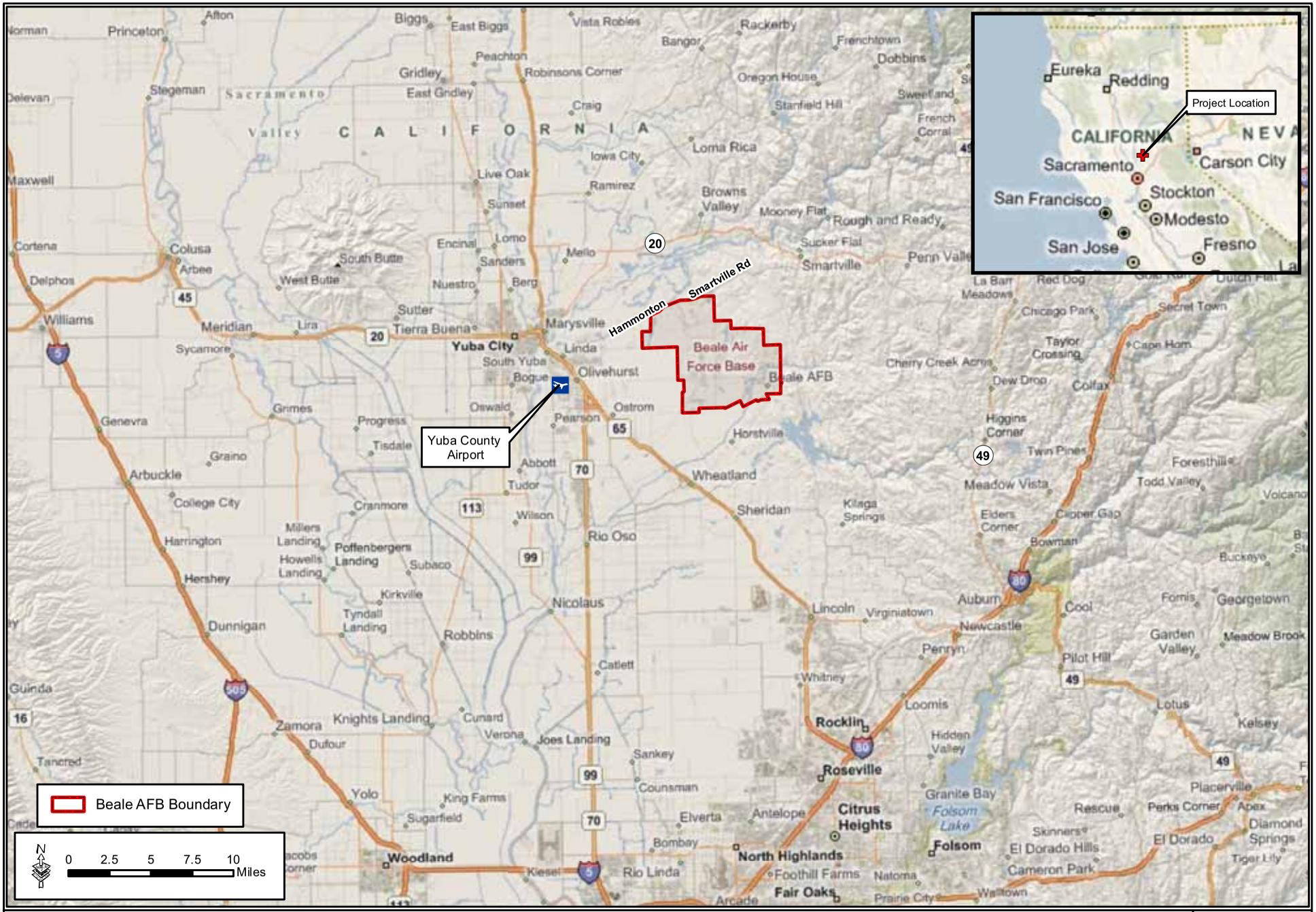

Figure 3-1: Beale AFB Transportation Map

GSRC

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well fields by the distribution lines. The water is pumped to and treated at the Central Water Supply Treatment Plant on base. The plant has a maximum treatment capacity of 5 mgd and the well fields can adequately supply water to meet the plant's treatment capacity. The water is then pumped into an underground main reservoir with a 3 million gallon capacity and four smaller ground-level storage tanks. The average annual demand for potable water on the entire base is 1.4 mgd, while the peak demand in July averages 4.2 mgd, which is 38% of the well source capacity. The water supply system has a residual capacity of 62% which can support growth on the base. Three booster/pump stations pump water throughout the distribution system on base. A new drinking water treatment plant has been recently constructed to include additional treatment processes and a new transmission line to transport water from the plant to the reservoir. Beale AFB is also in the process of replacing and upgrading water system lines. The water supply system provides water to all users and fire suppression systems. The base maintains approximately 500 fire hydrants and 3,220 linear feet of dedicated firefighting pipelines (Beale AFB 2008).

3.1.2.3 Wastewater

The wastewater system on Beale AFB consists of a gravity and force main collection system and a wastewater treatment plant (WWTP). The collection system consists of approximately 96 miles of sewer main. The lines consist of either concrete or asbestos cement, vitrified clay, polyvinyl chloride, high-density polyethylene, and cast or ductile iron piping and range from 6 to 24 inches in diameter. The majority of the wastewater system is gravity-fed because of the higher elevation of the eastern region of the base. The flight line which is located north of the WWTP is serviced by four lift stations. The WWTP has a treatment capacity of 5 mgd. The plant treats an average of 0.26 mgd, with a peak winter flow of 2.06 mgd, which leaves a 60% residual capacity. The treated effluent receives secondary treatment and the treated effluent is either land-based discharged to the 40-acre irrigation fields or pumped to the golf course pond in the summer for irrigation of the golf course. During the winter months, the treated effluent is stored in the 100-million-gallon on-base treated wastewater overflow pond near Pheasant Farm Road. During the rainy season, which is from October through April, stormwater inflow enters the sewer system through cracked pipes, faulty pipe joints, and deteriorated manholes, increasing the amount of sewage flow. However, the level has never exceeded the 5 mgd capacity of the system even during the rainy periods. Although capacity is available, the wastewater system is listed as degraded due to its age, poor structural condition, and system defects. A WWTP upgrade project is near completion and projects to rehabilitate these sewer lines to reduce inflow and infiltration have been funded and programmed. There is no separate base-wide industrial wastewater system. Wastewater from aircraft operations and maintenance and industrial areas flows through oil/water separators into the wastewater system (Beale AFB 2008).

3.1.2.4 Gas

The natural gas provider for Beale AFB is PG&E. Natural gas enters Beale AFB through a single 4-inch diameter line near the Wheatland Gate northwest of the railroad track. PG&E supplies the base with 32 million cubic ft per hour of natural gas. At peak demand, Beale AFB uses approximately 48% of the supply capacity. The natural gas distribution system services the main base and flightline areas (Beale AFB 2008).

3.1.2.5 Storm Drainage System

The principal surface drainage systems for Beale AFB are Dry, Hutchinson, and Reeds creeks. The western parameters of these creeks are surrounded by a wide floodplain area. Dry Creek flows year-round and Hutchinson and Reeds creeks are intermittent. Storm water runoff is evacuated through a system of open ditches, storm sewers, culverts, and pipes. The system

includes approximately 49 miles of curbs and gutters, most of which are located in the flight line and Military Family Housing areas. Storm water flow is directed to the sanitary sewer or drainage ditches, and is discharged into the creeks. Beale AFB storm water discharges are regulated by the California Statewide General Industrial Activities Storm Water Discharge Permit Number 5A58S009991.

Section 438 of the Energy Independence and Security Act (EISA) (42 USC Section 17094) establishes into law new stormwater design requirements for Federal construction projects that disturb a footprint of greater than 5,000 square feet of land. EISA Section 438 requirements are independent of stormwater requirements under the Clean Water Act (CWA). The project footprint consists of all horizontal hard surfaces and disturbed areas associated with project development. Under these requirements, predevelopment site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. Predevelopment hydrology shall be modeled or calculated using recognized tools and must include site-specific factors such as soil type, ground cover, and ground slope. Site design shall incorporate stormwater retention and reuse technologies such as bioretention areas, permeable pavements, cisterns/recycling, and green roofs to the maximum extent technically feasible. Post-construction analyses shall be conducted to evaluate the effectiveness of the as-built stormwater reduction features. As stated in a DoD memorandum dated January 19, 2010, these regulations will be incorporated into applicable DoD Unified Facilities Criteria within 6 months (DoD 2010). Additional guidance is provided in the USEPA's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act*.

3.1.2.6 Liquid Fuels

At Beale AFB, JP-8 and Jet Petroleum-Thermally Stable (JPTS) fuel are the only liquid aircraft fuels used on the base. JP-8 fuel can be delivered by pipeline, rail, or truck. JPTS can be delivered by rail or truck. Refueling trucks transport JPTS from the storage tank farm to the flight line. There is no JPTS pipeline or a JPTS refueling hydrant system. Motor gas and diesel fuel are also used and stored on base (Beale AFB 2008).

3.1.2.7 Communications System

The information transfer system at Beale AFB consists of overhead and underground copper and fiber-optic cables. This system provides service access for the base telephone system, the Defense Information System Network (DISN), Defense Data Network (DDN), and the Defense Switched Network (DSN). Beale utilizes two separate networks for the majority of its data communications – SIPRNET and NIPRNET. There is also access to other networks for higher levels of security such as JWICS and Global Missile Defense. The major long-haul communications systems, which provide vital links between Beale AFB and other USAF and DoD resources, include Automatic Digital Network (AUTODIN), DISN, and the Defense Information Systems Agency (DISA) facility. Telephone service to the main base is provided by a Northern Telecom digital switching system. Beale AFB uses fixed and land mobile radio systems (Beale AFB 2008).

3.1.3 Cultural Resources

3.1.3.1 Cultural Background

The term 'cultural resource' refers to any prehistoric or historic resource such as prehistoric settlement sites, historic archaeological sites, and other evidence of our cultural heritage. The term 'historic property' refers specifically to a cultural resource eligible for inclusion in the National Register of Historic Places (NRHP). Five classes of historic properties are defined that are eligible for listing on the NRHP: buildings, sites, districts, structures, or objects (36 CFR

60.3). In addition, cultural resources qualify for protections afforded by the Archeological Resources Protection Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA) and other regulations and EOs.

Beale AFB has an Integrated Cultural Resources Management Plan (ICRMP) in place (Beale AFB 2008c). The ICRMP is an integral part of the Base Comprehensive Plan and addresses the cultural resources of Beale AFB. The purpose of the ICRMP is to provide the cultural resources manager with guidelines, non-technical managers with standard operating procedures, and planners with awareness of the legal responsibilities, for the preservation of significant archaeological and historic resources at the base. It integrates the cultural resource management program with ongoing mission activities on the base and the properties it manages.

Under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, the Federal agency, in this case the USAF, is required to assess the effects of undertakings prior to their initiation to ensure that there will be no adverse effects on historic properties (36 CFR 800). The NHPA also establishes the NRHP, and Title 36 CFR Section 60.4 define the criteria used to establish significance and eligibility to the NRHP. Section 110 of the NHPA requires the USAF to complete an inventory of historic properties located on its land (36 CFR 60, 63, 78, 79, and 800).

3.1.3.2 Previous Cultural Resource Surveys and Cultural Resource Sites

According to the Beale AFB ICRMP, 91% of the base has been surveyed for cultural resources. These surveys were accomplished through projects contracted by the USAF in compliance with the NHPA Section 110 and NHPA Section 106.

A total of 127 sites have been located on Beale AFB property. These include 38 prehistoric archaeological sites, 42 pre-military historical sites, with another 39 sites associated with the military era. Eight sites have multiple components. The six Cold War PAVE PAWS facilities have been determined eligible for placement on the NRHP, even though they are less than 50 years old.

There are also hundreds of isolated historic features that were noted in various surveys, investigations, and reports. These can be found interspersed in the historic records at Beale AFB.

Cultural Resources Investigations

Beale AFB has had several previous cultural resources investigations performed throughout the base. Sixteen cultural resources block surveys were performed between 1961 and 2006 and six linear surveys have been conducted between 1981 and 1993. Other cultural resources site studies and plans have also been performed.

Archaeological surveys have not been conducted on the project area because it is located on previously developed land. Building surveys have been previously conducted more than 10 years ago; however, there was a base-wide building survey conducted in 2006 and finalized in 2009.

Previously recorded Prehistoric Sites

There were a total of 38 prehistoric sites and one prehistoric component site recorded on Beale AFB. Of the 38 sites, 34 were found to be bedrock milling stations and four were flaked lithic scatters. One site has been determined not eligible for NRHP.

Previously recorded Pre-Military Historic Sites
There were a total of 42 pre-military historic sites and 7 sites with a pre-military historic component recorded on Beale AFB. Of the 49 sites, 23 are ranch/farm complexes, 13 are refuse scatters, seven were bridges, and one was a mining/quarry area. Thirty-eight have been determined not eligible for the NRHP.

Previously recorded Military Sites
There were 39 military-era historic sites and three sites with a military-era historic component recorded on Beale AFB. These sites consist primarily of structural remnants associated with Camp Beale. Thirty-one sites have been determined not eligible for the NRHP.

Historic Facilities or Structures
Even though it is less than 50 years old, the PAVE PAWS facility (consisting of six buildings), of the Cold War Era, has been determined eligible for the NRHP. One of the proposed MC-12 beddown facilities (Building 1322) is eligible for inclusion in the NRHP. Besides this, many existing facilities at Beale AFB are turning 50 years old, but determinations have not been initiated on these properties.

3.1.4 Socioeconomics and Environmental Justice
For the purpose of this EA, socioeconomics includes employment and income, population, housing, and public schools. The Region of Influence (ROI) for socioeconomics at Beale AFB is Yuba County, CA.

3.1.4.1 Employment, Income, and Poverty Levels
The total estimated civilian labor force in Yuba County for 2008 was 33,819, of which 28,351 were employed. There were an estimated 1,984 Armed Forces personnel in Yuba County (down from 2,362 in 2000), bringing the total employed labor force in the area to 30,335. The 2008 unemployment rate for the county was 10.9% (U.S. Census Bureau 2008a). This was almost double the unemployment rate of 5.9% for the year 2000. Educational services and health care and social services provided the most jobs in Yuba County (5,661) in 2008, followed by retail trade (3,352), and construction (3,229) (U.S. Census Bureau 2008b).

In 2008, Yuba County had a per capita personal income (PCPI) of $27,099. This PCPI ranked 53rd in the state and was 62% of the state average ($43,852) and 67% of the National average ($40,166). The 2008 PCPI reflected an increase of 3.9% from 2007. The 2007-2008 state change was 1% and the National change was 2%. In 1998, the PCPI of Yuba County was $17,182 and ranked 55th in the state. The 1998-2008 average annual growth rate of PCPI in Yuba County was 4.7%, while the average annual growth rate for the state was 4.2% and for the Nation was 4% (U.S. Bureau of Economic Analysis [BEA] 20010a).

Total personal income (TPI) includes net earnings by place of residence; dividends, interest, and rent; and personal current transfer receipts received by the residents of Yuba County. In 2008, net earnings accounted for 59% of TPI (compared with 57% in 1998); dividends, interest, and rent were 13% (compared with 15% in 1998); and personal current transfer receipts were 28% (compared with 29% in 1998). From 2007 to 2008, net earnings increased 3.5%; dividends, interest, and rent increased 8.1%; and personal current transfer receipts increased 9.1%. From 1998 to 2008 net earnings increased on average 7.1% each year; dividends, interest, and rent increased on average 5.2%; and personal current transfer receipts increased on average 6.6% (BEA 2010a).

In 2008, Yuba County had a TPI of $1,974,581,000. This TPI ranked 42nd in the state and accounted for 0.1% of the state total. The 2008 TPI for Yuba County reflected an increase of 5.6% from 2007. The 2007-2008 state change was 2% and the National change was 2.9%. The 1998-2008 average annual growth rate of TPI in Yuba County was 6.7%. The average annual growth rate of TPI for the state was 5.2% and for the Nation was 5% (BEA 2010a).

An estimated 13.9% of families lived in poverty in Yuba County in 2008 (Table 3-1). This percentage is higher than both the state of California and the Nation's population that live in poverty (9.6% for both) (U.S. Census Bureau 2008b). The median household income in 2008 for Yuba County was $45,727. This was lower than both the 2008 median household income for the state ($61,154) and for the Nation ($52,175) (U.S. Census Bureau 2008c).

Table 3-1. Poverty and Median Income

Location	Percentage in Poverty (2008)	Median Income (2008)
Nation	9.6%	$52,175
California	9.6%	$61,154
Yuba County	13.9%	$45,727

Source: U.S. Census Bureau 2008c

3.1.4.2 Population and Demographics

Yuba is one of 58 counties in CA. It is part of the Yuba City, CA metropolitan statistical area. Its 2008 population of 72,865 ranked it 39th in the state (BEA 2010a). The 2008 racial mix of Yuba County was predominantly Caucasian (69%), followed by people of some other race (12.2%), people of Asian descent (7.1%), persons that are Black or African-American (2.1%) tied with American Indian and Alaskan Natives (2.1%), with the remaining 7.5% of the population split between Native Hawaiians and those people that are two or more races. Approximately 22.5% of the 2008 population of Yuba County identify themselves as of Hispanic or Latino origin (U.S. Census Bureau 2008a).

3.1.4.3 Housing

Yuba County had a total of 27,879 housing units in 2008 (U.S. Census Bureau 2008b). According to the 2008 Census, 13,364 of the housing units were owner-occupied, 10,912 housing units were rented, and 3,333 housing units were vacant.

3.1.4.4 Schools

Beale AFB is served by the Wheatland School District. Elementary education is offered on-base at the Lone Tree School which educates children in kindergarten up through the fifth grade. Enrollment at the Lone Tree School for the 2008-09 school year was estimated at 409 students. Children entering above the fifth grade are bused to Bear River Middle School and Wheatland High School in Wheatland. Enrollment at the Bear River Middle School for the 2008-09 school year was estimated at 415 students. Also on Beale AFB is the Wheatland Charter Academy, which educates children in grades kindergarten through 12. Enrollment for the 2008-09 school year was estimated at 132 students (Beale AFB 2008).

3.1.4.5 Environmental Justice

EO 12898, Environmental Justice

The fair treatment of all races has been assuming an increasingly prominent role in environmental legislation and implementation of environmental statutes. In February 1994, President Clinton signed EO 12898 titled, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. This action requires all Federal agencies to identify and address disproportionately high and adverse effects of its programs, policies, and activities on minority and low-income populations. Yuba County has a high number of low-income families at 13.9% and a lower than average median income of $45,727. This disparity would indicate that there is a higher than normal chance that there would be adverse impacts on this demographic.

EO 13045, Protection of Children

EO 13045 requires each Federal Agency to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. This EO was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. Approximately 18% of the total population of Yuba County was made up of children under the age of 18 that were below poverty level. The percent of children under the age of 18 and below the poverty level in the state of California is 14.2%. For the U.S., that number rises to 14.9%, but it is still lower than the percent of children younger than 18 living below the poverty level in Yuba County (U.S. Census Bureau 2008c).

3.1.5 Biological Resources

Biological resources are defined as cultivated and non-cultivated resources such as timber, crop and plant, aquatic, and animal which bring present and future benefit to an area of interest (in this case, proposed AFBs). NEPA and the California Environmental Quality Act (CEQA) provide protection for conservation and management of biological resources. The DoD serves the role as conservation steward to millions of acres of public lands. As a result of DoD conservation initiatives, implementation of Integrated Natural Resource Management Plans (INRMPs) at the proposed beddown locations have continued to guide base staff in maintenance and enhancement of ecosystem integrity (Beale AFB 2005a). Information for this section was obtained from on-site surveys, past INRMPs for the proposed bases, the California Department of Fish and Game (DFG) and the California Department of Conservation (DOC), and other publications noted in reference to this report. The following summarizes the native plant and animal habitat including threatened and endangered (T&E) species that occur within the boundaries of the proposed MC-12 project locations. These sites were previously developed with some natural habitat remaining undisturbed at the sites.

3.1.5.1 Terrestrial Communities

According to the National Hierarchical Framework of Ecological Units (also known as Bailey's Ecoregions), Beale AFB encompasses approximately 23,000 acres of rolling hillside in the Humid Temperate (Domain), Mediterranean (Division), and California Dry Steppe (Province). This classification falls within the Great Valley Section (Section 262A), which contains the alluvial plains of the Sacramento and San Joaquin Valleys (Beale AFB 2005a). Major Features of the region encompassing Beale AFB include the Sierra Nevada foothills (east), the Sacramento Valley (west), and major rivers including the Feather, Yuba, and Sacramento Rivers.

The western and central portions of Beale AFB consist of grasslands, characteristic of the topography of Central Valley (Holland 1986). The eastern portion of the base contains low, rolling hills that merge with the foothills of the Sierra Nevada. The elevation [National Geodetic Vertical Datum of 1929 (NGVD29)] of the base ranges from 80 to 90 ft above mean sea level (MSL) toward the Central Valley (western and southern boundary) to more than 500 feet towards the Sierra Nevada foothills. Alteration to the landscape and associated habitat occurred over the last 200 years, due to grazing of livestock and other dry crop agricultural practices.

3.1.5.1.1 Vegetation

Historically, a majority of the grassland located in the western portion of Beale AFB contained expansive vernal pool fields with mound/inter-mound topography and connecting swales. However, many of the vernal pool fields were disturbed or destroyed by farming activity prior to base establishment (Beale AFB 2005a). Riparian habitat consisting of valley oak (*Quercus lobata*) woodland and mixed riparian forest were historically present along Dry Creek and Best Slough. The degradation of this habitat is assumed to be from clearing woodlands for agricultural use (Grossman et al. 1998). Additionally, based on soil and hydrological evidence, oak woodlands and savannas (Holland 1986) were present and more densely populated near the Sierra Nevada foothills (eastern side of the base) as compared to the present-day landscape at Beale AFB. Assumptions made by biologists and historians suggest that the trees in these forests were cut by miners for fuel use, or grazing of livestock in the 1850s (Beale AFB 2005a).

Non-native Grasslands (California Prairie)

Annual grasslands are the most common type of vegetation (~18,835 acres) at Beale AFB. These grasslands are common at low elevations (i.e., below 2,500 ft). Most of the grassland species are naturalized species (primarily of Mediterranean origin), with the exception of perennial bunch grasses (see Table 3-2), including purple needlegrass (*Nassella pulchra*), California melic (*Melica californica*), and giant squirrel tail (*Sitanion jubatum*). One native annual grass, oldfield three-awn (*Aristida oligantha*), can be found in pastures and roadsides throughout the base (Beale AFB 2005a).

Table 3-2. Common grassland species found at Beale AFB

Common Name	Nomenclature	Annual/Perennial	Native/Non-Native
Purple needlegrass	*Nassella pulchra*	Perennial	Native
California melic	*Melica californica*	Perennial	Native
Giant squirrel tail	*Sitanion jubatum*	Perennial	Native
Oldfield three-awn	*Aristida oligantha*	Annual	Native
Ripgut brome	*Bromus diandrus*	Annual	Non-Native
Italian ryegrass	*Lolium multiflorum*	Annual	Non-Native
Soft chess	*Bromus hordeaceus*	Annual	Non-Native
Medusahead	*Taeniatherum caput-medusae*	Annual	Non-Native
Annual fescue	*Vulpia myuros*	Annual	Non-Native
Foxtail barley	*Hordeum jubatum*	Annual	Non-Native

A diverse assemblage of native and non-native forb species (Table 3-3) are found intermixed with the dominant grass species. The colonization of forb species are associated with permanent disturbance of floristic composition resulting from: land leveling, tillage and crop irrigation activities that altered the soil structure of wetlands, heavy grazing by domestic livestock, suppression of prairie fires, and colonization of opportunistic (ruderal) annuals and other non-native species (Beale AFB 2005a).

Table 3-3. Native and introduced forb species found intermixed with dominant grasses at Beale AFB

Common Name	Nomenclature	Annual/Perennial	Native/Non-native
Dove weed	*Croton setigerus*	Annual	Native
Sheep sorrel	*Rumex acetosella*	Perennial	Naturalized
Clover	*Trifolium* sp.	Annual	Native
Fiddleneck	*Amsinckia menziesii*	Annual	Native
Field owl's-clover	*Castilleja campestris* ssp. *campestris*	Annual	Native
Popcorn flower	*Plagiobothrys* sp.	Annual	Native
Poppy	*Eschscholzia californica*	Annual/Perennial	Native
Brodiaea	*Brodiaea appendiculata*	Perennial	Native
Navarretia	*Navarretia squarrosa*	Annual	Native
Mariposal lily	*Calochortus luteus*	Perennial	Native
Silver bush lupine	*Lupinus albifrons*	Perennial	Native
Vetch	*Vicia* spp.	Annual	Native
Blue-eyed grass	*Sisyrinchium bellum*	Perennial	Native
Filaree	*Erodium* spp.	Annual	Non-native (invasive)
Field mustard	*Brassica rapa*	Annual	Non-native (invasive)
Spikeweed	*Hemizonia* spp.	Annual	Native
Tidytips	*Layia fremontii*	Annual	Native
Tarweeds	*Madia* spp.	Annual	Native
Goldfields	*Lasthenia* spp.	Annual/Perennial	Native
Annual Checkerbloom	*Sidalcea calycosa*	Annual	Native

In some areas, the grasslands have undergone frequent disturbance from livestock corrals, staging areas, and roadsides allowing ruderal vegetation (Table 3-4) to colonize the area. Dominance of ruderal vegetation at these locations can be temporary (lasting only a few years) provided that the soil surface is not impacted by foreign materials (e.g., rock, cement, animal waste).

Table 3-4. Ruderal vegetation with potential to occur at Beale AFB in disturbed areas

Common Name	Nomenclature	Annual/Perennial	Native/Non-native	Invasive
Buffalobur	*Solanum rostratum*	Annual	Non-native	
Yellow star-thistle	*Centaurea solstitialis*	Annual	Non-native	Invasive
Cheeseweed	*Malva parviflora*	Annual	Non-naitve	
Milk thistle	*Silybum marianum*	Annual/Perennial	Non-native	Invasive
Chicory	*Cichorium intybus*	Perennial	Non-naitve	
Field bindweed	*Convolvulus arvensis*	Perennial	Non-native	Invasive

Vernal Pools

Vernal pools are unique wetlands that exhibit a restrictive subsurface layer, with a pattern of shallow depressions in an otherwise level topography (Platenkamp 1998). Vernal pools support distinct flora typically dominated by native plant species. The plants colonizing vernal pools can be either aquatic or semi-aquatic but must survive drought conditions as these pools dry seasonally (Major 1988). Plant species known to colonize vernal pools at Beale AFB include California goldfields (*Lasthenia californica),* Fremont goldfields (*Lasthenia fremontii*), white flowered navarretia (*Navarretia leucocephala*), vernal buttercup (*Ranunculus canus*), field owl's-clover, Sacramento mesa mint (*Pogogyne ziziphoroides*), dwarf woolly marbles (*Psilocarphus brevissimus* var. *brevissimus*), coyote thistle (*Eryngium racemosum*), goldfields (*Lasthenia* spp.), popcorn flower (*Plagiobothrys tenellus*), bractless hedge-hyssop (*Gratiola ebracteata*), little quaking grass (*Briza minor*), silver hairgrass (*Aira caryophyllea*), and hyssop loosestrife (*Lythrum hyssopifolia*).

Freshwater Marsh

Freshwater marsh intermingles with riparian woodland vegetation near ponds and drainages that offer a permanent water supply. The marshland found at Beale AFB contains perennial plants such as cattails (*Typha* spp.), tules (*Schoenoplectus acutus*), arrowheads (Sagittaria spp.), rushes (*Juncus* spp.), and sedges (*Carex* spp.*).* Trees and shrubs found in the marshland include willows (*Salix* spp.), Freemont cottonwoods (*Populus fremontii*), and buttonwillows (*Cephalanthus occidentalis*). As temperatures in late spring rise, much of the marshland habitat will disappear (Beale AFB 2005a). Open water vegetation such as pondweeds (*Potomogeton* spp.), lesser duckweed (*Lemna* spp.), and mosquito fern (*Azolla* spp.) are supported by riparian and freshwater marsh habitats.

Oak Woodlands and Savanna

Oak woodlands are classified by the dominant tree canopy (>50% cover) of one or more species of oak. The herbaceous understory of oak woodlands is comprised of common grassland species such as those previously mentioned above in the non-native grasslands description. Oak woodland is a minor habitat at Beale AFB, occurring as small, isolated valley oak (*Quercus lobata*) woodlands dispersed through the grasslands and undulating terrain (around family housing). In the foothills (east of family housing), grey pine or digger pine *(Pinus sabineana and P. sabiniana,* respectively) can be found growing within the blue oak (*Quercus douglasii*) woodlands. Common species found in valley oak (the least drought-tolerant of the native oaks) woodlands are valley oak, blue oak, interior live oak (*Quercus wizlizenii*), Fremont's cottonwood, blue elderberry (*Sambucus mexicana*), toyon (*Heteromeles arbutifolia*), California coffeeberry (*Rhamnus californica*), California wild grape (*Vitis californica*), Pacific blackberry (*Rubus ursinus*), and poison oak (*Toxicodendron diversilobum*). In the foothills, where groundwater supply is low, blue oak (the most drought-tolerant of the native oaks) woodlands

support species such as blue oak, gray pine (higher elevations), interior live oak (higher elevations), California buckeye (*Aesculus californica*), Western redbud (*Cercis occidentalis*), blue elderberry, common manzanita (*Arctostaphylos manzanita*), buckbrush (*Ceanothus cuneatus*), yerba santa (*Eriodictyon glutinosum*) (higher elevations), silver bush lupine (*Lupinus albifrons*), California coffeeberry, redberry, rock gooseberry (*Ribes hirtellum*) (higher elevations), and poison oak.

Traditionally, land use practices affecting oak woodlands have been administered through local programs. The incremental loss of oak woodland through land conversion to agricultural, commercial, and residential uses, combined with the lack of natural regeneration, has led to increased concern for the future preservation of this ecosystem. In 2005, Senate Bill 1334 was passed by the California Legislature, mandating that counties require feasible and proportional habitat mitigation for impacts made on oak woodlands as part of the CEQA process. This law applies to all oak woodlands except those dominated by black oak (*Quercus velutina*). Public Resources Code Section 21083.4, institutes a cap on planting oaks for habitat mitigation and prescribes four mitigation options: conservation easements, contribution to the Oak Woodlands Conservation Fund, replanting trees, or implementation of other mitigation actions as outlined or developed by the county (Yuba County 2007).

The two primary oak species at Beale AFB, blue oak and valley oak, are successfully regenerating and assumed to be attributable to low use of the areas dominated by these species and reduction of livestock grazing in most oak woodlands on base.

Riparian Habitat

Riparian habitat at Beale AFB found along Dry Creek and Best Slough provides a corridor of well-developed riparian forest. Along other drainages such as Hutchinson Creek, the riparian vegetation is patchy, and at Reeds Creek, the riparian vegetation is nonexistent (Beale AFB 2005a). Riparian scrub habitat found at Beale AFB is composed of dense growth of willow species. Three types of riparian forest were identified at Beale AFB. The forest types identified included cottonwood-willow, valley oak, and mixed riparian forests. The riparian forests are comprised of a multilayered complex of cottonwoods with occasional valley oak, box elder (*Acer negundo*), sycamore (*Platanus racemosa*), ash (*Fraxinus sp.),* alder (*Alnus rhombifolia*), and willow (*Salix* spp.), with wild rose (*Rosa californica*), blackberry (*Rubus sp*.), and other shrubs found in the understory. The groundcover is normally dense and comprised of grasses and herbs. The drainages associated with the riparian habitat also support freshwater marsh and open water vegetation (Beale AFB 2005a).

Turf and Landscaped Areas

Turf and landscaped areas include all the improved grounds at the base. The improved areas primarily exist around the flight line, cantonment (including olive orchards), family housing, and transportation corridors. Mulberry (*Morus* sp.*)* trees were planted along the corridor of Gavin Mandery and Warren Shingle Roads (the primary base entrance) about 30 years ago. Other landscape shrubs and trees planted around the base include fruitless mulberry (*Morus alba*), Fremont's cottonwood, Lombardy poplar (*Populus nigra*), and weeping willow (*Salix sepulcralis*).

3.1.5.1.2 Wildlife

Beale AFB provides habitat for many species of terrestrial wildlife. Species include mammals, birds, reptiles, and amphibians. Many of these species are resident species and depend on the oak woodland communities and riparian habitat for shelter, nesting, and foraging. The riparian mixed forest is the most structurally diverse habitat on Beale AFB (Beale AFB 2005a). Not only does the riparian habitat provide food and cover, it also serves as a migration corridor for many

wildlife species (Yuba County 2007). Additionally, permanent wetlands are considered important habitat due to their high biological value and rarity in the Sacramento Valley relative to historical distribution (Beale AFB 2005a).

Mammals

Mammals found in the grasslands include the western harvest mouse (*Reithrodontomys megalotis*), Botta pocket gopher (*Thomomys bottae*), California ground squirrel (*Otospermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), and coyote (*Canis latrans*) (Yuba County 2007). Larger mammals are expected to occur in the oak woodlands, especially woodlands located in or adjacent to the foothills of the Sierra Nevada range. The large mammals likely to occur in this habitat include mule deer (*Odocoileus hemionus*), mountain lion (*Felis concolor*), bobcat (*Felis rufus)*, coyote, gray fox (*Urocyon cinereoargenteus*), ringtail (*Bassariscus astutus*), opossum (*Didelphis virginiana)*, and raccoon (*Procyon lotor*). Smaller mammals such as the western gray squirrel (*Sciurus griseus*), California ground squirrel, striped skunk (*Mephitis mephitis*), black-tailed jack rabbit, deer mouse (*Peromyscus maniculatus*), and dusky-footed woodrat (*Neotoma fuscipes*) would also occur in this habitat. Riparian communities provide habitat for a diversity of species due to the streamside forage opportunities and sheltered area. Mammals that utilize the resources associated with the riparian habitat include many species of bats (*Chiroptera*), the gray fox (*Urocyon cinereoargenteus*), brush mouse (*Peromyscus boylii*), Virginia opossum, broad-footed mole (*Scapanus latimanus*), cottontail rabbit, raccoon, long-tailed weasel (*Mustela frenata*), ringtail, muskrat (*Ondatra zibethica)*, mink (*Mustela vison*), striped skunk, spotted skunk (*Spilogale putorius*), river otter (*Lontra canadensis*), bobcat, and mule deer. Mammals such as raccoon, striped skunk, beaver (*Castor canadensis*), river otter, and muskrat would potentially utilize the fresh marsh habitat. Bat species are also known to utilize pond, lake, and reservoir biological resources for foraging and drinking water supply.

Birds and Raptors

Approximately 150 species of birds could pass through or utilize various habitats in Yuba County. In northern California, the richness and density of bird species vary temporally and annually, where some species become residents and others are migrant species (Garrett and Dunn 1981). Bird species found within the foothill woodland communities include tufted titmouse (*Parus bicolor*), American crow (*Corvus brachyrhynchos*), scrub jay (*Aphelocoma californica*), western wood peewee (*Contopus sordidulus*), brown towhee (*Pipilo maculates)*, and downy woodpeckers (*Picoides pubescens*). Bird species observed in the annual grasslands during field surveys include the western kingbird (*Tyrannus verticalis*), western meadowlark (*Sturnella neglecta*), lark sparrow (*Chondestes grammacus*), savannah sparrow (*Passerculus sandwichensis*), horned lark (*Eremophila alpestris*), Brewer's blackbird (*Euphagus cyanocephalus*), and wild turkey (*Meleagris gallopavo*). Other bird species with the potential to nest in the grasslands include mourning dove (*Zenaida macroura*), American kestrel (*Falco sparverius*), killdeer (*Charadrius vociferous*), common nighthawk (*Chordeiles minor*), barn swallow (*Hirundo rustica*), red-winged blackbird (*Agelaius phoeniceus*), savannah sparrow, purple finch (*Carpodacus purpureus*), and house finch (*Carpodacus mexicanus*) (Beale AFB 2005a).

Birds with potential to nest in the riparian habitats include yellow-rumped warbler (*Dendroica coronate*), Hutton's vireo (*Vireo huttoni*), ash-throated flycatcher (*Myiarchus cinerascens*), wild turkey, killdeer, Anna's hummingbird (*Calypte anna*), mourning dove, California quail (*Callipepla californica*), American kestrel, turkey vulture (*Cathartes aura*), barn owl (*Tyto alba*), screech owl (*Megascops asio*), house wren (*Troglodytes aedon*), wood duck (*Aix sponsa*), great blue heron (*Ardea Herodias*), American robin (*Turdus migratorius*), acorn woodpecker (*Melanerpes*

formicivorus), Stellar's jay (*Cyanocitta stelleri*), dipper (*Cinclus cinclus*), western scrub-jay, song sparrow (*Melospiza melodia*), Berwick's wren (*Thryomanes bewickii*), and Swainson's thrush (*Catharus ustulatus*) (Beale AFB 2005a).

Raptors, such as hawks, falcons, eagles, and owls are considered "birds of prey". Some raptor species in California are considered threatened and endangered by the U.S. Fish and Wildlife Service (USFWS), and threatened or designated by the CA DFG as Species of Special Concern endangered (see T&E and Special Status Species Section 3.1.5.3). Raptors of special interest that have been observed foraging in annual grasslands at Beale AFB include the red-tailed hawk (*Buteo jamaicensis*), Western burrowing owl (*Athene cunicularia hypugea*), and American kestrel. Raptors with the potential to occur in oak and riparian woodlands or forage in grasslands at Beale AFB include Swainson's hawk (*Buteo swainsoni*), black-shouldered kite (*Elanus axillaris*), great horned owl (*Bubo virginianus*), Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*Accipiter striatus*). Raptors typically nest in large, tall trees such as oaks, cottonwoods, sycamores, and willows.

Freshwater marsh provide important habitat for fish-eating birds such as American bittern (*Botaurus lentiginosus*), great blue heron, great egret (*Ardea alba*), double-crested cormorant (*Phalacrocorax auritus*), and belted kingfisher (*Megaceryle alcyon*). Marsh habitat at Beale AFB also attracts mallard (*Anas platyrhynchos*), American coot (*Fulica americana*), common moorhen (*Gallinula chloropus*), northern pintail (*Anas acuta*), American widgeon (*Anas americana*), and other aquatic bird species. Occasional concentrations of northern shoveler (*Anas americana*), gadwall (*Anas strepera*), and tundra swan (*Cygnus columbianus*) have been observed on base (Beale AFB 2005a).

Other water birds observed utilizing Beale AFB permanent wetlands include American avocet (*Recurvirostra americana*), black-necked stilt (*Himantopus mexicanus*), long-billed curlew (*Numenius americanus*), greater yellowlegs (*Tringa melanoleuca*), long-billed dowitcher (*Limnodromus scolopaceus*), common snipe (*Gallinago gallinago*), snowy egret (*Egretta thula*), black-crowned night-heron (*Nycticorax nycticorax*), and green heron (*Butorides virescens*). Avian species such as marsh wren (*Cistothorus palustris*) and song sparrow often nest in the cattails and other emergent vegetation on base (Beale AFB 2005a). The open ponds, lakes, and reservoirs provide habitat for ducks such as mallard, gadwall, and northern pintail, and other water birds such as American coots and pied-billed grebe (*Podilymbus podiceps*). Fish-eating birds, such as those previously mentioned as inhabiting the freshwater marsh, would potentially utilize the ponds, lakes, and reservoirs on base.

Reptiles and Amphibians

Reptiles that are common to the foothill woodland community include Northern Pacific rattlesnake (*Crotalus oreganus*), gopher snake (*Pituophis catenifer*), kingsnake (*Lampropeltis getula*), and California alligator lizard (*Elgaria multicarinata*). Reptile species that have the potential to occur in riparian habitats in Yuba County include the giant garter snake (*Thamnophis gigas*), valley garter snake (*Thamnophis sirtalis fitchi*), mountain garter snake (*Thamnophis elegans elegans*), western pond turtle (*Emys marmorata*), western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Elgaria multicarinata*), Northern Pacific rattlesnake, and yellow-bellied racer (*Coluber constrictor*) (Beale AFB 2005a; USFWS 2006). Annual grasslands also provide habitat for gopher snake, western yellow-bellied racer, western rattlesnake, common kingsnake, and southern alligator lizard. Western fence lizards and western skink (*Eumeces skiltonianus*) are also known to inhabit areas within Beale AFB. The USFWS has determined that Beale AFB has potential habitat for the giant garter snake.

Both the Pacific chorus frog (*Pseudacris regilla)* and bullfrog (*Lithobates catesbeianus*) (noted as an invasive nuisance species) have been observed in the fresh marsh habitat and ponds, lakes and reservoirs at Beale AFB (Beale AFB 2005a). Habitat exists on Beale AFB in the mixed riparian forests for the California slender salamander (*Batrachoseps attenuates*) (Beale AFB 2005a). Additionally, habitat for the red-legged frog (*Rana aurora draytoni*) and Western spadefoot (*Spea hammondii*) occur on base; however, these species were not detected on Beale AFB during a 2007 survey (Beale AFB 2005a: 80).

3.1.5.2 Aquatic Communities

3.1.5.2.1 Fish

Information regarding fisheries resources in Yuba County, with the exception of Yuba and Bear Rivers, is limited. Four anadromous fish species important to commercial and sport fisheries are found in the Yuba River (QUAD Consultants 1992). These economically important species include spring and fall run chinook salmon (*Oncorhynchus tshawytscha*), steelhead trout, (*Oncorhynchus mykiss*), American shad (*Alosa sapidissima*), and striped bass (*Morone saxatilis*). Sturgeons (*Acipenser transmontanus*) are also known to occur in the Yuba River. Of the creeks that traverse the base, Hutchinson and Reed Creeks are likely to have insufficient water flow to support fisheries habitat. Dry Creek does support limited aquatic species due to its continued annual flow. The aquatic habitats along Dry Creek and Best Slough support an abundance of wildlife species similar to those previously mentioned for fresh marsh habitat, as well as both native an non-native fish species. Fall-run chinook salmon and Central Valley steelhead are both known to utilize Dry Creek aquatic habitat. Common native fish species that occur in Dry Creek and Best Slough include speckled dace (*Rhinichthys osculus*), California roach (*Hesperoleucus symmetricus*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento sucker (*Catostomus occidentalis*), and tule perch (*Hysterocarpus traskii*). Common non-native fish include mosquitofish (*Gambusia affinis*), smallmouth bass (*Micropterus dolomieu*), green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*), and redear sunfish (*Lepomis microlophus*). Created lakes and ponds are found within Beale AFB, and all have the potential to support non-native fish species such as smallmouth bass, bluegill, and mosquitofish, sunfish (*Lepomis* spp.), bass (*Micropterus* spp.), carp (*Cyprinus carpio)*, and catfish (*Ictalurus* spp.). Beale Lake (an impoundment on Dry Creek) is thought to support some native fish species. Water temperatures in most of the stock ponds and lakes at Beale AFB are too warm to support and sustain trout fisheries (Beale AFB 2005a).

3.1.5.2.2 Wetland and Aquatic Communities

As addressed in the INRMP, portions of the natural habitat within the base are “considered either potential or known habitat for species listed as threatened or endangered”. Wetlands and other Waters of the U.S. (WUS) regulated under the CWA are also present in areas where future development may occur (Beale AFB 2005a).

Beale AFB and the USACE are preparing a Special Area Management Plan (SAMP) to achieve a balance between aquatic resource protection and reasonable economic development. As a result of the SAMP, there will be areas on Beale AFB that would be protected and preserved, as well as areas where future activities would be allowed to occur. The SAMP would ultimately establish a predictable process for wetland permitting and compensation that are necessary for compliance with Section 404 of the CWA.

Once finalized, the SAMP would result in a Regional General Permit for the entire base. This permit would allow the base to implement routine construction, maintenance, and repair activities with a reduced coordination timeline for evaluating impacts on aquatic resources. In addition, the base is also in the process of putting in place a programmatic biological opinion

with the USFWS that would allow for the endangered species permitting to be streamlined as well.

Vernal pools are found in the western, central and southern portions of the Beale AFB. Vernal pools provide potential habitat for many aquatic invertebrates including the Federally-threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*).

3.1.5.3 Threatened, Endangered, and Special Status Species

3.1.5.3.1 Federal and State-Listed Species

The USFWS responsibilities under the Endangered Species Act of 1973 (ESA) include: (1) the identification of T&E species; (2) the identification of critical habitats for listed species; (3) implementation of research on, and recovery efforts for, these species; and (4) consultation with other Federal agencies concerning measures to avoid harm to listed species (7 USC 136, 15 USC 1531 et seq.). The National Marines Fisheries Service also has responsibilities regarding marine mammals and some fishes, such as the chinook salmon.

In addition, the USFWS has identified species that are candidates for listing as a result of identified threats to their continued existence. The candidate designation includes those species for which the USFWS has sufficient information on hand to support proposals to list as endangered or threatened under the ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity. Special Status Species are considered rare, require special consideration and/or protection, and should be, or have been, listed as rare, threatened, or endangered by the Federal and/or state governments.

While the requirements of the Federal ESA (such as consultations with the USFWS) do not apply to state-listed species, AFI 32-7064 requires an installation's INRMP to provide for the protection and conservation of state-listed protected species when practicable. The INRMP should provide similar conservation measures for species protected by state law when such protection is not in direct conflict with the military mission. The installation is directed to consult with the appropriate state authority to determine if any conservation measures can be feasibly implemented to mitigate impacts. California state T&E and Special Status species are defined as:

- Species that are listed or proposed for listing by the State of CA as threatened or endangered under the CA Endangered Species Act (Title 14, CA Code of Regulations, Section 670.5);
- Plants listed as rare under the California Native Plant Protection Act of 1977 (CA Fish and Game Code Section 1900 et seq.);
- Plants considered by California Native Plant Society (CNPS) to be "rare, threatened, or endangered in CA";
- Species that meet the definitions of rare or endangered under CEQA Guidelines (Section 15380); and
- Animals fully protected in California (CA Fish and Game Code Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Vegetation

A table of Special Status plant species with potential to occur at Beale AFB was created from the CNPS database on September 29, 2010. Topographical areas gained from 7.5 Minute Series (1:24,000 scaled) maps were used to determine the range of vegetation (Figure 3-2).

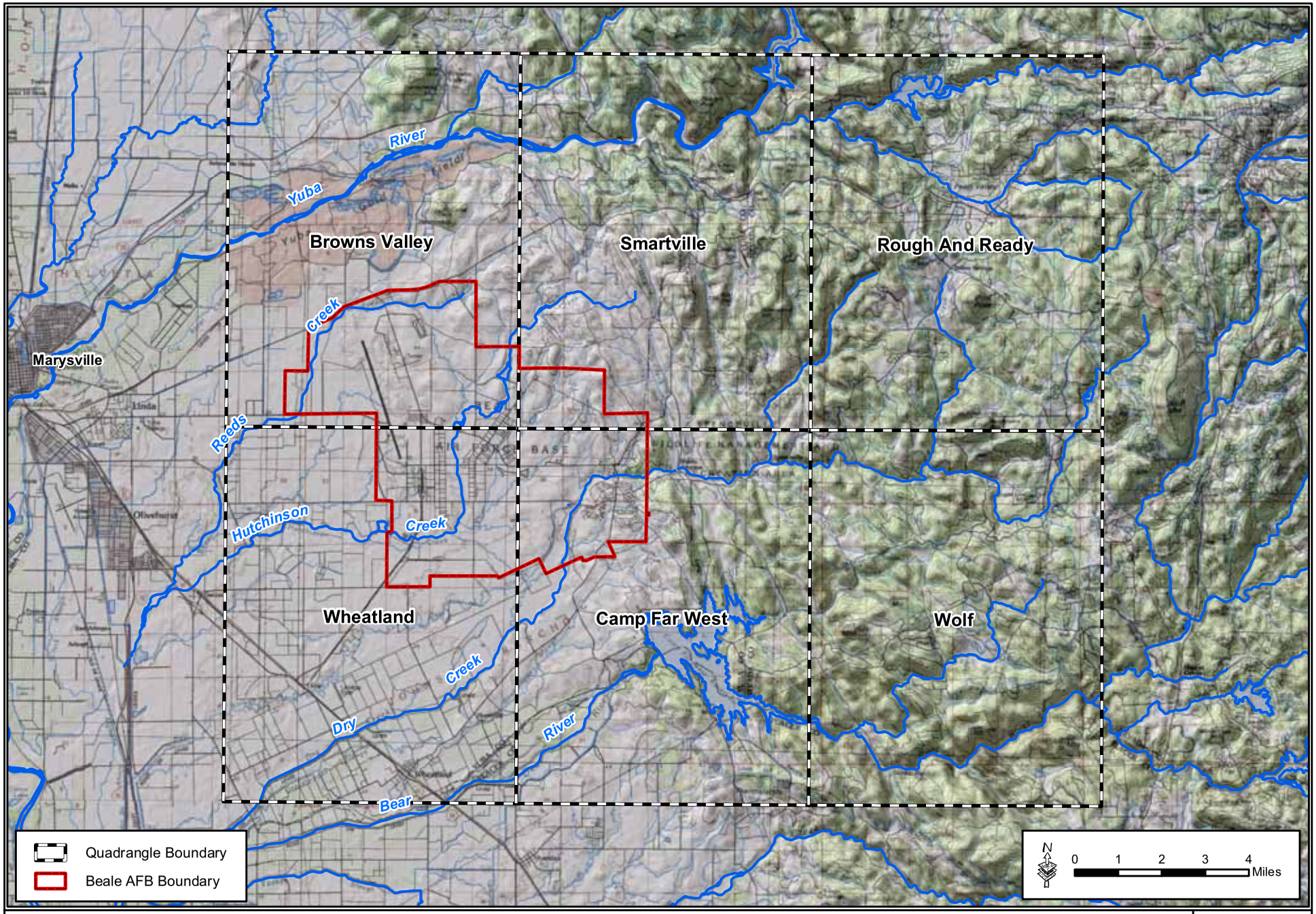

Figure 3-2: Beale AFB Topographical (1:24,000) Regions and Major Waterways

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The associated topographical areas utilized in the CNPS vegetation query were: Brown's Valley (543B), Smartville (543A), Rough and Ready (542B), Wheatland (543C), Camp Far West (543D), and Wolf (542C). This T&E and special status species query identified 25 CNPS Special Status plant species having potential to occur at Beale AFB. A list of these species can be found in Table 3-5.

Table 3-5. California Native Plant Society list of special status plant species known or with potential to occur at Beale AFB

Common Name	Scientific Name	CNPS List
Jepson's onion	*Allium jepsonii*	List 1B.2
Ferris' milk-vetch	*Astragalus tener var. ferrisiae*	List 1B.1
big-scale balsamroot	*Balsamorhiza macrolepis var. macrolepis*	List 1B.2
Stebbins' morning-glory	*Calystegia stebbinsii*	List 1B.1
Brandegee's clarkia	*Clarkia biloba* ssp. *brandegeeae*	List 1B.2
Norris' beard moss	*Didymodon norrisii*	List 2.2
dwarf downingia	*Downingia pusilla*	List 2.2
Pine Hill flannelbush	*Fremontodendron decumbens*	List 1B.2
Butte County fritillary	*Fritillaria eastwoodiae*	List 3.2
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	List 1B.2
Ahart's dwarf rush	*Juncus leiospermus var. ahartii*	List 1B.2
Red Bluff dwarf rush	*Juncus leiospermus var. leiospermus*	List 1B.1
dubious pea	*Lathyrus sulphureus var. argillaceus*	List 3
Greene's legenere	*Legenere limosa*	List 1B.1
Cantelow's lewisia	*Lewisia cantelovii*	List 1B.2
elongate copper moss	*Mielichhoferia elongata*	List 2.2
veiny monardella	*Monardella douglasii* ssp. *venosa*	List 1B.1
Follett's monardella	*Monardella follettii*	List 1B.2
pincushion navarretia	*Navarretia myersii* ssp. *myersii*	List 1B.1
Ahart's paronychia	*Paronychia ahartii*	List 1B.1
Cedar Crest popcorn-flower	*Plagiobothrys glyptocarpus var. modestus*	List 3
Hartweg's golden sunburst	*Pseudobahia bahiifolia*	List 1B.1
brownish beaked-rush	*Rhynchospora capitellata*	List 2.2
Scadden Flat checkerbloom	*Sidalcea stipularis*	List 1B.1
oval-leaved viburnum	*Viburnum ellipticum*	List 2.3

1A = List 1A species: presumed extinct in CA..
1B = List 1B species: rare, threatened, or endangered in CA and elsewhere.
2 = List 2 species: rare or endangered in CA, but more common elsewhere.
3 = List 3 species: plants about which more information is needed to determine their status

Only five special-status plant species are known to occur at Beale AFB and include, dwarf downingia (*Downingia pusilla*), listed as rare and endangered in CA (list 2 species); Greene's legenere (*Legenere limosa*) is Federally listed as species of special concern and state-listed as rare, threatened, or endangered in CA and elsewhere (list 1B species); Tehama navarretia (*Navarretia heterandra*) is state-listed as a plant of limited distribution (list 4 species); dwarf

dwarf-cudweed (*Hesperevax caulescens*); and stink bells (*Fritillaria agrestis*) (Jones & Stokes 1995).

Aquatic Species
Vernal pool tadpole shrimp are Federally endangered and known to occur in numerous vernal pools and ephemeral stock ponds at Beale AFB. Only one reptile, the western pond turtle, was found at Beale AFB during a recent survey. This species is a state-listed species of special concern. The western pond turtle utilizes streams, ponds, and marshes for foraging and cover. Central Valley steelhead is listed as a Federally threatened species. This species can be found in perennial and intermittent streams and was observed upstream of Beale AFB at Spenceville WMA. The Central Valley steelhead has been known to utilize Dry Creek aquatic habitat in high flow years. Fall-run chinook salmon can also be found in perennial and intermittent streams. A small run was known to occur in Dry Creek (Beale AFB 2005a).

Many avian species with special status are known or suspected to occur at Beale AFB.

Wildlife (birds, mammals, invertebrates, and reptiles)
The valley elderberry longhorn beetle [(VELB)(*Desmocerus californicus dimorphus*)], known to occur at Beale AFB, is Federally threatened and can be found in riparian and oak savannas that support elderberry shrubs (USFWS 1999). The location of elderberry shrubs can be seen in Figure 3-3. The Cooper's hawk, listed as a state species of concern, was detected during a BASH survey in November and December at Beale AFB. The Sharp-shinned hawk is a species of special concern in California. This hawk is a winter visitor of Beale. The Golden eagle (*Aquila chrysaetos*) is also a species of special concern and fully protected in California. Eagles are year-round visitors of Beale AFB. Ferruginous hawk (*Buteo regalis*) is a Federal and state species of special concern and winter resident of Beale AFB. Swainson's hawk is listed as threatened in the State of California. The Swainson's hawk is a frequent summer visitor to Beale AFB. Several confirmed Swainson's hawk nests have been sighted on the base.

A table of threatened and endangered, and special status species (including species being monitored) specifically associated with Beale AFB, by USFWS, DFG, and CNP can be found in Table 3-6.

3.1.6 Earth Resources
The following information on Earth Resources was excerpted from the Beale AFB INRMP (Beale AFB 2005a).

3.1.6.1 Climate
The regional climate of Beale AFB is controlled by its location: inland from the Pacific Ocean and in an interior valley between the Coastal Ranges and the Sierra Nevada. This valley has warm summers and cool winters, with the average high temperature of 74° Fahrenheit (F) and average low temperature of 50°F. July is the hottest and driest month of the year in this area. The record high was 113°F. Relative humidity averages 61% annually. The mean annual precipitation is 22.16 inches; 95% of rainfall occurs October through April. Winds average speeds of 5 knots and are channeled by the Sacramento Valley topography. The maximum annual wind gust is 77 knots. The prevailing wind direction is south-southeast.

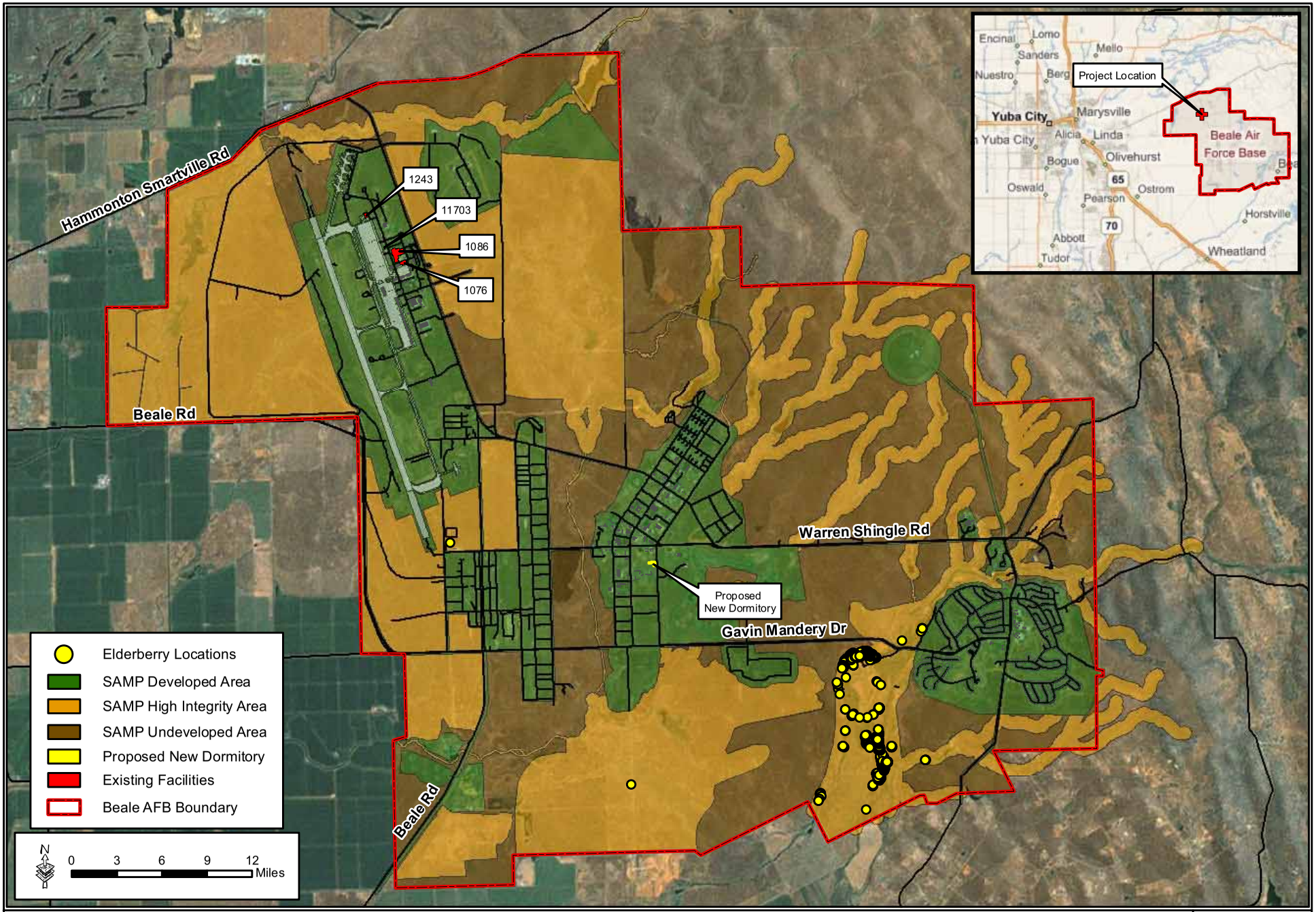

Figure 3-3: Beale AFB Vegetation Map

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Table 3-6. Threatened and Endangered, and Special Status Species known or with the potential to occur at Beale AFB

Quadrats	Scientific Name	Common Name	Federal T&E	California T&E	DFG	CNPS
Wheatland, Camp Far West	*Circus cyaneus*	northern harrier			SSC	
Wheatland, Browns Valley	*Buteo swainsoni*	Swainson's hawk		T		
Wolf, Browns Valle, Smartville, Rough and Ready, Camp Far West	*Laterallus jamaicensis coturniculus*	California black rail		T	FP	
Browns Valley	*Athene cunicularia*	burrowing owl			SSC	
Smartville	*Asio otus*	long-eared owl			SSC	
Camp Far West	*Dendroica petechia brewsteri*	yellow warbler			SSC	
Camp Far West	*Ammodramus savannarum*	grasshopper sparrow			SSC	
Browns Valley	*Agelaius tricolor*	tricolored blackbird			SSC	
Smartville	*Oncorhynchus tshawytscha*	chinook salmon - Central Valley spring-run ESU	T			
Smartville	*Myotis yumanensis*	Yuma myotis		T		
Smartville	*Lasiurus blossevillii*	western red bat			SSC	
Wheatland, Browns Valley, Smartville, Camp Far West	*Emys marmorata*	western pond turtle			SSC	
Wheatland, Browns Valley	*Branchinecta lynchi*	vernal pool fairy shrimp	T			
Browns Valley	*Lepidurus packardi*	vernal pool tadpole shrimp	E			
Wheatland, Browns Valley	*Desmocerus californicus dimorphus*	valley elderberry longhorn beetle	T			
Wheatland, Browns Valley, Smartville, Camp Far West	*Downingia pusilla*	dwarf downingia				2.2
Browns Valley	*Legenere limosa*	legenere				1B.1
Rough And Ready	*Lathyrus sulphureus var. argillaceus*	dubious pea				3
Wolf, Smartville, Rough And Ready, Camp Far West	*Clarkia biloba* ssp. *brandegeeae*	Brandegee's clarkia				1B.2

T = Threatened E=Endangered SSC = Species of Special Concern FP = Fully Protected
1A = List 1A species: presumed extinct in California
1B = List 1B species: rare, threatened, or endangered in California and elsewhere
2 = List 2 species: rare or endangered in California, but more common elsewhere
3 = List 3 species: plants about which more information is needed to determine their status
Note: Some species may not have special designation; these species were added to the table due to particular concern of their viablity, and/or potential for future listing.

3.1.6.2 Topography and Geomorphology

Beale AFB is located on the boundary between the Great Valley and Sierra Nevada Geomorphic Provinces. The Great Valley Province was formed as a basin between the Coast Range Province on the west and the Sierra Nevada Province on the east. Much of the land of Beale AFB is characteristic of the topography found in the Central Valley, consisting of relatively flat grasslands. The eastern portion of the base contains rolling hills that merge into the foothills of the Sierra Nevada. Elevation at Beale AFB ranges from 80 to 90 feet above MSL (NGVD29) to more than 500 ft in the northeastern part of the base towards the Sierra Nevada foothills. See Figure 3-2 for topographical coverage of the base.

3.1.6.3 Soils and Geology

The Great Valley basin has filled with alluvial deposits from the erosion of the Sierra Nevada and the Coast Ranges. Because of its location on the boundary of the two provinces, Beale AFB contains geologic characteristics of both the Great Valley and the Sierra Nevada.

Soils at Beale AFB tend to consist of gravely and cobbly alluvium in the northeast portion of the base, shallow loams in the east, clayey loams in the west, and clay rich alluvial soils in the central portions of the base. All the soils are acidic with a slight to moderate erosion potential.

The following soil types are found at Beale AFB: Auburn loam, Argonaut-Auburn loams, Auburn-Sobrante loams, Auburn-Sobrante-rock outcrop complex, Conejo loam, Pardee gravelly loam, Pardee-Rancho Seco complex, Perkins loam, Redding-Corning complex, and San Joaquin loam. Of the soils found on Beale AFB, Perkins loam (0 to 2 percent slopes) is considered Prime Farmland Soil (CA Department of Conservation [CA DOC] 2010). Figures 3-4a and 3-4b show the soils underlying the proposed beddown and dormitory area. There are also various pits and dumps found within the boundaries of the base, which have not been mapped or described due to the mixture of soil types found in these areas.

3.1.7 Water Resources

This section describes ground and surface water resources, floodplains, wetlands and Waters of the U.S. (WUS), and general water quality within Beale AFB, as discussed in the Beale AFB INRMP (Beale AFB 2005a) and incorporated herein by reference.

3.1.7.1 Surface Water

Surface water resources include lakes, ponds, rivers, and streams. Surface water functions as an ecological resource that provides habitat and transportation. Stormwater is an important component of surface water because of its role in introducing sediments and other contaminants that could degrade the water quality of lakes, ponds, rivers, and streams. Stormwater flows are often exacerbated by impervious surfaces such as rooftops, paved parking lots, and sidewalks.

The CWA (33 USC 1251 et seq.) sets the basic structure for regulating discharges of pollutants to U.S. waters. Section 404 of the CWA (33 U.S.C. 1344) established a Federal program to regulate the discharge of dredged and fill material into WUS. The USACE administers the permitting program for Section 404. Section 401 of the CWA (33 USC 1341) requires that proposed dredge and fill activities permitted under Section 404 be reviewed and certified by the designated state agency to ensure that the proposed project will meet state water quality standards. The CA State Water Resources Control Board (SWRCB), the Division of Water Quality (DWQ), and the Central Valley Regional Water Quality Control Board (CVRWQB) have the authority to regulate any form of work that may affect water quality. As discussed in Section 3.1.5.2.2, Beale AFB has developed a SAMP in response to the need for streamlining the overall construction and CWA permitting process. This management plan includes a watershed

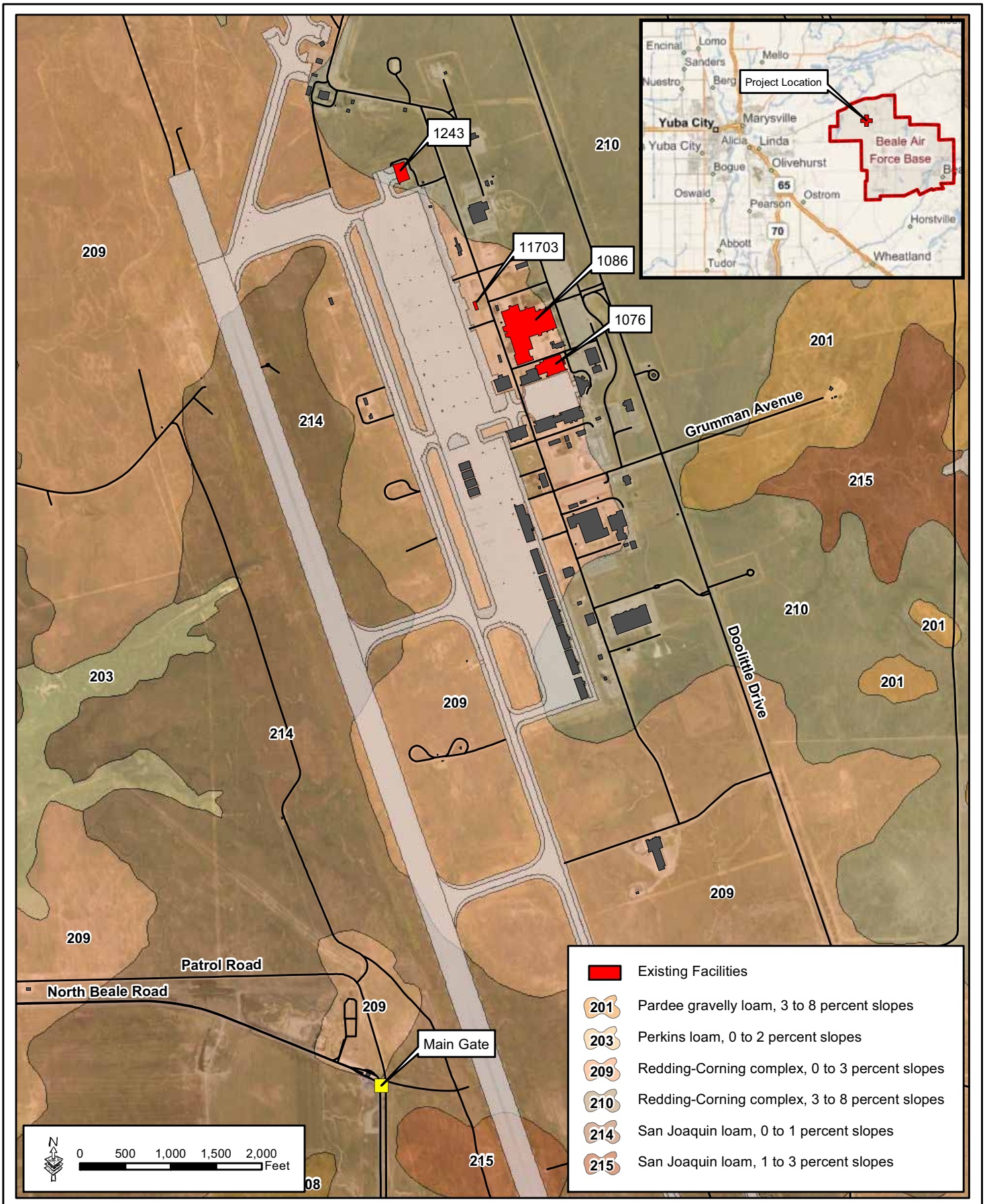

Figure 3-4a: Soils Map for MC-12 Facilities at Beale AFB (Beddown Area)

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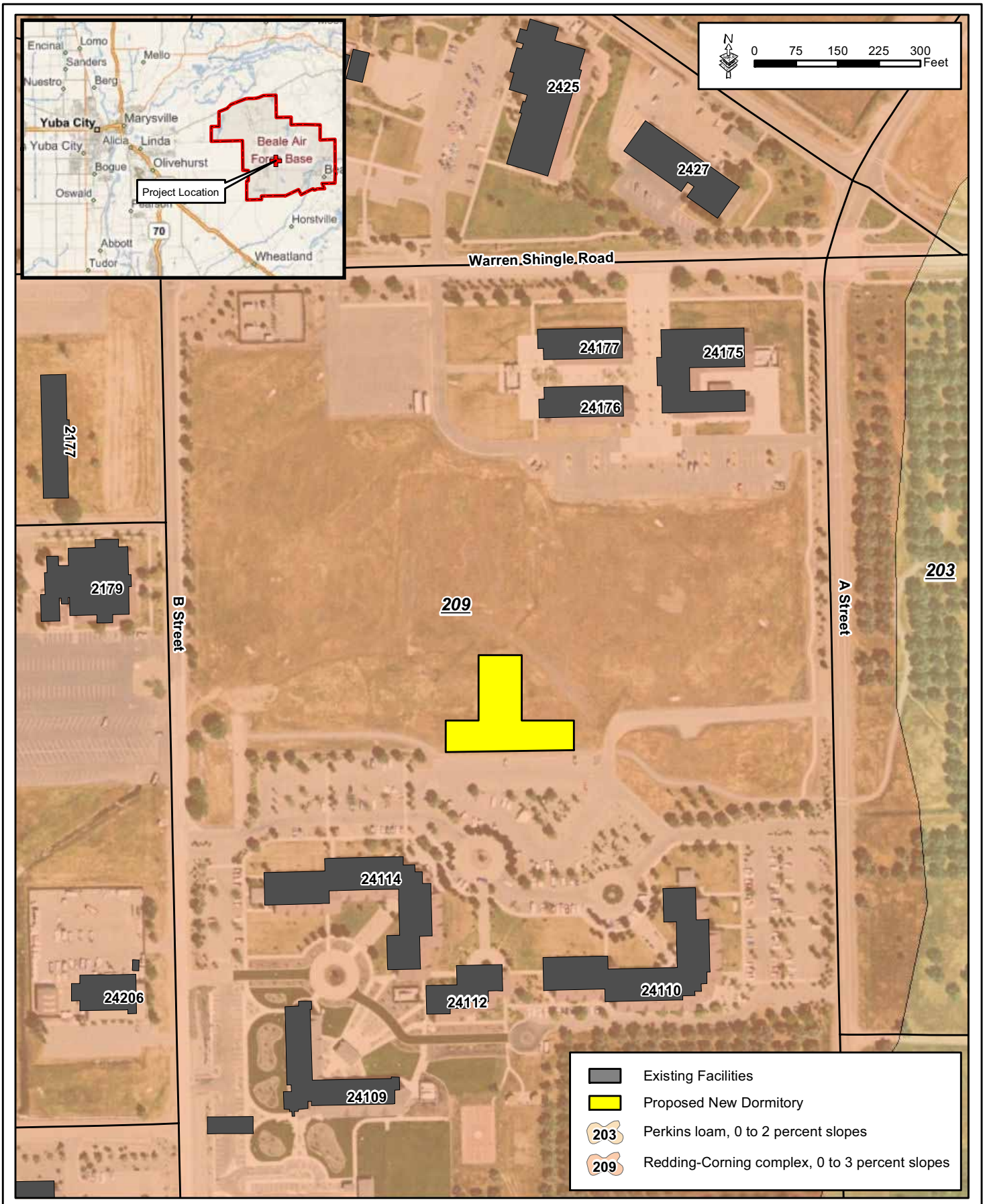

Figure 3-4b: Soils Map for MC-12 Facilities at Beale AFB (New Dormitory Area)

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and base-wide approach to wetland permitting and compensation for adverse effects on jurisdictional WUS, including wetland habitats, associated with implementation of the base development. The SAMP allows Beale AFB to implement minor construction, maintenance, and repair activities throughout Beale AFB utilizing a base-wide Section 404 CWA Regional General Permit. The base-wide permit would allow the base to quickly respond to construction maintenance and repair, while streamlining the permitting process for impacts on aquatic resources on Beale AFB. The designated SAMP areas on base were shown previously on Figure 3-3.

Beale AFB is located within the South Yuba River subbasin of the Sacramento River Basin which drains the northern and central portions of the State of California (USDA 2007). Beale AFB is associated with three main creeks (Dry Creek, Hutchinson Creek and Reeds Creek) that serve as the principal surface drainage system for the area (Beale AFB 2005a) (see Figure 3-5). These creeks generally traverse the base from northeast to southwest. Hutchinson and Reeds Creeks are intermittent, whereas Dry Creek flows year-round. Summer flows in Dry Creek, however, are a result of artificial water releases by the Nevada Irrigation District upstream from Beale AFB.

Twenty artificially created impoundments (i.e., lakes and stock ponds) are present on Beale AFB property and occupy approximately 238 acres (Beale AFB 2005a) (Figure 3-5). Many of the lakes were created more than 25 years ago with the creation of dams and spillways and have since received relatively infrequent maintenance. Vernal pools are extensive in the western, central, and southern portions of the base. Vernal pools are small, shallow, seasonal bodies of water formed by an impervious claypan, hardpan, or bedrock bottom. These pools provide unique habitat for plants that germinate as aquatic or semi-aquatic plants but must survive a terrestrial life and a drought environment as the pool dries. The main vernal pool preservation area is on the west side of the base north of North Beale Road. The vernal pools in this area are more likely to support habitat requirements for Federally listed crustaceans such as vernal pool fairy shrimp, vernal pool tadpole shrimp, and a larger diversity of native plant species.

Beale AFB currently has a NPDES Stormwater Permit (No. CA0110299) that was renewed in 2009 (USEPA 2009). In 2004, Beale AFB initiated and installed a Zero-Discharge Pollution Control System in response to a violation issued by the CVRWQB to halt all operations involving the discharge of photographic chemical waste and wash waters into its photographic waste treatment facility.

Stormwater runoff at Beale AFB is surface drained to inlets, concrete-lined ditches, and open grass-lined swales and ditches. The majority of runoff at Beale AFB infiltrates the ground or is discharged to creeks (Beale AFB 2008a).

Due to the topography at the base, a stormwater collection system is not necessary in most of the smaller, isolated areas (Beale AFB 2008a). The majority of the runoff in these areas is sheet flow to the nearest creek, ditch, or overland flow to adjoining grasslands. All storm sewers carry runoff a short distance and then discharge to the nearby drainage ditches. These drainage ditches eventually empty into the creeks in their respective basins. Beale AFB is permitted to discharge its stormwater from industrial activity under SWRCB Permit No. CAS000001, “Waste Discharge Requirements for Discharges of StormWater Associated with Industrial Activities Excluding Construction Activities.” The SWRCB has assigned Beale AFB to Waste Discharge Identification# 5S58S009991.

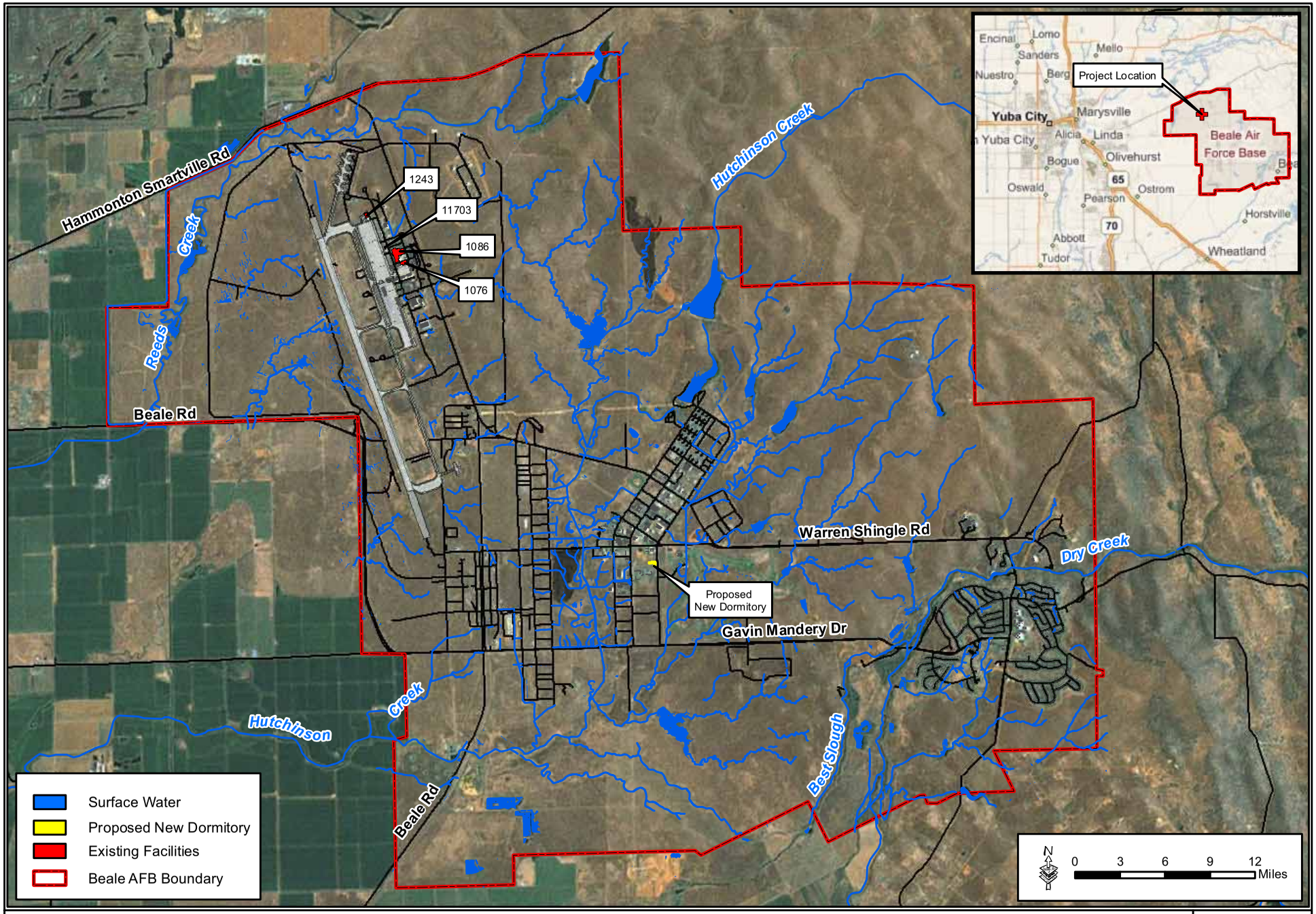

Figure 3-5: Beale AFB Water Resources Map

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3.1.7.2 Groundwater

Groundwater consists of subsurface hydrologic units. Groundwater is an essential resource that functions to recharge surface water, and it is also used for drinking, irrigation, and industrial purposes. It is typically described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, or recharge rate. The SWRCB regulates activities in groundwater recharge areas within Yuba County.

Beale AFB is underlain by the Laguna Formation which is the thickest and most extensive water bearing formation in the Yuba Basin (Yuba County Water Agency 2006). This formation consists of a heterogeneous mix of poorly sorted sand, silt, clay, and gravel. Wells are capable of producing approximately 2,000 gallons per minute (gpm) from this formation. Groundwater well depths within the formation generally range between 40 and 650 feet below ground surface (bgs). Groundwater typically flows from east to west across the installation. Groundwater recharge occurs naturally along the upper reaches of the Lower Yuba River, just downstream from the Sierra Nevada Foothills.

Beale AFB receives the majority of its water from seven groundwater wells located just south of and along the Yuba River north of the base where water quality is highest (Beale AFB 2005a). These wells draw water from the Laguna Formation from a depth of 300 to 500 feet bgs. With the exception of some isolated hazardous waste sites, groundwater quality at all monitoring locations at Beale AFB meets state and Federal primary water quality standards. The highest quality water is found in the northern portion of the base where the Yuba River provides infiltration and groundwater recharge. In 1990, the groundwater in this northern area had a low concentration of total dissolved solids (TDS), nitrates, and sulfates. Groundwater in the central portion of the base had higher concentrations of TDS and nitrates which is thought to be a result of cattle grazing, use of fertilizer, and/or irrigation of the golf course with discharge from the WWTP. No elevated levels of contamination of secondary drinking water standards have been identified. Water from these wells, however, has been found to have levels of manganese that exceed the National secondary standard for manganese (Dames & Moore 1990). This metallic element adversely affects taste and accumulates as deposits in distribution systems. In 2003, Beale constructed a new 5 mgd drinking water treatment plant at the corner of Doolittle and J Street in order to deal with the mineral deposits that were causing discolored water. Since that time, the drinking water on the base has met the Safe Drinking Water Act aesthetic standards.

3.1.7.3 Floodplains

A 100-year floodplain is defined as the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands as well as, at a minimum, that area subject to a 1% or greater chance of flooding in any given year. The critical action floodplain is defined as the 500-year floodplain (0.2% chance of flooding) (USEPA 2003). The 500-year floodplain is defined by 40 CFR 9 as an area, including the base floodplain, which is subject to inundation from a flood having a 0.2% chance of being equaled or exceeded in any given year. EO 11988 (Floodplain Management) requires Federal agencies to avoid direct or indirect support of development within the 100-year floodplain whenever there is a practicable alternative.

The Central Valley Flood Protection Board (CVFPB) requires an encroachment permit for any activity along or near Federal flood control project levees and floodways or in CVFPB-designated floodways to ensure that proposed local actions or projects do not impair the integrity of existing flood control systems to withstand flood conditions (California Department of Water Resources 2008). Because of the potentially catastrophic consequences of flooding, the Central Valley Flood Protection Act of 2008 recognizes that the Federal government's current

100-year flood protection standard is not sufficient to protect urban and urbanizing areas within flood-prone areas throughout the Central Valley and declares that the minimum standard for these areas is a 200-year level of flood protection (California Building Industry Association 2009). To continue with urban development, cities and counties must develop and implement plans for achieving this new standard by 2025.

Creeks at Beale AFB are surrounded by wide floodplain areas created by occasional heavy rainfall, impervious soil conditions, and a relative lack of topographic relief (Beale AFB 2005a). There are 100- and 500-year floodplain areas scattered throughout the base property. Figure 3-6 shows the location of the floodplain areas at Beale AFB. If construction activities are planned to occur within any 100-year, 200-year, or 500-year floodplain areas as defined by Federal Emergency Management Agency (FEMA), an encroachment permit would be required by the CVFPB prior to the start of any construction activity.

3.1.7.4 Wetlands

EO 11990 (Protection of Wetlands) requires Federal agencies to follow avoidance, mitigation, and preservation procedures with public input before proposing new construction in WUS, including wetlands. The implementation of EO 11990 is described in 44 CFR Part 9. Formal, legal protection of jurisdictional wetlands is promulgated through Section 404 of the CWA. A permit from the USACE may be required if an action has the potential to affect wetlands. In response to the need for streamlining the overall construction and CWA permitting process, Beale AFB is developing a SAMP. This management plan proposes a watershed and base-wide approach to wetland permitting and compensation for adverse effects to jurisdictional WUS, including wetland habitats, associated with implementation of the base development. The SAMP will ultimately establish a predictable process for wetland permitting and compensation that are necessary for compliance with Section 404 of the CWA. The designated SAMP areas on base were shown previously on Figure 3-3.

Since 1995, numerous wetland delineations have been prepared for Beale AFB and verified by the USACE (USAF 2001). The most recent base-wide wetland delineation was prepared and verified by the USACE in 2009. Wetland types at Beale AFB of particular importance to wildlife include vernal pools, riparian forests, and freshwater marsh. Vernal pools are extensive in the western, central, and southern portions of Beale AFB (Figures 3-7a and 3-7b).

Riparian areas at Beale AFB are primarily associated with lakes and perennial streams. Prime riparian habitat on the base is found along Dry Creek and Best Slough (USAF 2001). Freshwater marsh vegetation grows in ponds and drainages that have a relatively permanent water supply. Freshwater marsh vegetation also intermingles with riparian woodland vegetation along drainages throughout the base, such as Hutchinson Creek and Dry Creek.

3.1.8 Air Quality

3.1.8.1 Regulatory Setting

The enactment of the CAA of 1970 resulted in the National Ambient Air Quality Standards (NAAQS) and State Implementation Plans (SIPs). The USEPA established NAAQS for specific pollutants to determine the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare. The NAAQS standards are classified as either "primary" or "secondary" standards. The major pollutants of concern, or criteria pollutants, are carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), particulate matter less than 2.5 microns (PM-2.5) and less than 10 microns (PM-10), and lead (Pb). The NAAQS are included in Table 3-7.

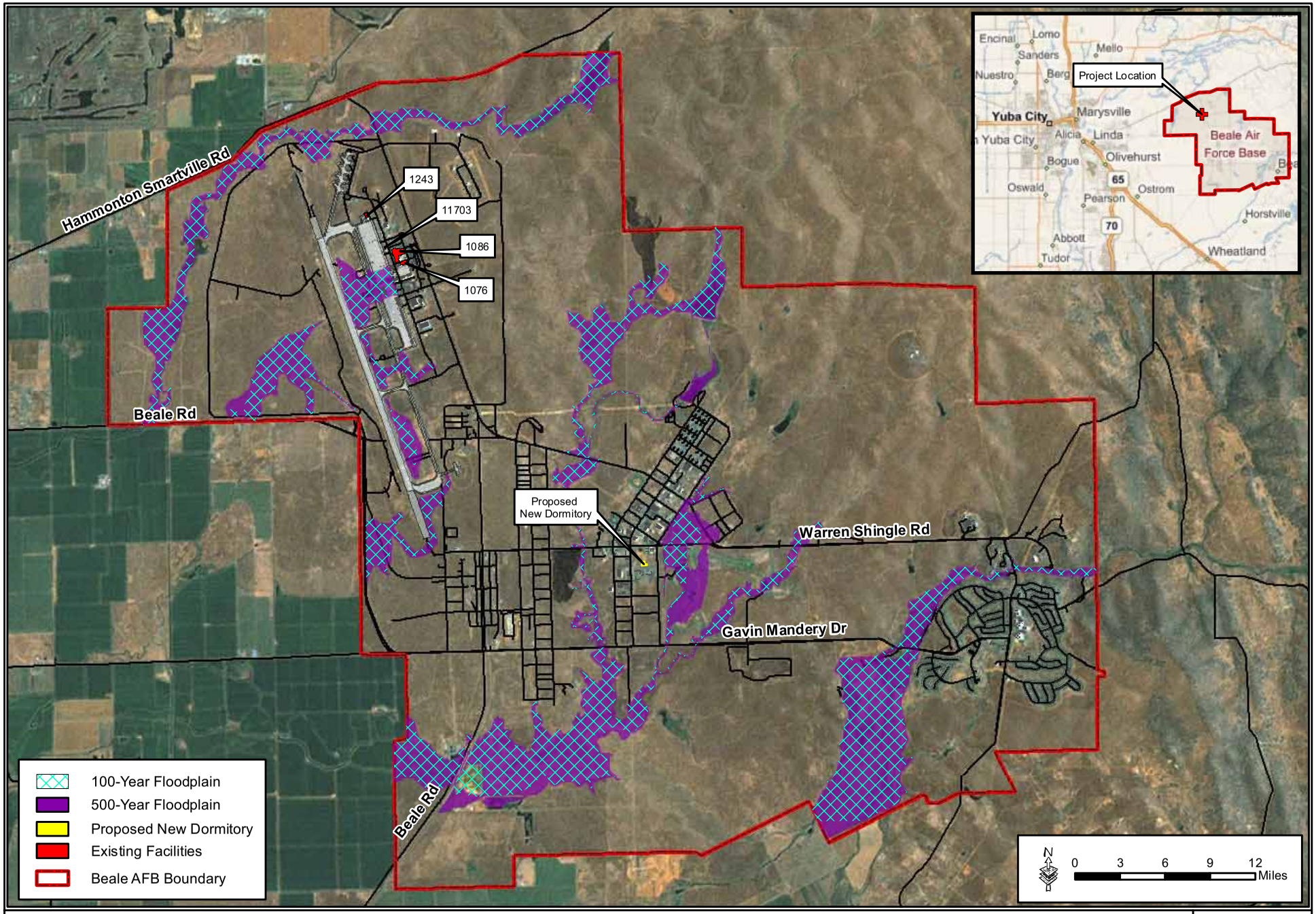

Figure 3-6: Beale AFB FEMA Floodplain Map

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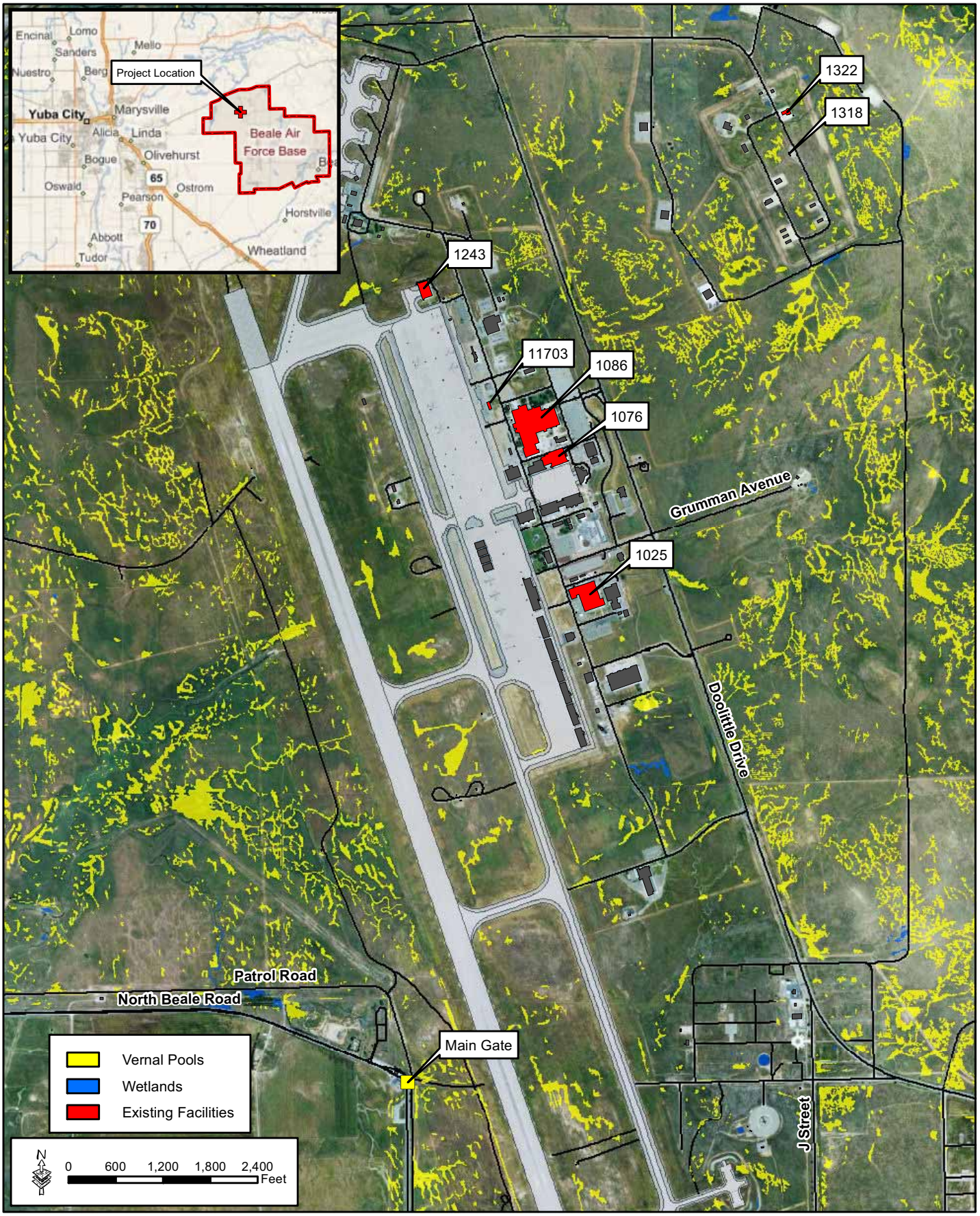

Figure 3-7a: Beale AFB Wetlands Map (Beddown Area)

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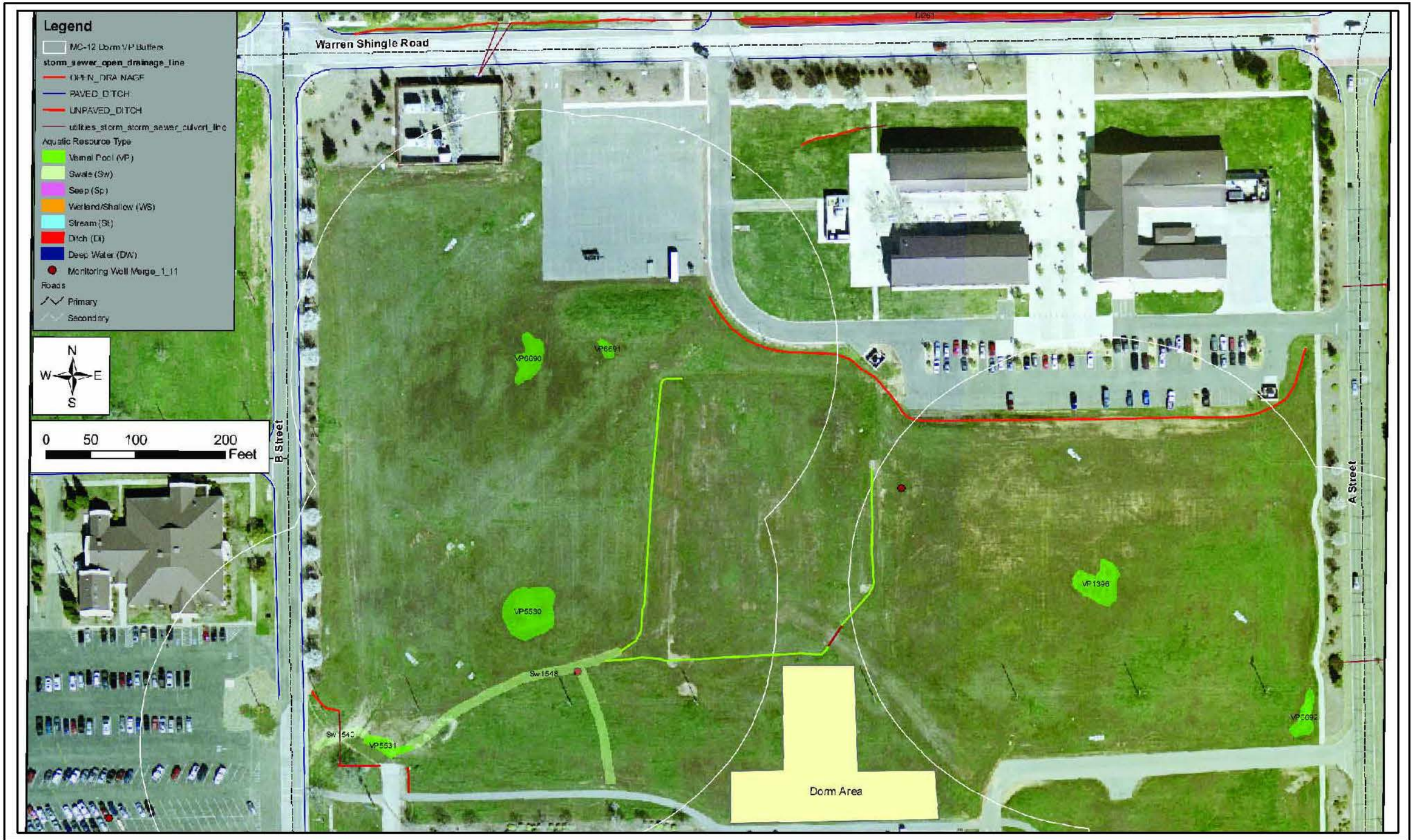

Figure 3-7b: Beale AFB Wetlands Map (New Dormitory Area)

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Table 3-7. National Ambient Air Quality Standards

	Primary Standards		Secondary Standards	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Times**
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour [1]	None	
	35 ppm (40 mg/m^3)	1-hour [1]		
Lead	0.15 µg/m^3 [2]	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m^3	Quarterly Average	Same as Primary	
Nitrogen Dioxide	53 ppb [3]	Annual (Arithmetic Average)	Same as Primary	
	100 ppb	1-hour [4]	None	
Particulate Matter (PM-10)	150 µg/m^3	24-hour [5]	Same as Primary	
Particulate Matter (PM-2.5)	15.0 µg/m^3	Annual [6] (Arithmetic Average)	Same as Primary	
	35 µg/m^3	24-hour [7]	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour [8]	Same as Primary	
	0.08 ppm (1997 std)	8-hour [9]	Same as Primary	
	0.12 ppm	1-hour [10]	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Average)	0.5 ppm	3-hour [1]
	0.14 ppm	24-hour [1]		
	75 ppb [11]	1-hour	None	

Source: USEPA 2010a

Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb - 1 part in 1,000,000,000) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter of air (µg/m^3).

[1] Not to be exceeded more than once per year.

[2] Final rule signed October 15, 2008.

[3] The official level of the annual NO_2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard

[4] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).

[5] Not to be exceeded more than once per year on average over 3 years.

[6] To attain this standard, the 3-year average of the weighted annual mean PM-2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.

[7] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3 (effective December 17, 2006).

[8] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)

[9] (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

(b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as USEPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

(c) USEPA is in the process of reconsidering these standards (set in March 2008).

[10] (a) USEPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding").

(b) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.

[11] (a) Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Areas that do not meet these NAAQS standards are called non-attainment areas or maintenance areas; areas that meet both primary and secondary standards are known as attainment areas. When air quality within a non-attainment area improves, the area is redesignated as a maintenance area (USEPA 2010). The air quality managers in maintenance areas develop maintenance plans to insure that air quality does not exceed the NAAQS.

The Federal Conformity Final Rule (40 CFR Parts 51 and 93) states that Federal actions must conform with Federal air quality regulations presented in the CAA. The rule mandates that a conformity analysis must be performed when a Federal action generates air pollutants in a region designated as non-attainment or maintenance area for one or more NAAQS. A conformity analysis determines whether a Federal action meets the requirements of general conformity rule. It requires the responsible Federal agency to evaluate the nature of the Proposed Action and associated air pollutant emissions, calculate emissions as a result of the Proposed Action, and mitigate emissions if *de minimis* thresholds are exceeded. If the emissions exceed the *de minimis* thresholds, the proponent is required to conduct a conformity analysis and implement appropriate mitigation measures.

Beale AFB is located in Yuba County, CA, and air emissions in the area are subject to local, state and Federal review. The local air quality management entity is called the Feather River Air Quality Management District (FRAQMD). The FRAQMD is a 2-county air district formed in 1991 to administer local, state, and Federal air quality management programs for Yuba and Sutter counties. The FRAQMD is located in the Sacramento Valley Air Basin (SVAB) which is part of the California Air Resources Board (CARB) that manages air pollution at the state level. CARB adopted similar, although more stringent, California Ambient Air Quality Standards (CAAQS). CAAQS include the constituents in the Federal list in addition to others such as sulfates, hydrogen sulfide, visibility reducing particles, and vinyl chloride. Table 3-8 presents the attainment status of air pollutants for the state and Federal criteria in Yuba County. Air Quality in the Yuba County area does not meet air quality CAAQS standards for 1-hour and 8-hour O_3, PM-2.5, and PM-10. At the Federal level, Yuba County is in non-attainment for PM-2.5.

Table 3-8. Federal (Yuba County) and Sacramento Valley Air Basin Attainment Status

Pollutant	Federal Standards	*De minimis* Threshold (tons/year)	State Standards	*De minimis* Threshold (tons/year)
O_3 – 1-hour	No Federal Standard	NA	Nonattainment	50
O_3 – 8-hour	Attainment	NA	Nonattainment	100
PM-10	Unclassified	NA	Nonattainment	100
PM-2.5	Nonattainment	100	Nonattainment	100
CO	Attainment	NA	Attainment/Unclassified	NA
NO_2	Attainment	NA	Attainment	NA
SO_2	Attainment	NA	Attainment	NA
Pb (Particulate)	Attainment	NA	Attainment	NA
Hydrogen Sulfide	No Federal Standard	NA	Unclassified	NA
Sulfates	No Federal Standard	NA	Attainment	NA
Visibility Reducing Particles	No Federal Standard	NA	Unclassified	NA
Vinyl Chloride	No Federal Standard	NA	Attainment	NA

Source: FRAQMD 2010.

Volatile organic compounds (VOC)s and nitrogen oxides (NO_x) are precursor molecules that react with oxygen in the atmosphere to create ozone. Consequently, *de minimis* thresholds for ozone criteria address VOCs and NO_x emissions.

3.1.8.2 Greenhouse Gases and Climate Change

Global climate change refers to a change in the average weather on the earth. Greenhouse gases (GHG) are gases that trap heat in the atmosphere. They include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), fluorinated gases including chlorofluorocarbons (CFC) and hydrochlorofluorocarbons (HFC), and halons, as well as ground-level O_3 (California Energy Commission 2007).

The major GHG-producing sectors in society include transportation, utilities (e.g., coal and gas power plants), industry/manufacturing, agriculture, and residential. End-use sector sources of GHG emissions include transportation (40.7%), electricity generation (22.2%), industry (20.5%), agriculture and forestry (8.3%), and other (8.3%) (CA Energy Commission 2007). The main sources of increased concentrations of GHG due to human activity include the combustion of fossil fuels and deforestation (CO_2), livestock and rice farming, land use and wetland depletions, landfill emissions (CH_4), refrigeration system and fire suppression system use and manufacturing (CFC), and agricultural activities, including the use of fertilizers.

Historically, the aviation sector is responsible for about 2.6% of the GHG emissions in the Nation, with the U.S. military contributing only a small portion of the total. Military aviation used approximately 0.5% of the U.S. aviation fuel in 2000 (USEPA 2006b). Non-aviation transportation emits 25%, industry emits 41%, and other sources emit 34% of the GHGs in the U.S. (USEPA 2006b).

Regulatory Overview of Federal GHG Rules

The regulatory framework for GHG has changed rapidly over the past few years. Beginning with the Supreme Court decision on April 2, 2007, in *Massachusetts v. USEPA*, 549 U.S. 497 (2007), a number of Federal legislative actions were enacted to control GHG emissions. The following sections highlight the important legislative events that shape the analysis of GHGs in this NEPA document.

Final Mandatory GHG Inventory Rule

In response to the Consolidation Appropriations Act (House Resolution 2764; PL 110–161), USEPA has issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires large sources that emit 25,000 metric tons or more per year of GHG emissions to report GHG emissions in the U.S., collect accurate and timely emissions data to inform future policy decisions, and submit annual GHG reports to USEPA. The final rule was signed by the Administrator on September 22, 2009, published in the *Federal Register* on October 30, 2009, and made effective December 29, 2009.

EO 13514

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, signed on October 5, 2009, directs Federal agencies to reduce GHG emissions and address climate change in NEPA analysis. It expands upon the energy reduction and environmental performance requirements of EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*. It identifies numerous energy goals in several areas, including GHG management, management of sustainable buildings and communities, and fleet and transportation management.

GHG Management

The new EO establishes GHG emission reductions as an overarching, integrating performance metric for all Federal agencies and requires a deliberative planning process. Federal agencies are required to adhere to scheduled GHG management goals outlined in EO 13423. Federal agencies must also enhance efforts toward sustainable buildings and communities. Specific requirements include implementing high performance sustainable Federal building design, construction, operation and management, maintenance, and deconstruction by ensuring all new Federal buildings entering the design phase in 2020 or later are designed to achieve zero net energy consumption by 2030. Zero net energy consumption means that the amount of energy provided by on-site renewable sources is equal to the amount of energy used by the building.

GHG Threshold of Significance

The CEQ provided draft guidelines for determining meaningful GHG decision making analysis. The CEQ GHG guidance is currently undergoing public comment at this time; however, the draft guidance states that if the Proposed Action would be reasonably anticipated to cause direct emissions of 27,558 tons or more of carbon dioxide equivalents (CO_2 -E) GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. For long-term actions that have annual direct emissions of less than 27,558 tons of CO_2 -E, CEQ encourages Federal agencies to consider whether the action's long-term emissions should receive similar analysis. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs (CEQ 2110).

Greenhouse Gas Rules in California

The CA Global Warming Solutions Act of 2006, identifies CA as a substantial source of GHG emissions and requires a significant reduction in these emissions. GHG emissions levels are required to be reduced to 2000 levels by 2010, to 1990 levels by 2020, and 80% below 1990 levels by 2050. The emissions reduction is expected to be achieved through the continuation of existing state policies, and through the enforcement of a statewide greenhouse gas emissions limit (to be incorporated starting in 2012). Existing policies aimed at limiting greenhouse gas emissions include AB 1493 (the Pavley Bill), which requires CARB to define standards for cars and light trucks manufactured after 2009 and is projected to result in an 18% reduction in emissions. In addition, Senate Bill 97, enacted in 2007, requires that CEQA guidelines be amended by the Resources Agency to incorporate analysis and mitigation of GHG emissions in CEQA documents by January 1, 2010 (CARB 2008a).

3.1.9 Solid and Hazardous Materials and Waste

There are seven existing Installation Environmental Restoration Program (ERP) sites located up to approximately 0.5 mile from the building renovations proposed at Beale AFB for the MC-12 beddown. The sites include SD-01, SD-08, SD-11, ST-21, ST-22, SD-32, and SS-37 (Figure 3-8a). ERP site SD-08 is located about 0.5 mile from Building 1243 and was the site of a J-57 test cell for jet engines. Petroleum hydrocarbons and VOCs have been detected in soils and groundwater near the site. Monitoring is ongoing for this site. Soil remediation is underway with a biovent system and soil vapor extraction (SVE) and groundwater contamination is being addressed through the use of absorption technology. Site SD-01 comprises the west side drainage ditch area. Beale AFB personnel have historically observed fuels in the drainage channels. Site SD-11 is located in the Aerospace Ground Equipment maintenance area. Petroleum hydrocarbons have been detected in the soil and groundwater near the area. Site ST-21 is comprised of an area between Taxiway 6 and the main runway, which was the former

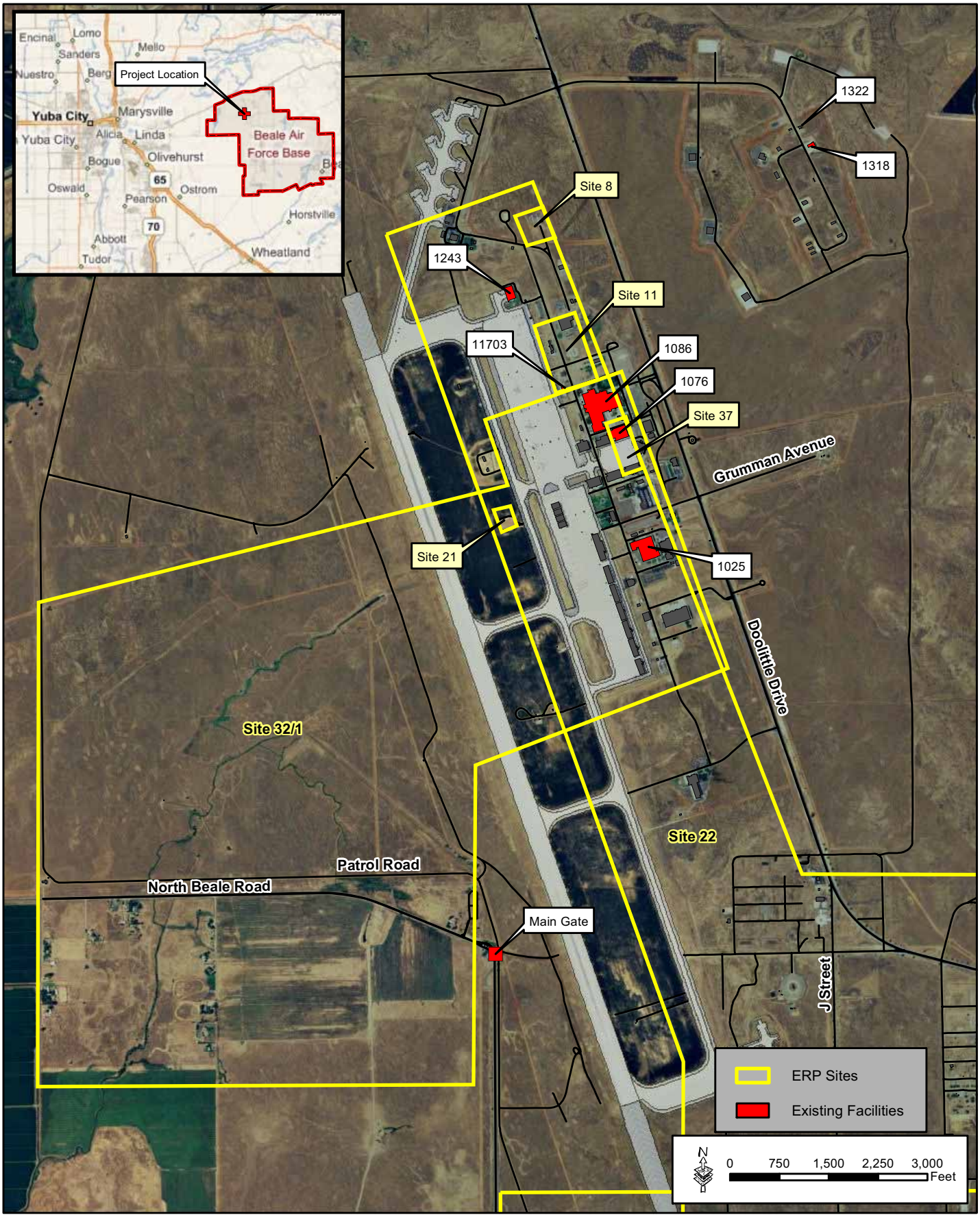

Figure 3-8a: Beale AFB Environmental Restoration Program Sites (Beddown Area)

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site of four JP-7 fuel aboveground storage tanks (AST). These tanks contributed to petroleum hydrocarbons in the soil. Site ST-22 consists of underground storage tanks (UST) currently or formerly located base-wide at Beale AFB. Approximately 95% of these USTs have received regulatory closure. Site SD-32 is believed to be the source of a plume of groundwater contamination in the flight line area that extends from the vicinity of Building 1089 to the west across the runway and south beyond the base boundary. VOCs have been detected in the soil and groundwater. Two SVE systems have been installed along with two vapor extraction wells and seven vapor monitoring points. The groundwater remediation included in situ chemical oxidation. The remediation in place was completed in 2007. Long-term monitoring is being conducted. Site SS-37 is the location of an industrial waste pipeline located between Building 1086 and Fairchild Street. VOCs from this site have been detected in the soil and groundwater. ERP sites SD-01, SD-11, ST-21, SD-32, and SS-37 are all included in one site investigation boundary for the purpose of groundwater investigation and remediation (Beale AFB 2007a).

There are four ERP sites located up to approximately 0.5 mile from the proposed new dormitory location. The sites include ST-22, SS-36, SS-39, and CG-40 (Figure 3-8b). Site ST-22 consists of USTs base-wide as discussed previously. Site SS-36 is a secure storage area located southwest of the junction of Warren Shingle Road and A Street. This primary contaminants of concern for this site are gasoline and diesel total petroleum hydrocarbons (TPH) and trichloroethene (TCE) from USTs and tank maintenance activities. Site SS-36 was closed with a No Further Response Action Planned (NFRAP) decision signed in 2004. Groundwater contamination is addressed as part of site SS-39. Site SS-39 encompasses Building 2145 and the surrounding area. VOCs have been detected in the soil gas and groundwater due to SS-39. Remediation for these VOCs is planned for 2011 followed by long-term monitoring. Site CG-40 consists of a groundwater monitoring well near the corner of Warren Shingle Road and D Street, approximately 0.5 mile from the proposed dormitory site. Throughout the well sampling history, VOC and total petroleum hydrocarbon concentrations have been detected in the groundwater and are steadily increasing. Interim remedial action is being implemented and planned to operate on a five-year basis. Long-term monitoring would also be implemented.

Existing storage tanks and capacity for JP-8 would be used for the Beale AFB site, and these tanks are currently operated under an Integrated Contingency Plan (ICP) and Site-Specific Spill Plan (SSSP) that is in place for the base. Solid wastes, hazardous materials, and hazardous wastes used and generated at Beale AFB are currently managed under existing management procedures and best management practices (BMP), which are sufficient to prevent any significant impact on the environment at the base or any significant impact on the general public (Beale AFB 2007).

3.1.10 Safety and Occupational Health

Responsibility and implementation of the USAF Safety Program is by the USAF host and tenant safety offices. The host safety office implements mishap prevention programs and processes for all USAF units and programs on base unless otherwise outlined in a Host/Tenant Support Agreement. Safety staff at all levels assist with the implementation and integration of operational risk management into all USAF operations and missions. Safety staff identifies rules, criteria, procedures, Occupational Safety and Health Administration (OSHA) standards, Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) standards, explosive safety, or other safety standards that help eliminate unsafe acts or conditions that could cause mishaps. AFI 91-202, *USAF Mishap Prevention Program,* establishes mishap prevention program requirements and assigns responsibilities for program elements. Detailed standard operating procedures (SOP) have been established to fulfill many health and safety requirements. Personnel involved with different test equipment are instructed

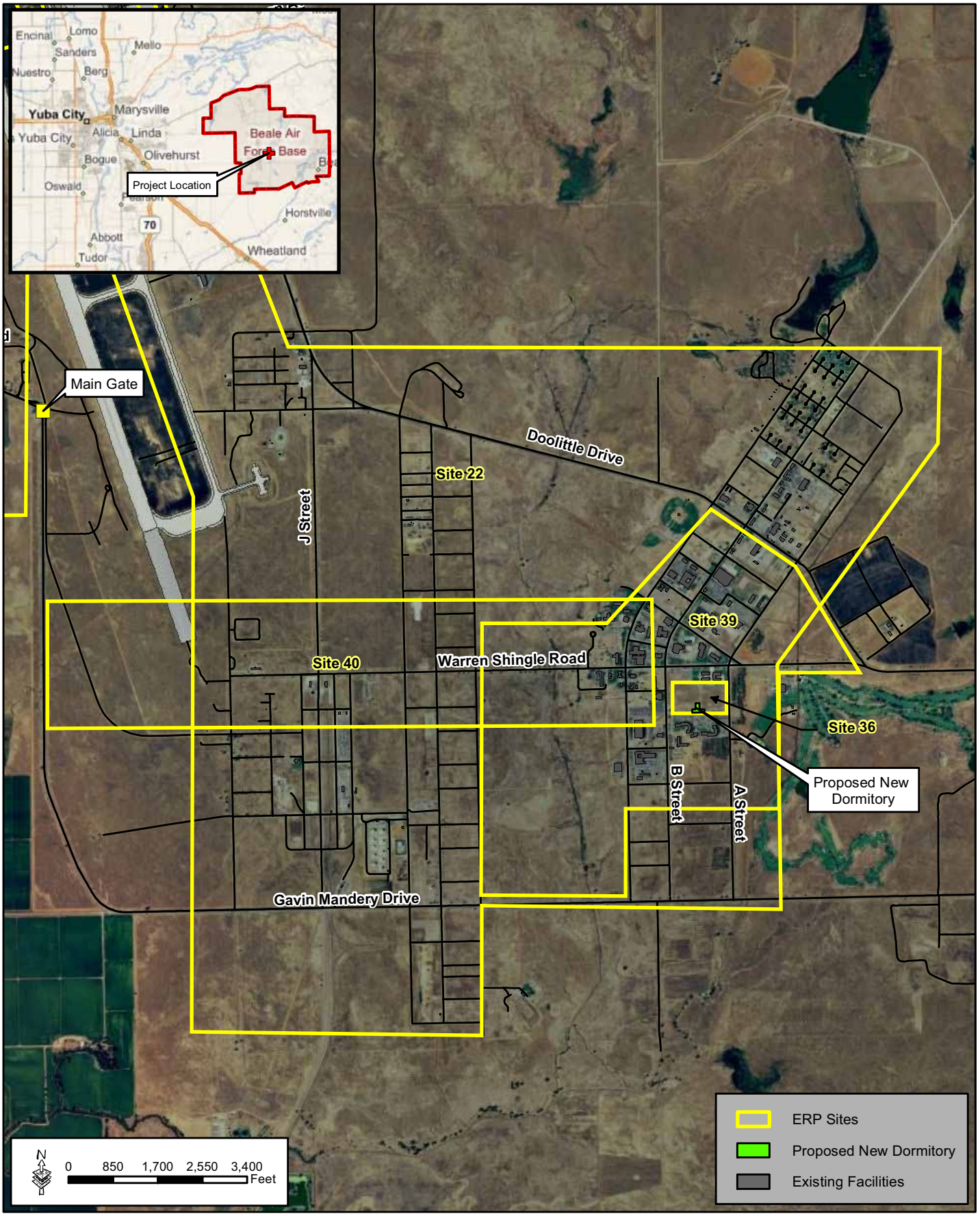

Figure 3-8b: Beale AFB Environmental Restoration Program Sites (New Dormitory Area)

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on the use of the equipment and personal protection equipment (PPE). In addition, daily operations and maintenance activities are performed in accordance with applicable USAF safety regulations, published USAF Technical Orders, and standards prescribed by AFOSH requirements.

The potential for aircraft mishaps is the primary safety issue generally associated with military flight operations. Aircraft mishaps may involve mid-air collisions with other aircraft, collisions with objects on the surface (e.g., towers or buildings), weather-related accidents, and bird-aircraft collisions. Data which are commonly used to describe aircraft safety and accident potential include mishap rates per 100,000 flying hours for each aircraft type, years between major mishaps (compares the mishap rate with the proposed number of hours annually flown), and the Bird/Wildlife Aircraft Strike Hazard (BASH).

The USAF has identified categories of aircraft mishaps. Class A mishaps are those which result in a human fatality or permanent total disability, the destruction of an aircraft or a total cost in excess of $1 million for injury, occupational illness, or destruction of an aircraft. Class A mishaps are focused on because only they have the potential to cause significant environmental damage. Class B mishaps are those which result in a permanent partial disability, inpatient hospitalization of three or more personnel, or a total cost in excess of $200,000 but less than $1 million for injury, occupational illness, and property damage. Class C mishaps are those which result in total damage in excess of $20,000 but less than $200,000; an injury resulting in a lost workday (i.e., duration of absence is at least eight hours beyond the day or shift during which the mishap occurred); or occupational illness that causes loss of time from work at any time.

The National range system, established by PL 81-60, was originally sited based on two primary concerns: location and public safety. Thus, training range safety, in the context of National range activities, is rooted in PL 81-60 and DoD Directive 3200.11*, Use Management*, and *Operation of Department of Defense Major Range and Test Facilities*. Both provide the framework under which the National ranges operate and provide services to range users. To provide for the public safety, the ranges use a Range Safety Program which ensures that the weapons delivery testing presents no greater risk to the general public than that imposed by overflight of conventional aircraft.

BASH constitutes another safety concern because of the potential for damage to aircraft or local populations if an aircraft crash should occur in a populated area. Aircraft occasionally encounter birds at altitudes of 30,000 feet AGL or higher; however, most birds fly closer to the ground. Over 97% of reported bird strikes occur between the ground to 4,000 feet AGL (Air Force Safety Center 2008). Approximately 30% of bird strikes happen in the airport environment, and almost 78% occur during climbing and low-altitude flight (Air Force Safety Center 2008). The potential for bird-aircraft strikes is greatest in bird migration corridors or where birds congregate for foraging or resting (e.g., open water bodies, rivers, and wetlands). Migratory waterfowl *(*e.g., ducks, geese, and swans) are the most hazardous birds to low-flying aircraft because of their size and their propensity for migrating in large flocks at a variety of elevations and times of day, although raptors and vultures also pose a strike hazard. USAF Pamphlet 91-212, *Bird/Wildlife Aircraft Strike Hazard Management Techniques,* provides guidance for implementing an effective BASH reduction program.

Two systems currently being used for estimating wildlife strike hazard are the USAFs Bird Avoidance Model (BAM), and the Avian Research Laboratory's Avian Hazard Advisory System (AHAS). These systems are based on geographic information system (GIS) and remote

sensing and provide information regarding bird strike risk to allow pilots to make informed decisions about their routes with regards to wildlife strike risk (Air Force Safety Center 2008).

Beale AFB is located along the Pacific Flyway, an important migratory route for many species of birds. This location substantially increases the potential for conflicts involving BASH on the base. Annual grasslands provide nesting and breeding habitat for a variety of grassland birds, as well as foraging habitat for many bird species. Bird species observed in the annual grassland during field surveys include the western kingbird, western meadowlark, lark sparrow, savannah sparrow, and Brewer's blackbird. Raptors observed foraging in the annual grasslands at Beale AFB include the red-tailed hawk, rough-legged hawk (*Buteo lagopus*), and American kestrel. Nocturnal raptors such as the great horned owl will also forage in the grasslands. During the wet season, however, from late fall to early spring, vernal pools and seasonal wetlands support a higher diversity of migrating water bird species. Ducks such as mallard, northern pintail, and American widgeon concentrate in these areas. Other water birds that use seasonal wetlands include American avocet, black-necked stilt, long-billed curlew, greater yellowlegs, long-billed dowitcher, great egret, snowy egret, great blue heron, Canada goose (*Branta canadensis*), and killdeer. The surrounding agricultural area is also a substantial food source for migrating waterfowl. Additionally, other wildlife poses a threat to flying operations. These include coyotes, deer, cattle and smaller animals such as rabbits. The BASH Plan at Beale AFB attempts to significantly reduce the bird and wildlife hazard through habitat management, active and passive dispersal techniques, and effective warning techniques (Beale AFB 2009).

There are numerous explosive safety zones and electromagnetic safety zones located on the northern and southern parts of the installation. Explosive safety zones are based on the types and amounts of explosives stored. To minimize the potential for loss of human life and the loss/damage of property in the event of an explosion, no non-munitions related development may occur within the explosive safety zones. The existing security clear zones on Beale AFB include the flightline area, munitions storage area, the area surrounding the PAVE PAWS facility, and the Global Hawk mission area (Beale AFB General Plan).

The Military Munitions Response Program (MMRP) addresses nonoperational military ranges and other sites that are suspected or known to contain unexploded ordnance (UXO), discarded military munitions, or munitions constituents. Beale AFB has 44 range sites which contain various munitions, UXO, and Chemical Agent Identification Sets (CAIS). Most of the munitions, UXO, and CAIS have been removed; however, some may still be found below the ground surface. The proposed area for the beddown is located within MMRP sites that are recommended for no further action (Beale AFB 2010).

3.1.11 Noise

3.1.11.1 Background Information

Noise is defined as sound that is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying. Noise levels often change with time and the distance of the receptor from the noise source. To compare sound levels over different time periods, several descriptors were developed that take into account this time-varying nature. These descriptors are used to assess and correlate the various effects of noise on humans.

The characteristics of sound include parameters such as amplitude (loudness), frequency (pitch), and duration. Sound varies over an extremely large range of amplitudes. The decibel (dB) is the accepted standard unit for describing levels of sound, and is expressed in logarithmic units to account for the large variations in amplitude.

Different sounds have different frequency contents. Because the human ear is not equally sensitive to sound at all frequencies, a frequency dependent adjustment, called A-weighting, was devised to measure sound similar to the way the human hearing responds. The adjustments in amplitude, established by the American National Standards Institute, are applied to the frequency content of the sound. Table 3-9 depicts typical A-weighted sound pressure levels (dBA) for various sources. For example, 65 dBA is equivalent to normal speech at a distance of three feet.

The average day/night sound level (DNL) metric is a measure of the total community noise environment. DNL is the average A-weighted sound level over a 24-hour period, with a 10 dBA adjustment added to the nighttime levels (between 10:00 PM and 7:00 AM). This adjustment is an effort to account for increased human sensitivity to nighttime noise events. DNL is an accepted unit for quantifying annoyance to humans from general environmental noise, including aircraft noise. The Federal Interagency Committee on Urban Noise (FICUN) developed land use compatibility guidelines for noise exposure areas (Federal Interagency Committee on Urban Noise 1980). Based upon these FICUN guidelines, the FAA developed recommended land uses in aircraft noise exposure areas. Land use compatibility and incompatibility are determined by comparing the predicted DNL level at a site with the recommended land uses. Beale AFB is located in California, which has its own noise regulations. In California, average noise levels are described in terms of Community Noise Equivalent Level (CNEL).

Table 3-9. A-Weighted (dBA) Sound Levels of Typical Noise Environments and Public Response

Public Reaction	Noise Level (dBA)	Common Noise Levels
Committee Legal Action	100-110	Jet Flyover at 1,000 feet
Letters of Protest	90-100	Gas Lawn Mower at 50 feet
Complaints Likely	80-90	Food Blender at 3 feet
Complaints Possible	70-80	Leaf Blower at 50 feet
Complaints Rare	60-70	Heavy Traffic at 300 feet
	50-60	Large Business Office
Community Acceptance	40-50	Inside a Small Theater
	30-40	Inside a Library
	10-30	Quiet Rural Nighttime
	0-10	Threshold of Hearing

Source: CA Department of Transportation (Caltrans) 1998.

3.1.11.2 Existing Noise Levels

Beale AFB is located in Yuba County where much of the land is rural and is being utilized for purposes such as farming, mining, or timber production. Land uses around the base include industrial, rural residential, agriculture, wildlife management, and some limited commercial. The primary source of noise in the vicinity of Beale AFB is airfield operations. Table 3-10 presents the total number of takeoffs and landings occurring at Beale AFB in 2005, which includes commercial aircraft. The U-2, T-38, and Global Hawk (RQ-4) are the principal aircraft operating from Beale AFB, and the average number of daily operations for these aircraft is shown below. An operation is defined as one takeoff, one landing, or half of a closed pattern. A closed pattern consists of both a departure portion and an approach portion (i.e., two operations). The U-2 and

T-38 are powered by jet engines. The noise signatures of the fixed-wing and turbo-propeller aircraft are relatively low noise producers when compared to military jet-engine aircraft.

Table 3-10. Existing Aircraft Operations at Beale AFB

Aircraft Operations at Beale AFB			
Type of Aircraft	**Average Daily Operations**	**Operations per Year**	**Percent of Total Aircraft Operations**
U-2	79	28,835	49%
T-38	71	25,915	44%
RQ-4	10	3,650	7%

Source: Beale AFB 2005

3.1.11.3 Existing Noise Contours

The most recent noise analysis for Beale AFB was completed in 2005 as part of the Air Installation Compatible Use Zone (AICUZ). The Beale AFB noise contours, shown in Figure 3-9, represent the most recent noise exposure map associated with aircraft operations at Beale AFB and depicts the noise exposure area for the baseline condition in 5 dBA increments, beginning with the CNEL 70 dBA contour.

No public residential receptors reside within the CNEL 65 dBA and greater noise exposure area. Residences and public use facilities, such as schools, libraries, hospitals, churches, and nursing homes, are more sensitive to noise than many other types of facilities. Elevated noise levels can interfere with speech, causing annoyance or communication difficulties. Based on a variety of studies, a CNEL 75 dBA indicates there is good probability for frequent speech disruption. This level produces ratings of "barely acceptable" for intelligibility of spoken material. Currently, no sensitive noise receptors are within the CNEL 75 dBA noise contours. Although people work within the noise exposure area, noise exposure inside the buildings is attenuated by the buildings' construction materials by approximately 20 dBA. Those individuals working outdoors in high noise areas are provided with hearing protection.

3.1.11.4 Noise Complaint Process and Noise Abatement

Beale AFB has an established noise complaint process available to the public. This process serves to educate local communities regarding Beale AFB operations and promotes openness between the base and the communities. It also visibly demonstrates the USAF's concern with being a good neighbor. Noise complaints are handled by the Public Affairs Office (PAO), while formal correspondence and investigations are managed by the Operations Group Commander. Complaints are registered by the PAO in a noise complaint form, which includes a description of the nature of the complaint and the action taken.

3.1.12 Airspace

There are 20 public use airports in the general vicinity of Beale AFB. The nearest airports to Beale AFB are Lincoln Regional Airport, Sutter County Airport, and Yuba County Airport. Close coordination with FAA is required to minimize conflicts with the civilian aircraft operations at these airports.

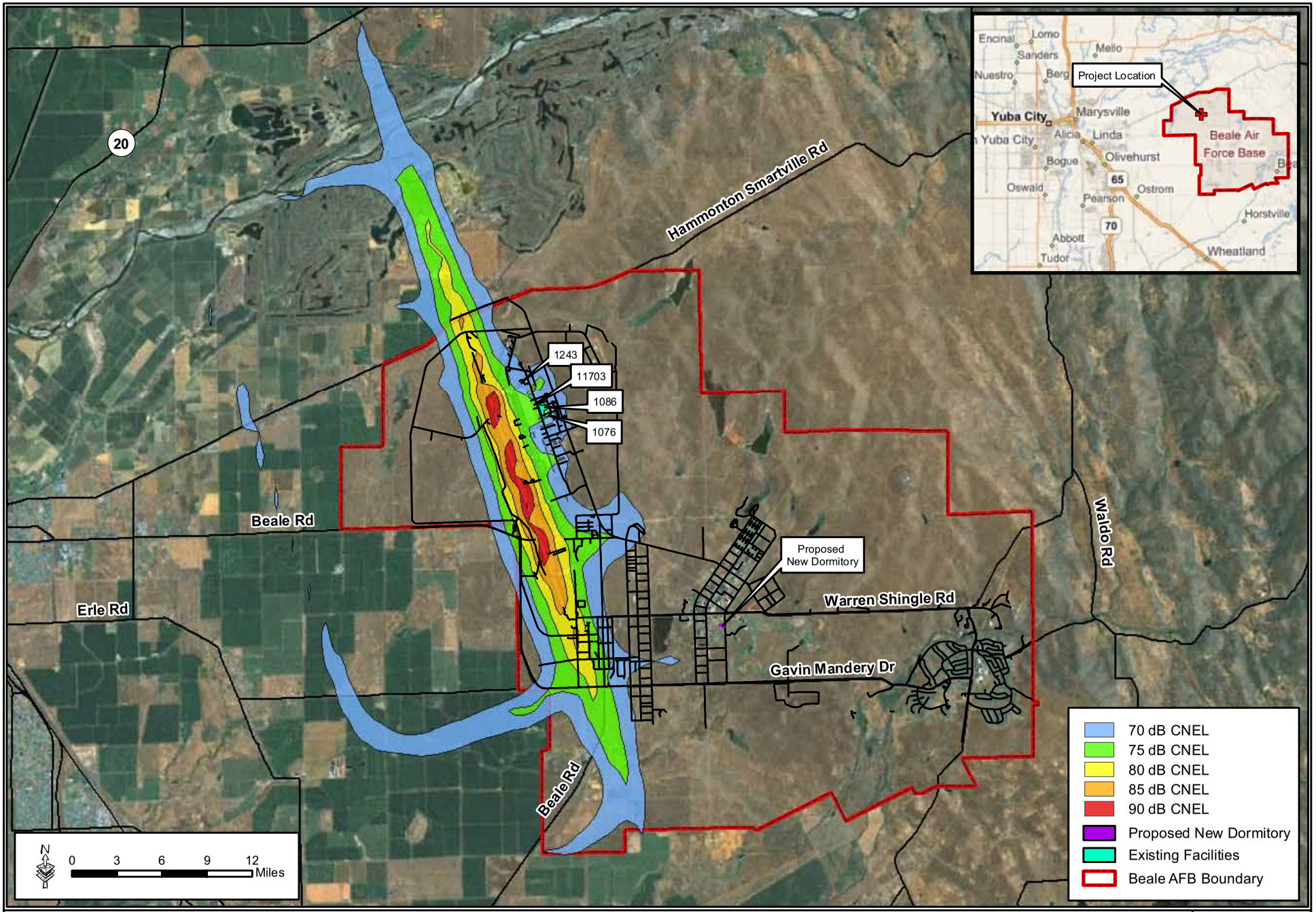

Figure 3-9: Beale AFB Noise Contour Map

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The U-2, T-38, and Global Hawk are the principal aircraft operating out of Beale AFB. The average number of daily operations for these aircraft can be found in Table 3-13. The airfield at Beale AFB has a manned tower serviced by a radar approach control and handles flights using IFR. The airspace around Beale AFB is classified as Class C controlled airspace. The Class C airspace typically runs from the surface elevation at the airfield up to 4,000 ft AGL. The airspace at Beale AFB is defined by two circular areas. The inner circle has a 5-NM radius and the outer circle has a 10-NM radius. The inner 5-NM radius area extends from ground level up to 4,000 ft AGL while the outer 10-NM radius area extends from 1,200 ft AGL up to 4,000 ft AGL (Beale AFB 2008). Departures and arrivals at Beale AFB are controlled by the Sacramento Terminal Radar Approach Control (TRACON) facility from the surface to 11,000 ft MSL. Above 11,000 ft MSL air traffic is controlled by Oakland Air Route Traffic Control Center (ARTCC) (USAF 2001). There are seven MOAs within Beale AFB: Maxwell 1 Air Traffic Control Assigned Airspace (ATCAA), Maxwell 2 ATCAA, Maxwell 3 ATCAA, Whitmore 1 ATCAA, Whitmore 2 ATCAA, Whitmore 3 ATCAA, and China ATCAA (FAA 2010).

Table 3-11. Beale AFB Airspace Identification and Description

	Altitudes		Hours of Use	
	Minimum	**Maximum**	**From**	**To**
Beale AFB Airspace				
Maxwell 1 MOA	11,000 feet MSL	UTBNI FL180	0500	2000†
Maxwell 2 MOA	11,000 feet MSL	UTBNI FL180	0500	2000†
Maxwell 3 MOA	11,000 feet MSL	UTBNI FL180	0500	2000†
Whitmore 1 MOA	11,000 feet MSL	UTBNI FL180	0730	1630†
Whitmore 2 MOA	11,000 feet MSL	UTBNI FL180	0730	1630†
Whitmore 3 MOA	11,000 feet MSL	UTBNI FL180	0730	1630†
China MOA	3,000 feet AGL	UTBNI FL180	0800	Sunset
NAS Fallon Airspace				
Austin MOA/ATCAA	200 feet AGL	UTBNI FL180	0800	2100†
Gabbs MOA/ATCAA	100 feet AGL	UTBNI FL180	0715	2330†
Ranch MOA	500 feet AGL	9,000 feet MSL	0715	2245†
Carson MOA	500 feet AGL	UTBNI FL180	0715	2330†
Sand Springs (R-4812)	Surface	UTBNI FL180	0715	2330†
R-4803	Surface	UTBNI FL180	0715	2330†
R-4804	Surface	UTBNI FL180	0715	2330†
R-4810	Surface	17,000 feet MSL	0715	2330†
R-4802/R-4813	Surface	UTBNI FL180	0715	2330†
R-4816	500 feet AGL	UTBNI FL180	0715	2330†

Source: FAA 2010 Notes: † – other times by NOTAM; NOTAM = Notice to Airmen
UTBNI = Up to, but not including; AGL = above ground level; MSL= mean sea level
FL=Flight Level (FL 180 is approximately 18,000 ft MSL)

Special Use Airspace (SUA) controlled by NAS Fallon includes nine restricted areas, seven MOAs, and five ATCAA areas. Restricted areas are located above and extend beyond the boundaries of the associated ranges or targets. The restricted airspace over NAS Fallon has historically been used by the DoD for testing and training. Utilization of NAS Fallon range

resources is dependent upon scheduling priorities and would require intense, coordinated scheduling between Beale AFB and NAS Fallon. Table 3-11 describes the MOAs and restricted airspace within Beale AFB and NAS Fallon. Much of this same airspace would be utilized to support MC-12 training.

3.2 ALTERNATIVE 1 – ROBINS AFB

3.2.1 Land Use Resources

3.2.1.1 Land Use

Robins AFB consists of 8,435 acres located in Houston County, GA. Robins AFB is located in Middle GA on the upper portion of the Inner Coastal Plain, about 2 miles west of the Ocmulgee River. The City of Warner Robins is situated adjacent to the base's western property boundary and is a commercial and residential area. Centerville is located northwest of Robins AFB and is surrounded by the rapidly expanding Warner Robins and other unincorporated portions of the county. Perry is the county seat of Houston County and is approximately 19 miles southwest of Robins AFB. Macon, the metropolitan hub of Middle GA, is approximately 18 miles north of Robins AFB along U.S. Highway 247.

The base consists of 8,435 acres and this includes 6,779 fee-owned acres. The major grounds categories for the fee-owned land are improved, semi-improved, and unimproved grounds. Improved grounds (3,540 acres) support housing, administrative and industrial facilities, parks and playgrounds, athletic fields, parade grounds, and the golf course. Semi-improved grounds (406 acres) are open fields. Unimproved grounds (2,833 acres) include natural, forested, and wetland areas on the base. At Robins AFB, the unimproved grounds are mostly wetlands. An additional 1,656 acres are controlled but not owned by the base. Robins AFB is the state's largest industrial facility and employer having 3.8 million SF of maintenance shops, 3.5 million SF of storage space and 1.7 million SF of administrative space.

3.2.1.2 Visual Resources

Visual resources on Robins AFB consist mostly of man-made landscape features. Warner Robins and Robins AFB are located in the very heart of middle GA. The central region of GA is characterized by the rolling hills of the Piedmont Plateau which then lead into the flat coastal plains of southern GA. Just north of Macon, the fall line begins, which is a 20-mile-wide transitional zone that marks the beginning of the coastal plain. There are no designated scenic routes, scenic views, or vistas recognized by the Federal, state, or county government located adjacent to the proposed construction sites. The town of Warner Robins was once an old train depot stop located amidst farms but is now a military community. The Museum of Aviation is located just south of Robins AFB.

3.2.1.3 Transportation

Three U.S. highways and two state highways connect Robins AFB to the local communities and the interstate highway system. U.S. Highway 129 parallels the western boundary and leads to I-16 and I-75 near Macon. Georgia State Highway 247 (Watson Boulevard) is an east/west roadway that travels through Warner Robins. This is the main road used to take travelers from Robins AFB to Warner Robins. The Main Gate for access to Robins AFB is off of State Highway 247 at the intersection of Robins Parkway. The nearest commercial airport serving the area is the Middle Georgia Regional Airport, located approximately four miles north of the base in Bibb County (Robins AFB 2002).

Freight service to the area is provided by Norfolk Southern Railroad from its mainline that parallels the western boundary. A rail spur connects the Norfolk Southern Railroad main line to

the rails servicing the base. Figure 3-10 presents the location of the transportation infrastructure around Robins AFB.

3.2.2 Infrastructure

3.2.2.1 Electrical Distribution

The electrical supply to Robins AFB is delivered by the Georgia Power Company through two substations located on the base which provide 80 million Volt Amps (MVA). The electric system includes approximately 70 miles of overhead and underground electrical lines and all associated components required to provide power and lighting to the entire base. The average demand is 38 MVA, which is 48% of the total capacity (Robins AFB 2002).

3.2.2.2 Potable Water/Fire Protection System

The primary source of potable water to serve Robins AFB is derived from groundwater sources via seven base-owned well pumping stations. Robins AFB pumps the water from the Blufftown Aquifer. The capacity of these wells is 9.5 mgd. The design capacity of the treatment system is 11 mgd but is only permitted to 3.87 mgd annual average. The average water use is 3.3 mgd which is 85% of the allowed usage of 3.87 mgd. The water is minimally treated with lime, fluoride, chlorine, and polyphosphate at an on-base water treatment plant (Robins AFB 2006). There are three fire protection water storage tanks, two of which are 100,000 gallons and one is 500,000 gallons. Each of the fire protection storage tanks supports an associated 1,000 gallons per minute fire protection pumping station. Water distribution mains connect these fire protection systems (Robins AFB 2002).

3.2.2.3 Wastewater

Robins AFB has wastewater treatment facilities that treat the wastewater collected on base. The treatment system includes a collections system, which is a combination of gravity feed and force mains, and a WWTP. The collection system includes over 48 miles of gravity sewers, 45 wastewater lift stations, and 13 miles of force main. The pipe sizes range from 4 to 8 inches and are constructed from various materials, including high-density polyethylene, PVC, clay tile and cast iron. The WWTP has a capacity of 3.3 mgd. The WWTPs are currently treating an average of 1.9 mgd leaving an excess capacity of 43%. There are also two industrial WWTPs on base. The treated wastewater from these plants goes to the sanitary wastewater facilities for further treatment. The industrial WWTP No. 1 has a design capacity of 0.65 mgd and receives an average flow of 0.24 mgd. The industrial WWTP No. 2 has a design capacity of 0.46 mgd and receives an average flow of 0.10 mgd (Robins AFB 2002).

3.2.2.4 Gas

The natural gas service on Robins AFB is purchased from the City of Warner Robins. Atlanta Gas Light Company also occasionally supplies gas service. The natural gas system includes approximately 38 miles of distribution piping and all associated components including eight regulator stations. The total gas available to the base is 21,600 thousand cubic feet per day (MCF/day). The average demand is 7,200 MCF/day. The City of Warner Robins can supply additional natural gas equal to six times the base's average demand, and Atlanta Gas Light Company can supply additional gas up to twice the base's average demand (Robins AFB 2002).

3.2.2.5 Storm Drainage System

The storm drainage system within Robins AFB consists of inlet structures, culverts, lined and unlined ditches, underground pipes, natural channels, and swales. Runoff captured by the drainage system generally flows from west to east across Robins AFB where it empties into Horse Creek and the wetlands of the Ocmulgee River floodplain. There are three man-made lakes and several smaller ponds on the base. The largest is Duck Lake which acts as a

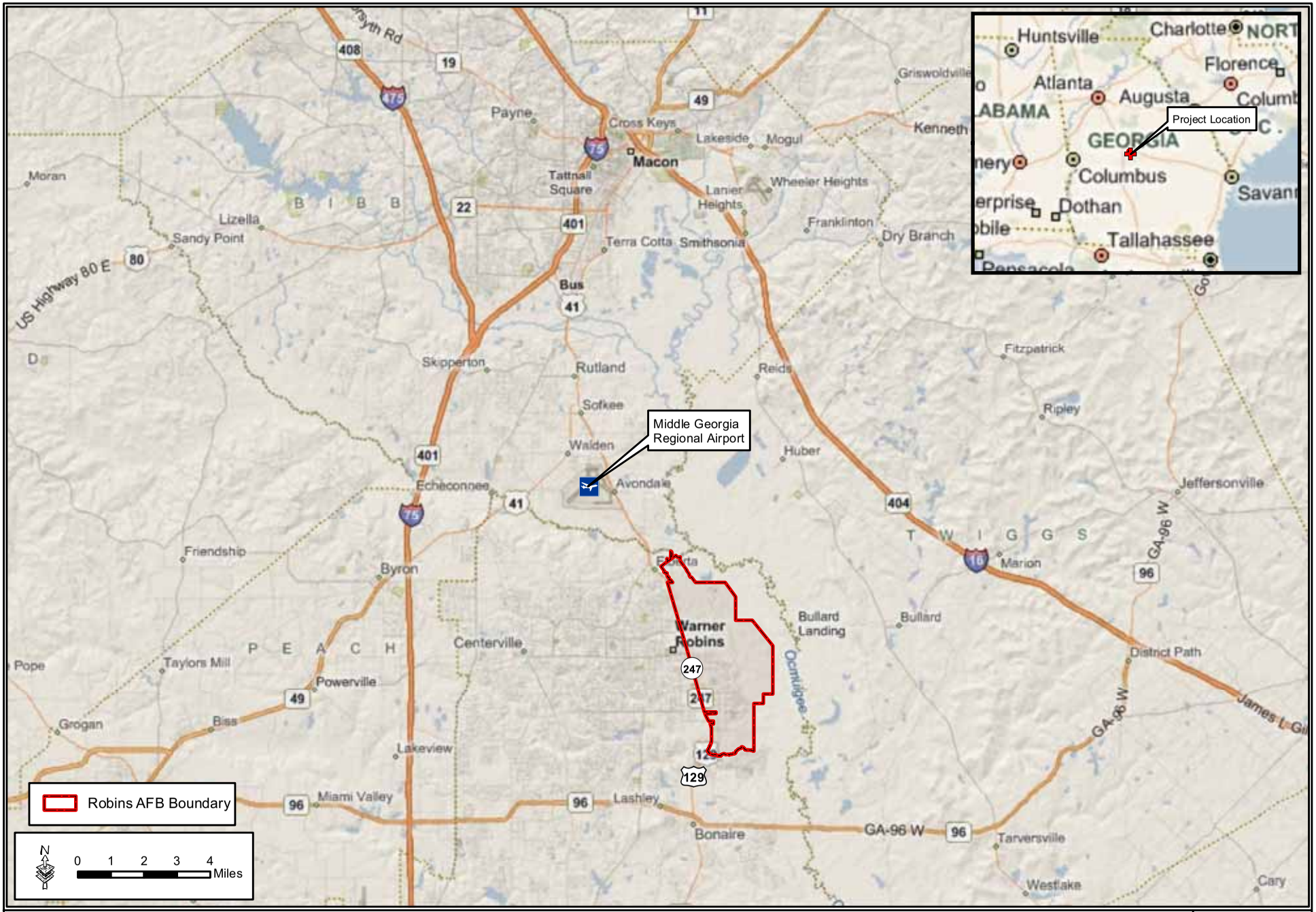

Figure 3-10: Robins AFB Transportation Map

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retention/detention basin and is recharged solely by stormwater (Robins AFB 2002). Storm water in the southern portion of the base discharges to Scout and Luna Lakes and the wetland areas. Detention ponds are present at several major stormwater outfalls on the eastern side of Robins AFB. Stormwater drainage patterns at Robins AFB, have been divided into 18 contiguous drainage areas for the purposes of the StormWater Pollution Prevention Plan (SWPPP) which was prepared in 2008. Robins AFB has two separate stormwater permits: National Pollutant Discharge Elimination System (NPDES) Permit #GA0002852 and General NPDES Permit #GAR00000 (Robins AFB 2008).

Section 438 of the EISA (42 USC Section 17094) establishes into law new stormwater design requirements for Federal construction projects that disturb a footprint of greater than 5,000 square feet of land. EISA Section 438 requirements are independent of stormwater requirements under the CWA. The project footprint consists of all horizontal hard surfaces and disturbed areas associated with project development. Under these requirements, predevelopment site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. Predevelopment hydrology shall be modeled or calculated using recognized tools and must include site-specific factors such as soil type, ground cover, and ground slope. Site design shall incorporate stormwater retention and reuse technologies such as bioretention areas, permeable pavements, cisterns/recycling, and green roofs to the maximum extent technically feasible. Post-construction analyses shall be conducted to evaluate the effectiveness of the as-built stormwater reduction features. As stated in a DoD memorandum dated January 19, 2010, these regulations will be incorporated into applicable DoD Unified Facilities Criteria within 6 months (DoD 2010). Additional guidance is provided in the USEPA's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act*.

3.2.2.6 Liquid Fuels

At Robins AFB, the liquid fuels system includes storage tanks, pump houses, and approximately 25,000 feet of pipeline for jet fuel, diesel fuel, and gasoline. All of the tanks and distribution lines have leak detection equipment and are monitored for any possible fuel loss. Fuel is delivered to the base by pipeline and tank trucks. No fuels are delivered by rail. The fuels are stored at six primary areas on the base (Robins AFB 2002).

3.2.2.7 Communications System

Robins AFBs communications system consists of a copper cable plant and fiber-optic cable plant. Telephone service to the main base is through a voice switching system that provides administrative, DSN, Federal Telecommunication System and operator assistance service to all areas of the base. Robins AFB uses fixed and land mobile radio systems (Robins 2002).

3.2.3 Cultural Resources

3.2.3.1 Cultural Background

Robins AFB and the surrounding area including Houston County has had a very long and varied cultural past. The ICRMP (Robins AFB 2005) for Robins AFB provides an extensive summary of the cultural past for the region that includes the Proposed Action considered in this EA. The cultural resources overview described in the 2005 ICRMP for Robins AFB is herein incorporated by reference.

3.2.3.2 Previous Cultural Resource Surveys and Cultural Resource Sites

According to the 2005 Robins AFB ICRMP, all of the upland areas on the base have been archaeologically surveyed. However, the unimproved wetlands and timberland, as well as some

of the existing buildings and structures, are not currently planned to be surveyed. There are currently 55 archaeological sites on Robins AFB. There are 11 sites that are eligible for placement on the NRHP and 23 that are ineligible. The 21 sites remaining have yet to be evaluated. There are also 29 isolated occurrences, or isolated finds, of which four were found to be sites, three are parts of other sites, 18 are isolated occurrences, and the remaining four have yet to be evaluated.

Forty-one archaeological reports have been written for Robins AFB projects as of August 2005. These reports, which are available to researchers, are listed in Appendix C of the ICRMP. A table listing all known Robins AFB archaeological resources is contained in Appendix D of the ICRMP.

The GA State Historic Preservation Officer (SHPO) has determined that no further testing in the wetlands are necessary until such time that any plans are developed to use the lands. If such an event arises, archaeological testing will be needed before construction or other modifications are allowed.

As of October 2004, all of the buildings on Robins AFB have currently been evaluated for their World War II or Cold War NRHP eligibility. This eligibility for historic status occurs when the building reaches 50 years of age, or if there was a significant event that occurred there later. It is not necessary to document a building again with another historic building inventory form; however, the existing documentation must be reviewed, and the building may have to be revisited to determine if it has been altered since the last building inventory form was completed. There are currently 58 buildings that have been identified as potentially eligible, and the SHPO is making a final determination of eligibility. Each building will have to be reevaluated when they reach 50 years old. Currently, three WWII and two Cold War buildings may be eligible for inclusion in the National Register. One of the proposed MC-12 beddown buildings (Building 12) is eligible for inclusion.

There are no documented sites or areas of known cultural importance to local Native American tribes on base holdings and there is a low potential for discovery of such sites.

3.2.4 Socioeconomics and Environmental Justice

The ROI for socioeconomics at Robins AFB is Houston County, GA.

3.2.4.1 Employment, Income, and Poverty Levels

The total estimated civilian labor force in Houston County in 2008 was 63,066, of which 58,745 were employed. There were an estimated 3,718 Armed Forces personnel in Houston County (up from 2,362 in 2000), bringing the total employed labor force in the area to 62,463. The 2008 unemployment rate for the county was 6.9%. This was slightly higher than the unemployment rate of 4.9% for the year 2000. In 2008, educational services, and health care and social services provided the most jobs in Houston County (12,120), followed by public administration (11,214), and retail trade (6,424) (U.S. Census Bureau 2008d).

In 2008, Houston County had a PCPI of $32,577. This PCPI ranked 25th in the state and was 93% of the state average ($34,849) and 81% of the National average ($40,166). The 2008 PCPI reflected an increase of 2% from 2007. The 2007-2008 state change was 0.7% and the National change was 2%. In 1998, the PCPI of Houston County was $22,574 and ranked 27th in the state. The 1998 to 2008 average annual growth rate of PCPI was 3.7%. The average annual growth rate for the state was 3.1% and for the Nation was 4% (BEA 2010b).

In Houston County in 2008, net earnings accounted for 69% of TPI (compared with 72% in 1998); dividends, interest, and rent were 15% (compared with 18% in 1998); and personal current transfer receipts were 16% (compared with 11% in 1998). From 2007 to 2008, net earnings increased 2%; dividends, interest, and rent increased 3%; and personal current transfer receipts increased 12.6%. From 1998 to 2008 net earnings increased on average 5.7% each year; dividends, interest, and rent increased on average 4.4%; and personal current transfer receipts increased on average 10.2% (BEA 2010b).

In 2008, Houston had a TPI of $4,348,108,000. This TPI ranked 16th in the state and accounted for 1.3% of the state total. The 2008 TPI for Houston County reflected an increase of 3.7% from 2007. The 2007-2008 state change was 2.4% and the National change was 2.9%. The 1998-2008 average annual growth rate of TPI in Houston County was 6%. The average annual TPI growth rate for the state was 5.3% and for the Nation was 5% (BEA 2010b).

An estimated 9.5% of families lived in poverty in Houston County in 2008 (Table 3-12). This percentage is slightly lower than both the State of GA (9.6%) and the Nation (9.6%) percentages of families that live in poverty (U.S. Census Bureau 2008e). The median household income in 2008 for Houston County was $53,849. This was higher than both the 2008 median household income for the state ($50,549) and for the Nation ($52,175) (U.S. Census Bureau 2008f).

Table 3-12. Poverty and Median Income

Location	Percentage in Poverty (2008)	Median Income (2008)
Nation	9.6%	$52,175
Georgia	9.6%	$50,549
Houston County	9.5%	$53,849

Source: U.S. Census Bureau 2008e

3.2.4.2 Population and Demographics

Houston is one of 159 counties in Georgia. It is part of the Warner Robins, GA metropolitan statistical area. Its 2008 population of 133,470 ranked it 14th in the state (BEA 2010b). The 2008 racial mix of Houston County was predominantly Caucasian (67%), followed by Black or African-American (26.7%), people of two or more races (2.1%), people of Asian descent (2%), with the remaining 2.2% of the population split between people of some other race, Native Hawaiian and Other Pacific Islander, and American Indian and Alaskan Natives. Approximately 4% of the 2008 population of Houston County identify themselves as Hispanic or of Latino origin (U.S. Census Bureau 2008d).

3.2.4.3 Housing

Houston County had a total of 56,779 housing units in the 2008 Census (U.S. Census Bureau 2008e). According to the 2008 Census, 33,681 of the housing units were owner-occupied, 16,129 housing units were rented, and 6,969 housing units were vacant.

3.2.4.4 Schools

All Houston County schools are fully accredited by the Southern Association of Colleges and Schools (SACS). This accreditation means that all schools offer equitable educational programs as a result of applied standards. These standards are checked annually by SACS and every 5

years the schools are required to hold evaluations conducted by visiting educators. All schools also meet all standards established by the GA Department of Education. Houston County has 21 elementary schools with 10,625 students, seven middle schools with 5,650 students, and four high schools and one Career/Technology center with 6,700 students.

3.2.4.5 Environmental Justice

EO 12898, Environmental Justice

Houston County had a low number of low income families at 9.5% and a higher than average median income of $53,849. This disparity would indicate that there is a lower than normal chance that there would be adverse impacts on this demographic.

EO 13045, Protection of Children

Approximately 16.8% of the total population of Houston County was made up of children under the age of 18 that were below poverty level. The percent of children under the age of 18 and below the poverty level in the state of GA is 19.8%. For the U.S., that number falls to 14.9%, but it is still lower than the percent of children younger than 18 living below the poverty level in Houston County (U.S. Census Bureau 2008f).

3.2.5 Biological Resources

3.2.5.1 Terrestrial Communities

3.2.5.1.1 Vegetation

Robins AFB is located in central GA. Georgia includes portions of five physiographic provinces. Each physiographic province has its own distinctive representative habitats and landforms (Clark and Zisa 1976). Robins AFB is located within the Atlantic Coastal Plain physiographic province along the upper margin of the Southeastern Plains ecoregion of GA (Clark and Zisa 1976). Subdivisions of the Southeastern Plains in GA include the Sand Hills Ecoregion near the fall line between the Coastal Plain and the uplifted Piedmont region (GA Department of Natural Resources [GDNR] 2005).

Most of the developed and undeveloped upland areas of Robins AFB are within the Sand Hills Ecoregion, although portions of the airfield and associated facilities are within the Southeastern Floodplains and Low Terraces Ecoregion (Robins AFB 2007a). The Southeastern Floodplains and Low Terraces Ecoregion to the northeast contain bottomland hardwood forest. The upper canopy cover of this forest consists of loblolly pine (*Pinus taeda*), longleaf pine (*P. palustris*) and shortleaf pine (*P. echinata*) with hardwoods, including sweetgum (*Liquidambar styraciflua*), flowering dogwood (*Cornus florida*), elms (*Ulmus* spp.), eastern red cedar (*Juniperus virginiana*), southern red oak (*Quercus falcata*), southern magnolia (*Magnolia grandiflora*) and hickories (*Carya* spp.). Figure 3-11 shows the various types of vegetation located on Robins AFB.

The areas around the proposed buildings have been disturbed by previous construction activities and contain mostly developed, landscaped or impervious surfaces. The flora located at this site includes mature pines and hardwoods interspersed between the buildings, and areas of landscaped grasses and landscaped shrubs and trees.

3.2.5.1.2 Wildlife

Mammals

Southern Floodplain Forest is present on bottomlands associated with streams and rivers. Typical fauna supported in this section include white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), bobcat, gray fox, raccoon, eastern gray (*Sciurus carolinensis*) and fox

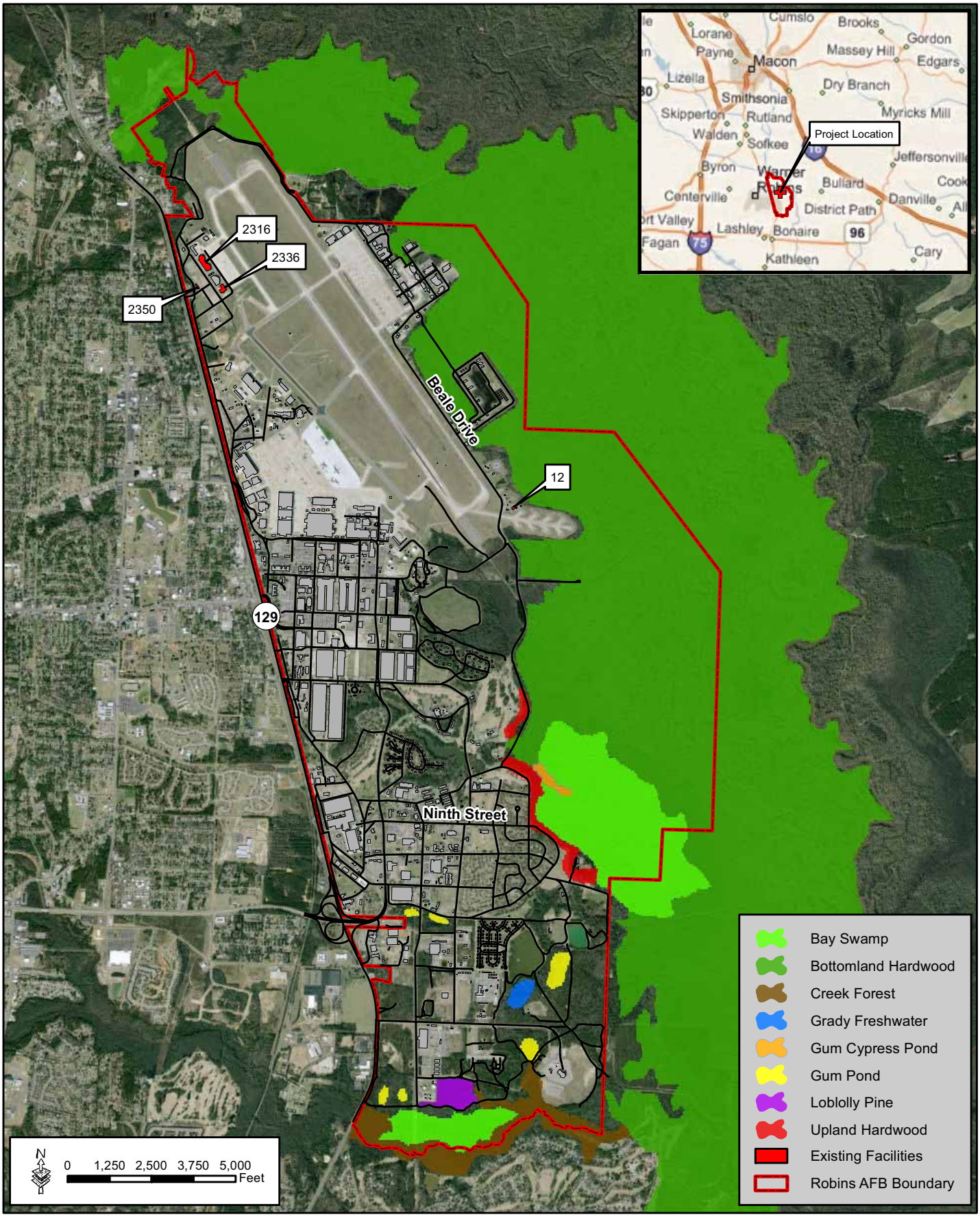

Figure 3-11: Robins AFB Vegetation Map

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squirrel (*S. niger*), eastern chipmunk (*Tamias striatus*), white-footed mouse (*Peromyscus leucopus*), and cotton rat (*Sigmodon hispidus*) (Reid 2006).

Residences, schoolyards, parks, and golf courses are considered urban wildlife habitat. The areas around the residences and buildings on Robins AFB have been disturbed by previous construction and offers minimal habitat for mammals, mainly limited to trees and shrubs, which would support small mammals such as the eastern gray squirrel, the eastern chipmunk, bats and various murid rodents (mice and rats). The occasional raccoon or opossum (*Didelphis virginianus*) may take up residence in the area (Wilson 1998).

Birds
Game birds of the southern floodplain forest include wild turkey, bobwhite quail (*Colinus virginianus*), and mourning dove. Songbirds include red-eyed vireo (*Vireo olivaceus*), northern cardinal (*Cardinalis cardinalis*), tufted titmouse, wood thrush (*Hulocichia mustelina*), summer tanager (*Piranga rubra*), blue-gray gnatcatcher (*Polioptila caerulea*), hooded warbler (*Wilsonia citrina*), and Carolina wren (*Thryothorus ludovicianus*) (Robins AFB 2007a).

The areas around the residences and base buildings have been disturbed by previous construction activities and contain mostly buildings, roads, and landscaped or impervious surfaces. Urban habitat for birds is primarily limited to landscaped trees and shrubs, which birds could use. Birds such as northern cardinal, blue jay (*Cyanocitta cristata*), tufted titmouse, gray catbird (*Dumetella carolinensis*), brown thrasher (*Toxostoma rufum*), American crow, Carolina wren, northern mockingbird (*Mimus polyglottos*), and American robin (*Turdus migratorius*) have been observed in these areas (Robins AFB 2007a).

Reptiles and Amphibians
Herpetofauna of this area include a variety of snakes such as common garter snake (*Thamnophis sirtalis*), ratsnakes (*Elaphe guttata*), and semi-aquatic snakes, including the eastern cottonmouth (*Agkistrodon piscivorus*) and banded water snake (*Nerodia fasciata*). Lizard species include green anoles (*Anolis carolinensis*), eastern fence lizards (*Sceloporus undulata*), and various skink species such as *Eumeces* sp. Turtles likely found on Robins AFB includes eastern box turtle (*Terrapene carolina*), and semi-aquatic turtles, such as the common snapping turtle (C*helydra serpentina*), eastern mud turtle (*Kinosternon subrubrum*), and yellow-bellied slider (*Trachemys scripta scipta*).

3.2.5.2 Aquatic Communities
3.2.5.2.1 Fish
Two watercourses, Horse Creek and Sandy Run Creek, tributaries of the Ocmulgee River, provide most of the stream habitat at Robins AFB. These streams provide aquatic habitats for fish, reptiles and amphibians, avian species, and many species of aquatic invertebrates.

Fishes likely to utilize stream habitat at Robins AFB include lamprey (*Petromyzon marinus*), minnow (*Pimephales promelas*), sucker (*Catostomus commersoni*), catfish, madtom (*Noturus* sp.), killifish, largemouth bass *(Micropterus salmoides),* sunfish and darter (*Percina* sp.). Horse Creek, Sandy Run Creek, and the Ocumulgee River provide valuable floodplain habitat which, when flooded, provides ideal foraging and rearing habitat for many fish species (Robins AFB 2007a).

3.2.5.2.2 Wetland and Aquatic Communities
Inland wetlands found on Robins AFB are classified into five groups: (1) hydrophytic plant communities found in permanently flooded, wet, or impounded areas, (2) semi-permanently

flooded river/swamp forests, (3) lower hardwood swamp forest where soils are saturated 40 to 50% of the year, (4) backwater forests and flats with soils that are saturated 20 to 30% of the year, and (5) transitional areas where soils are saturated less than 15% of the year and transition from lowland to upland habitat is occurring. Wetlands at Robins AFB are designated as palustrine (shallow, standing-water marsh environment, including swamps and bogs) or marsh-like (USFWS National Wetland Inventory). Wetlands at the base are found on unimproved and semi-improved tracts of land.

Horse Creek and Sandy Run Creek provide most of the stream habitat at Robins AFB. Both creeks, being tributaries of the Ocmulgee River, provide habitat for fish, reptiles, amphibians, and many species of aquatic invertebrates. The three lakes provide habitat for many types of fish. Perennial and ephemeral ponds located on the base provide aquatic habitat for fish, turtles, snakes, frogs, and toads.

There are also three lakes on Robins AFB Base, Scout Lake, Luna Lake, and Duck Lake. These lakes are stocked for fishing, and fishing is allowed in a portion of Horse Creek. The lakes are variously stocked with largemouth bass, catfish, sunfish, and grass carp (*Ctenopharyngodon idella*) for vegetation control as needed.

3.2.5.3 Threatened and Endangered Species

3.2.5.3.1 Federal and State-Listed Species

There are no Federally-listed threatened and endangered animal species found on Robins AFB, except for the American alligator (*Alligator mississipiensis*) which is only listed because of the similarity of appearance to the Federally endangered American crocodile (*Crocodylus acutus*). The base does provide habitat that would be suitable for transient animal species. No Federally-listed plant species have been recorded on Robins AFB (Robins AFB 2007a).

Ten state-listed rare plant species have been recorded on Robins AFB (Table 3-13). Harper's wild ginger (*Hexastylis shuttleworthii var. harperi*) and Ocmulgee skullcap are the only two state-protected plants reported to occur on the base. These species are protected by law in GA (GDNR 2006). Tracking List plants that occur on base include Boykin's lobelia (*Lobelia boykinii*) and awnpetal meadowbeauty (*Rhexia aristosa*), but none were found during any of the recent surveys. Watch List plants that occur on the base include white doll's daisy *(Boltonia asteroids),* southern peat moss sedge *(Carex* lonchocarpa), black-seeded spikerush (*Elocharis melanocarpa*), Robbin's spikerush (*Elocharis robbinsii*), quillwort arrowhead (*Sagittaria isoetiformis*), and October ladies'-tresses (*Spiranthes ovalis*).

3.2.6 Earth Resources

The following information on Earth Resources was excerpted from the Robins AFB INRMP (Robins AFB 2007a).

3.2.6.1 Climate

The regional climate of Robins AFB is influenced by the Gulf of Mexico and the Atlantic Ocean, as well as the Appalachian Mountains. The moist, warm air masses from the Gulf and Ocean create high humidity in the area through the year and high amounts of precipitation. Precipitation is greatest from November through July, with the wettest month being March. Average yearly rainfall in the region is about 45 inches. Warm, humid summers and short, mild winters are normal for this area. The average high temperatures are around 90°F and the average low temperatures are about 32°F. Tornados and damaging winds are known to occur occasionally through the year in the area.

Table 3-13. State-Protected and Special Concern Plants Occurring at Robins AFB

Scientific Name	Common Name	State List (Status/Rank)	Potential to Occur at Project Area?
Boltonia asteroides	White doll's daisy	Watch (S3)	No
Carex lonchocarpa	Southern peat moss sedge	Watch (S3)	No
Eleocharis melanocarpa	Black-seeded spikerush	Watch (S3)	No
Eleocharis robbinsii	Robbins spikerush	Watch (S3)	No
Hexastylis shuttleworthii var harperi	Harper's wild ginger	Protected (U)	No
Lobelia boykinii	Boykin's lobelia	Tracking (S2S3)	No
Rhexia aristosa	Awnpetal meadowbeauty	Tracking (S2)	No
Sagittaria isoetiformis	Quillwort arrowhead	Watch (SU)	No
Scutellaria ocmulgee	Ocmulgee skullcap	Protected (T)	No
Spiranthes ovalis	October ladies'-tresses	Watch (SP)	No

Source: Robins AFB 2007a

T A species which is likely to become an endangered species in the foreseeable future throughout all or parts of its range.
U Unusual and thus deserving special consideration.
S2 Imperiled in the State of Georgia because of rarity (6-20 occurrences).
S3 Rare or uncommon in the State of Georgia (on the order of 21-100 occurrences).
SU Possibly in peril in State of Georgia, but status uncertain; more information needed on threats or distribution.

3.2.6.2 Topography and Geomorphology

Robins AFB lies within the Atlantic Coastal Plain geomorphic province. The base location is about 20 miles southeast of the Fall Line, which separates the more resistant crystalline rocks of the Piedmont Ecoregion from the less resistant unconsolidated deposits of the Southeastern Plains.

The base is partly within the Level IV Sand Hills and Level IV Southeastern Floodplains and Low Terraces Ecoregions of the Southeastern Plains of Georgia. The Sandhills Ecoregion forms a narrow, rolling to hilly, highly dissected coastal plain belt that crosses the state from Augusta to Columbus. The base is situated on the low alluvial terrace of the Ocmulgee River, included in the Southeastern Floodplains and Low Terraces Ecoregion.

Elevation at Robins AFB ranges from about 240 ft MSL on the east to about 300 ft MSL on the west. The topography of the area can be seen in Figure 3-12. Some of the base has been constructed over filled wetlands, with much of the area bordering the eastern side of the base being low-lying swampland.

3.2.6.3 Soils and Geology

Most of the land of Robins AFB is immediately underlain by alluvial deposits of the Ocmulgee River. The depth to consolidated deposits is presumed to be at least 1,700 ft. The western half of the base is sandy alluvial deposits; the eastern part is underlain by peat and fine-grained organic silt deposits.

There are 16 soil types and 9 complexes mapped on Robins AFB. Upland soils on the base are typically sandy and well-drained with low fertility and easily eroded. Bottomland soils are generally moderately well- to very poorly-drained and subject to flooding. Soils at Robins AFB considered to be hydric soils are Chastain, Grady, Kingsland, Osier-Kinston, and Tawcaw soils.

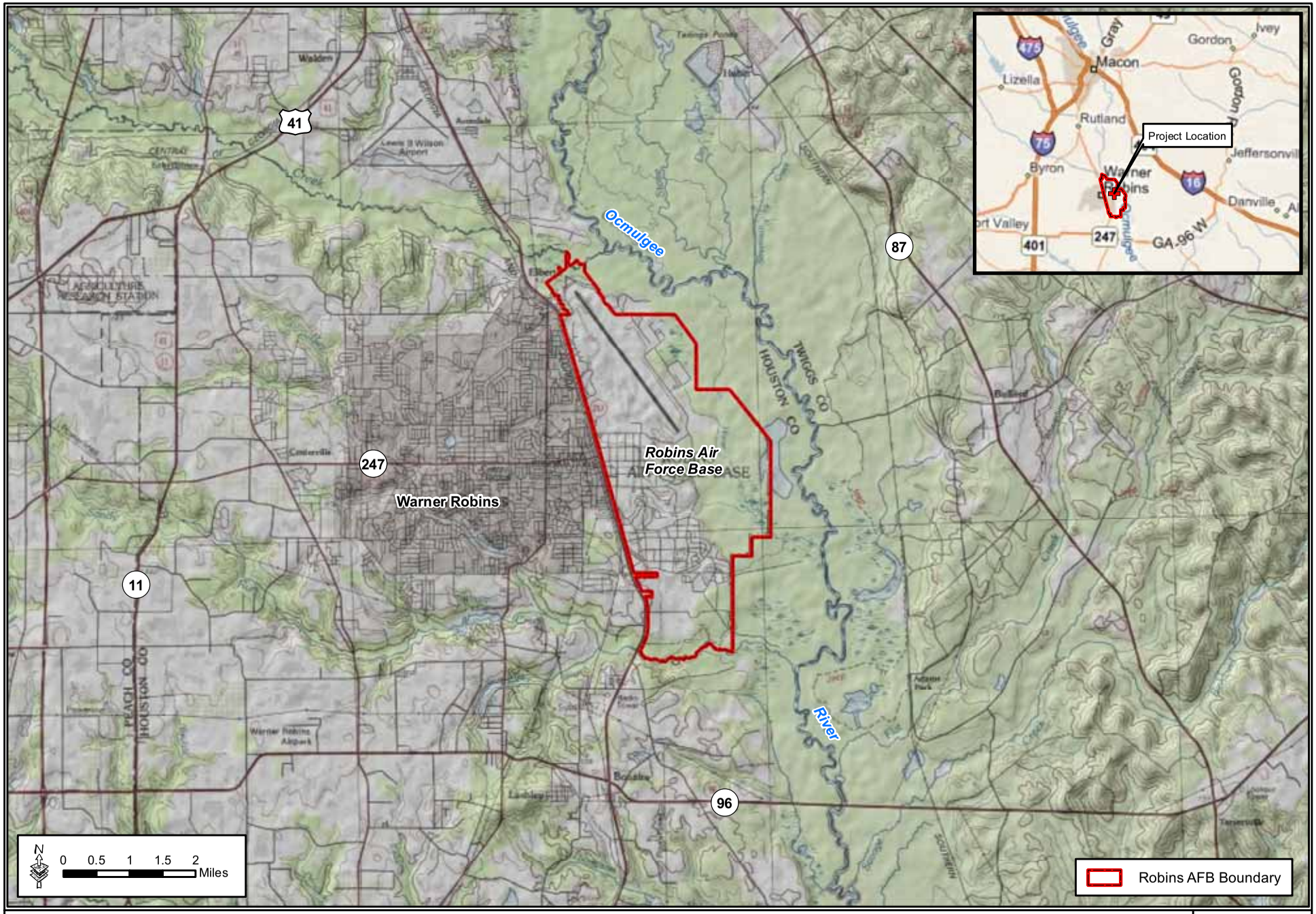

Figure 3-12: Robins AFB Topographical Map

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Prime farmland soils are found on the base and include Bonifay loamy sand, Dothan loamy sand, Fuquay loamy sand, Lynchburg sandy loam, and Orangeburg sandy loam. Orangeburg sandy loam is the only prime farmland soil located near the beddown site (see Figure 3-13).

3.2.7 Water Resources

3.2.7.1 Surface Water

Robins AFB is located within the Altamaha River Basin, which occupies approximately 2,850 acres in southeast GA (GDNR 2003). The basin lies within the Coastal Plain physiographic province, which extends throughout the southeastern U.S. The Altamaha River, which drains into the Atlantic Ocean, is formed by the confluence of the Ocmulgee and Oconee Rivers and serves as a major drainage for central and southeastern GA. The surface waters of the Altamaha River Basin are divided into two major watersheds: the Altamaha River subbasin and the Ohoopee River subbasin. Surface water supplies in the basin include water in rivers, ponds, and reservoirs.

Robins AFB is drained by four unnamed intermittent creeks flowing from west to east into Horse Creek, which flows in a southeasterly direction along the eastern portion of the base and ultimately into the Ocmulgee River (Robins AFB 2007a) (Figure 3-14). The direction of surface flow is from west to east, into one of the intermittent creeks or the wetlands on the eastern side of the base. The stream, pond, and wetland habitats on Robins AFB are hydraulically interconnected and dynamic systems that change seasonally with precipitation and corresponding fluctuations in surface and ground water levels. Horse Creek and Sandy Run Creek provide most of the surface water supplies at Robins AFB. Horse Creek is a small bottomland stream draining marshland in the northeastern portion of the base. Sandy Run Creek, a significantly larger drainage, marks the southern boundary of the base. Both creeks are tributaries of the Ocmulgee River and provide habitat for fish, reptiles, and amphibians and for many species of aquatic invertebrates.

There are three constructed lakes on Robins AFB (Robins AFB 2007a). Duck Lake (8.34 acres) is located centrally on the base and is surrounded by a mosaic of upland forest and the maintained yards of residential housing along the southern shore and a golf course along the northern shore. Luna Lake (7.70 acres) is open-water habitat used primarily for recreation.

Scout Lake (22.36 acres), once connected to the wetlands, has been converted to limnetic habitat and is now an artificial open-water habitat.

According to the USEPA CWA Section 303 (d) impaired waters list, no surface waters in the vicinity of Robins AFB are in violation of supporting their designated uses (USEPA 2008).

3.2.7.2 Groundwater

The primary demands for water supply in the Altamaha River Basin include municipal and industrial use, agricultural use, and recreation (GDNR 2003). The demand for drinking water is expected to remain stable in the near future due to average population growth rates. Agricultural water demand in the Altamaha River basin has increased over the last 3 decades and is expected to increase in the future. Robins AFB relies mostly on groundwater withdrawal from the Cretaceous-Tertiary (or Blufftown) Aquifer. The water table is present throughout the base at shallow depths in the upper sandy alluvial deposits (Robins AFB 2007a). The water table discharges to the east and contributes to the development of a swampy area extending to the Ocmulgee River.

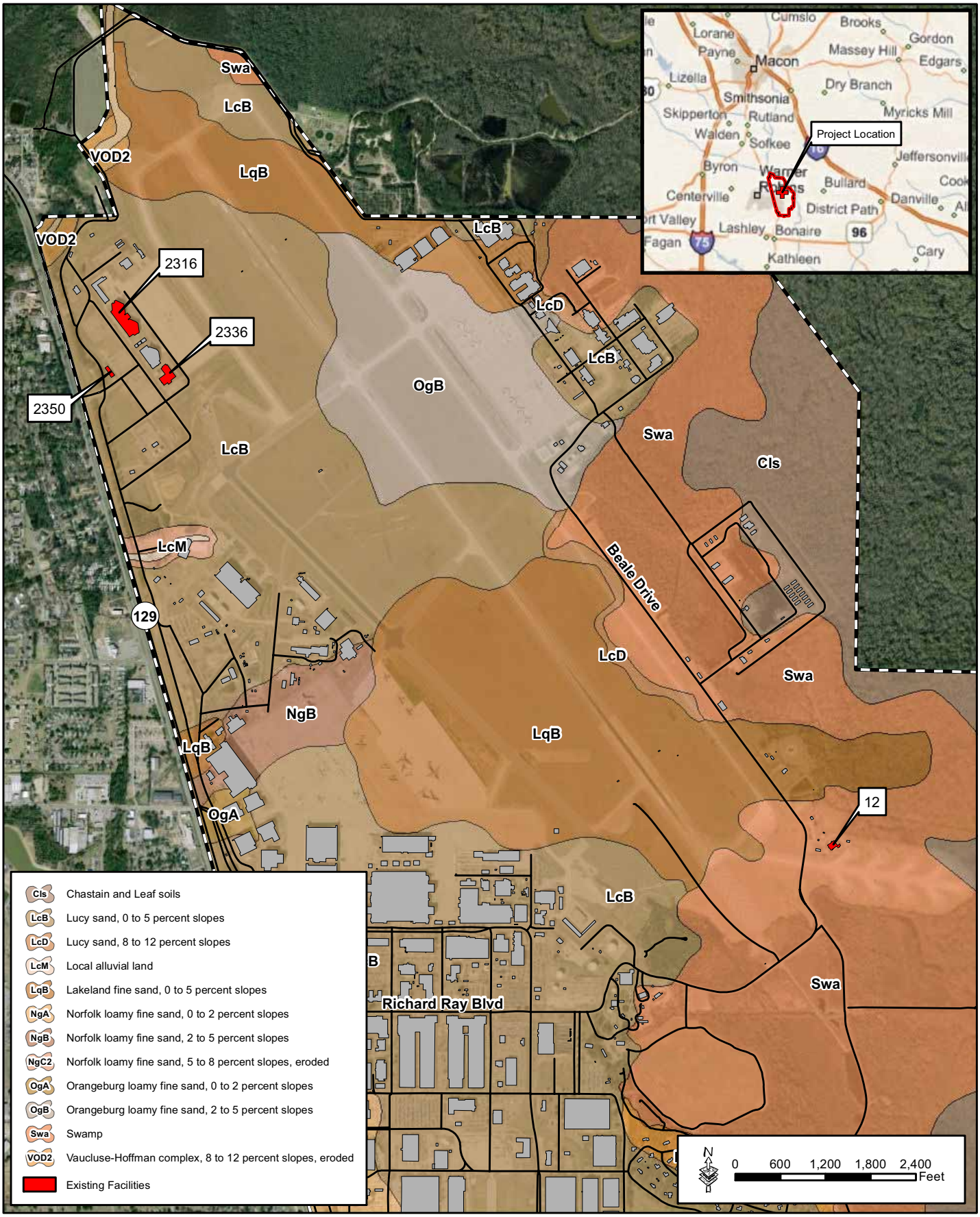

Figure 3-13: Soils Map for MC-12 Facilities at Robins AFB

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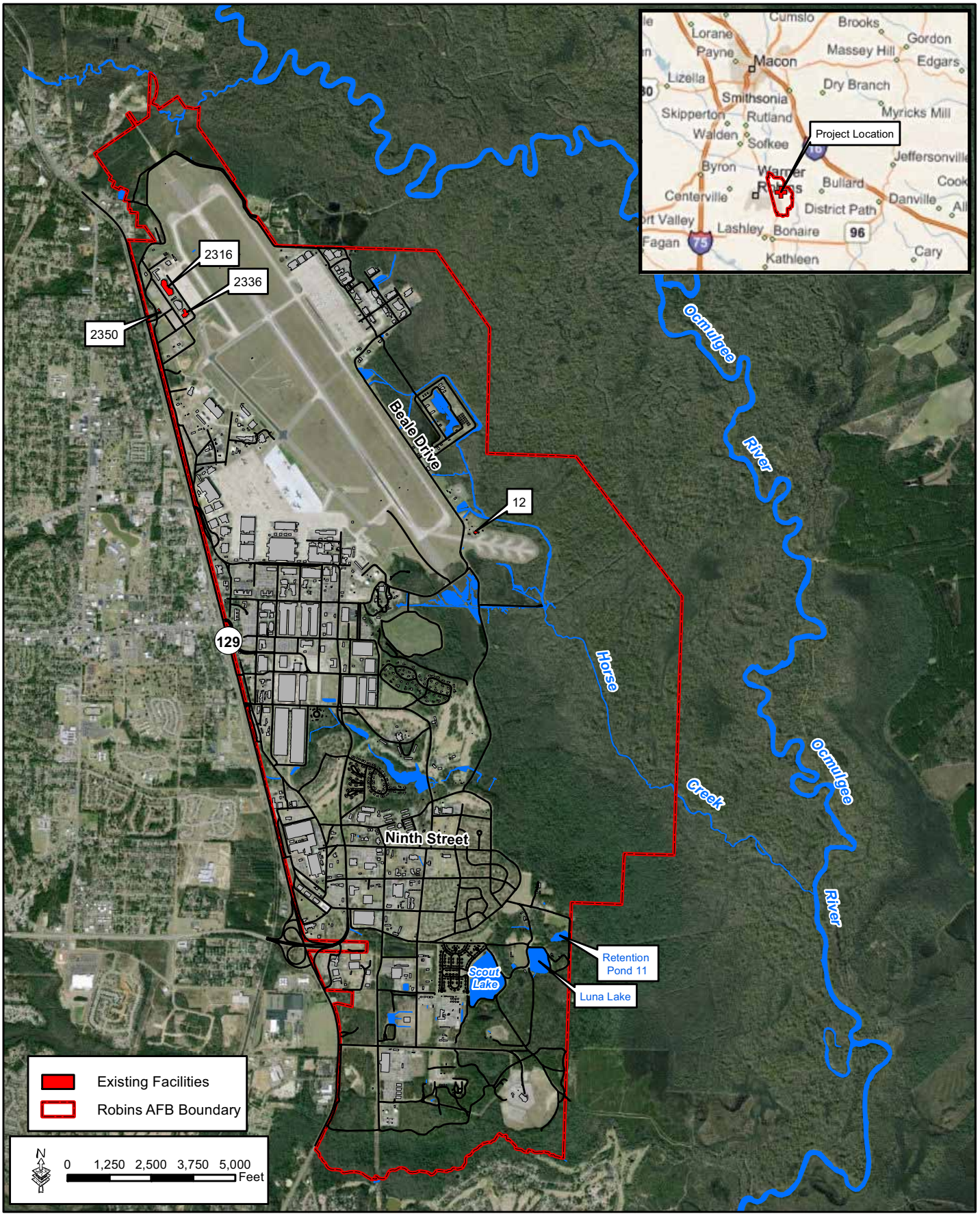

Figure 3-14: Water Resources in the Vicinity of Robins AFB

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The base water distribution system supplies water for residential and industrial uses on the main base (Defense Logistics Agency 2004). The water distribution system consists of approximately 96 miles of distribution pipe ranging from 0.75 inch to 30 inches in diameter. Most of the pipe is in the 8-to-12-inch range. Total water storage capacity onsite is 2.7 million gallons. The water supply is drawn from seven on-base water wells. An eighth groundwater well exists as part of the Robins West housing development but does not contribute to main base operations. Water is drawn from the Cretaceous-Tertiary (or Blufftown) Aquifer and requires minimal, if any, treatment to meet drinking water standards. Treatment that does occur consists of chlorine injection, fluoridation, lime injection, and polyphosphate precipitation. The extraction of groundwater is permitted by the GDNR Environmental Protection Division as required by the Groundwater Use Act (Robins AFB 2007).

3.2.7.3 Floodplains

Most of the landforms on and around Robins AFB have been affected by the Ocmulgee River, which is one of the dominant watercourses in west-central Georgia and is part of the Altamaha River drainage. The Ocmulgee River floodplain is about 3 miles wide from bluff to bluff at Robins AFB. The distance from the westernmost bluff of the floodplain on base to the river averages about 2 miles. Nearly all of the Ocmulgee River floodplain at Robins AFB falls into the area of 500-year floods. There are also some outlying areas that fall within the 100-year floodplain (Figure 3-15).

3.2.7.4 Wetlands

There are approximately 2,250 acres of delineated wetlands on Robins AFB (Figure 3-16) (Robins AFB 2007a). Wetlands are classified according to the USFWS National Wetland Inventory on the basis of vegetation type, topography, and hydrologic regime. The Palustrine wetland system, characterized by shallow, standing-water marsh environments that include swamps and bogs, is dominant at Robins AFB.

Wetlands occur on many of the semi-improved and unimproved tracts of land on Robins AFB. High quality wetlands are present throughout the undeveloped areas. Wetland features in the upland portion of the base include six gum ponds and the Grady Freshwater Meadow. A large Bay Swamp is present in the floodplain of Sandy Run Creek at the southern boundary of the base. An extensive Bay Swamp also occurs at the base of the Upland Hardwood Bluff and surrounds a Gum Cypress Pond. The remainder of the eastern portion of the base is Bottomland Hardwood Swamp. Ephemeral pools also are present after rain events.

The most recent study undertaken to delineate and quantify the jurisdictional wetlands located on the base occurred in 1999 (*Final Wetland Delineation for Warner Robins Air Logistics Center*, Earth Tech 1999) and was conducted in accordance with the criteria set forth in the Technical Report Y-87-1, Corps of Engineers, Wetlands Delineation Manual (1987 Federal Manual). The 1999 delineation report should be consulted for further information, including detailed maps showing jurisdictional wetland boundaries. Only three CWA Section 404 permits have been issued for the base since 2001. All of these permits were for remedial actions to correct inadvertent actions that resulted in impact to jurisdictional wetland areas.

3.2.8 Air Quality

Robins AFB is located in Houston County, GA, which is in attainment for all NAAQS. Federal agencies are required to address GHGs for any Proposed Actions. Refer to Section 3.1.8 for discussion of GHGs and their regulatory requirements.

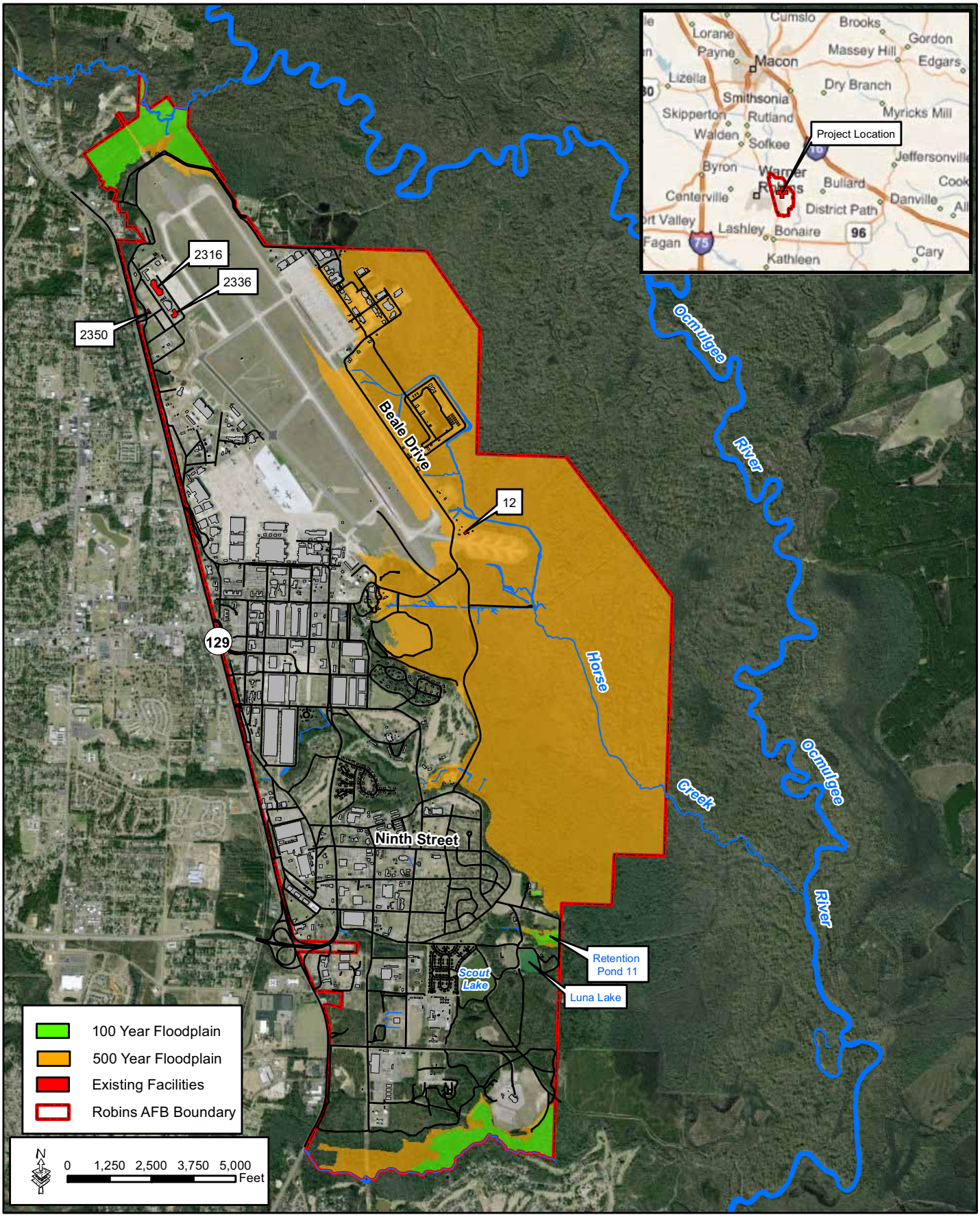

Figure 3-15: Floodplain Map in the Vicinity of Robins AFB

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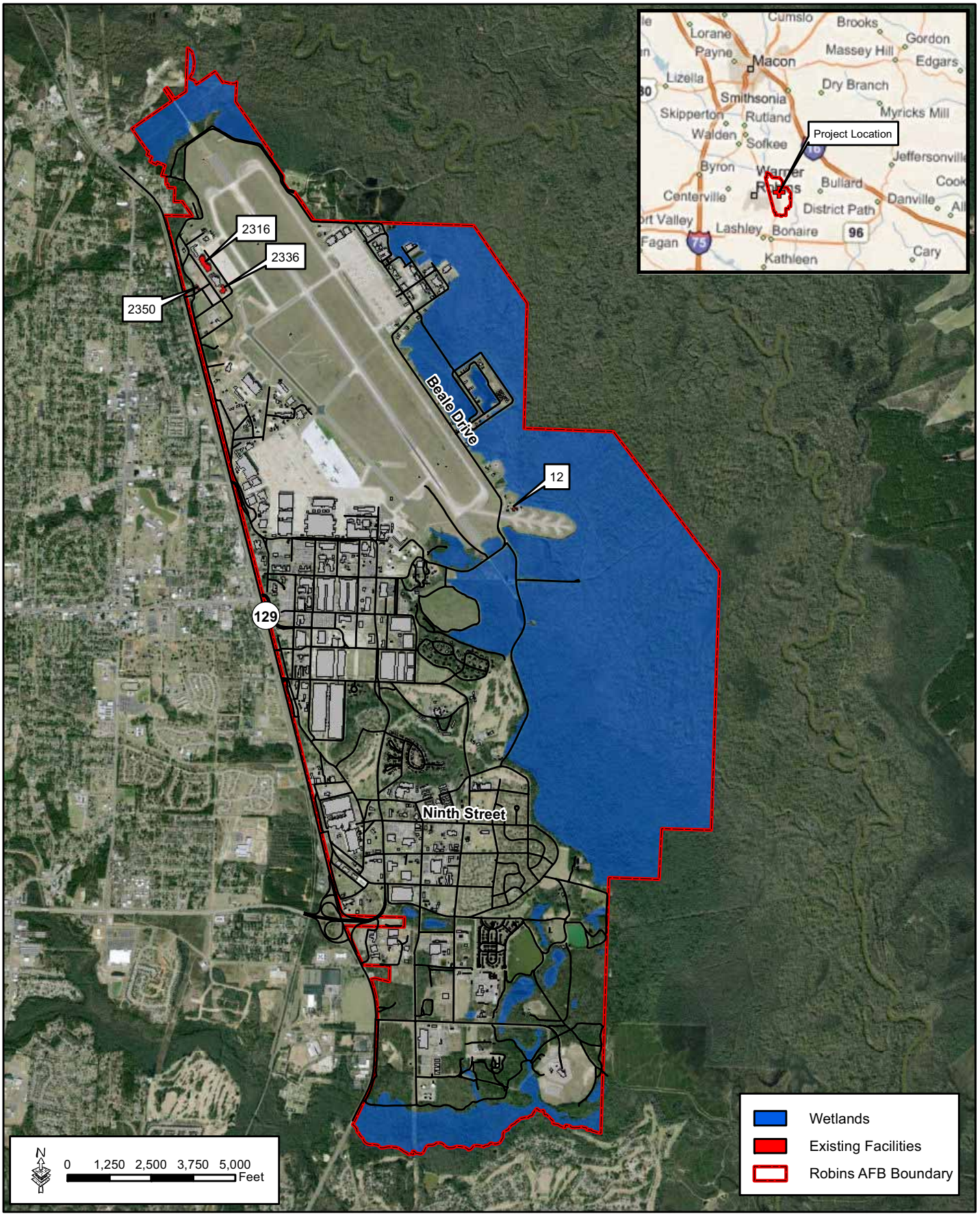

Figure 3-16: Robins AFB Wetland Map

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3.2.9 Solid and Hazardous Materials and Wastes

There are two ERP sites of concern near the beddown site at Robins AFB (see Figure 3-17). Building 12 is located in the leading edge portion of the industrial area TCE groundwater plume associated with solid waste management unit (SWMU) 20. Groundwater in this area is fairly shallow, generally less than 8 ft. Groundwater treatment and remediation is ongoing to address the contamination (Robins AFB 2010). There is another groundwater plume about 1,000 ft north of Building 2316. This plume is from an off-site source across the railroad tracks and it is listed as a benzene plume. Groundwater in this area is fairly deep, generally greater than 40 ft. The second area of concern (AOC) 1 is located around Building 2316 and is the original area of concern for the benzene plume. However, no further response action is planned for the site since the benzene plume has been delineated back to an off-site source across the railroad tracks and did not originate on base.

Existing storage tanks and capacity for JP-8 would be used for the Robins AFB site, and these tanks are currently operated under a site-specific contingency plan and emergency response procedures that are in place for the base. Existing solid wastes and hazardous materials and waste management procedures and BMPs are used at Robins AFB to prevent any significant impact on the environment at the base or any significant impact on the general public.

3.2.10 Safety and Occupational Health

BASH exists at Robins AFB due to resident and migratory bird species such as ducks, shorebirds, raptors, doves, swallows, starlings, and blackbirds. Daily and seasonal bird movements create hazardous conditions. The most probable location for bird strikes at Robins AFB is around the overrun area of Runway 33 and extending back, along the final approach course to Runway 33 over the wetland area. Bird strikes are likely to occur in the airfield itself, as species such as meadowlarks and doves frequent that environment. Most bird strikes at Robins AFB occur below 2,000 feet AGL. Approximately 70% of the strikes occur during the fall and spring, and involve birds migrating through Robins AFB airspace. Other wildlife strikes are possible but rarely occur. Feral hogs, deer, coyotes, bobcats, and stray dogs are occasionally observed on the airfield. The USAF BASH team has recorded approximately 560 bird/wildlife strikes for the period between 1985 and 2006. Robins AFB's BASH Plan minimizes the bird and wildlife hazard through habitat management, active and passive dispersal techniques, and effective warning techniques (Robins AFB 2008a).

There are numerous explosive safety zones and electromagnetic safety zones, located on the installation. Explosive safety zones were based on the types and amounts of explosives stored. There are six areas with established explosive safety zones at Robins AFB. These areas include: the Alert Apron, Base Weapons Storage Area, Hot Cargo Pad, Suspect Vehicle Parking Area, Building 209 (used for storage of transit munitions), and Precision Range Integrated Maneuver Exercise Base Engineer Emergency Force Training Area. To minimize the potential for loss of human life and the loss/damage of property in the event of an explosion, no non-munitions related development may occur within the explosive safety zones. Security clear zones with controlled access have been established around the critical mission resources at Robins AFB (Robins AFB 2002).

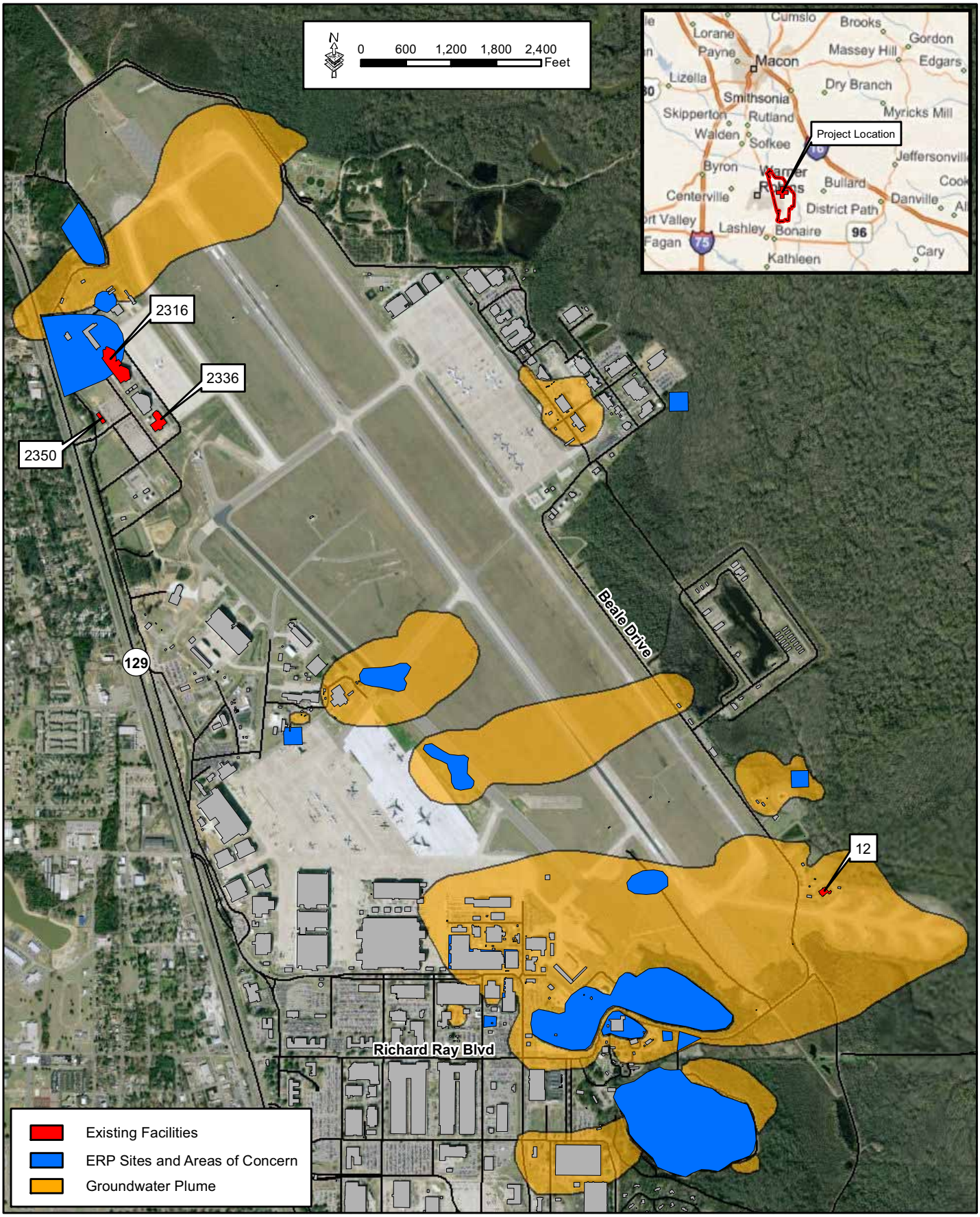

Figure 3-17: Robins AFB Environmental Restoration Program Sites

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3.2.11 Noise

3.2.11.1 Existing Noise Levels

Robins AFB was originally built in an outlying, largely undeveloped area, the base has been a catalyst for the region's growth and is now being encroached upon by suburban, commercial, and industrial development approaching from the northwest, west, and southwest. Rural agricultural areas are located to the east, northeast, and southeast. Aircraft flights are routed to the eastern side of the runway where the land use consists of forest and agricultural areas.

The primary source of noise in the vicinity of the Robins AFB is airfield operations. Table 3-14 presents the total number of takeoffs and landings occurring at Robins AFB in 1998 which includes commercial aircraft. The F-15, E-8, C-5, C-17 and C-130 are the principal aircraft operating from Robins AFB, and the average number of daily operations for these aircraft is shown below. The noise signatures of the fixed-wing and turbo-propeller aircraft are relatively low noise producers when compared to military jet-engine aircraft.

Table 3-14. Number of daily and annual flight operations at Robins AFB

Aircraft Operations at Robins AFB			
Type of Aircraft	**Average Daily Operations**	**Operations per Year**	**Percent of Total Aircraft Operations**
F-15	21	7,665	22%
C-5	4	1,460	4%
C-17	3	1,095	3%
C-130	4	1,460	4%
E-8	34	12,410	36%
Aero Club	30	10,950	31%

Source: Robins AFB 1998

3.2.11.2 Existing Noise Contours

Noise exposure levels were modeled for the 1998 AICUZ study using the USAF NOISEMAP computer model; the resulting noise contours are mapped in Figure 3-18. The model generates noise exposure estimates that are based on the day-night DNL metric used by the USAF, which is expressed in dB.

3.2.11.3 Noise Complaint Process and Noise Abatement

Robins AFB has an established noise complaint process available to the public. This process serves to educate local communities regarding Robins AFB operations and promotes openness between the base and the communities. Noise complaints are handled by the PAO formal correspondence and investigations are managed by the Operations Group Commander.

Complaints are registered by the PAO in a noise complaint form, which includes a description of the nature of the complaint and the action taken.

3.2.12 Airspace

There are several public use airports in the general vicinity of Robins AFB. The nearest airports to Robins AFB are Middle Georgia Regional Airport, Macon Downtown Airport, and Perry-Houston County Airport. Close coordination with FAA is required to minimize conflicts with the civilian aircraft operations at these airports. The F-15, C-5, C-130, C-17, and E-8 are the

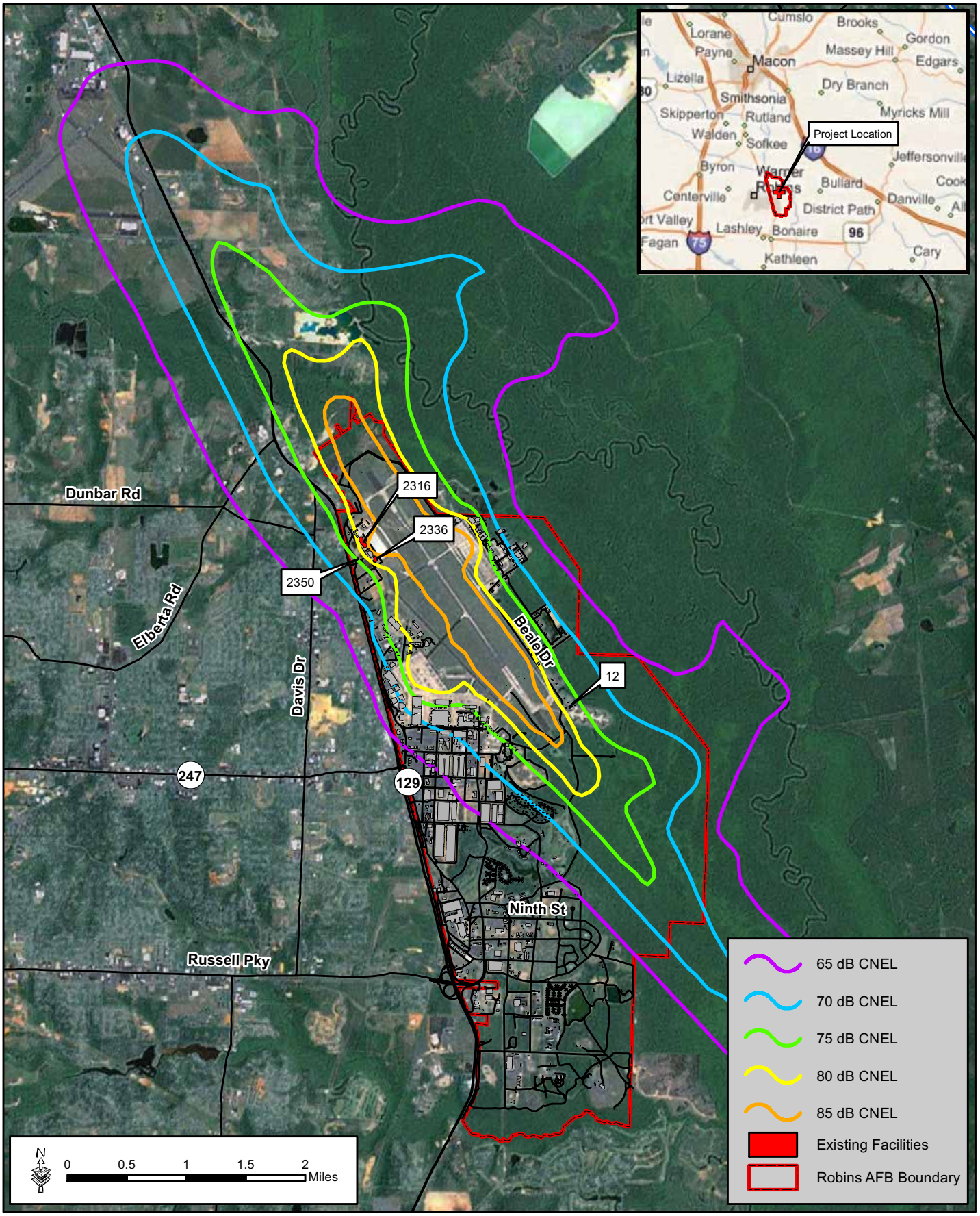

Figure 3-18: Robins AFB Noise Contour Map

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principal aircraft operating out of Robins AFB. The average numbers of daily operations for these aircraft are listed in Table 3-14.

Robins AFB airspace is located within Bulldog and Coastal MOAs. Townsend Range is divided into five areas and is used for air-to-ground bombing, rocket, and strafing exercises; chaff use is also authorized. Table 3-15 describes the MOAs and restricted airspace within Robins AFB and Townsend Range. Much of this same airspace would be utilized to support MC-12 training.

Table 3-15. Robins AFB Airspace Identification and Description

	Altitudes		Hours of Use	
	Minimum	Maximum	From	To
Airspace				
Bulldog MOA	500 feet AGL	UTBNI FL 180	0700	2400†
Coastal MOA	300 feet AGL	UTBNI FL 180	0700	2200†
R-3002 (Fort Benning)	Surface	FL 250	0600	0200†
R-3005 (Fort Stewart)	Surface	29,000 feet MSL	0600	2400†
R-3007 (Townsend Range)	Surface	UTBNI13,000 feet MSL	0700	2200†

Notes: † = other times by NOTAM
UTBNI = Up to, but not including; AGL = above ground level; MSL = mean sea level
FL= Flight Level (FL 180 is approximately 18,000 ft MSL)
NOTAM = Notice to Airmen
Source: FAA 2010

3.3 ALTERNATIVE 2 – WHITEMAN AFB

3.3.1 Land Use and Resources

3.3.1.1 Land Use

Whiteman AFB occupies approximately 4,183 acres (3,821 owned and 362 leased) with 733 acres of easements of Federally owned or leased land at the eastern edge of Johnson County, MO. The base is located two miles south of Knob Noster, MO. The eastern one quarter of the base is separated, in a north/south direction, by MO Highway 23, which connects the base to I-70 to the north. The largest metropolitan area proximate to Whiteman is Kansas City, MO, approximately 60 miles to the northwest via U.S. Highway 50. Other large cities in the vicinity include Columbia, MO, 85 miles to the east, Springfield, MO, 134 miles to the south, St. Louis, MO, 209 miles to the east, and Tulsa, Oklahoma, 314 miles to the southwest (Whiteman AFB 2008).

3.3.1.2 Visual Resources

Visual resources at Whiteman AFB include several sensitive natural areas, such as Knob Noster State Park, located just west of the base, and the Truman Reservoir. Local, regional, and natural areas can serve as a model for and a measure of ecosystem health on the installation. Knob Noster State Park consists of thick forests, clear lakes, and grassland areas that provide opportunities for camping, hiking, fishing, and nature study. This park includes 3,567 acres of prairie, savanna, and forests, with small lakes and a creek. The Missouri Department of Natural Resources administers Knob Noster State Park. Wildlife is abundant in the park and includes white-tailed deer, fox, raccoon, opossum, wild turkey, barred owl, pileated woodpecker and the great blue heron. Whiteman AFB's rural setting also provides opportunities for outdoor sportsmen and recreation (Whiteman AFB 2008).

3.3.1.3 Transportation

Whiteman AFB is immediately adjacent to a state highway on the south and west, with some land interests to the west of the highway. Access to Whiteman AFB is provided primarily by MO Highway 23, through the Spirit Gate, located on the west side of the base. Missouri Highway 23 connects the base to MO Highway 50 to the north. Secondary access to the base is provided through the Arnold Gate, located on the north side of the base on Highway J. The Arnold Gate is primarily used for personnel to get to and from Knob Noster. Secondary access is also provided on a limited basis by the LeMay Gate, located on the south side of the base on Highway D. Traffic through the LeMay Gate is projected to increase as it becomes the "contractor's gate" through which all contractors and deliveries to the base will be required to pass. An arterial street network connects the installation gates, Spirit on the west, Arnold on the north, and LeMay on the south. Two collector roads supplement the arterial network to distribute traffic throughout the base (Whiteman AFB 2008). The closest civilian airports are Skyhaven Airport (9 miles northwest) and Sedalia Memorial Airport (15 miles east). Figure 3-19 presents the transportation infrastructure located around Whiteman AFB.

3.3.2 Infrastructure

3.3.2.1 Electrical Distribution

The electrical supply to Whiteman AFB is delivered by Aquila Electric. The electrical distribution system provides in excess of 482,000 mega kilowatts (MKW) hours. The demand is only 85 MKW, which is 18% of the total system capacity. Two substations provide electricity to the entire base (Whiteman AFB 2008).

3.3.2.2 Potable Water/Fire Protection System

The primary water source for Whiteman AFB and the surrounding areas are the Deep Ordovician and Cambrain aquifers. Nine wells provide the water from these aquifers to the base. Well Number 11 is used exclusively to supply water for the base golf course, which leaves the other eight wells to supply water to the base population. Water from the wells is pumped into an on-base water treatment plant that has a capacity of 2.5 mgd and is designed as a single-stage lime-softening treatment with recarbonation, filtration, and disinfection (Whiteman AFB 2000). Three elevated water storage towers are used to store the water prior to use. The water supply and treatment system is currently operating at <30% capacity (Whiteman AFB 2008).

3.3.2.3 Wastewater

There is one base-owned WWTP on base. This plant handles all industrial and domestic wastewater. There is no separate wastewater system for industrial wastewater. The WWTP can treat approximately 799 million gallons per year (2.2 mgd). The plant currently treats less than 232 million gallons per year (0.6 mgd) which is 29% of its capacity. There is an NPDES permit for the WWTP discharge. Oil/water separators in buildings along the flight line discharge into the sanitary sewer system, then to the WWTP. Effluent from the WWTP is discharged to Brewer Creek. Wastes and runoff that drain from the flight line from outside buildings and the parking ramp migrates into ditches, storm sewers, and creeks around the base (Whiteman AFB 2008).

3.3.2.4 Gas

The natural gas service on Whiteman AFB is provided by the Missouri Gas Company. The natural gas system includes approximately 174,000 linear ft of distribution piping and all associated components including two regulator stations. Approximately 95% of the distribution lines have been upgraded to polyethylene lines. The capacity of the system is capable of

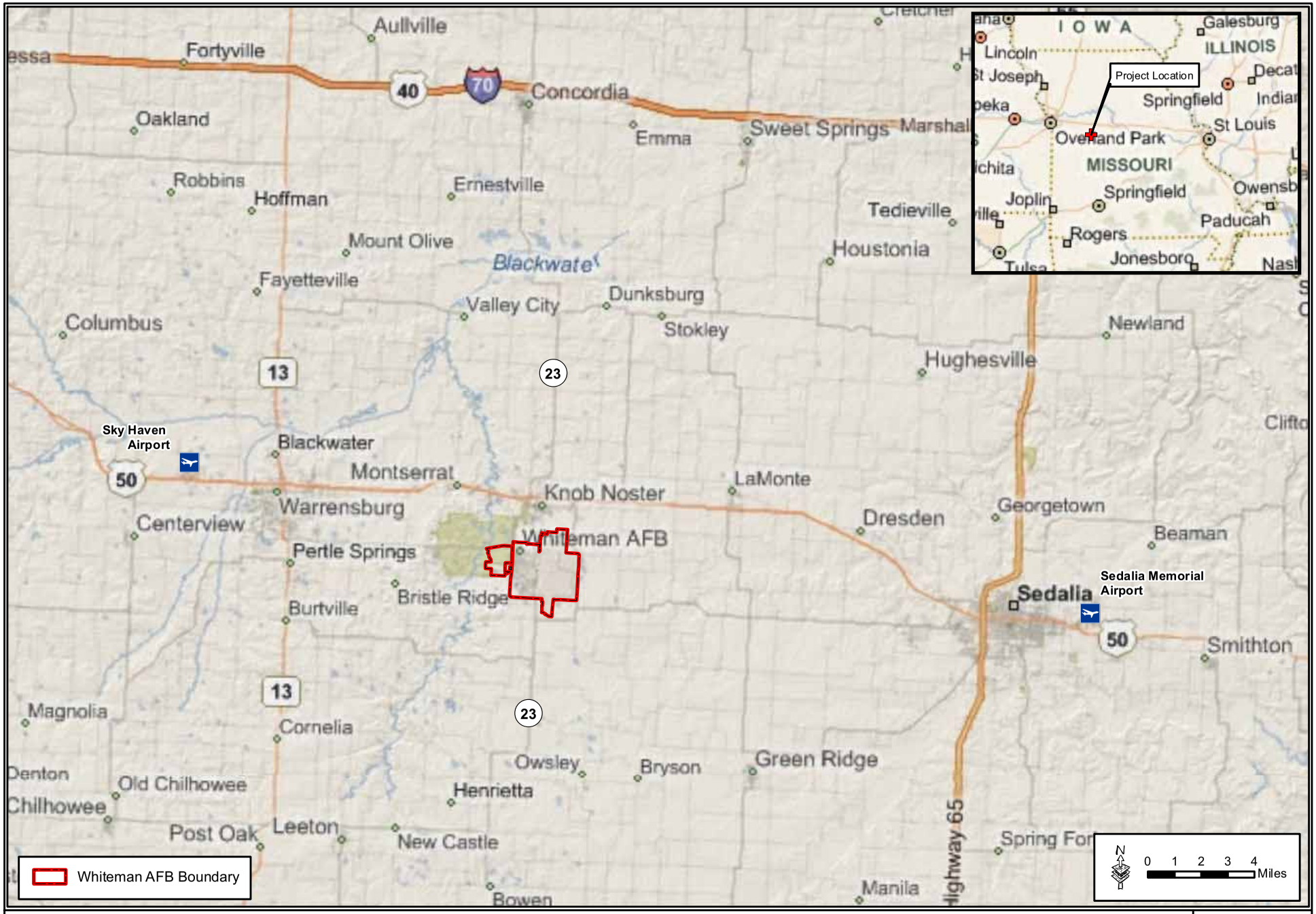

Figure 3-19: Whiteman AFB Transportation Map

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providing 26,000 MCF. Current usage is 2,000 MCF which is 8% of the total system capacity (Whiteman AFB 2008).

3.3.2.5 Storm Drainage System

The storm drainage system within Whiteman AFB consists of roadside ditches, crossroad culverts, enclosed pipe drainage systems and natural drainage channels. The tarmac and major portions of the operations and support areas are relatively level and have inlet and enclosed storm sewer systems with some roadside ditches and crossroad culverts. Residential areas are generally located along ridges and are served primarily by curbed and guttered streets with inlets and enclosed systems that convey runoff to open natural channels. There are four regulated stormwater outfalls and three man-made ponds located within the boundaries of Whiteman AFB. Base Lake consists of two small ponds located in the southwest corner of the base. The lake was built to contain runoff coming in from the south. Overflow from these two ponds drains to the north through regraded and native channels. North Lake is located in the northern portion of the base and was built as a stormwater retention pond to contain runoff from the runways and de-icing areas. The middle and eastern portions of the base feed to the Long Branch of Muddy Creek. An NPDES permit authorizes the discharge of stormwater, from industrial activity areas on the base, into Brewer's Branch of the Blackwater River Basin (Whiteman AFB 1998).

Section 438 of the EISA (42 USC Section 17094) establishes into law new stormwater design requirements for Federal construction projects that disturb a footprint of greater than 5,000 square feet of land. EISA Section 438 requirements are independent of stormwater requirements under the CWA. The project footprint consists of all horizontal hard surfaces and disturbed areas associated with project development. Under these requirements, predevelopment site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. Predevelopment hydrology shall be modeled or calculated using recognized tools and must include site-specific factors such as soil type, ground cover, and ground slope. Site design shall incorporate stormwater retention and reuse technologies such as bioretention areas, permeable pavements, cisterns/recycling, and green roofs to the maximum extent technically feasible. Post-construction analyses shall be conducted to evaluate the effectiveness of the as-built stormwater reduction features. As stated in a DoD memorandum dated January 19, 2010, these regulations will be incorporated into applicable DoD Unified Facilities Criteria within 6 months (DoD 2010). Additional guidance is provided in the USEPA's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act*.

3.3.2.6 Liquid Fuels

At Whiteman AFB liquid fuels are trucked to the base. Fuel is stored in the north industrial section of the base and is piped to secondary fuel storage tanks on the flightline. There is a fuel pipeline located 6 miles north of the base that could be used in the future if another fuel delivery option is needed (Whiteman AFB 2008).

3.3.2.7 Communications System

Whiteman AFB's communications system consists of all aspects of communication including voice, video, radio, security and flight support. While there are minor deficiencies within the system, most of the communications systems are functioning well and serve the base adequately (Whiteman AFB 2008).

3.3.3 Cultural Resources

3.3.3.1 Cultural Background

The 2000 ICRMP for Whiteman AFB (Whiteman AFB 2000a) provides an extensive summary of the cultural past for the region encompassing Whiteman AFB and is herein incorporated by reference.

3.3.3.2 Previous Cultural Resource Surveys and Cultural Resource Sites

Several areas on Whiteman AFB have been surveyed for cultural resources, but it was concluded that, because of extensive surface and subsurface disturbances resulting from on-going mission implementation, no archaeological investigations would be required for the industrial area of the base or of the base housing area. Additional areas of the base including the golf course, North Gate area, S-6 area, LeMay Gate area, and grenade explosive ordnance disposal area were removed from further consideration because of extensive prior impacts. Intensive pedestrian surveys and systematic shovel testing produced no evidence of historic or pre-historic archaeological sites, rock art sites, or historical architectural resources on the base. Due to the intense utilization of land resources prior to DoD ownership and continued utilization by the USAF, there is little chance of an archaeological discovery on Whiteman AFB (Whiteman AFB 2000a). Mariah Associates, Inc. conducted an architectural review of Whiteman AFB and concluded that Whiteman AFB has no Section 106 responsibilities for architectural resources at the facility as currently configured.

There are several facilities at Whiteman AFB that are eligible for the NRHP. These facilities are the Minuteman I/II launch control center, including Buildings 1230, 1231, 1232, and 1233 and the SAC Special Storage compound facilities, including Buildings 4017 and 4021. None of these facilities are located within the proposed beddown area.

3.3.4 Socioeconomics and Environmental Justice

The ROI for socioeconomics at Whiteman AFB is Johnston County, MO.

3.3.4.1 Employment, Income, and Poverty Levels

The total estimated civilian labor force in Johnson County in 2008 was 24,346, of which 22,633 were employed. There were an estimated 2,821 Armed Forces personnel in Johnson County (up from 2,509 in 2000), bringing the total employed labor force in the area to 25,454. The 2008 unemployment rate for the county was 7%. This was slightly higher than the 2000 unemployment rate of 6.1%. In 2008, educational services and health care and social services provided the most jobs in Johnson County (5,966), followed by retail trade (2,681), and manufacturing (2,501) (U.S. Census Bureau 2008g).

In 2008, Johnson County had a PCPI of $27,394. This PCPI ranked 74th in the state and was 75% of the state average ($36,356) and 68% of the National average ($40,166). The 2008 PCPI reflected an increase of 4.1% from 2007. The 2007 to 2008 state change was 3.5% and the National change was 2%. In 1998 the PCPI of Johnson County was $18,305 and ranked 72nd in the state. The 1998-2008 average annual growth rate of PCPI was 4.1%. The average annual PCPI growth rate for the state was 3.6% and for the Nation was 4% (BEA 2008c).

In Johnson County in 2008, net earnings accounted for 69% of TPI (compared with 67% in 1998); dividends, interest, and rent were 13% (compared with 19% in 1998); and personal current transfer receipts were 18% (compared with 14% in 1998). From 2007 to 2008 net earnings increased 3.2%; dividends, interest, and rent increased 3.7%; and personal current transfer receipts increased 9.9%. From 1998 to 2008 net earnings increased on average 5.4%

each year; dividends, interest, and rent increased on average 1.2%; and personal current transfer receipts increased on average 7.9% (BEA 2008c).

In 2008, Johnson had a TPI of $1,428,919,000. This TPI ranked 21st in the state and accounted for 0.7% of the state total. The 2008 TPI for Johnson County reflected an increase of 4.4% from 2007. The 2007-2008 state change was 4.3% and the National change was 2.9%. The 1998 to 2008 average annual growth rate of TPI in Johnson County was 5.1%. The average annual growth rate for the state was 4.4% and for the Nation was 5% (BEA 2010c).

An estimated 7% of families lived in poverty in Johnson County in 2008 (Table 3-16). This percentage is lower than both the state of Missouri (9.7%) and the Nation (9.6%) in 2008 (U.S. Census Bureau 2008h). The median household income in 2008 for Johnson County was $47,169. This was slightly higher than the 2008 median household income for the state ($46,408) but lower than the Nation ($52,175) (U.S. Census Bureau 2008i).

Table 3-16. Poverty and Median Income

Location	Percentage in Poverty (2008)	Median Income (2008)
Nation	9.6%	$52,175
Missouri	9.7%	$46,408
Johnson County	7.0%	$47,169

Source: U.S. Census Bureau 2008h and 2008i

3.3.4.2 Population and Demographics

Johnson County is one of 115 counties in MO. It is part of the Warrensburg, MO micropolitan statistical area. Its 2008 population of 52,161 ranked it 20th in the state (BEA 2008c). The 2008 racial mix of Johnson County was overwhelmingly Caucasian (90.1%), followed by Black or African-American (4.4%), followed by those people that are two or more races (2.4%), followed by people of Asian descent (1.3%), with the remaining 1.8% of the population split between Native Hawaiians and Other Pacific Islander and those of some other race. Approximately 3.4% of the 2008 population of Johnson County identify themselves as Hispanic or of Latino origin (U.S. Census Bureau 2008g).

3.3.4.3 Housing

Johnson County had a total of 20,581 housing units in the 2008 Census. According to the Census Bureau, 12,373 of the housing units were owner-occupied, 5,827 housing units were rented, and 2,381 housing units were vacant (U.S. Census Bureau 2008g).

3.3.4.4 Schools

Knob Noster R-VIII School District

The Knob Noster R-VIII School District has four educational centers that serve more than 1,800 students. The district holds a AAA rating, the highest available, yet it has the lowest tax rate for a school with that rating. Whiteman Elementary School, which is part of the Knob Noster R-VIII School District, is on base for children in kindergarten through fourth grade. Knob Noster Elementary School serves children in kindergarten through fifth grade. Knob Noster Middle School serves grades 6 to 8. Knob Noster High School offers vocational and advanced education credits for students in grades 9 to 12. The school system also offers classes for children with special needs, including those at an advanced learning level.

Warrensburg School District
The Warrensburg School District is a AAA-rated school system serving more than 2,100 students. The system includes a high school, one middle school, three elementary schools, the Warrensburg Kindergarten Center, and the Warrensburg Vocational-Technical School, which offers training to youths and adults (Warrensburg 2010).

Sedalia School District 200
Sedalia School District 200 is a AAA-rated school system. The public school system includes five elementary schools, a middle school, and a high school. There are also several parochial schools in Sedalia which serve children from preschool age through high school.

3.3.4.5 Environmental Justice
EO 12898, Environmental Justice
Johnson County has a relatively low number of low income families at 7% and a higher than average median income of $47,169. This difference would indicate that there is a lower than normal chance that there would be adverse impacts on this demographic.

EO 13045, Protection of Children
Approximately 13.1% of the total population of Johnson County was made up of children under the age of 18 that were below poverty level. The percent of children under the age of 18, below the poverty level in the state of Missouri is 18.3%. For the U.S., that number is 18.2 %, which is considerably higher than the percent of families below the poverty level with children younger than 18 in Johnson County. This difference would indicate that there is a lower than normal chance that there would be adverse impacts on this demographic (U.S. Census Bureau 2008i).

3.3.5 Biological Resources
3.3.5.1 Terrestrial Communities
3.3.5.1.1 Vegetation
Whiteman AFB is located in west/central MO within the Osage Plains portion of the Central Lowlands physiographic province which has a flat to gently rolling topography. Whiteman AFB is located in an area referred to as the tallgrass prairie. Most of the tall grasslands have been converted to agriculture. The base areas include open prairie, mixed wood and hardwood urban forests, green belt areas, branches, streams, and ponds. The majority of the current vegetative surface area at Whiteman AFB is either improved or semi-approved landscape areas. The area around the base is a region of mixed prairie and forest. The base is surrounded by Knob Noster State Park, pasture, cropland, and a few small residential developments.

There are 52 species of trees and 22 species of shrubs on Whiteman AFB. Forested land near the base and within Knob Noster State Park consists primarily of mixed oak upland dry forest with hickory (*Carya* spp.), maple (*Acer* spp.), and cedar (*Juniperus* spp.). Other characteristic species include shagbark hickory, white oak, and sugar maple. These woodlands do not support a high diversity of wildlife. Understory species include dogwood, red mulberry, spicebush, redbud, and Virginia creeper. The original prairie of west central Missouri consisted of dominant tall grass prairie species including Indian grass, big bluestem, prairie cordgrass, ragweed, and other species. The grassland on Whiteman AFB consists of fescue grass and vegetation other than fescue including Bermuda grass (*Cynodon dactylon*), buffalo grass (*Buchloe dactyloides*), bluegrass (*Poe annua*), common dandelion (*Tataxacum officinale*), white clover (*Trifolium repens*), red clover (*Trifolium pretense*), and sedge (*Dichromena* spp.) (Whiteman AFB 2000).

The areas around the proposed buildings have been disturbed by previous construction activities and contain mostly developed, landscaped, or impervious surfaces. The flora located around the beddown site includes mature hardwoods interspersed between the buildings and areas of landscaped grasses and landscaped shrubs and trees.

3.3.5.1.2 Wildlife

Mammals

Typical fauna supported on Whiteman AFB include white-tailed deer, coyote, eastern fox squirrel, eastern gray squirrel, eastern cottontail rabbit (*Sylvilagus floridanus),* woodchuck (*Marmota monax),* raccoon, opossum, eastern mole (*Scalopus aquaticus),* prairie vole (*Microtus ochrogaster),* beaver, muskrat, mink, feral cat (*Felis silvestris),* deer mouse, white-footed mouse, hispid cotton rat, long-tailed weasel (*Mustela frenata),* and bobcat.

Residences, schoolyards, parks, and golf courses are considered urban wildlife habitat. The areas around the residences and buildings on Whiteman AFB have been disturbed by previous construction and offers minimal habitat for mammals, mainly limited to trees and shrubs, which would support small mammals such as squirrels, raccoons, opossums, and various rodents (mice and rats).

Birds

Various birds can be found on Whiteman AFB including northern bobwhite, American woodcock (*Scolopax minor*), mourning dove, wild turkey, turkey vulture, european starling (*Sturnus vulgaris*), eastern meadowlark (*Sturnella magna*), red-winged blackbird, blue jay, American robin, horned lark, common flicker (*Colaptes auratus*), American crow, eastern bluebird (*Sialia sialis*), northern cardinal, brown thrasher, killdeer, and upland sandpiper (*Bartramia longicauda*).

Raptors are found at Whiteman AFB and the population density and richness is correlated to their predator-prey relationship with rodents occurring in the area. However, the density of raptors on the base normally peak during the fall and winter months. Raptors found at Whiteman AFB include Red-tailed hawk, rough-legged hawk, northern harrier, American kestrel, Swainson's hawk, short-eared owl, and the great horned owl. Others known to visit but not recorded during the BASH survey are the bald eagle, barn owl, barred owl, snowy owl (*Nyctea scandiaca*), ferruginous hawk (*Buteo regalis*), and Cooper's hawk.

Aquatic birds observed on base include ring-billed gull (*Larus delawarensis*), common snipe, great blue heron, green-backed heron (*Butorides striatus*), white-fronted goose (*Anser albifrons*), Canada goose, and snow goose (*Chen caerylescens*).

The areas around the residences and base buildings have been disturbed by previous construction activities and contain mostly buildings, roads, and landscaped or impervious surfaces. Urban habitat for birds is primarily limited to landscaped trees and shrubs, which small birds could use.

Reptiles and Amphibians

Frogs likely found on Whiteman AFB include the northern cricket frog (*Acris crepitans),* gray tree frog (*Hyla chrysocelis/versicolor),* spring peeper (*Hyla crucifer),* western chorus frog (*Pseudacris triseriata),* northern crawfish frog (*Rana aereolata),* plains leopard frog (*Rana blairi),* bullfrog, southern leopard frog (*Rana sphenocephala), and* American toad (*Bufo americanus).* Lizard species include five-lined skink (*Eumeces fasciatus)* and ground skink (*Scincella lateralis).* Turtles likely found on Whiteman AFB include common snapping turtle, painted turtle

(*Chrysemys picta),* three-toed box turtle (*Terrapene carolina),* ornate box turtle (*Terrapene ornate),* and red-eared slider. Several types of snakes can be found including yellow-bellied racer, black rat snake (*Elaphe obsosleta*), prairie kingsnake (*Lampropeltis calligaster),* common kingsnake, northern water snake (*Nerodia sipedon),* midland brown snake (*Storeria dekayi),* common garter snake, red-sided garter snake, and central lined snake (*Tropidoclonion lineatum).*

3.3.5.2 Aquatic Communities

3.3.5.2.1 Fish

Few fisheries species have potential to occur in the manmade lakes and ponds found on base. Fish species likely to utilize stream habitat at Whiteman AFB include channel catfish (*Ictalurus punctatus*), largemouth bass, black bullhead (*Ameiurus melas),* black crappie (*Pomoxis nigromaculatus),* white crappie (*Pomoxis annularis),* bluegill, green sunfish, mosquitofish, hybrid sunfish, creek chub (*Semotilus atromaculatus),* central stoneroller (*Campostoma pullum),* orangethroat darter (*Etheostoma spectabile),* fathead minnow (*Pimephales notatus),* common shiner (*Luxilus cornutus),* emerald shiner (*Notropis athernoides),* yellow bullhead (*Ameriurus natalis),* and logperch (*Percina caprodes).*

3.3.5.2.2 Wetland and Aquatic Communities

Palustrine wetlands are the only type of wetland found on Whiteman AFB. Palustrine wetlands include all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens. Five classes of palustrine wetlands occur on the base. They include unconsolidated bottom, emergent, forest, scrub-shrub, and a combination of scrub-shrub and emergent. Drainage ditches associated with the airfield and the ammunition storage area, four tertiary wastewater treatment ponds, two ponds on the golf course, and two large lakes on the base have been identified as non-jurisdictional wetland habitats. There is also an influent location where Long Branch Creek enters base property on the southern boundary near the southeast corner of the runway. All of these aquatic communities provide habitat capable of supporting aquatic species.

3.3.5.3 Threatened and Endangered Species

3.3.5.3.1 Federal and State-Listed Species

No Federally-listed threatened or endangered species, as classified by the USFWS, are currently known to occur on Whiteman AFB. This assessment is based on a survey completed with the MO Department of Conservation in 1994 and extensive survey work conducted by the base Natural Resource Planner since 2000. Because of the lack of T&E species, Section 7 consultation was not required with the USFWS. Local or National groups (i.e., Nature Conservancy, National Wildlife Federation) have not taken an active interest in this area for T&E species (Whiteman AFB 2000).

A number of species found or historically located on the base have been listed as endangered or using a state ranking system (S1 through S5) by the State of MO. State rank S2 and S3 species are found at Whiteman AFB, which are categorized as Imperiled and Vulnerable species, respectively. Species are termed Imperiled in the state or Nation because of rarity or because of some factor(s) making it very vulnerable to extirpation (Missouri Natural Heritage Program 2011). Species are termed Vulnerable because they are rare or uncommon or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation (Missouri Natural Heritage Program 2011). Table 3-17 lists the species which have historically been found on the base and have been listed by the State of MO.

Table 3-17. State-Listed Threatened and Endangered Species Known to Occur at Whiteman AFB, Missouri

Common Name	Scientific Name	Status
Black-tailed Jack Rabbit	*Lepus californicus*	Endangered
Greater Prairie-Chicken	*Tympanuchus cupido*	Endangered
Common Barn Owl	*Tyto alba*	Vulnerable
Sharp-shinned Hawk	*Accipiter striatus*	Imperiled
Long Tailed Weasel	*Lithobates areolatus circulosus*	Vulnerable
Northern Crawfish Frog	*Tympanuchus cupido*	Endangered

Source: Whiteman AFB 2000 and Missouri Natural Heritage Program 2011

Sharp-shinned hawks have been documented on base as recently as 2002 (Whiteman AFB 2000). There is the possibility that auriculate false foxglove (*Tomanthera auriculata*) could be found in the future as it has been identified on disturbed land. Historically, prairie-chickens have been observed on the flight line but none have been observed since the spring of 1993. Species most likely to be found in the future include loggerhead shrike, Bewick's wren, Bell's vireo, northern harrier and greater prairie-chicken. Suitable habitats currently exist for these species (Whiteman AFB 2000).

3.3.6 Earth Resources

The following information on Earth Resources was excerpted from the Whiteman AFB INRMP (Whiteman AFB 2000).

3.3.6.1 Climate

The climate at Whiteman AFB varies greatly throughout the year. Average low temperature for the year is 28° F, occurring in January. Average high temperature for the year is 79° F and occurs in July. The record low recorded was -19° F, with the record high temperature recorded as 107° F. Winds generally come from the north with the mean speed of five to eight miles per hour, but are typically stronger during the winter. Annual precipitation is about 40 inches, 5% of which is snowfall. Fog occurs an average of 120 days a year in this area.

3.3.6.2 Topography and Geomorphology

Whiteman AFB lies within the Osage Plains portion of the Central Lowlands physiographic province. The topography of the region in which Whiteman AFB is located is flat to gently rolling. The base is located on a plateau, which is rare to find in the area. Elevation ranges from 830 ft MSL to 870 ft MSL from the south to north ends of the base. The topography of the area around Whiteman AFB can be seen in Figure 3-20. Precipitation runoff has cut some ravines and ditches through the base.

3.3.6.3 Soils and Geology

Whiteman AFB is underlain by bedrock that consists primarily of limestones, dolomites, shales, siltstones and sandstones in nearly horizontal beds. The thickness and lithology of the underlying beds vary in the vicinity of the base. Overburden (material deposited from erosional processes or derived from erosion of the underlying bedrock) in the vicinity of Whiteman AFB contains gravel-to boulder-sized rock fragments and sediments. Many mineral resources exist near or at Whiteman AFB, including coal, oil, aggregate, barite, lead, and zinc. Of these resources only aggregate is being recovered in the vicinity of the base, and none are being recovered or mined on the base.

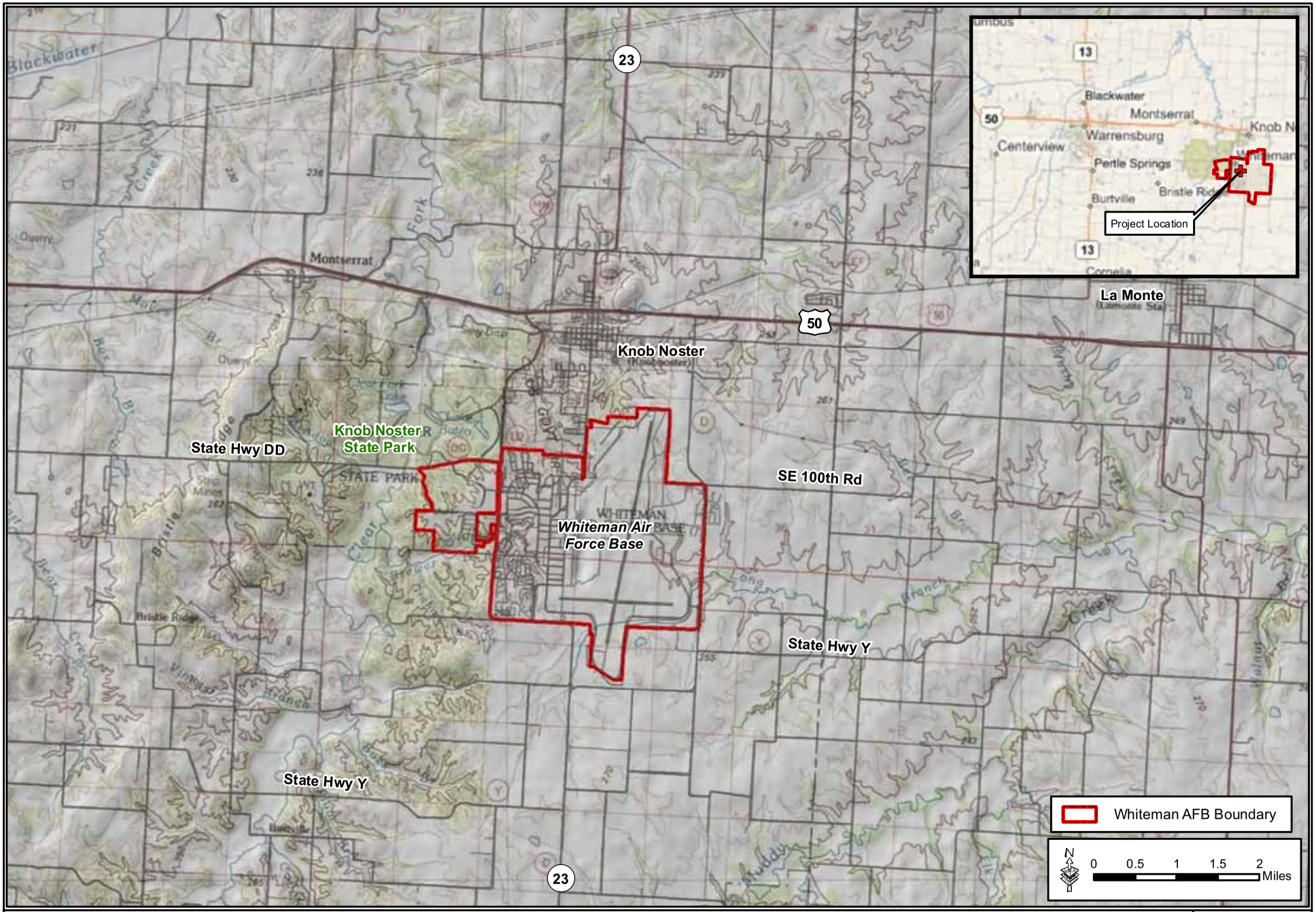

Figure 3-20: Whiteman AFB Topographical Map

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Soils found in Whiteman AFB are composed of alluvium, loess, and residuum. The alluvium consists of unconsolidated stratified sand and gravel, silty clay, and silt loam. Silt, silty clay, and fine sandy silt comprise the loess. Weathering of bedrock has produced clayey silt or sandy silty clay. The soils have moderate to very slow permeabilities and a moderate-to-high shrink-swell potential. Most of the soil types are moderately to highly susceptible to soil erosion by water if disturbed. Wind erosion is not a major concern.

There are soils on Whiteman AFB that have been designated under the FPPA as prime, unique soils. Haig silt loam and Sampsel silty clay loam are designated as prime, unique soils and are found predominately in the flight line area and to the south and east of the base, and can be seen in Figure 3-21.

3.3.7 Water Resources

This section describes ground and surface water resources, floodplains, wetlands and WUS, and general water quality within Whiteman AFB as discussed in the INRMP and the Whiteman AFB e-General Plan (2008) and incorporated herein by reference.

3.3.7.1 Surface Water

Whiteman AFB is in the Missouri River Drainage Basin, the Gasconade-Osage Rivers Subregion and lies along a ridge that divides the watersheds of the Clear Fork Creek of the Blackwater River to the west from the Long Branch of Muddy Creek to the east (Figure 3-22). The Blackwater River drains into the Lamine River approximately 12 miles west of Boonville, MO. Muddy Creek drains into the Lamine River approximately 14 miles northeast of Sedalia. The Lamine River subsequently drains into the Missouri River approximately 6 miles west of Boonville.

The Whiteman AFB storm drainage system consists primarily of roadside ditches, crossroad culverts, enclosed pipe drainage systems, and natural drainage channels. The tarmac and major portions of the operations and support areas have inlet and enclosed storm sewer systems with some roadside ditches and crossroad culverts. Residential areas are generally located along ridges and are served primarily by curbed and guttered streets with inlets and enclosed systems that convey runoff to open natural channels. The lower reaches of the watersheds on base are generally ravines and natural drainage channels, some of which are located in native timber and unmaintained, while others are mowed on a regular basis. There is also an influent location where Long Branch Creek enters base property on the southern boundary near the southeast corner of the runway. There are 16 separate stormwater outfall locations on Whiteman AFB.

Surface water quality in the area of the base is within state and Federal environmental guidelines and the installation performs monthly sampling of the effluent from the WWTP and other outfalls to monitor surface water contaminants (Whiteman AFB 2000). Oil/water separators in buildings along the flight line discharge into the sanitary sewer system then to the WWTP. Effluent from the wastewater treatment plant is discharged to Brewer Creek. Wastes and runoff that drain from the flight line from outside buildings and the parking ramp migrates into ditches, storm sewers, and creeks around the base.

Stream channelization and the resulting fast-flowing waters contribute to turbidity in the streams in the local watershed. Low levels of dissolved oxygen and elevated concentrations of ammonia have also been detected and are probably a result of runoff from agriculture. Chlordane has contaminated Lake Buteo, and fishing restrictions were in place for several years but have been lifted (Whiteman AFB 2000).

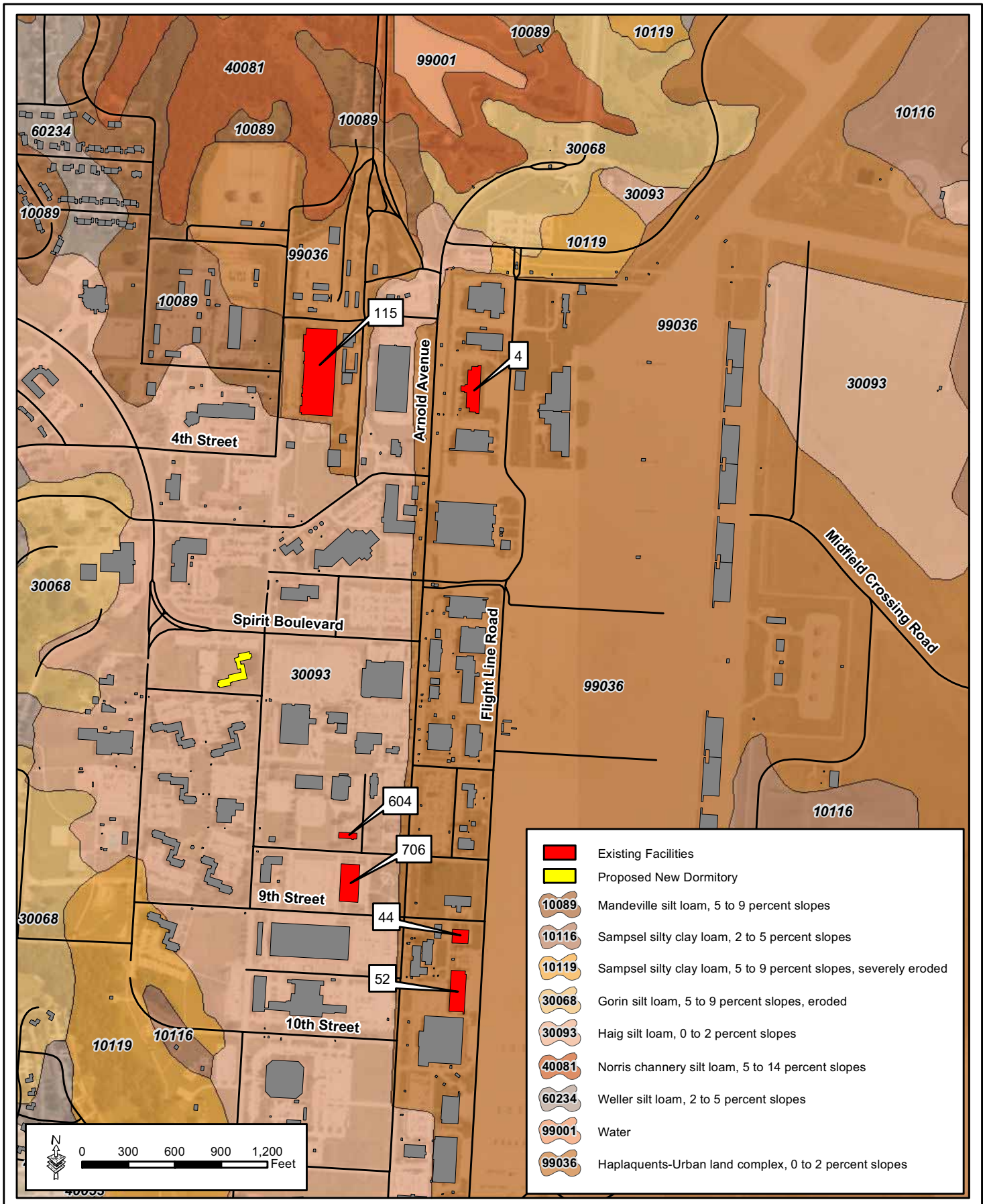

Figure 3-21: Whiteman AFB Soils Map

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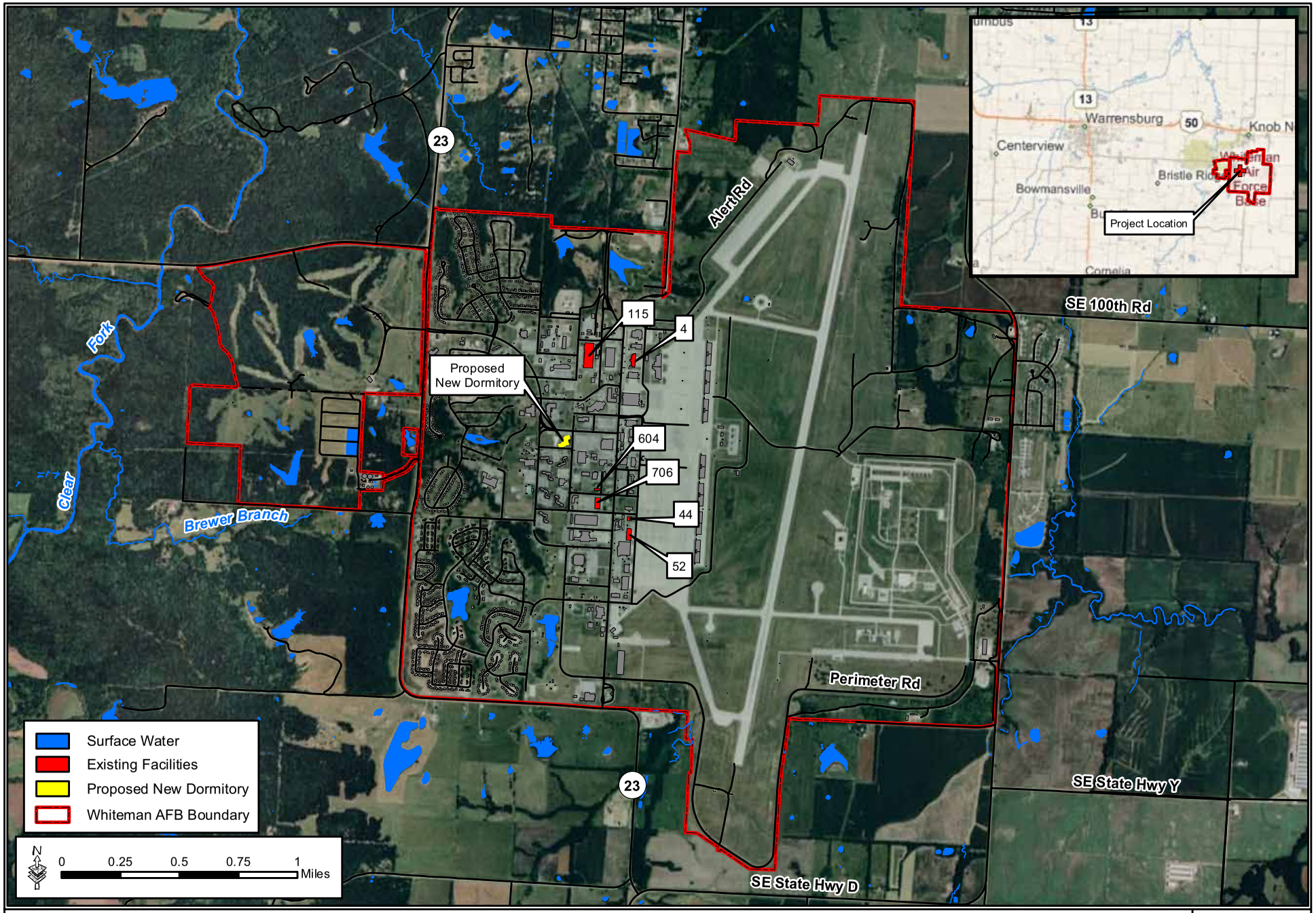

Figure 3-22: Whiteman AFB Water Resource Map

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3.3.7.2 Groundwater

Whiteman AFB is located within the Central Midwest Regional Aquifer System (Whiteman AFB 2000). Groundwater in this area is found in aquifers composed of alluvium, glacial drift deposits and carbonates. The regional aquifers include the Pennsylvanian and Mississippian aquifers. The principal means of recharge in the area around the base is infiltration of precipitation into residual materials and then by diffuse recharge into the bedrock aquifers. In the vicinity of the base, groundwater from surficial aquifers is seldom used for potable water. The primary use from these aquifers is for stock and crop watering. Johnson County contains three Public Water Supply Districts (PWSD) which regulate activities in groundwater recharge areas within the county. The supply capacity of the aquifer poses no limits to the amount of drinking water that may be supplied to the base (Whiteman AFB 2008).

Deep Ordovician and Cambrain aquifers are the primary water source for Whiteman AFB and surrounding areas. The Gasconade Formation supplies water to Knob Noster, and the Roubidoux Formation supplies water to Warrensburg (Whiteman AFB 2000). Whiteman AFB draws its water from both of these formations. The regional movement of the groundwater in confined aquifers below the base is generally north to northwest. Seasonable water table fluctuations of eight to ten feet can occur. Northwest of the base is a fresh-water/mineralized water contact zone. Groundwater in the area of the base tends to be slightly basic in the pH range of 7.6 to 7.7. According to a chemical database maintained by the Missouri Department of Natural Resources, groundwater contaminant levels in the area of the base meet or exceed the National primary drinking water standards (Whiteman AFB 2000). Whiteman AFB derives its water from 10 wells drilled into formations as deep as 1,171 feet. Well No. 7 is used exclusively to supply water for the base golf course (Whiteman AFB 2000). Water from the wells is pumped into an on-base water treatment plant that has a capacity of 1.35 mgd and is designed as a single-stage lime-softening treatment with re-carbonation, filtration and disinfection. There are three PWSDs within Johnson County. Neither Whiteman AFB nor the town of Knob Noster is located in a PWSD.

3.3.7.3 Floodplains

Floodplain Management in MO is regulated by the State Emergency Management Agency. All structures shall: (i) be adequately anchored to prevent flotation, collapse, or lateral movement of the structure, (ii) be constructed with materials and utility equipment resistant to flood damage, and (iii) be constructed by methods and practices that minimize flood damage. Furthermore, no use shall affect the capacity or conveyance of the channel or floodway of any tributary to the main stream, drainage ditch, or other drainage facility or system (Johnson County Unified Development Ordinance 2005).

The southeastern corner of Whiteman AFB is within the 100-year floodplain of Long Branch Creek (Whiteman AFB 2008) (Figure 3-23). One-year storms cause localized flooding and ponding on several parts of the base.

3.3.7.4 Wetlands

Missouri's regulation of wetlands rests solely with the Federal 401 certification and the state's general water quality standards.

In compliance with public policy requirements and with ecosystem management principles, a Wetlands Delineation Report for Whiteman AFB was completed in 1995. Palustrine wetlands were the only type of wetland found on base. Palustrine wetlands include all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens. They cover approximately only 88.29 acres, or two percent, of the land space on Whiteman AFB and are

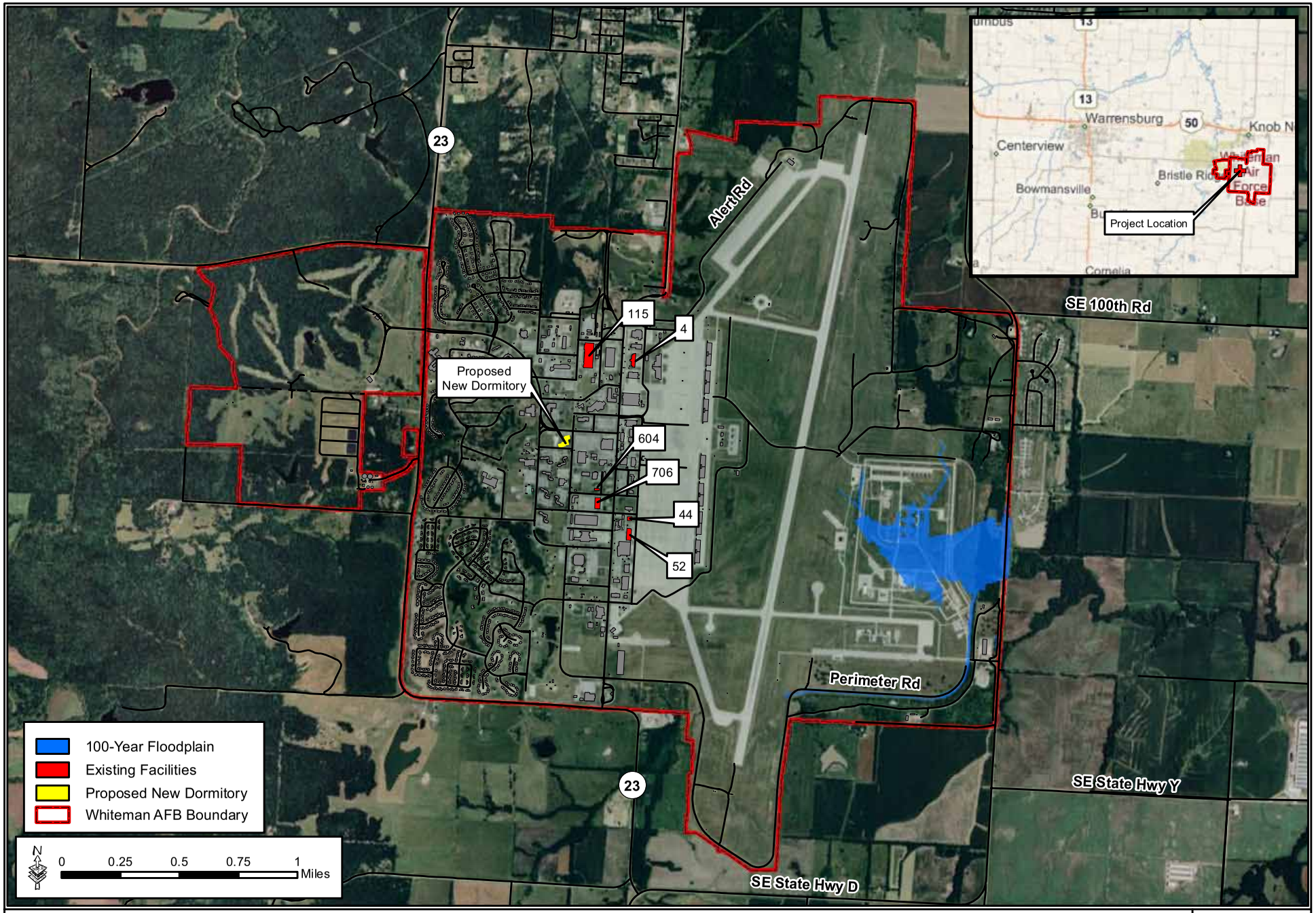

Figure 3-23: Whiteman AFB Floodplain Map

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listed as jurisdictional. Drainage ditches, four wastewater treatment ponds, two ponds on the golf course, and two large lakes have been identified as non-jurisdictional wetland habitats (Whiteman AFB 2008).

3.3.8 Air Quality

Whiteman AFB is located in Johnson County, Missouri, which is in attainment for all NAAQS. Pettis County is located immediately to the east of Whiteman AFB and is also in attainment for all NAAQS. Federal agencies are required to address GHGs for any Proposed Actions. Refer to Section 3.1.8 for discussion of GHGs and their regulatory requirements.

3.3.9 Solid and Hazardous Materials and Waste

There is one existing ERP site located up to approximately 0.5 mile from the proposed MC-12 beddown area at Whiteman AFB (Figure 3-24). Site WP-04 is located approximately 0.25 mile from Building 115, which is proposed to be used by the second squadron for maintenance. Site 0T-01 is located over a mile away from any of the proposed buildings.

Existing storage tanks and capacity for JP-8 would be used for the Whiteman AFB site, and these tanks are currently operated under a spill prevention plan and emergency response procedures that are in place for the base. Existing solid wastes and hazardous materials and waste management procedures and BMPs are used at Whiteman AFB to prevent any significant impact on the environment at the base or any significant impact on the general public.

3.3.10 Safety and Occupational Health

Whiteman AFB and the surrounding area have high concentrations of small perching birds, blackbirds, and shore birds. Large flocks of blackbirds migrate through the Whiteman AFB flying area in the morning and the evening from September through December. Raptors and vultures winter in the area from October to March and are active during the midmorning and remain aloft until late afternoon. Turkey vultures are present in high numbers during the summer months of June through September. Raptors can be particularly hazardous to aircraft because of their size and widespread distribution over the base and low-level training routes. Resident and migratory waterfowl such as ducks, geese, and swans pose a strike hazard. Any water sources such as ponds, lakes, and ditches may attract these birds if the areas contain emergent or submerged vegetation for feeding and nesting. Aircrews are most likely to encounter waterfowl during low-altitude flights in the vicinity of these water sources. Other wildlife including turkey, deer, and coyotes are abundant on base property and in the surrounding area, posing a potential threat to flying operations. Whiteman AFBs BASH Plan minimizes the bird and wildlife hazard through habitat management, active and passive dispersal techniques, and effective warning techniques (Whiteman AFB 2009).

There are explosive safety zones located on the northeastern, central, and southeastern parts of the installation. Explosive safety zones were based on the types and amounts of explosives stored. To minimize the potential for loss of human life and the loss/damage of property in the event of an explosion, no non-munitions related development may occur within the explosive safety zones. The existing security clear zones on Beale AFB include the flightline area, PL-2 area, PL-1 area, and munitions storage area (Whiteman AFB 2008).

3.3.11 Noise

Whiteman AFB is located in west-central MO in Johnson County, 65 miles east-southeast of Kansas City, 9 miles east of the city of Warrensburg, 22 miles west of Sedalia, and 12 miles north of Windsor. Knob Noster State Park borders the base to the west, and the City of Knob

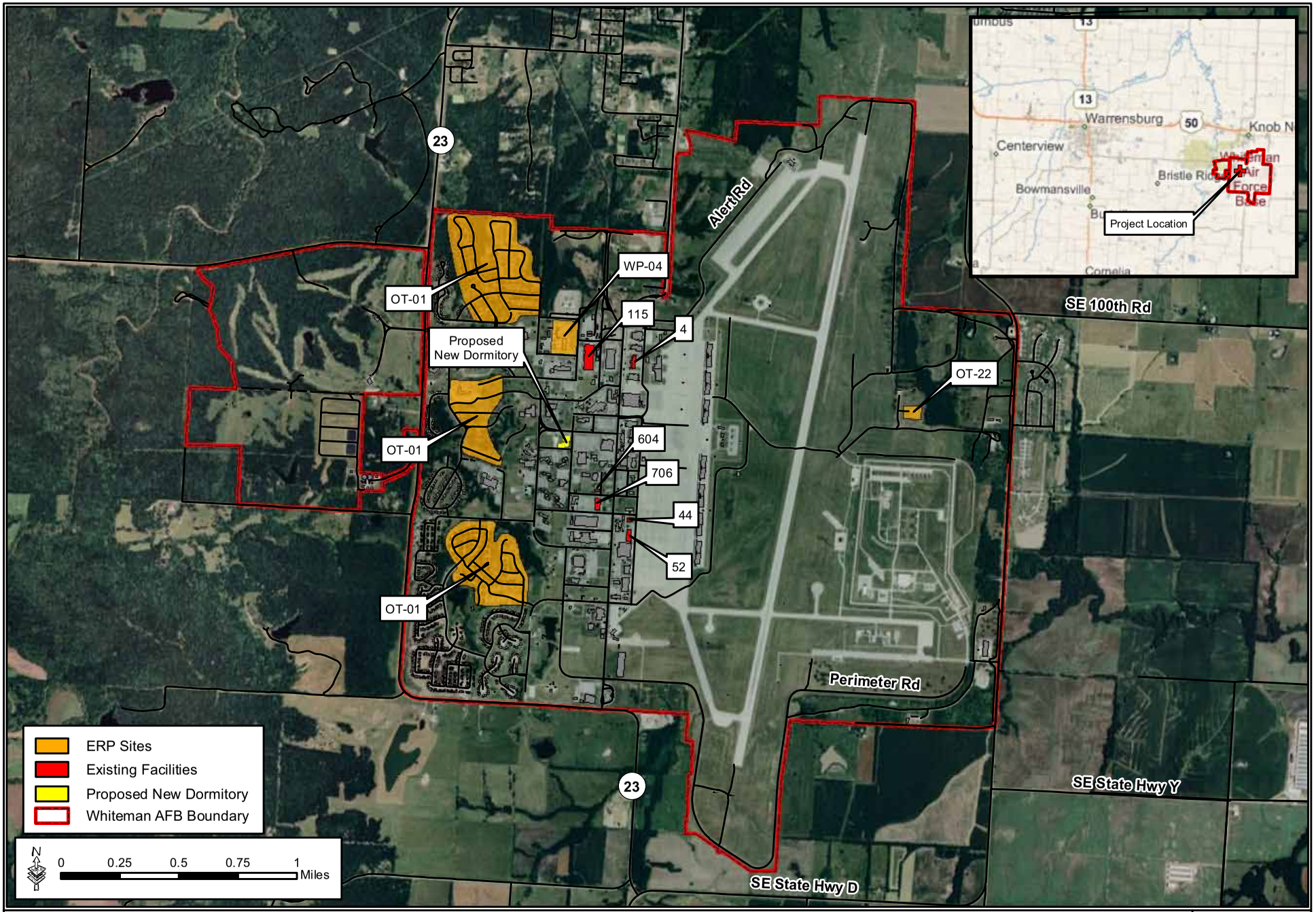

Figure 3-24: Whiteman AFB Environmental Restoration Program Sites

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Noster borders it to the north. The remainder of the surrounding land (south and east) is primarily used for agriculture.

The primary source of noise in the vicinity of the Whiteman AFB is airfield operations. Table 3-18 presents the total number of takeoffs and landings occurring at Whiteman AFB which includes commercial aircraft. The B-2, A-10, T-38, and AH-64 helicopter are the principal aircraft operating from Whiteman AFB and the average number of daily operations for these aircraft is shown below. The noise signatures of the fixed-wing and turbo-propeller aircraft are relatively low noise producers when compared to military jet-engine aircraft.

Table 3-18. Number of daily and annual flight operations at Whiteman AFB

Aircraft Operations at Whiteman AFB			
Type of Aircraft	**Average Daily Operations**	**Operations per Year**	**Percent of Total Aircraft Operations**
B-2	41	14,965	22%
A-10	27	9,855	15%
T-38	77	28,105	41%
AH-64	41	14,965	22%

Source: Whiteman AFB

3.3.11.1 Existing Noise Contours

Noise exposure levels were modeled for the AICUZ study using the USAF NOISEMAP computer model; the resulting noise contours are mapped in Figure 3-25. The model generates noise exposure estimates that are based on the day-night DNL metric used by the USAF, which is expressed in dB.

3.3.11.2 Noise Complaint Process and Noise Abatement

Whiteman AFB has an established noise complaint process available to the public. This process serves to educate local communities regarding Whiteman AFB operations and promotes openness between the base and the communities. Noise complaints are handled by the PAO formal correspondence and investigations are managed by the Operations Group Commander. Complaints are registered by the PAO in a noise complaint form, which includes a description of the nature of the complaint and the action taken.

3.3.12 Airspace

There are several public use airports in the general vicinity of Whiteman AFB. The nearest airports to Whiteman AFB are Skyhaven Airport, Sedalia Memorial Airport, and Lincoln Municipal Airport. Close coordination with FAA is required to minimize conflicts with the civilian aircraft operations at these airports. The B-2, A-10, T-34, and AH-64 are the principal aircraft operating out of Whiteman AFB. The average numbers of daily operations for these aircraft are listed in Table 3-18.

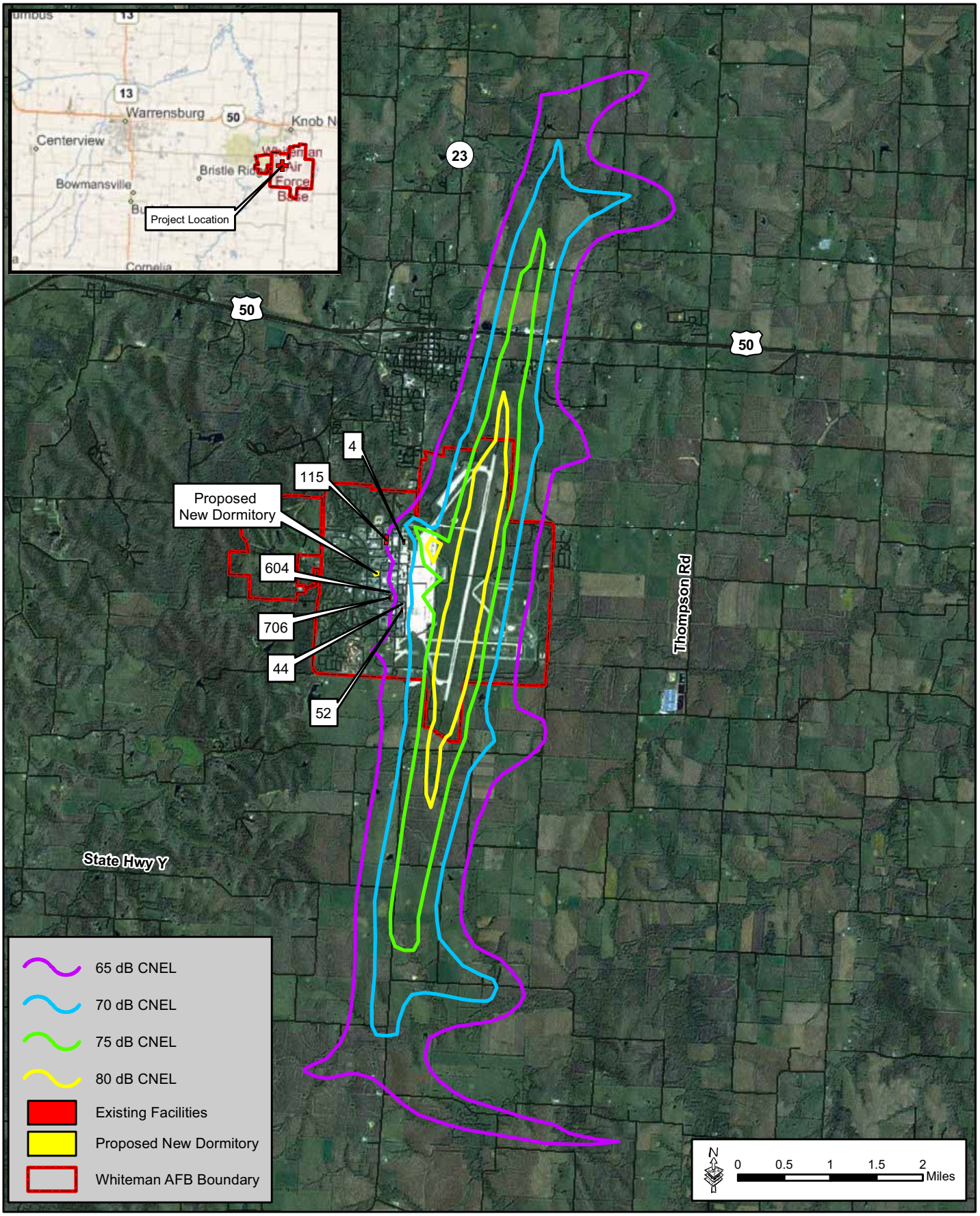

Figure 3-25: Whiteman AFB Noise Contour Map

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Whiteman AFB and Cannon Range airspace is located within Truman MOA. Fort Leonard Wood airspace is located within restricted airspace R-4501. Table 3-19 describes the MOAs and restricted airspace within Whiteman AFB and Cannon Range. This same airspace would be utilized to support MC-12 training.

Table 3-19. Whiteman AFB Airspace Identification and Description

	Altitudes		Hours of Use	
	Minimum	**Maximum**	**From**	**To**
Airspace				
Truman MOA	500 feet AGL	UTBNI FL 180	0600	2400†
Fort Leonard Wood (R-4501)	Surface	UTBNI FL 180	0630	2100†

Notes: † = other times by NOTAM
Source: FAA 2010 UTBNI = Up to, but not including; AGL = above ground level; MSL = mean sea level
FL= Flight Level (FL 180 is approximately 18,000 ft MSL) NOTAM = Notice to Airmen

SECTION 4.0
ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 PREFERRED ALTERNATIVE – BEALE AFB

4.1.1 Land Use Resources

4.1.1.1 Land Use

The construction of new facilities or renovations of existing facilities to accommodate the MC-12 aircraft and two squadrons would occur on previously disturbed areas adjacent to other Beale AFB buildings. Beale AFB has excess squadron operations facilities, maintenance facilities and hangars, and ramp space that would be used for the beddown, and MILCON would be required for a new dormitory. No changes in land use are planned and the MILCON project would be consistent with the base's master plan. Land use would remain for military purposes (i.e., there would be no change in the existing land use). Therefore, there would be no significant impacts on land use.

4.1.1.2 Visual Resources

Construction and renovation projects associated with the Preferred Alternative would be designed to be visually consistent with existing structures at Beale AFB. The visual character of the site consists of man-made landscape features and natural features. Adverse visual impacts are anticipated during construction, created both by the construction itself and by the associated increase in traffic, dust, and equipment. These impacts would be temporary and minor. New landscaping and hardscaping should enhance Beale AFB's existing features.

The visual impact of aircraft launches and traffic would co-exist with other aircraft operations. The general public in the area of the Beale AFB is accustomed to seeing various military aircraft performing training maneuvers. Therefore, the visual presence of horizontal launches would not be new to the area, and the introduction of the MC-12 operations would not create a significant impact to visual resources in the area.

4.1.1.3 Transportation

The total amount of inbound traffic at Beale AFB was 5,137 in 2009 (ACC 2010), and the additional 874 personnel would represent a 17% increase in traffic on base. The increase would be expected to impact the current traffic on the installation, but not significantly. Beale AFB is a large installation in terms of land area and the beddown activities are located on an area of the base with little traffic congestion. The off-base transportation system is in good condition and is capable of handling increased traffic. Various area roadway improvements are proposed to adequately support increases of military personnel at Beale AFB. These projects include roadway widening, improved access, and capacity improvements to roadways and state highways within Yuba County. Examples of the proposed improvements include widening of CA Highways 70 and 65 and construction of a Highway 65 Bypass around Wheatland (Beale AFB 2008). Other plans in this area include bicycle trails to the north, east, and south of the installation. Transportation impacts would be moderate but are not expected to be significant due to the MC-12 beddown.

4.1.2 Infrastructure

4.1.2.1 Electrical Distribution

The existing buildings that are proposed to be used for the MC-12 beddown are currently served by the existing electrical infrastructure. Electrical usage and demand are expected to remain at levels similar to the past use these buildings experienced, and thus, no improvements to the existing electrical distribution system would be required. Assuming each person uses an average of 10 kWh per day, electricity demand on-base would increase approximately 8,740

kWh per day based on 874 additional staff and contracted personnel. This amount represents a 2% increase over the average daily demands for the base. Since the electrical system has a residual capacity of 65% which can support growth on the base, the addition of new personnel and a new dormitory would have negligible impacts on the electrical system at Beale AFB. No significant impacts on public electrical sources would be expected.

4.1.2.2 Potable Water/Fire Protection System

Anticipated water uses for the Preferred Alternative include potable water for consumption and personnel use, facility wash down, and maintenance needs. Implementation of the Preferred Alternative would increase demands on water supplies during and following the construction period. Water would be needed for a variety of construction activities including, but not limited to, drinking water supply for construction crews, wetting construction sites for dust suppression, and concrete mixing. These increases would be temporary and minimal. Water usage would likely increase by 50 gallons per person per day as a result of the beddown (Gleick 1996). Therefore, potable water demand on-base would increase approximately 45,000 gallons per day based on 874 additional staff and contracted personnel. This amount represents a 2.5% increase over the average daily demands for the base. Since the water supply system has a residual capacity of 60% which can support growth on the base, the addition of new personnel would have negligible impacts on the water supply at Beale AFB.

4.1.2.3 Wastewater

Assuming the usage and occupancy remains similar to the past use these buildings experienced, no additional sewer demands would occur, and therefore the existing wastewater collection system would not need to be improved. Assuming the amount of wastewater produced per person would be similar to the amount of potable water used, which is 50 gallons per person per day, there would be an increase of approximately 17% over the average daily demands of the base. Even with the new dormitory, the anticipated wastewater flows generated from the facilities appear to be well within the treatment limits of the plant's permitted capacity since only 38% of the capacity is currently being used; thus, there would be no significant impacts on the wastewater system. However, since the system is old and in poor condition, it is recommended that building cleanouts and sewer mains in the vicinity of the proposed MC-12 beddown site would be inspected at the time of final design. Any sewer lines that may be deteriorated or that otherwise may pose problems in the life span of the beddown should be considered for rehabilitation during initial improvements, in order to avoid interruptions of operations and minimize cost and inconvenience.

4.1.2.4 Gas

Natural gas usage and demand are expected to remain at levels similar to the past use the proposed existing buildings experienced, and thus, no improvements to the existing gas distribution system would be required. The new dormitory would require additional natural gas supply. The amount of natural gas that would be used by the beddown is much less than 1%, so it would be considered negligible. There is a 52% residual gas supply capacity available and thus there would be no significant impacts on the natural gas system.

4.1.2.5 Storm Drainage System

Impervious surfaces reduce rainwater infiltration into the soils and increase the flow of migrating rainwater to stormwater systems. Improvements to existing buildings and new facility construction would add approximately 1 acre of impervious area to the drainage area. The Proposed Action could directly impact the stormwater drainage system by increasing stormwater flow which may, indirectly, cause an overflow event. Vegetative landscaping around

the new buildings would reduce the harmful effects of impervious surfaces by slowing down overland flow of rainwater and increasing rates of evapotranspiration.

In addition, Beale AFB would be subject to the new stormwater design requirements of Section 438 of the EISA that require Federal construction projects that disturb 5,000 square feet or more of land to maintain or restore predevelopment site hydrology to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. The renovation projects are anticipated to disturb 5,000 square feet or greater and, therefore, are subject to the stormwater design requirements of Section 438 of the EISA.

The project area is located in a watershed that encompasses a highly developed area of Beale AFB. The increase of 1 acre of impervious areas would represent less than a 1 percent increase in impervious surfaces in the drainage area. Upon completion of construction activities, all disturbed areas would be landscaped to reduce stormwater flow over land and increase percolation through the soils. The landscape would be reseeded with turf and native shrubs. With the proper vegetative cover and other environmental measures, direct and indirect impacts on stormwater flow and drainage systems would be less than significant.

4.1.2.6 Liquid Fuels
The MC-12 beddown would not impact liquid fuels on the base. JP-8 fuel would be transported to the MC-12 via trucks. Additional fuel pipeline would likely not be required.

4.1.2.7 Communications System
The extant buildings proposed for the MC-12 beddown are currently served by the existing communications system provided by 9 CS/SCX. Since base personnel would increase with the proposed beddown, telephone, network, and special circuit requirements would be required. Beale AFB currently has the capacity to meet these infrastructure requirements, so no significant impacts on the communications system would be expected.

4.1.3 Cultural Resources
Implementation of the Preferred Alternative would primarily involve use of existing buildings and infrastructure and, thus, potential impacts to cultural resources would be limited. The Preferred Alternative would require the upgrade, repair, or conversion of buildings and infrastructure such as roads and ramps to bring them to standards for long-term viability. Where repair of the existing infrastructure would include the replacement of that which currently exists on previously disturbed property, no impact on cultural resources would be expected. One of the proposed facilities to be used for the MC-12 beddown (Building 1322) is considered eligible for the NRHP. However, this facility is only proposed to be used as a storage area for additional flare buildup, which is the current use of this building. No modifications would be required for Building 1322; therefore there would be no impacts. The proposed new dormitory would be sited near the existing dormitories in a developed area; thus, there would be a low risk of encountering cultural resources. Consultation with the California SHPO and other interested parties would need to occur if any cultural resources are found during construction. Given ACC's commitment to implement appropriate mitigation measures, no adverse impacts on historic properties or cultural resources would be expected.

4.1.4 Socioeconomics and Environmental Justice
Revenue in the region would increase temporarily during any period(s) of building construction, repairs or renovations. The beddown at Beale AFB would require substantial construction and MILCON funding to construct a dormitory and would contribute a short-term increase in revenue for a limited period of time. There would be an additional demand for temporary quarters, base

exchange, commissary and other community-related functions, which would increase revenue temporarily.

In the long-term, increased revenue would be associated with an increase in expenditures from the additional 874 additional staff and contracted personnel associated with the MC-12 beddown. Based on the average accompanying dependent factor of 1.8 (Air Force Center for Environmental Excellence 2001), direct permanent population changes as a result of the beddown would be an increase of approximately 2,450 people (711 military personnel and 163 contracted personnel and 1,575 dependents). There are more than 4,200 people residing on Beale AFB as of March 2008 (Beale AFB 2008c). If the accompanying dependent factor of 1.8 is used, the current population would be approximately 11,760 persons. An increase of 2,450 people would represent a 20.8% increase of the 2008 estimated population at Beale AFB and a 3.4% increase of Yuba County's 2008 population of 72,865. The increase in personnel would have an overall long-term positive impact on revenue in the region.

Some housing would be available on Beale AFB, in nearby communities, and in Yuba County for 874 personnel (and their dependents) associated with the MC-12 beddown. In June 1998, the base completed construction on the second phase of the "Mountain View" housing area. There are 12 four-bedroom and 119 two-bedroom junior enlisted homes. In addition, 48 new two-bedroom junior enlisted units in the Brookview area became available in October 2002. According to the 2008 U.S. Census, there are 3,333 vacant housing units in Yuba County; however, suitable housing in this area for unaccompanied enlisted personnel is a minimum of 20 miles from the base. Beale AFB currently has a dormitory deficit of 300 rooms. Construction of a dormitory is included in the Preferred Alternative. With the construction of the dormitory, an increase of personnel would not have a significant impact on housing.

The MC-12 beddown would cause an increase in demand for public services such as police and fire services and the public school system. Potential adverse impacts would be temporary and short-term in nature until upgrades are made in the capacity of public services, but are not expected to be significant. No permanent significant adverse impacts on these services would be expected once adjustments have been made on these public services.

Although minority, low-income, and youth populations across the ROI are slightly higher than the state of California, there would be no disproportionate or significant, adverse impacts upon minority or low-income populations or upon children due to the MC-12 beddown.

4.1.5 Biological Resources

Beale AFB is the preferred location for MC-12 beddown activities. The base would leverage existing facilities (previously disturbed) to support the beddown and minimize impact on biological resources.

Development associated with the MC-12 beddown would have regulatory constraints associated with sensitive natural resources and special-status species found at Beale AFB. The project would comply with Federal and state environmental laws, and regulations such as the ESA, the CESA, and CWA.

The proposed beddown area and new dormitory would avoid WUS including seasonal and permanent wetlands. The proposed new dormitory at Beale AFB would be located more than 250 feet away from the nearest vernal pools (see Figure 3-7b) and they would be avoided during MC-12 beddown activities; therefore, there would be no effect on the species associated with the vernal pools (i.e., fairy shrimp, tadpole shrimp). There are no anticipated impacts on

these vernal pool species, Central Valley steelhead, Chinook salmon, or VELB due to the renovations of the existing buildings to be used for the beddown, the proposed new dormitory, or MC-12 operations.

Some disruption of wildlife associated with developed areas such as mice, rats, bats and birds is possible. These animals would likely remain in the buildings or move to adjacent uninhabited buildings and structures in the project areas. Noise associated with flight corridors and MC-12 flight operations would have no impact on wildlife or protected species in the area. The noise produced by the MC-12 is relatively low compared to the aircraft that currently use Beale AFB.

A database query of CNP, CDNR, and USFWS was performed to identify all threatened and endangered, and special-status species including critical habitat. The proposed building renovations and dormitory construction would occur on previously disturbed ground or buildings and would not be expected to impact any California threatened, endangered, or sensitive biological species. The proposed action is not expected to have any significant impact on biological resources.

4.1.6 Earth Resources

4.1.6.1 Climate

Emissions from MC-12 training would not contribute significantly to climate change in this area.

4.1.6.2 Topography and Geomorphology

Geomorphology would not be altered by the MC-12 beddown. Topography could potentially be altered minimally by construction of the dormitory but would not be considered a concern due to its minor impact.

4.1.6.3 Soils and Geology

Soils on the base are not expected to be impacted by beddown of the MC-12 at Beale AFB, except potentially minimally during construction, but protective measures and BMPs will be taken to avoid negative impacts at that time. No prime farmland soils would be impacted by the beddown or new dormitory at Beale AFB.

4.1.7 Water Resources

Under the Preferred Alternative, soil would be cleared of vegetation due to dormitory construction and, consequently, would be susceptible to erosion during construction activities. The new facilities would be expected to increase the amount of impervious surfaces within the South Yuba River subbasin of the Sacramento River Basin. The South Yuba River subbasin of the Sacramento River Basin could be affected by stormwater runoff and suspended sediments resulting from precipitation events during the construction period. If the construction area is greater than 1 acre, a NPDES StormWater Discharge permit would be required prior to construction. This permit would require that a SWPPP be prepared and a NOI to be filed with the CWRB and USEPA. Implementation of specific erosion and sedimentation controls and other BMPs, such as the strategic placement of hay bales and silt fence, would limit the amount of erosion that occurs on-site and restrict potential impacts on surface water during the construction phase of the Preferred Alternative. Incorporation of post-construction stormwater controls within Beale AFB's existing SWPPP for base-wide facilities and operations would minimize long-term impacts to surface waters and allow for groundwater recharge. Therefore, no significant impacts on groundwater or surface waters would occur as a result of an increase of impervious surfaces under the Preferred Alternative.

From Section 3.1.7.4, areas of wetlands, including vernal pools, on Beale AFB have been identified. Since the preferred beddown facilities would occur within developed areas, no wetlands or vernal pools would be impacted by the renovation of existing facilities. The proposed location for the new dormitory is approximately 250 feet from the nearest vernal pools and would have no impact on the vernal pools. The MC-12 beddown area and the new dormitory would not be located within any floodplains; therefore, there would be no impact on floodplains.

4.1.8 Air Quality

4.1.8.1 Construction - combustible emissions and fugitive dust

Temporary and minor increases in air pollution would occur from the use of construction equipment (combustible emissions) and the disturbance of soils (fugitive dust) during construction of the new dormitory and renovation of existing facilities. The following paragraphs describe the air calculation methodologies utilized to estimate air emissions produced by the Preferred Alternative. Fugitive dust emissions were calculated using the emission factor of 0.19 tons per acre per month (Midwest Research Institute [MRI] 1996), which is a more current standard than the 1985 PM-10 emission factor of 1.2 tons per acre-month presented in AP- 42 Section 13 Miscellaneous Sources 13.2.3.3 (USEPA 2001).

USEPA's NONROAD Model (USEPA 2005) was used, as recommended by USEPA's *Procedures Document for National Emission Inventory, Criteria Air Pollutants, 1985-1999* (USEPA 2001), to calculate emissions from construction equipment. Combustible emission calculations were made for standard construction equipment, such as backhoes, trenchers, and cement trucks. Assumptions were made regarding the total number of days each piece of equipment would be used and the number of hours per day each type of equipment would be used.

Construction workers would temporarily increase the combustible emissions in the airshed during their commute to and from the project area. Emissions from delivery trucks contribute to the overall air emission budget (CARB 2008b). Emissions from delivery trucks and construction worker commuters traveling to the job site were calculated using the USEPA MOBILE6.2 Model (USEPA 2005a, 2005b and 2005c).

The total annual air quality emissions were calculated for the construction activities to compare to Federal and state *de minimis* thresholds. Summaries of the total emissions for the renovation of existing facilities and construction of the dormitory are presented in Table 4-1. Details of the analyses are presented in Appendix B.

Several sources of air pollutants contribute to the overall air impacts of the renovation and dormitory construction projects. The results of the air calculations in Table 4-1 included emissions from:

a. Combustible engines of construction equipment
b. Construction workers commuting to and from work
c. Supply trucks delivering materials to construction site
d. Fugitive dust from job-site ground disturbances

Table 4-1. Total Annual Air Emissions from the Renovation of the Existing Facilities and Construction of the Dormitory at Beale AFB versus the *De minimis* Threshold Levels

Pollutant	Total (tons/year)	*De minimis* Thresholds (tons/year) [1]
CO	3.35	100
VOCs	0.51	50
NO_x	2.61	50
PM-10	2.49	100
PM-2.5	0.43	100
Sulfur Dioxide (SO_2)	0.27	100
GHG CO_2 and CO_2-E	1,090	25,000

Source: 40 CFR 51.853 and GSRC model projections.
[1.] Note that Yuba County is in non-attainment for PM-2.5 at the Federal level and in non-attainment for one hour ozone, eight hour ozone, PM-10, and PM-2.5 at the state level.

The proposed renovation and construction activities would not exceed Federal or state *de minimis* thresholds; thus, these activities would be exempt from a Conformity Determination. As there would be no violations of air quality standards and no conflicts with the state implementation plans, there would be no significant impacts on air quality from the implementation of the Preferred Alternative.

During the construction of the dormitory, proper and routine maintenance of all vehicles and other construction equipment would be implemented to ensure that emissions are within the design standards of all construction equipment. Standard construction air quality emission mitigation measures such as clean fuel equipment, particulate matter minimization controls such as seeping, tarping, and equipment washing, and dust suppression methods to minimize fugitive dust would be implemented. By using these environmental design measures, air emissions from the renovation of existing facilities and the construction of the dormitory would be temporary and would not significantly impair air quality in the region.

4.1.8.2 Operational Air Emissions

Ongoing air emissions from aircraft operations and new commuter traffic from staff would contribute to the long-term air budget of Yuba County. Annual combustion air emissions from the MC-12 operations were estimated, using the FAA Emission and Dispersion Modeling System (EDMS) 5.1 air quality model, for the projected number of aircraft maneuvers occurring during the year (15,000 in full operation mode). The emission factors for the MC-12 aircraft are available in the EDMS database.

Beale AFB would experience an increase in the number of permanent and contracted staff due to implementation of the Preferred Alternative. Workers would increase air emissions in Yuba County during their commute to work and daily travel events. Air emissions from personal vehicles were calculated using the USEPA'S MOBILE6.2 Model.

The USEPA typically uses 3,000 ft AGL as the default mixing height that inhibits the rapid vertical transfer of air. Pollutants emitted above the mixing height become diluted in the very large volume of air in the troposphere before they are slowly transported down to ground level. These emissions above 3,000 ft AGL have little or no effect on ambient air quality. Therefore, air quality impacts below 3,000 ft AGL are the emphasis of the daily air quality assessment

analysis. The majority of emissions from criteria air pollutants, or precursors thereof, for the Preferred Alternative are expected to occur above the mixing height of 3,000 ft AGL. Approximately 5% of the flight time for consolidated mission events would generate emissions below 3,000 ft AGL and would be associated with takeoff and landing at Beale AFB. The calculations for the ongoing aircraft and commuter emissions are presented in Appendix B and are summarized in Table 4-2. Overall, the net increases in air emissions (from commuter traffic and ongoing operations) would be minor and well below the *de minimis* threshold and, therefore, the impacts on air quality would be less than significant. Because the net increases in air emissions would be below the *de minimis* threshold, the proposed action would be exempt from a Conformity Determination and a conformity analysis would not need to be conducted.

Historically, the aviation sector is responsible for about 2.6% of the GHG emissions in the Nation, with the U.S. military contributing only a small portion. Aircraft activities will generate small amounts of GHGs primarily from emission products from internal combustion engines. However, these amounts are negligible and will not significantly contribute to GHGs. Aircraft activities would not significantly affect the climate on a global or regional scale.

Table 4-2. Total Annual Air Emissions from Operations at Beale AFB versus the *de minimis* Threshold Levels

Pollutant	Total (tons/year)	*De minimis* Thresholds (tons/year) [1]
CO	134.15	NA
VOCs	20.00	50
NO_x	6.38	50
PM-10	0.03	100
PM-2.5	0.03	100
Sulfur Dioxide (SO_2)	0.69	100
GHG CO_2 and CO_2-E	6,190	25,000

Source: 40 CFR 51.853 and GSRC model projections.
1. Note that Yuba County is in non-attainment for PM-2.5 at the Federal level and in non-attainment for one-hour ozone, eight-hour ozone, PM-10, and PM-2.5 at the state level.

4.1.9 Solid and Hazardous Materials and Waste

The potential exists for petroleum, oil, and lubricants (POL) storage and use at the construction areas to maintain and refuel construction equipment during construction activities; however, these activities would include primary and secondary containment measures. Clean-up materials (e.g., oil mops) would also be maintained at the site to allow immediate action in case an accidental spill occurs. Drip pans would be provided for stationary equipment to capture any POL accidentally spilled during maintenance activities or leaks from the equipment. In addition, a spill prevention control and countermeasures plan (SPCCP) would be in place prior to the start of construction, and all personnel would be briefed on the implementation and responsibilities of this plan. Emergency response personnel would be notified immediately in the event of a release, and appropriate spill control and countermeasures would be taken by trained personnel only.

The renovation of some buildings could result in the production of minor amounts of lead or asbestos wastes. Any facility constructed before 1979 would require a hazardous materials survey before disturbing potentially hazardous material. These facilites would be inspected for lead and materials containing asbestos. The renovation of structures known to contain lead or

asbestos would be conducted in accordance with applicable state and Federal regulations. If the structures do contain asbestos, an Asbestos Dust Mitigation Plan would be implemented to mitigate the exposure and migration of the asbestos.

Some activities associated with the operation of aircraft and maintenance at the beddown site would generate small quantities of hazardous waste. Used POLs would be generated during the repair and maintenance of aircraft. Hazardous wastes would be disposed of according to the Beale AFB Hazardous Waste Management Plan. Existing storage capacity for JP-8 would be used for the MC-12 aircraft, and the Beale AFB operational ICP would be implemented if a spill were to occur to ensure the appropriate response to any fuel spills.

The hazardous waste generated by operations of the MC-12 would be similar to wastes currently generated by other aircraft operations at Beale AFB, and the additional amount generated would be very small in comparison to current amounts generated on the base from overall aircraft operations. The Preferred Alternative would not result in a significant hazard to the public or environment regarding the transport, use, or disposal of hazardous materials or wastes. Therefore, the Preferred Alternative would not have a significant impact on hazardous wastes.

There are 10 ERP sites that are located near the beddown area and proposed new dormitory area that would be used for the MC-12 beddown. Table 4-3 lists the ERP sites and the status of their remediation/closure.

Table 4-3. ERP sites at Beale AFB

ERP Site	Location	Contaminants of Concern	Status
SD-01 (West Side Drainage Ditch)	West of the runway on the northwest portion of the base.	Polychlorinated Biphenyl, Polycyclic Aromatic Hydrocarbons, TPH & metals contaminated sediment; VOCs in groundwater.	Active. Soil remedial action and remediation in place completed in 2007; Groundwater contamination addressed in coordination with Site SD-32.
SD-08 (J-57 Test Cell)	East of the northern flight line area.	Petroleum hydrocarbons and VOCs in soil and groundwater.	Active. Biovent system in place; Groundwater contamination addressed through use of absorption technology.
SD-11 (Aerospace Ground Equipment Maintenance Area)	Northern portion of the base, approximately 3,000 ft east of the north end of the runway.	Petroleum hydrocarbons in soil and groundwater.	Active. SVE system and wells in place; Groundwater contamination addressed in coordination with Site SD-32.
ST-21 (JP-7 ASTs Flight Line)	Bermed area between Taxiway 6 and the main runway.	Petroleum hydrocarbons in soil.	Active. Biovent system in place; Groundwater contamination addressed in coordination with Site SD-32.
ST-22 (USTs)	Base wide	Petroleum hydrocarbons/VOCs in soil and groundwater.	Active. 60 USTs sites are closed; Six UST sites remain open.

Table 4-3, continued

ERP Site	Location	Contaminants of Concern	Status
SS-37 (Industrial Waste Pipeline)	Northwestern portion of the base between Building 1086 and Fairchild Street.	VOCs in soil gas and groundwater.	Active. Remediation being handled under Site SD-32.
SD-32 (Building 1086)	The vicinity of Building 1086 on the east side of the flight line area, to the west across the runway, and south to the base boundary.	VOCs in soil and groundwater.	Active. SVE system including two vapor extraction wells and seven vapor monitoring points in place; Remediation in place completed in 2007; Groundwater remediation includes in situ chemical oxidation; Site is part of base wide groundwater monitoring program.
SS-36 (Building 2195 Secure Storage)	Southwest of the junction of Warren Shingle Road and A Street.	TPH- gasoline, TPH-diesel, and TCE in groundwater.	Closed. NFRAP approved in 2004; Groundwater remediation addressed in coordination with Site SS-39.
SS-39 (Building 2145)	East of C Street between 10^{th} and 12^{th} Streets.	VOCs in soil gas and groundwater.	Active. Remediation in place planned for 2011.
CG-40 (Monitoring Well UBL002MW)	Corner of Warren Shingle Road and D Street.	TCE and TPH in groundwater.	Active. Remedial Design planned.

Most of these sites are currently active and undergoing monitoring and/or remediation and should not pose an issue in the design, construction, or operation of the proposed facilities as long as proper safety precautions and standards are followed. Site SS-36, which is located near the proposed location of the new dormitory, is closed with NFRAP. Construction of the dormitory would not be affected by this ERP site or any subsurface groundwater contamination. There are no significant impacts anticipated from any of these ERP sites.

4.1.10 Safety and Occupational Health

There would be no significant increase in safety hazards associated with the Preferred Alternative. Maintenance and flight preparation activities would occur in existing hangars, facilities, or on the ramp and would be performed in accordance with applicable USAF safety regulations, published USAF Technical Orders, and standards prescribed by AFOSH requirements. Civilian contractors would be contractually governed by their companies' health and safety plans. Detailed SOPs have been established to fulfill many health and safety requirements. Personnel involved with different test equipment would be instructed on the use of the equipment and PPE. Hazardous materials associated with the aircraft are negligible as the aircraft are similar to the aircraft already stationed on base. No significant impacts relating to exposure to hazardous and toxic materials/wastes from the training program and maintenance requirements are expected due to the types of waste generated.

The proposed area for the beddown is located within MMRP sites ML625 (Primary Toss Bomb) and TA602 (Target 1955). These MMRP sites are currently recommended for no further action

within the proposed beddown area. No significant impacts relating to these MMRP sites or explosive safety zones are anticipated.

Under the MC-12 beddown at Beale AFB, there would be a potential for Class A mishaps, but this potential would be considered less than significant. MC-12 flight training operations would be conducted in restricted areas, ATCAAs, and MOAs which would alleviate any potential effects to non-military resources.

The MC-12 aircraft carry combat supporting munitions (M-211 flares). The handling and storage of the flares for the aircraft would be in accordance with USAF explosive safety directives. The residue material of the M-211 flares consists of iron and iron oxides which are not hazardous and may be discarded. The operating airspace and training ranges are designed to support live weapons training. Standardized procedures have been developed on the training ranges for the planning, safety evaluation, and conduct of flight testing. The impacts from use of these flares are also considered less than significant.

The Beale AFB BASH plan establishes procedures to minimize both bird and other wildlife strike hazards at the base and low level areas utilized by the base assigned aircraft. While the MC-12 aircraft is capable of flying at low-levels, BASH would be most likely during climbing and descent of the aircraft. However, low-level flying activities are already associated with the base's existing reconnaissance and training mission and all initiatives affecting bird populations are already closely coordinated to minimize BASH. Local flying procedures avoid direct over-flight of areas where migratory birds are predominantly located and the AHAS and BAM help predict where birds would be located in the operations area. Impacts on BASH are considered less than significant.

4.1.11 Noise

4.1.11.1 Short-Term Construction Noise

The new dormitory and renovations to existing buildings would require the use of common construction equipment. Table 4-4 describes noise emission levels for construction equipment which range from 76 dBA to 81 dBA at a distance of 50 feet (Federal Highway Administration [FHWA] 2007).

Table 4-4. A-Weighted (dBA) Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances[1]

Noise Source	50 feet	100 feet	200 feet	500 feet	1000 feet
Backhoe	78	72	66	58	52
Crane	81	75	69	61	55
Dump truck	76	70	64	56	50
Concrete mixer truck	79	73	67	59	53
Pneumatic tools	81	75	69	61	55
Generator	81	75	69	61	55

Source: FHWA 2007 and GSRC

[1] The dBA at 50 feet is a measured noise emission (FHWA 2007). The 100 to 1,000 foot results are GSRC modeled estimates.

Assuming the worst case scenario of 81 dBA, the noise model projected that noise levels of 81 dBA from a point source (i.e., pneumatic tools) would have to travel 300 feet before the noise would be attenuated to an acceptable level of 65 dBA. To achieve an attenuation of 81 dBA to

a normally unacceptable level of 75 dBA, the distance from the noise source to the receptor is 100 feet.

Sensitive noise receptors may be exposed to unacceptable (75 dBA) and to normally unacceptable (65 dBA) noise emissions. To minimize these impacts, construction activities should be limited to daylight hours during the workweek, between 8:00 am to 5:00 pm on Monday through Friday. Noise impacts should be less than significant if these timing restrictions are implemented during construction activities. Noise generated by the construction activities would be intermittent and last for 6 months, after which noise levels would return to ambient levels. Therefore, the noise impacts from construction activities would be considered less than significant.

4.1.11.2 Long-term Operational Noise Emissions

The MC-12 is a propeller-driven aircraft which is substantially quieter than the military and civilian jet aircraft that currently use Beale AFB. The MC-12 produces noise emissions of 79.4 dBA during takeoff, whereas an aircraft with jet engines produces 111.2 dBA during takeoff (MS Air National Guard 2009). The rule of thumb is that noise sources 10 decibels less powerful than the dominant noise source (jet engines) would have little to no effect on the total DNL noise contours (USAF 2009). The MC-12 is approximately 30 dBA quieter than the jet aircraft currently operating at Beale AFB.

Over the course of a year, the MC-12 would fly approximately 41 airfield operations per average busy flying day (Monday through Friday). Beale AFB currently handles approximately 58,400 airfield operations per year. Because the airport operates 7 days per week, total annual airfield operations were divided by 365 to yield 160 airfield operations per day. The beddown of the MC-12 mission would result in an increase in operations of approximately 26% and this increase could conceivably result in the increased likelihood of noise interference with activities (e.g., conversation, watching television) but would not increase the total DNL noise contours at the facility. The USAF (2009) reported that aircraft operations would have to double before the DNL noise contours would yield an increase in the DNL noise contours by 3 dB.

Aircrews must occasionally train at night to achieve and maintain night-flying proficiency for real world mission requirements. Approximately 26% of MC-12 arrivals would occur after 10:00 p.m. A dB noise “penalty” assessment occurs for these late night events due to their added potential for causing annoyance.

While at mission altitude, MC-12 aircraft noise would be noticeable, approximately 57 dB, but would not be expected to be obtrusive. No changes to land use compatibility would occur as a result of MC-12 operations within a 40-mile radius of Beale AFB. The beddown of the fleet of small propeller driven MC-12 would not alter the current noise contours presented in Figure 3-9. Impacts on the noise environment in the area would be limited to temporary annoyance and would be less than significant.

4.1.12 Airspace and Range Operations

The Preferred Alternative would have no changes to the Controlled Airspace around Beale AFB. The beddown of the MC-12 aircraft would increase the number of sorties by 4,320 annually. The airfield operations would be increased by 15,000 annually, which would impact airspace management and air safety in the MOAs and the surrounding FAA controlled airspace. The number of airfield operations that have recently occurred at Beale AFB was up to 60,000 annually. Beale AFB would experience an increase of nearly 26%. However, Beale AFB and the surrounding airspace have the capacity to absorb the additional 15,000 airfield operations.

The availability of the restricted airspace and ATCAAs has permitted USAF training flexibility, and has enabled USAF training consistent with airspace requirements. The MC-12 sorties are expected to use MOAs and ATCAAs within Beale AFB and NAS Fallon Airspace. There are other joint mission training centers near Beale AFB that could also be used for MQT training including the Marine Corps Mountain Warfare Training Center, Fort Hunter Liggett Multipurpose Range Complex, and Fort Irwin National Training Center. Typical training flights would be about three hours long, with only one hour of that flight being used at the range/training center. The training altitudes would be between 10,000 and 25,000 ft AGL for most of the training events that would be accomplished at the range, in the MOA, or around the local area.

The MC-12 carries M-211 flares and a flare drop training requirement exists for the mission. It is anticipated that flares would be expended fairly often. As a rule of thumb, 1 out of every 15 sorties would expend flares on the ranges or training centers wherever flares are authorized.

The M-211 flare reacts with air to give a heat signature but does not burn like a flare. The reaction would only last for several seconds until all the material is used up at which point the reaction would be finished. After the reaction stops, the M-211 foil material would continue to fall to the ground; therefore, the fire risk associated with M-211 flares would be very low. The residue material of the M-211 flares consists of iron and iron oxides which are not hazardous and may be discarded. The impacts from use of these flares would be less than significant.

Flight tests operating in the MOAs and on the ranges/training centers would be accomplished in accordance with USAF and FAA guidelines and regulations. Thus, the impacts on airspace management and air safety for aircraft flight operations would be less than significant and no conflicts with on-going test and training missions would be expected. General aviation or other civil aircraft operating in the controlled airspace above or surrounding Beale AFB would not be impacted. The airspace surrounding Beale AFB and any of the airfields or training ranges that would be used by the MC-12 missions would not be adversely impacted.

4.2 ALTERNATIVE 1 – ROBINS AFB

4.2.1 Land Use and Resources

4.2.1.1 Land Use

Impacts to land use at Robins AFB site would be similar to those listed in the Preferred Alternative. The construction of new facilities or renovations of existing facilities to accommodate the MC-12 aircraft and two squadrons would occur on previously disturbed areas adjacent to other buildings. No changes in land use are planned. Land use would remain for military purposes (i.e., there would be no change in the existing land use). Therefore, there would be no significant impacts on land use.

4.2.1.2 Visual Resources

Impacts on visual resources at Robins AFB site would be similar to those listed in the Preferred Alternative. Renovation projects would be designed to be visually consistent with existing structures at Robins AFB. The visual character of the site consists of man-made landscape features and natural features. Adverse visual impacts on the area are anticipated during construction, created both by the construction itself and by the associated increase in traffic, dust, and equipment. These impacts, however, would be temporary and minor. New landscaping and hardscaping should enhance Robins AFB's existing features.

The visual impact of aircraft launches and traffic would co-exist with other aircraft operations. The general public in the area of the Robins AFB is accustomed to seeing various military aircraft performing training maneuvers. Therefore, the visual presence of horizontal launches

would not be new to the area, and the introduction of the MC-12 operations would not create a significant impact on visual resources in the area.

4.2.1.3 Transportation

Impacts on traffic and transportation at Robins AFB would be similar to those listed in the Preferred Alternative. The additional personnel would represent a 9% increase in base traffic but only a 3% increase in total worker (civilian, military, contractors) population. The increase would be expected to impact the current traffic on the installation, but not significantly. The beddown activities are located on an area of the base with little traffic congestion compared to the rest of the base. The off-base transportation system is in good condition and is capable of handling increased traffic. Transportation impacts would be moderate, but are not expected to be significant due to the MC-12 beddown.

4.2.2 Infrastructure

4.2.2.1 Electrical Distribution

The existing buildings that are proposed to be used for the MC-12 beddown are currently served by the existing electrical infrastructure. Electrical usage and demand are expected to remain at levels similar to the past use these buildings experienced, and thus, no improvements to the existing electrical distribution system would be required. Assuming each person uses an average of 10 kWh per day, electricity demand on-base would increase approximately 8,740 kWh per day based on 874 additional staff and contracted personnel. This amount represents a 2.3% increase over the average daily demands for the base. Since the electrical system has a residual capacity of 52% which can support growth on the base, the addition of new personnel and a new dormitory would have negligible impacts on the electrical system at Robins AFB. No significant impacts on public electrical sources would be expected.

4.2.2.2 Potable Water/Fire Protection System

Anticipated water uses for the Preferred Alternative include potable water for consumption and personnel use, facility wash down, and maintenance needs. Implementation of the Preferred Alternative would increase demands on water supplies during and following the construction period. Water would be needed for a variety of construction activities including, but not limited to, drinking water supply for construction crews, wetting construction sites for dust suppression, and concrete mixing. These increases would be temporary and minimal. Water usage would likely increase by 50 gallons per person per day as a result of the beddown (Gleick 1996). Therefore, potable water demand on-base would increase approximately 45,000 gallons per day based on 874 additional staff and contracted personnel. This amount represents less than 1% increase over the average daily demands for the base. Since the water supply system has a residual capacity of 15% which can support some growth on the base, the addition of new personnel would not have significant impacts on the water supply at Robins AFB.

4.2.2.3 Wastewater

Assuming the usage and occupancy remains similar to the past use these buildings experienced, no additional wastewater demands would occur, and therefore the existing wastewater collection system would not need to be improved. Assuming the amount of wastewater produced per person would be similar to the amount of potable water used, which is 50 gallons per person per day, there would be an increase of approximately 2.4% over the average daily demands of the base. Anticipated wastewater flows generated from the facilities appear to be well within the treatment limits of the plants permitted capacity since only 57% of the capacity is currently being used. Therefore, no significant impacts from wastewater would be expected.

4.2.2.4 Gas

As long as the usages of the buildings remain similar to the past uses these buildings experienced, no additional gas demands would occur; therefore, the proposed MC-12 beddown would not require any improvements to the existing gas distribution system. The amount of natural gas that would be used by the beddown is much less than 1%, so it would be considered negligible. Since the City of Warner Robins can supply additional natural gas equal to six times the base's average demand and Atlanta Gas Light Company can supply additional gas up to twice the base's average demand there would be no significant impacts on natural gas service at Robins AFB.

4.2.2.5 Storm Drainage System

Impervious surfaces reduce rainwater infiltration into the soils and increase the flow of migrating rainwater to stormwater systems. The Proposed Action for Robins AFB would only involve improvements to existing buildings which would only add a small amount of impervious area to the drainage area, if any. The renovation projects are not anticipated to disturb 5,000 square feet or greater and, therefore, are not subject to the stormwater design requirements of Section 438 of the EISA. Upon completion of construction activities, all disturbed areas would be landscaped to reduce stormwater flow over land and increase percolation through the soils. The landscape would be reseeded with turf and native shrubs. With the proper vegetative cover and other environmental measures, direct and indirect impacts on stormwater flow and drainage systems would be less than significant.

4.2.2.6 Liquid Fuels

The MC-12 beddown would not impact liquid fuels on the base. JP-8 fuel storage would likely be transported to the MC-12 via trucks. Additional pipeline would likely not be required.

4.2.2.7 Communications System

The extant buildings proposed for the MC-12 beddown are currently served by the existing communications system provided by 78 ABW/SCX. Since base personnel would increase with the proposed beddown, telephone, network, and special circuit requirements would be required. Robins AFB currently has the capacity to meet these infrastructure requirements, so no significant impacts on the communications system would be expected.

4.2.3 Cultural Resources

As with the Preferred Alternative, implementation of Alternative 1 would primarily involve use of existing buildings and infrastructure and, thus, potential impacts on cultural resources would not be expected to be significant. Alternative 1 would require the upgrade, repair and conversion of buildings and infrastructure such as ramps to bring them to standards for long-term viability. Where repair of the existing infrastructure would include the replacement of that which currently exists on previously disturbed property, no impact on cultural resources would be expected. Building 12 is considered eligible for the NRHP primarily due to its age (over 50 years). Any modifications to the proposed use of the building including construction of exterior additions and installation of fire protection to the building would have an impact on this cultural resource, although not likely significant, and would require consultation with the Georgia SHPO if Alternative 1 is implemented.

4.2.4 Socioeconomics and Environmental Justice

Temporary revenue increases to socioeconomic resources at Robins AFB would be similar to those described for Beale AFB. Similarly, long-term increased revenue would be generated associated with the addition of 874 additional staff and contracted personnel associated with the MC-12 beddown. However, Robins AFB is the largest single-site industrial complex in Georgia.

Long-term beneficial impacts of increased revenue at Robins AFB would be similar to those described for Beale AFB. An increase of approximately 2,450 people would represent approximately 1.8% of the census year 2008 population of the ROI. The increase in personnel and their dependents would constitute a 9% increase in the population at Robins AFB based on 2008 personnel population data. Currently, the base employs more than 27,020 civilian service workers, military members, contractors, and non-appropriated fund employees (Warner Robins Chamber of Commerce 2010). The increase in personnel would have an overall long-term positive impact on revenue in the region.

Housing would be available on Robins AFB, in nearby communities, and in Houston County for 874 personnel (and their dependents) associated with the MC-12 beddown. According to the 2008 US Census, there are 6,969 vacant housing units in Houston County. Consequently, an increase of 874 personnel (and their dependents) would not have a significant impact on housing.

Temporary, minor potentially adverse impacts on public services as described for Beale AFB could occur at Robins AFB but are not expected to be significant. No long-term significant adverse impacts on public services would be expected.

There is a small minority, low-income population near Robins AFB compared to the state of Georgia. The population of youth on Robins AFB is comparable to the youth population across the ROI and in the state. However, there would be no direct disproportionate impact upon minority or low-income populations or children in the area.

4.2.5 Biological Resources

No Federally-listed threatened, endangered, or special status species are known to occur on the base. Terrestrial and aquatic communities would be avoided during the MC-12 beddown; therefore, there would be no impacts on biological resources. Additionally, the beddown of MC-12 proposed for Robins AFB would occur on previously disturbed ground or buildings and would have no impact on wildlife habitat.

4.2.6 Earth Resources

Beddown of the MC-12 at Robins AFB would have similar (minimal if at all) impacts on earth resources to those of the Preferred Alternative. No prime farmland soils would be disturbed by the beddown at Robins AFB.

4.2.7 Water Resources

Ample space exists at Robins AFB to accommodate the addition of personnel and aircraft; therefore, no new MILCON would be required. The amount of impervious surfaces at Robins AFB and the integrity of the Altamaha River Basin would remain at status quo. The impact on water resources at Robins AFB would result in increases in demand on water supply similar to those discussed in the Preferred Alternative.

There are areas of wetlands on Robins AFB. Since the preferred beddown facilities would be within developed areas, no wetlands would be impacted by the renovation of existing facilities.

Building 12 is located within the 500-year floodplain. Floodplain management would be incorporated by minimizing any land-disturbing development activity in the floodplain and by ensuring that any development is consistent with regulatory requirements and natural resource management goals. Since Building 12 is an existing building and would only require minimal

interior renovations for the beddown, the floodplain should not be significantly, adversely impacted.

4.2.8 Air Quality

The air emissions would be similar to those described in the Preferred Alternative and would be less than significant. Robins AFB is located in Houston County, GA which is in attainment for all NAAQS. Annual emissions from both the construction and ongoing operations would be below *de minimis* thresholds. Because the air emissions associated with the Robins AFB Alternative would not exceed *de minimis* thresholds and Houston County is in-attainment for all NAAQS, an air conformity determination, and possible subsequent air conformity analysis, would not be required if the Robins AFB is selected to be the beddown site for the MC-12. No significant air quality impacts would result from daily operation of MC-12 at Robins AFB.

Aircraft activities will generate small amounts of GHGs primarily from emission products from internal combustion engines. However, these amounts are negligible and would not significantly contribute to GHGs. Aircraft activities would not significantly impact the climate on a global or regional scale.

4.2.9 Solid and Hazardous Materials and Waste

The impacts on solid and hazardous materials or wastes from the MC-12 beddown at Robins AFB would be the same or similar as described for the Preferred Alternative. There is a TCE groundwater plume located near Building 12. This site is currently undergoing monitoring and remediation and shouldn't pose an issue in the renovation or operation of the proposed facilities as long as proper safety precautions and standards are followed. There is no further response action planned for Site# AOC 1 near Building 2316 and there should be no impacts anticipated from that site. Therefore, there would be no significant impacts on solid or hazardous materials or wastes if Robins AFB is selected to be the beddown site for the MC-12.

4.2.10 Safety and Occupational Health

Potential safety and occupational health impacts of the MC-12 beddown at Robins AFB would be similar to those described for the beddown at Beale AFB. No significant impacts relating to exposure to hazardous or toxic materials/wastes from the training program and maintenance requirements are expected due to the types of waste generated. The impacts from the use of M-211 flares would be considered less than significant.

Ground operations and maintenance would be similar to those at Beale AFB and would be subject to the same rules and regulations, and operating procedures. Storage and handling of munitions would be subject to the USAF explosive safety directives. The Robins AFB BASH plan establishes procedures to minimize both bird and other wildlife strike hazards at the base and low-level flying areas utilized by the base-assigned aircraft.

4.2.11 Noise

4.2.11.1 Short-Term Construction Noise

No MILCON would be required at Robins although renovation/construction would be associated with the implementation of Alternative 1. Several buildings would have to be renovated to accommodate the beddown of the MC-12 and would require the use of common construction equipment as described in Table 4-3. This activity would take place on the inside of the buildings and walls, and windows would reduce most of the noise emissions produced by equipment and tools used during construction. Sensitive noise receptors may be exposed to unacceptable (75 dBA) and to normally unacceptable (65 dBA) noise emissions. To minimize these impact potentials, construction activities should be limited to daylight hours during the

workweek, between 8:00 am to 5:00 pm on Monday through Friday. Noise impacts should be less than significant if these timing restrictions are implemented during construction activities. Noise generated by the construction activities would be intermittent and last for 6 months, after which noise levels would return to ambient levels. The noise impacts from construction activities would be considered less than significant.

4.2.11.2 Long-term Operational Noise Emissions

The MC-12 is a propeller-driven aircraft which is substantially quieter than the military and civilian jet aircraft that currently use Robins AFB. The MC-12 produces noise emissions of 79.4 dBA during takeoff, whereas an aircraft with jet engines produces 111.2 dBA during takeoff (MS Air National Guard 2009). The rule of thumb is that noise sources 10 decibels less powerful than the dominant noise source (jet engines) will have little to no effect on the total DNL noise contours (USAF 2009). The MC-12 is approximately 25-30 dBA quieter than the common jet aircraft currently operating at Robins AFB (MS Air National Guard 2009).

Over the course of a year, the MC-12 would fly approximately 41 airfield operations per average busy flying day (Monday through Friday). Robins AFB currently handles approximately 40,000 airfield operations per year. Because the airport operates 7 days per week, total annual airfield operations were divided by 365 to yield approximately 100 airfield operations per day. The beddown of the MC-12 mission would result in an increase in operations of approximately 36% and this increase could conceivably result in the increased likelihood of noise interference with activities (e.g., conversation, watching television) but would not increase the total DNL noise contours at the facility. USAF (2009) reported that aircraft operations would have to double before the DNL noise contours would yield an increase in the DNL noise contours by 3 dB.

Aircrews must occasionally train at night to achieve and maintain night-flying proficiency for real world mission requirements. Approximately 26% of MC-12 arrivals would occur after 10:00 p.m. A dB noise “penalty” assessment occurs for these late night events due to their added potential for causing annoyance.

While at mission altitude, MC-12 aircraft noise would be noticeable, approximately 57 dB, but would not be expected to be obtrusive. No changes to land use compatibility would occur as a result of MC-12 operations within a 40-mile radius of Robins AFB. The beddown of the fleet of small propeller-driven MC-12 would not alter the current noise contours presented in Figure 3-15. Impacts on the noise environment in the area would be limited to temporary annoyance and would be less than significant.

4.2.12 Airspace and Range Operations

The beddown of the MC-12 aircraft would increase the number of sorties at Robins AFB by 4,320 annually. The airfield operations would be increased by 15,000 annually, which would impact airspace management and air safety in the MOAs and the surrounding FAA-controlled airspace. The number of airfield operations that have typically occurred at Robins AFB was up to 40,000 annually and most recently around 35,000 annually. Robins AFB would experience an increase of nearly 43%. While these levels would be higher than the operations that have occurred historically, Robins AFB and the surrounding airspace have the capacity to absorb the additional 15,000 airfield operations.

There are other joint mission training centers near Robins AFB, in addition to Townsend Range, which could be used for MQT training including Grand Bay Range at Moody AFB and Savannah Combat Readiness Training Center. Typical training flights would be about three hours long, with only one hour of that flight being used at the range/training center. The training altitudes

would be between 10,000 and 25,000 ft AGL for most of the training events that would be accomplished at the range, in the MOA, or around the local area.

The MC-12 carries flares and a flare drop training requirement exists for the mission. It is anticipated that flares would be expended fairly often. As a rule of thumb, 1 out of every 15 sorties would expend flares wherever flares are authorized, most likely on the ranges or training centers.

The M-211 flare reacts with air to give a heat signature but does not burn like a flare. The reaction would only last for several seconds until all the material is used up at which point the reaction would be finished. After the reaction stops, the M-211 foil material would continue to fall to the ground; therefore, the fire risk associated with M-211 flares would be very low. The residue material of the M-211 flares consists of iron and iron oxides which are not hazardous and may be discarded. The impacts from use of these flares would be less than significant.

Flight tests operating in the MOAs would be accomplished in accordance with USAF and FAA guidelines and regulations. Thus, the impacts on airspace management and air safety for aircraft flight operations would be less than significant and no conflicts with ongoing test and training missions would be expected. Similar to the Preferred Alternative, general aviation or other civil aircraft operating in the controlled airspace above or surrounding Robins AFB would not be impacted. The airspace surrounding Robins AFB and any of the airfields or training ranges that would be used by the MC-12 training missions would not be adversely affected.

4.3 ALTERNATIVE 2 – WHITEMAN AFB

4.3.1 Land Use Resources

4.3.1.1 Land Use

Impacts on land use at Whiteman AFB site would be similar to those listed in the Preferred Alternative. The construction of new facilities or renovations of existing facilities to accommodate the MC-12 aircraft and two squadrons would occur on previously disturbed areas adjacent to other buildings. No changes in land use are planned and the MILCON project would be consistent with the base's master plan. Land use would remain for military purposes (i.e., there would be no change in the existing land use). Therefore, there would be no significant impacts on land use.

4.3.1.2 Visual Resources

Impacts on visual resources at Whiteman AFB site would be similar to those listed in the Preferred Alternative. Construction and renovation projects would be designed to be visually consistent with existing structures at Whiteman AFB. The visual character of the site consists of man-made landscape features and natural features. Adverse visual impacts on the area, including Knob Noster State Park, are anticipated during construction, created both by the construction itself and by the associated increase in traffic, dust, and equipment. These impacts, however, would only be temporary and minor and not significant. New landscaping and hardscaping should enhance Whiteman AFB's existing features.

The visual impact of aircraft launches and traffic would co-exist with other aircraft operations. The general public in the area of the Whiteman AFB is accustomed to seeing various military aircraft performing training maneuvers. Therefore, the visual presence of horizontal launches would not be new to the area, and the introduction of the MC-12 operations would not create a significant impact on visual resources in the area.

4.3.1.3 Transportation

The total amount of inbound traffic at Whiteman AFB was 6,559 in 2009 (ACC 20009) and the additional 874 personnel would represent a 13% increase in traffic on base. The increase would be expected to impact the current traffic on the installation but not significantly. The off-base transportation system is in good condition and is capable of handling increased traffic. Transportation impacts due to the MC-12 beddown for Alternative 2 are not expected to be significant.

4.3.2 Infrastructure

4.3.2.1 Electrical Distribution

The existing buildings that are proposed to be used for the MC-12 beddown are currently served by the existing electrical infrastructure. Electrical usage and demand are expected to remain at levels similar to the past use these buildings experienced. Assuming each person uses an average of 10 kWh per day, electricity demand on-base would increase approximately 8,740 kWh per day based on 874 additional staff and contracted personnel. This amount represents a 1% increase over the average daily demands for the base. Since the electrical system has a residual capacity of 85% which can support growth on the base, the addition of new personnel and a new dormitory would have negligible impacts on the electrical system at Whiteman AFB. No significant impacts on public electrical sources would be expected.

4.3.2.2 Potable Water/Fire Protection System

Anticipated water uses for the Preferred Alternative include potable water for consumption and personnel use, facility wash down, and maintenance needs. Implementation of the Preferred Alternative would increase demands on water supplies during and following the construction period. Water would be needed for a variety of construction activities including, but not limited to, drinking water supply for construction crews, wetting construction sites for dust suppression, and concrete mixing. These increases would be temporary and minimal. Water usage would likely increase by 50 gallons per person per day as a result of the beddown (Gleick 1996). Therefore, potable water demand on-base would increase approximately 45,000 gallons per day based on 874 additional staff and contracted personnel. This amount represents a 6% increase over the average daily demands for the base. Since the water supply system has a residual capacity of more than 70% which can support growth on the base, the addition of new personnel would have negligible impacts on the water supply at Whiteman AFB.

4.3.2.3 Wastewater

Assuming the usage and occupancy remains similar to the past use these buildings experienced, no additional sewer demands would occur, and therefore the existing sewer collection system would not need to be improved. Assuming the amount of wastewater produced per person would be similar to the amount of potable water used, which is 50 gallons per person per day, there would be an increase of approximately 7.5% over the average daily demands of the base. Even with the new dormitory, the anticipated wastewater flows generated from the facilities appear to be well within the treatment limits of the plants' permitted capacity since only 29% of the capacity is currently being used. Therefore, no significant impacts from wastewater would be expected.

4.3.2.4 Gas

As long as the usages of the existing buildings remain similar to the past uses these buildings experienced, no additional gas demands would occur; therefore, the proposed MC-12 beddown site facilities would not require any improvements to the existing gas distribution system. The amount of natural gas that would be used by the beddown is much less than 1%, so it would be considered negligible. The new dormitory would require additional natural gas demands;

however, there is a 92% residual gas supply capacity available, and thus there would be no impacts on the natural gas system.

4.3.2.5 Storm Drainage System

Impervious surfaces reduce rainwater infiltration into the soils and increase the flow of migrating rainwater to stormwater systems. Improvements to existing buildings and new facility construction would add approximately one acre of impervious area to the drainage area. The Proposed Action could directly impact the stormwater drainage system by increasing stormwater flow which may, indirectly, cause an overflow event. Vegetative landscaping around the new buildings and additions would reduce the harmful effects of impervious surfaces by slowing down overland flow of rainwater and increasing rates of evapotranspiration.

In addition, Whiteman AFB would be subject to the new stormwater design requirements of Section 438 of the EISA that require Federal construction projects that disturb 5,000 square feet or more of land to maintain or restore predevelopment site hydrology to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. The renovation projects and new dormitory construction are anticipated to disturb 5,000 square feet or greater and, therefore, are subject to the stormwater design requirements of Section 438 of the EISA.

The project area is located in a watershed that encompasses a developed area of Whiteman AFB. The increase of one acre of impervious areas would represent less than a 1 percent increase in impervious surfaces in the drainage area. Upon completion of construction activities, all disturbed areas would be landscaped to reduce stormwater flow over land and increase percolation through the soils. The landscape would be reseeded with turf and native shrubs. With the proper vegetative cover and other environmental measures, direct and indirect impacts on stormwater flow and drainage systems would be less than significant.

4.3.2.6 Liquid Fuels

The MC-12 beddown would not impact liquid fuels on the base. JP-8 fuel storage would likely be transported to the MC-12 via trucks. Additional pipeline would likely not be required.

4.3.2.7 Communications System

The extant buildings proposed for the MC-12 beddown are currently served by the existing communications system provided by the 509 CS/SCX. Since base personnel would increase with the proposed beddown, telephone, network, and special circuit requirements would be required. Whiteman AFB currently has the capacity to meet these infrastructure requirements, so no significant impacts on the communications system would be expected.

4.3.3 Cultural Resources

As with the Preferred Alternative, implementation of Alternative 2 would primarily involve use of existing buildings and infrastructure, and thus potential impacts on cultural resources would be limited. The Proposed Action would require the upgrade, repair, and conversion of buildings and infrastructure such as ramps to bring them to standards for long-term viability. Where repair of the existing infrastructure would include the replacement of that which currently exists on previously disturbed property, no impact on cultural resources would be expected. The new dormitory would be sited near the existing dormitories. This area has been surveyed and no cultural resources were discovered. No NRHP-eligible sites would be impacted by the beddown. There would be a low risk of encountering cultural resources in these areas. Consultation with the Missouri SHPO would need to occur if any cultural resources are found

during construction. Given ACC's commitment to implement appropriate mitigation measures, no significant adverse impacts on historic properties or cultural resources would be expected.

4.3.4 Socioeconomics and Environmental Justice

Temporary revenue increases to socioeconomic resources at Whiteman AFB would be similar to those described for the Preferred Alternative. Similarly, long-term increased revenue would be generated associated with the addition of permanent and contracted personnel associated with the MC-12 beddown.

Long-term beneficial impacts of increased revenue at Whiteman AFB would be similar to those described for Beale AFB. An increase of approximately 1,990 people would represent a 3.8% increase over the census year 2000 population of the ROI, but is almost an 80% increase over the population in Knob Noster, which is the closest community to Whiteman AFB. The increase in personnel would have an overall long-term positive impact on revenue in the region.

Housing would be available on Whiteman AFB and nearby communities for 711 personnel (and their families) associated with the MC-12 beddown. Although census year 2000 data indicate that there are only 105 vacant housing units at Whiteman AFB, the remaining demand could be absorbed by the nearby communities and rural areas in the ROI. Housing unit vacancy in the ROI, according to census year 2000 data, is 2,381 units. There is currently a dormitory deficit at Whiteman AFB. Construction of a dormitory is included in Alternative 2; therefore, an increase of 711 personnel (and their dependents) would not have a significant impact on housing.

Since Knob Noster is a relatively small, rural community with a population of around 2,500 people, additional public services may be needed immediately upon beddown. Temporary potentially adverse impacts on public services could occur at Whiteman AFB. These potential adverse impacts would be short-term in nature until upgrades are made in the capacity of public services. No long-term adverse significant impacts on public services would be expected.

There is a lower than average incidence of minority or low income populations on or near Whiteman AFB and within the towns nearest to Whiteman AFB. The population of youth on Whiteman AFB is comparable to the youth population across the ROI and in the state. There would be no disproportionate impact upon minority or low-income populations or children.

4.3.5 Biological Resources

Aquatic habitats (utilized primarily for stormwater retention) and woodlands occur at Whiteman AFB. These habitats attract minimal wildlife to the area. No Federally-listed threatened, endangered, or special-status species are known to occur on the base. Terrestrial and aquatic communities would be avoided during the MC-12 beddown, thereby avoiding impacts on biological resources. Additionally, the beddown of MC-12 proposed for Whiteman AFB would occur on previously disturbed ground or buildings and would not be expected to impact wildlife habitat. Predator and prey interaction was suppressed during BASH activities. Many wildlife species now reside in suitable and more desired habitat protected by the adjacent State park.

4.3.6 Earth Resources

Beddown of the MC-12 at Whiteman AFB would have similar (minimal if at all) impacts on earth resources as those for the Preferred Alternative. Existing buildings 604 and 706, which are proposed to be used for the beddown site, are located on Haig silt loam soils which are classified as prime farmland. Since these are existing buildings located in a developed area and renovations would only be made the inside of the buildings, no impacts on this prime farmland soil are anticipated. The proposed location for the new dormitory would also be on

Haig silt loam, which is prime farmland. However, acquisition or use of farmland by a Federal agency for national defense purposes is exempt from the FPPA, and therefore would not impact prime farmland. BMPs would be instituted during any construction activities to control erosion and sedimentation.

4.3.7 Water Resources

Under the implementation of Alternative 2, soil would be cleared of vegetation due to dormitory construction and, consequently, susceptible to erosion during construction activities. Construction of the new facility would result in similar consequences as discussed for the Preferred Alternative. Implementation of Alternative 2 would result in similar increases in demand on water supply as discussed in the Preferred Alternative.

There are areas of jurisdictional and non-jurisdictional wetlands located on Whiteman AFB; however, they only cover a small area (2%) of the base. Since the preferred beddown facilities would occur within developed areas, no wetlands would be impacted by the renovation of existing facilities. The dormitory would be constructed near the existing dormitories and would not impact wetlands. Floodplains would not be impacted, since none are located within the proposed beddown area or dormitory construction area on Whiteman AFB.

4.3.8 Air Quality

The air emissions would be similar to those described in the Preferred Alternative and would be less than significant. Whiteman AFB is located in Johnson County, Missouri, which is in attainment for all NAAQS. Pettis County is located immediately to the east of Whiteman AFB and is also in attainment for all NAAQS. Annual emissions from both the construction and ongoing operations would be below *de minimis* thresholds. Because the air emissions associated with the Whiteman AFB Alternative would not exceed *de minimis* thresholds and Johnson County is in-attainment for all NAAQS, an air conformity determination, and possible subsequent air conformity analysis, would not be required if Whiteman AFB is selected to be the beddown site for the MC-12. No significant air quality impacts would result from construction and daily operation of MC-12 at Whiteman AFB.

Aircraft activities will generate small amounts of GHGs primarily from emission products from internal combustion engines. However, these amounts are negligible and would not significantly contribute to GHGs. Aircraft activities would not significantly impact the climate on a global or regional scale.

4.3.9 Solid and Hazardous Materials and Waste

The impacts on solid and hazardous materials or wastes from the MC-12 beddown at Whiteman AFB would be the same or similar as described for the Preferred Alternative. There is one current ERP site (WP-04) that is located near (0.25 mile) Building 115 that would be used for the MC-12 beddown. This site should not pose an issue with the renovation or operation of the proposed facilities as long as proper safety precautions and standards are followed. Therefore, there would be no significant impacts on solid or hazardous materials or wastes if Whiteman AFB is selected to be the beddown site for the MC-12.

4.3.10 Safety and Occupational Health

Potential safety and occupational health impacts of the MC-12 beddown at Whiteman AFB would be similar to those described for the beddown at the Preferred Alternative. No significant impacts relating to exposure to hazardous or toxic materials/wastes from the training program and maintenance requirements are expected due to the types of waste generated. The impacts from the use of M-211 flares would be considered less than significant.

Ground operations and maintenance would be similar to those at Beale AFB and would be subject to the same rules, regulations, and operating procedures. Storage and handling of ordnance would be subject to the USAF explosive safety directives. The Whiteman AFB BASH plan establishes procedures to minimize both bird and other wildlife strike hazards at the base and low-level flying areas utilized by the base-assigned aircraft.

4.3.11 Noise

4.3.11.1 Short-Term Construction Noise

Renovation/construction impacts would be associated with the implementation of Alternative 2. The installation of the new dormitory and renovations to existing buildings would require the use of common construction equipment as described in Table 4-3. Sensitive noise receptors, including Knob Noster State Park, may be exposed to unacceptable (75 dBA) and to normally unacceptable (65 dBA) noise emissions. To minimize these potential impacts, construction activities should be limited to daylight hours during the workweek, between 8:00 am to 5:00 pm on Monday through Friday. Noise impacts should be less than significant if these timing restrictions are implemented during construction activities. Noise generated by the construction activities would be intermittent and last for 6 months, after which, noise levels would return to ambient levels. The noise impacts from construction activities would be considered less than significant.

4.3.11.2 Long-term Operational Noise Emissions

The MC-12 is a propeller-driven aircraft which is substantially quieter than the military and civilian jet aircraft that currently use Whiteman AFB. The MC-12 produces noise emissions of 79.4 dBA during takeoff, whereas an aircraft with jet engines produces 111.2 dBA during takeoff (MS Air National Guard 2009). The rule of thumb is that noise sources 10 decibels less powerful than the dominant noise source (jet engines) will have little to no effect on the total DNL noise contours (USAF 2009). The MC-12 is approximately 25-30 dBA quieter than the common jet aircraft currently operating at Whiteman AFB (MS Air National Guard 2009).

Over the course of a year, the MC-12 would fly approximately 41 airfield operations per average busy flying day (Monday through Friday). Whiteman AFB currently handles approximately 67,890 airfield operations per year. Because the airport operates 7 days per week, total annual airfield operations were divided by 365 to yield 186 airfield operations per day. The beddown of the MC-12 mission would result in an increase in operations of approximately 22% and this increase could conceivably result in the increased likelihood of noise interference with activities (e.g., conversation, watching television) but would not increase the total DNL noise contours at the facility. USAF (2009) reported that aircraft operations would have to double before the DNL noise contours would yield an increase in the DNL noise contours by 3 dB.

Aircrews must occasionally train at night to achieve and maintain night-flying proficiency for real world mission requirements. Approximately 26% of MC-12 arrivals would occur after 10:00 p.m. A dB noise “penalty” assessment occurs for these late night events due to their added potential for causing annoyance.

While at mission altitude, MC-12 aircraft noise would be noticeable, approximately 57 dB, but would not be expected to be obtrusive. No changes to land use compatibility would occur as a result of MC-12 operations within a 40-mile radius of Whiteman AFB. The beddown of the fleet of small propeller driven MC-12 would not alter the current noise contours presented in Figure 3-25. Impacts on the noise environment in the area would be limited to temporary annoyance and would be less than significant.

4.3.12 Airspace and Range Operations

The beddown of the MC-12 aircraft would increase the number of sorties at Whiteman AFB by 4,320 annually. The airfield operations would be increased by 15,000 annually, which would impact airspace management and air safety in the MOAs and the surrounding FAA controlled airspace. The number of airfield operations that have recently occurred at Whiteman AFB was up to 68,000 annually. Whiteman AFB would experience an increase of nearly 22%. However, Whiteman AFB and the surrounding airspace have the capacity to absorb the additional 15,000 airfield operations.

There are other joint mission training centers near Whiteman AFB, in addition to Fort Leonard Wood and Cannon Range, which could be used for MQT training including Fort McCoy and Volk Field Combat Readiness Training Center. Typical training flights would be about three hours long, with only one hour of that flight being used at the range/training center. The training altitudes would be between 10,000 and 25,000 ft AGL for most of the training events that would be accomplished at the range, in the MOA, or around the local area.

The MC-12 carries flares and a flare drop training requirement exists for the mission. It is anticipated that flares would be expended fairly often. As a rule of thumb, 1 out of every 15 sorties would expend flares wherever flares are authorized, most likely on the ranges or training centers.

The M-211 flare reacts with air to give a heat signature but does not burn like a flare. The reaction would only last for several seconds until all the material is used up at which point the reaction would be finished. After the reaction stops, the M-211 foil material would continue to fall to the ground; therefore, the fire risk associated with M-211 flares would be very low. The residue material of the M-211 flares consists of iron and iron oxides which are not hazardous and may be discarded. The impacts from use of these flares would be less than significant.

Flight tests operating within the airspace and MOAs would be accomplished in accordance with USAF and FAA guidelines and regulations. Thus, the impacts on airspace management and air safety for aircraft flight operations would be less than significant and no conflicts with ongoing test and training missions would be expected. Similar to the Preferred Alternative, general aviation or other civil aircraft operating in the controlled airspace above or surrounding Whiteman AFB would not be impacted. The airspace surrounding Whiteman AFB and any of the airfields or training ranges that would be used by the MC-12 missions would not be adversely impacted.

4.4 NO ACTION ALTERNATIVE

4.4.1 Land Use Resources

The implementation of the No Action Alternative would not impact transportation, visual resources, or land uses at Beale AFB, Robins AFB, or Whiteman AFB.

4.4.2 Infrastructure

Under the No Action Alternative, the MC-12 beddown would not occur; therefore, there would be no impacts on any utilities or infrastructure at Beale, Robins, or Whiteman AFBs.

4.4.3 Cultural Resources

Under the No Action Alternative the MC-12 beddown would not occur. The No Action Alternative would have no impact on cultural resources at Beale AFB, Robins AFB, or Whiteman AFB.

4.4.4 Socioeconomics and Environmental Justice

Under the No Action Alternative, the MC-12 beddown would not occur. The No Action Alternative would impact the installations because there would be no opportunity to realize the revenue gain associated with the beddown as well as community benefits of a beddown action, but the impact is not expected to be significant.

4.4.5 Biological Resources

Under the No Action Alternative, there would be no beddown of the MC-12 at Beale, Robins, or Whiteman AFB. There would be no impacts on biological resources as a result of the No Action Alternative.

4.4.6 Earth Resources

The No Action Alternative would create no impacts on earth resources. No impacts on climate, topography and geomorphology, geology, or soils at Beale AFB, Robins AFB, or Whiteman AFB would occur.

4.4.7 Water Resources

Under the No Action Alternative, the conditions at Beale AFB, Robins AFB, and Whiteman AFB would not change. No temporary or permanent impacts on water demand or stormwater runoff would occur. The long-term demand on regional water supplies would remain the same.

4.4.8 Air Quality

Under the No Action Alternative, there would be no air emissions produced by the MC-12 beddown and it would not impair the air quality in the region of Beale AFB, Robins AFB, or Whiteman AFB. Furthermore, there would be no additional GHGs produced from internal combustion engines if an action alternative is not implemented.

4.4.9 Solid and Hazardous Materials and Waste

Under the No Action Alternative, there would be no additional facilities constructed at Beale AFB, Robins AFB, or Whiteman AFB, and no additional use or storage of hazardous materials would occur; therefore, there would be no impacts.

4.4.10 Safety and Occupational Health

Under the No Action Alternative, there would be no potential for Class A mishaps, munitions hazards, or BASH due to the MC-12 mission at Beale AFB, Robins AFB, or Whiteman AFB as there would be no beddown of the MC-12 aircraft.

4.4.11 Noise

Under the No Action Alternative, the MC-12 beddown would not occur and there would be no changes to the noise environment at Beale AFB, Robin AFB, or Whiteman AFB.

4.4.12 Airspace

Implementation of the No Action Alternative would have no effect on the airspace over Beale AFB, Robins AFB, Whiteman AFB, or the surrounding controlled airspace of the installations.

SECTION 5.0
CUMULATIVE EFFECTS

5.0 CUMULATIVE EFFECTS

This section of the EA addresses the potential cumulative impacts associated with the implementation of the alternatives and other projects/programs that are planned for the region. The CEQ defines cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). This section continues, "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

By Memorandum dated June 24, 2005, from the Chairman of the CEQ to the Heads of Federal Agencies, entitled "Guidance on the Consideration of Past Actions in Cumulative Effects Analysis", CEQ made clear its interpretation that "…generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions…" and that the "…CEQ regulations do not require agencies to catalogue or exhaustively list and analyze all individual past actions."

USEPA suggests that analysis of cumulative impacts should focus on specific resources and ecological components that can be affected by the incremental effects of the proposed actions and other actions in the same geographic area. This can be determined by considering:

- Whether the resource is especially vulnerable to incremental effects;
- Whether the proposed action is one of several similar actions in the same geographic area;
- Whether other activities in the area have similar effects on the resource;
- Whether these effects have been historically significant for this resource; and
- Whether other analyses in the area have identified cumulative effects.

Additionally, the analysis should consider whether geographic and time boundaries large enough to include all potentially significant effects on the resources of concern have been identified. Geographic boundaries should be delineated and include natural ecological boundaries and the time period of the project's effects. The adequacy of the cumulative impact analysis depends upon how well the analysis considers impacts that are due to past, present, and reasonably foreseeable actions. This can be best evaluated by considering whether the environment has been degraded (to what extent); whether ongoing activities in the area are causing impacts; and the trend for activities and impacts in the area. The ROI for cumulative impacts analysis includes the installations and restricted airspace surrounding Beale AFB, Robins AFB, and Whiteman AFB. Specific projects that have occurred, those currently taking place, and those projected for the future are identified in subsequent subsections.

As active military installations, Beale, Robins, and Whiteman AFBs experience changes in mission and training requirements in response to defense policies, current threats, and tactical and technological advances. As a result, the bases require new construction, facility improvements, infrastructure upgrades, and maintenance and repairs on an ongoing basis. Although such known construction and upgrades are a part of the analysis contained in this EA, some future requirements cannot be predicted. As those requirements surface, future NEPA analysis will be conducted, as necessary.

5.1 PAST AND PRESENT ACTIVITIES AT OR NEAR BEALE AFB (PREFERRED ALTERNATIVE)

5.1.1 Military Projects

Numerous changes have recently occurred or are being planned in and around Beale AFB. There are several projects and foreseeable actions that are scheduled to occur that could have potential cumulative impacts.

The top 10 MILCON projects include construction of a Deployment Facility, Fitness Center, Dormitory, Civil Engineer Complex, Small Arms Range, RQ-4 Centralized Operations and Maintenance Facility, Force Support Complex, Vehicle Maintenance Facility, Munitions Facility, and Wing HQ. The top four or five projects on this list are likely to begin within the next 10 years.

There are many projects that were awarded last FY and should be completed within the next two years. Table 5-1 below lists those projects:

Table 5-1. List of projects recently awarded at Beale AFB

Building 2145 Emergency Repairs
Repair Building 2145
Repair Lightning Protection for Com Shelter
Dock 1 Phase 2/3
Land Based Discharge
Repair/Alter U-2 shelter for RQ-4, B/1044
Construct K-12 Barriers @ 1200 AREA; AFTP
Construct GH Classified Storage @ Facility 1023
Runway and Taxiway Lighting
PAVE PAWS Cooling Tower
Water Pipe Military Family Housing (MFH) AST
Roof- Building 1025
PAVE PAWS Electrical Switchgear
Replace Base Sidewalks/Construct New Base Sidewalks & Landscape
Roof - Building 1086
Roof - Building 2539
Aero Club Demo / Tank
Mountain View Repairs
Beale West Whole House Repair Design
Repair Beale West, MFH 30 Units < $20K
Demo MFH 100 UNITS
Replace Degraded Sewer Lines in MFH
Repair Roads, MFH
Repair Dorm B/25309
Repair Dorm B/25307
Emergency Repair Lincoln Site 12 Kv Meter Switchgear B4131

Table 5-1, continued

Repair Alert Drive (CIVIL seed project)
Ridge Drive
Construct 940th SFS Warehouse, B 2569
Construct Consolidated Storage Facility, B 2568
Install Anti-Terrorism Force Protection Ballards, Dorms
Recarpet Rooms 535, 521, 522 & 523 in B1086
Fitness Center Restrooms
Lodging Relocation
Construct Shower Facility PAVE PAWS B/5766
Construct Government Vehicle Parking @ Tool Crib
Construct Parking at 1200 Area
Paint B/25215
Paint B/25216
Privately owned vehicle Carwash
FAMCAMP Irrigation
Trans concrete pad
Precision Measurement Equipment Lab / Sonic Gas Calibration Equipment
Paint Building 24206, HVAC
Paint Water Wells
Repair Lighting w/Occupancy Sensors (Design)
Demo Old Trans Bldg Demo
Repair Electrical at Clinic, B5700 (Study)
Remove PAR Equipment
Repair Clinic, B5700
Repair Lighting w/Daylighting Controls-MILCON
Burger King Image Upgrade
J Street Gas Station Remodel
J Street Gas Station Remodel Abatement
Abatement for BX Image Upgrade
Repair Power Production Shop Roof, B/2541
Repair Roofs, Windows, & Doors; Lodging, B/5109-5113 & 5116

There are more projects that are expected to be awarded over the next two fiscal years, but there are no plans yet for construction.

A project which involves a beddown of 405 personnel to work in the intelligence functions to meet current and expanding mission tasking is currently being considered at Beale AFB. It will also include a MILCON project to construct a new facility near the existing intelligence facilities or add onto existing facilities (2145 and/or 23260).

5.1.2 Other Federal, State, and Local Actions Surrounding Beale AFB

Other past, current, and future Federal actions in the area could also contribute to cumulative effects of the Proposed Action or alternatives. Federal agencies with jurisdiction within the ROI include the BLM, USFWS, FAA, and FHWA. Potential actions, within the area and occurring in the same time frame as the proposed MC-12 beddown, were identified and considered in preparation of this EA.

Caltrans and FHWA are proposing a highway improvement project on CA Highway 99 in Sutter County, between the Highway 99/70 junction to Sacramento Avenue. The proposed project would widen Highway 99 to a four-lane facility with continuous median and left-turn lane from the Highway 70/99 junction to Sacramento Avenue. In addition, the project provides for a new two-lane bridge on the east side of and adjacent to existing Feather River Bridge #18-26. The project will improve safety and reduce congestion.

5.2 PAST AND PRESENT ACTIVITIES AT OR NEAR ALTERNATIVES

5.2.1 Alternative 1 – Robins AFB

Several projects are in progress, planned, or proposed at Robins AFB. These projects and foreseeable actions that are scheduled to occur could have potential cumulative impacts.

Construction of a new Aircraft Maintenance Hangar is proposed on the western side of the airfield at the southeastern corner of Perimeter Road and Eagle Street Extension. The new hangar would be 97,000 SF and would be constructed on a 15-acre parcel of land. Approximately 170 new civilian personnel would be hired for the increased workload anticipated at the hangar.

Construction of a new air traffic control tower located on the western side of the airfield at the corner of Eagle Avenue and Mustang Street is proposed. The new tower would be constructed on the western side of Taxiway J and would require the demolition of the existing tower.

Construction of a new Avionics Facility on the East Ramp of the airfield is proposed on 0.52 acre located along Blunk Drive between Buildings 2062 and 2066 and north of the Joint Stars aprons. The project consists of the demolition of Buildings 2052/2054 and construction of the new facility.

5.2.2 Alternative 2 – Whiteman AFB

Whiteman AFB has several construction, renovation, and demolition projects that are in progress, planned, or proposed. These projects and foreseeable actions that are scheduled to occur could have potential cumulative impacts.

Whiteman AFB will have a new mission and become home to a squadron of 280 military and civilian personnel who remotely fly the MQ-1 Predator aircraft, although the aircraft will be stationed elsewhere. The squadron will be called the Remote Split Operation squadron and ground control and would be in operation by February 2011.

Whiteman AFB's recent acquisition of land at the southwest portion of the base will provide an area for the development of new family housing. The demolition of aged deficient family housing would occur as new development is constructed.

A consolidated Air Operations Facility that will coordinate bomber squadron operations and bring more flight group elements together to train and fight is proposed to be constructed in the near future at Whiteman AFB.

Three out of the five dormitory facilities, Columbia, Atlantis, and Endeavor dormitories, will be renovated, and each dorm has a fiscal year set aside for the renovations. These renovations include a number of cosmetic and structural updates. Columbia dormitory is being renovated for March 2011. Changes include new carpet, fresh paint, a new heating, ventilation and air conditioning unit, and an upgraded plumbing system. Renovations for Atlantis dormitory are scheduled for 2011 and Endeavor dormitory is scheduled for 2012. A new 66,000 SF gym/fitness facility is planned in the future.

5.3 CUMULATIVE EFFECTS ANALYSIS

Other military actions in the region overlap in space or time with the Proposed Action but these overlaps have historically been handled through intense, coordinated scheduling. This scheduling has not resulted in cumulative impacts. There is potential interaction with some ongoing and recent projects, described above, to have the potential to either increase or offset possible environmental consequences. The following sections describe what these potential outcomes may be. Due to a lack of specific description of other major actions (past, present, or future), these are assessed qualitatively.

5.3.1 Preferred Alternative – Beale AFB

5.3.1.1 Transportation and Utilities

Implementation of the Proposed Action at Beale AFB would increase both on- and off-base traffic due to daily commutes of up to 711 permanent staff members and their dependants. There are no other current proposals for or other military realignments at Beale AFB. Other projects identified above, including the beddown of 400 personnel, could add to these effects. Most of the other projects are improvements to on-base facilities and should not result in long-term traffic increases. Cumulative effects on transportation routes on base would be less than significant. Off-base transportation routes would experience minor cumulative impacts that would be less than significant.

Current and proposed demands on utilities at Beale AFB are below design capacity, and the addition of 711 permanent staff would pose a negligible to minor cumulative impact on these resources. The increase in base population as a result of the MC-12 beddown would not reach historic levels.

5.3.1.2 Cultural Resources

Any federal project in the region that includes ground-disturbing activities has the potential to adversely affect cultural resources and is subject to NEPA compliance and Section 106 consultation. Such projects include construction, oil and gas development, off-road tracked vehicle training, pipelines or other facilities, highway work, or any other ground-disturbing undertaking that affects public land. The proposed dormitory, which would be constructed as part of the MC-12 beddown, could impact undiscovered cultural resources; however, appropriate coordination would be conducted to avoid or mitigate any adverse impacts should any buried resources be discovered during construction. The list of projects in Table 5-1 generally includes repairs/renovation to existing facilities and would have a low potential to impact cultural resources. The MILCON projects would likely occur in developed areas, which would also have a low potential to impact cultural resources. Consequently, no significant cumulative impact on historic properties is expected as a result of the proposed beddown at Beale AFB.

5.3.1.3 Socioeconomics and Environmental Justice

The balance of ongoing and anticipated military actions is likely to have a long-term, strong positive effect on regional economy, even though there may be local differences in effects.

Since the Nation and the region have experienced a recent downturn in employment and personal income, the proposed MC-12 beddown and other military projects that are ongoing would result in beneficial cumulative impacts. Depending upon the timing of construction projects, temporary immigration of laborers may exceed capacity of local and regional accommodations; however, renovation and construction associated with the MC-12 beddown is expected to occur over the next 5 years; thus, the cumulative impact of the construction activities should be minimal.

The Proposed Action would not cause any cumulative disproportionate impacts on minorities, low-income populations, or children in the vicinity of the base or under the airspace. The incremental effects of the proposed MC-12 beddown, in combination with potential impacts associated with the past and reasonably foreseeable future actions described in this section, would not be expected to have any significant cumulative effects on minority or low-income populations or on children.

5.3.1.4 Biological Resources

The biological resources at Beale AFB are managed in accordance with Beale's INRMP (Beale AFB 2005a). Cumulative impacts to native flora and fauna have and do occur on surrounding public and private lands due to grazing, off-road traffic, introduction of non-native species, and development. No cumulative impacts on wildlife populations would be expected as a result of noise generated during the proposed MC-12 training missions, as the noise levels would be attenuated by the altitude of these aircraft. As mentioned earlier, there are several MILCON and repair/renovation projects that have recently been awarded and will begin work in the near future. These ground-disturbing activities could result in cumulative impacts to wildlife and their habitats. Mitigation measures have been identified by Beale AFB and USFWS to minimize potential cumulative impacts on the vernal pool tadpole shrimp, chinook salmon, vernal pool fairy shrimp, valley elderberry longhorn beetle, and other sensitive or protected species. The use of the training facilities at NAS Fallon, Marine Corps Mountain Warfare Training Center, Fort Hunter Ligget, or Fort Irwin could have moderate to major impacts on each installation's wildlife populations and vegetation communities. The proposed MC-12 beddown would not significantly contribute to those cumulative impacts on nearby training facilities; therefore, the cumulative impacts of the beddown would be less than significant.

5.3.1.5 Earth and Water Resources

The effects to earth (soil, topography) and water resources associated with the MC-12 beddown do not coincide with areas where other ground-based activities occur or may increase in the region. Construction activities would occur in previously disturbed and developed areas; thus, no significant cumulative impacts to earth and water resources are anticipated. No other major ground-disturbing activities have been identified that could result in cumulative impacts to soils and water resources.

5.3.1.6 Air Quality

The potential cumulative air quality impacts would result from operations occurring below 3,000 ft AGL and ground-disturbing activities. Emissions created by flight activity, commuter traffic, and construction activities associated with the MC-12 beddown, as addressed in Section 4.1.8, would be well below *de minimis* threshold levels. At the Federal level, Yuba County is not in attainment for PM-2.5. As seen in Table 5-1, there are many proposed construction projects that would be completed in the near future. Cumulative adverse impacts to the region's airshed could occur, especially in regards to PM-10 and PM-2.5, but are not expected to be significant.

Historically, the aviation sector has been estimated to emit about 2.6 percent of the Nation's greenhouse gas emissions; thus, the U.S. military aircraft contributes a very small portion of these gases (USEPA 2006b). The emissions associated with MC-12 operations and the MQT program would not have significant cumulative impacts on climate. The proposed MC-12 sorties would not significantly add to the greenhouse gas emissions occurring nationwide or globally and, therefore, the cumulative impacts are not expected to be significant.

5.3.1.7 Solid and Hazardous Materials and Waste

Significant cumulative impacts would occur if an action created a public hazard, the site was considered a hazardous waste site that poses health risks, or the action would impair the implementation of an adopted emergency response or evacuation plan. All past, present, and future projects incorporate measures to limit or control hazardous materials and waste into the design and operation plan of the facility. Therefore, the effects of the Proposed Action, when combined with other ongoing and proposed projects on Beale AFB, would not be considered a significant cumulative impact.

5.3.1.8 Airspace and Range Management, Noise and Safety

Airspace management and air safety are vulnerable to incremental effects, and if the cumulative actions were to overload the capacity of the airspace or the controller's ability to manage flight activity, then cumulative impacts would be considered significant. Several actions have taken place at Beale AFB over the last decade that have increased or decreased operations and changed aircraft type, number of operations, and support staff. As a result, airspace demand, safety issues, and noise levels at the airfield and surrounding areas have also varied. The base has historically experienced noise levels much higher than would be expected under the Proposed Action. The addition of 4,320 annual sorties (15,000 annual airfield operations) by MC-12 aircraft would represent 26% increase over the current flight operations. However, the noise emissions from the MC-12 aircraft would be insignificant compared to existing operations at Beale AFB, and this would not result in a significant cumulative impact on ambient noise levels.

Cumulative effects on regional airspace would occur where the airspace is used and controlled by FAA and DoD, requiring more coordination between airspace managers and users to satisfy their respective missions. However, MC-12 training flights would be scheduled to ensure that the airspace is safely allocated and no conflicts with other training occur.

Most other actions at Beale AFB may produce localized noise increases, primarily from ground activities (such as weapons firing ranges, field training exercises or MILCON projects), so cumulative noise impacts would be localized and primarily on Federally owned land. None of the cumulative impacts identified for airspace, ranges, noise, or safety would be significant, but will likely require more coordination between the Oakland ARTCC, the FAA, and military airspace managers.

5.3.2 Alternative 1 – Robins AFB

5.3.2.1 Transportation and Utilities

There are no other current proposals for additional beddown activities or other military realignments at Robins AFB. The new Aircraft Maintenance Hangar, in addition to the proposed MC-12 beddown, would bring an increase in population and traffic. The extant transportation routes and utilities are below their design capacity, and the increase in utility demands and commuter traffic would result in minor cumulative impacts at Robins AFB that are less than significant. None of the other future projects identified would add to the cumulative impacts of transportation on or near the base.

5.3.2.2 Cultural Resources

The MC-12 mission does have the potential to impact cultural resources because of the renovation of Building 12; however, consultation with the GA SHPO would be required to avoid or mitigate impacts to this structure. The list of projects at Robins AFB generally includes repairs/renovation to existing facilities and MILCON. These projects would have a potential to impact cultural resources. Consequently, some cumulative impacts on cultural resources are expected as a result of the proposed beddown at Robins AFB, but are not expected to be significant.

5.3.2.3 Socioeconomics and Environmental Justice

The proposed MC-12 beddown and other projects that are ongoing or proposed would result in beneficial cumulative impacts. Depending upon the timing of construction projects, temporary immigration of laborers may exceed capacity of local and regional accommodations; however, renovation and construction associated with the MC-12 beddown is expected to occur over the next 5 years; thus, the cumulative impact of the construction activities should be minimal.

The Proposed Action would not cause any cumulative disproportionate impacts on minorities, low-income populations, or children in the vicinity of the base or under the airspace. The incremental effects of the proposed MC-12 beddown, in combination with potential impacts associated with the past and reasonably foreseeable future actions described in this section, would not be expected to have any significant cumulative effects on minority or low-income populations or on children.

5.3.2.4 Biological Resources

The proposed beddown and flight operations would not create a significant cumulative impact on natural resources at Robins AFB. No other major ground-disturbing activities have been identified on Robins AFB that could result in cumulative impacts to wildlife and their habitats. The use of the training facilities at Townsend Range, Fort Benning, or Fort Stewart could have moderate to major impacts on each installation's wildlife populations and vegetation communities. The proposed MC-12 beddown would not significantly contribute to those cumulative impacts on nearby training facilities; therefore, the cumulative impacts of the beddown would be less than significant.

5.3.2.5 Earth and Water Resources

Construction activities at Robins AFB are expected to occur in previously disturbed and developed areas; thus, no significant cumulative impacts to earth and water resources are anticipated. No other major ground-disturbing activities have been identified that could result in cumulative impacts to soils and water resources.

5.3.2.6 Air Quality

Air emissions from aircraft operating out of Robins AFB have not created any significant air quality impacts since Robins AFB and Houston County is in attainment for all NAAQS. The cumulative effects on air quality would be expected to be less than significant. If emissions from other projects occurring in the same geographic region were to exceed the *de minimis* threshold values, then the effects on air quality would be significant. The air emissions from vehicles and support equipment for the MC-12 beddown were calculated and would be expected to create minor increase to current levels and would be below *de minimis* threshold levels.

Impacts on greenhouse gas emissions from MC-12 operations would be similar to those described under the Beale AFB alternative. The proposed MC-12 sorties would not significantly add to the greenhouse gas emissions occurring nationwide or globally.

5.3.2.7 Solid and Hazardous Materials and Waste

Significant cumulative impacts would occur if an action created a public hazard, the site was considered a hazardous waste site that poses health risks, or the action would impair the implementation of an adopted emergency response or evacuation plan. All past, present, and future projects incorporate measures to limit or control hazardous materials and waste into the design and operation plan of the facility. Therefore, the effects of the Proposed Action, when combined with other ongoing and proposed projects on Robins AFB, would not be considered a significant cumulative impact.

5.3.2.8 Airspace and Range Management, Noise, and Safety

The base has historically experienced noise levels much higher than would be expected under the Proposed Action, especially when the B-1 bomber was stationed on base. The addition of 4,320 annual sorties (15,000 annual airfield operations) by MC-12 aircraft would represent a 43% increase over the current flight operations. However, the noise emissions from the MC-12 aircraft would be insignificant compared to existing operations at Robins AFB and this would not result in a significant cumulative impact to ambient noise levels. As with Beale AFB, MC-12 training flights would be scheduled to ensure that the airspace is safely allocated and no conflicts with other training occur.

None of the cumulative impacts identified for airspace, ranges, noise or safety would be significant, but would likely require more coordination between the USAF, FAA, and other DoD military airspace managers.

5.3.3 Alternative 2 – Whiteman AFB

5.3.3.1 Transportation and Utilities

The new Predator mission is anticipated to come to Whiteman in 2011 and will bring a squadron of 280 military and civilian personnel. This mission, in addition to the proposed MC-12 beddown, would bring an increase in population and traffic. Since most of the utility systems have excess capacity available, the increase in utility demands and commuter traffic from these missions would result in minor cumulative impacts at Whiteman AFB that are less than significant. None of the other future projects identified would add to the cumulative impacts of transportation on or near the base.

5.3.3.2 Cultural Resources

Although there is new MILCON (dormitory) that would occur, the area proposed for the construction has been surveyed and cleared for cultural resources. Intensive pedestrian surveys and systematic shovel testing produced no evidence of historic or pre-historic archaeological sites, rock art sites, or historical architectural resources on Whiteman AFB. Consequently, no cumulative impacts on cultural resources at Whiteman AFB are anticipated.

5.3.3.3 Socioeconomics and Environmental Justice

The proposed MC-12 beddown and other projects that are ongoing or proposed would result in beneficial cumulative impacts. Depending upon the timing of construction projects, temporary immigration of laborers may exceed capacity of local and regional accommodations; however, renovation and construction associated with the MC-12 beddown is expected to occur over the next 5 years; thus, the cumulative impact of the construction activities should be minimal.

The Proposed Action would not cause any cumulative disproportionate impacts on minorities, low-income populations, or children in the vicinity of the base or under the airspace. The incremental effects of the proposed MC-12 beddown, in combination with potential impacts associated with the past and reasonably foreseeable future actions described in this section,

would not be expected to have any significant cumulative effects on minority or low-income populations nor on children.

5.3.3.4 Biological Resources

The proposed beddown and flight operations would not create a significant cumulative impact on natural resources at Whiteman AFB. No other major ground-disturbing activities have been identified on Whiteman AFB that could result in cumulative impacts to wildlife and their habitats. The use of the training facilities at Cannon Range or Fort Leonard Wood could have moderate to major impacts on each installation's wildlife populations and vegetation communities. The proposed MC-12 beddown would not significantly contribute to those cumulative impacts on nearby training facilities; therefore, the cumulative impacts of the beddown would be less than significant.

5.3.3.5 Earth and Water Resources

There are construction activities proposed at Whiteman AFB that could impact earth and water resources. Most of the soil units on Whiteman AFB are moderately to highly susceptible to soil erosion by water if disturbed. Cumulative impacts on the soils could be moderate depending on the type of ground-disturbing activity involved, but are not expected to be significant.

5.3.3.6 Air Quality

Air emissions from aircraft operating out of Whiteman AFB have not created any significant air quality impacts since Whiteman AFB and Johnston County is in attainment for all NAAQS. The cumulative effects on air quality would be expected to be less than significant. If emissions from other projects occurring in the same geographic region were to exceed the *de minimis* threshold values, then the effects on air quality would be significant. The air emissions from vehicles and support equipment for the MC-12 beddown were calculated and would be expected to create minor increase to current levels and would be below *de minimis* threshold levels.

Impacts on greenhouse gas emissions from MC-12 operations would be similar to those described under the Beale AFB alternative. The proposed MC-12 sorties would not significantly add to the greenhouse gas emissions occurring nationwide or globally.

5.3.3.7 Solid and Hazardous Materials and Waste

Significant cumulative impacts would occur if an action created a public hazard, the site was considered a hazardous waste site that poses health risks, or the action would impair the implementation of an adopted emergency response or evacuation plan. All past, present, and future projects incorporate measures to limit or control hazardous materials and waste into the design and operation plan of the facility. Therefore, the effects of the Proposed Action, when combined with other ongoing and proposed projects on Whiteman AFB, would not be considered a significant cumulative impact.

5.3.3.8 Airspace and Range Management, Noise and Safety

The base has historically experienced noise levels much higher than would be expected under the Proposed Action. The addition of 4,320 annual sorties (15,000 annual airfield operations) by MC-12 aircraft would represent a 22% increase over the current flight operations. However, the noise emissions from the MC-12 aircraft would be insignificant compared to existing operations at Whiteman AFB and this would not result in a significant cumulative impact to ambient noise levels. MC-12 training flights would be scheduled to ensure that the airspace is safely allocated and no conflicts with other training occur.

None of the cumulative impacts identified for airspace, ranges, noise, or safety would be significant, but will likely require more coordination between the USAF, FAA, and other DoD military airspace managers.

5.4 OTHER ENVIRONMENTAL CONSIDERATIONS

5.4.1 Relationship Between Short-Term Uses and Long-Term Uses and Long-Term Productivity

CEQ regulations (Section 1502.16) specify that environmental analysis must address "…the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity." Special attention should be given to impacts that narrow the range of beneficial uses of the environment in the long-term or pose a long-term risk to human health or safety. This section evaluates the short-term benefits of the proposed alternatives compared to the long-term productivity derived from not pursuing the proposed alternatives.

A short-term use of the environment is generally defined as a direct consequence of a project in its immediate vicinity. Short-term effects could include localized disruptions and higher noise levels. Under the Proposed Action, short-term uses of the environment would result in noise from construction activities. Noise generated by construction activities would be temporary and sporadic and would not be expected to result in adverse effects on noise sensitive receptors, wildlife or livestock.

The long-term impacts of the MC-12 beddown would primarily involve additional use of airspace. These changes in airspace use would not impact the long-term productivity of the land and natural resources.

5.4.2 Irreversible and Irretrievable Commitment of Resources

NEPA CEQ regulations require environmental analyses to identify "...any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented" (40 CFR Section 1502.16). Primary irreversible effects result from permanent use of a nonrenewable resource (e.g., minerals or energy). Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., disturbance of a cultural site) or consumption of renewable resources that are not permanently lost (e.g., old growth forests). Secondary impacts could result from environmental accidents, such as explosive fires. Natural resources include minerals, energy, land, water, forestry, and biota. Nonrenewable resources are those resources that cannot be replenished by natural means, including oil, natural gas, and iron ore. Renewable natural resources are those resources that can be replenished by natural means, including water, lumber, and soil.

For the Proposed Action at either Beale AFB, Robins AFB, or Whiteman AFB, most impacts are short-term and temporary or, in the case of airspace, long-term but negligible. No irretrievable commitments of natural or cultural resources are expected as a result of the construction or renovation of facilities associated with the proposed beddown. Military training necessarily involves consumption of nonrenewable resources, such as gasoline for vehicles/aircraft and jet fuel for aircraft.

Secondary impacts on natural resources could occur in the unlikely event of an accidental fire, such as those caused by an aircraft mishap. However, while any fire can affect agricultural resources, wildlife, and habitat, the increased risk of fire hazard due to operations under the Proposed Action is very low.

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SECTION 6.0
REFERENCES

6.0 REFERENCES

Air Force Safety Center. 2008. Air Force Safety Center website. http://www.afsc.af.mil/organizations/bash/index.asp.

Air Combat Command (ACC). 2009. Entry Control Facility Transportation Engineering Assessment for Whiteman AFB. March 2009.

ACC. 2010. Entry Control Facility Transportation Engineering Assessment for Beale AFB. February 2010.

Beale AFB. 2005. Air Installation Compatible Use Zone (AICUZ). Beale AFB California, 2005.

Beale AFB. 2005a. Integrated Natural Resource Management Plan; March 2005.

Beale AFB. 2007. Beale Hazardous Waste Management Plan; January 2007.

Beale AFB. 2007a. Beale AFB Environmental Restoration Program Site Summaries; December 2007.

Beale AFB. 2008. Beale General Plan; September 11, 2008.

Beale AFB. 2008a. StormWater Pollution Prevention Program; December 2008.

Beale AFB. 2008b. Beale Joint Land Use Study; May 2008.

Beale AFB. 2008c. Beale Integrated Cultural Resources Management Plan; March 2008.

Beale AFB. 2009. Beale AFB Bird/Wildlife Aircraft Strike Hazard Plan. 78 ABW/SEF; October 14, 2009.

Beale AFB. 2010. Correspondence from Ms. Rolfsness at Beale AFB regarding MMRP sites.

California Energy Commission. 2007. Integrated Energy Policy Report 2007. CEC – 100 – 2007-006 – CMF.

California Air Resources Board (CARB). 2008a. Preliminary Draft Staff Proposal: Recommended Approach for Setting Interim Significance Thresholds for GHGs under CEQA. October 2008.

CARB. 2008b. Diesel programs and activities. Internet address: http://www.arb.ca.gov/diesel/diesel.htm, Accessed October 2010.

California Building Industry Association. 2009. Agreement Reached on Flood Protection. Internet Address: http://www.cbia.org/go/cbia/government-affairs/issues/agreement-reached-on-flood-protection/.

California Department of Conservation (CA DOC). 2010. *Farmland Mapping and Monitoring Program, Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, Yuba County*. Updated April 15, 2010. Available: http://www.conservation.ca.gov/dlrp/fmmp/pubs/soils/Documents/YUBA_ssurgo.pdf.

California Department of Transportation. 1998. Technical Noise Supplement. Environmental Program Environmental Engineering-Noise, Air Quality, and Hazardous Waste Management Office, pages 24-28; October 1998.

California Department of Water Resources. 2008. Preliminary 100- and 200- year Floodplains Based Upon Best Available Data. Map Numbers E2, E3, F2, and F3. Internet Address: http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fes/best_available_maps/yuba/ .

Clark, W.Z., and A.C. Zisa. 1976. *Physiographic Map of Georgia.* Georgia Department of Natural Resources, Georgia Geologic Survey, Atlanta.

Dames and Moore. 1990. Environmental Impact Statement for realignment of Beale Air Force Base; June.

Defense Logistics Agency (DLA). 2004. Synopsis of Robins AFB. Defense Energy Support Center. Internet Address: https://www.fbo.gov/index?tab=core&s=opportunity&mode=form&id=a56809bcab119ef3a31a35e54bb98bfe&cck=1&au=&ck=

Department of Defense (DoD). 2010. Low Impact Development Best Practices, UFC. 3-210-10N.

Earth Tech. 1999. Final Wetland Delineation for Warner Robins Air Logistics Center.

Feather River Air Quality Management District (FRAQMD). 2010. Area Designations for State and National Ambient Air Quality Standards. Available online at: http://www.fraqmd.org/2004%20Area%20Designations.htm. Last Accessed: 10/6/10.

Federal Aviation Administration (FAA). 2010. Air Traffic Organization Policy – Special Use Airspace. February 2010.

Federal Highway Administration (FHWA) 2007. Special Report: Highway construction Noise: Measurement, Prediction, and Mitigation, Appendix A Construction Equipment Noise Levels and Ranges. www.fhwa.dot.gov/environment/noise/highway/hcn06.htm

Federal Interagency Committee on Urban Noise. 1980. Guidelines for Considering Noise in Land Use Planning and Control. June 1980.

Garrett K. and J. Dunn. 1981. Birds of Northern California. Los Angeles Audubon Society.

Georgia Department of Natural Resources (GDNR), Environmental Protection Division. 2003a. Altamaha River Basin Management Plan 2003. Internet Address: http://www.gaepd.org/Files_PDF/plans/altamaha/Altamaha-Contents.pdf .

GDNR. 2005. A Comprehensive Wildlife Conservation Strategy for Georgia. Internet URL: http://www1.gadnr.org/cwcs/index.html.

GDNR. 2006. DNR Updates Protected Species List. Internet URL: http://www.georgiawildlife.org/documentdetail.aspx?docid=514&pageid=1&category=conservation.

Gleick, P. 1996. Basic water requirements for human activities: Meeting basic needs. International Water 21(2): 83-92. 1996.

Grossman, D.H., K. Goodin, M. Anderson, P. Bourgeron, M.T. Bryer, R. Crawford, L. Engelking, D. Faber-Langendown, M. Gallyoun, S. Landaal, K. Metzler, K.D. Patterson, M. Pyne, M. Reid, L. Sneddon, and A.S. Weakley. 1998. International classification of ecological communities: Terrestrial vegetation of the United States. The Nature Conservancy. Arlington, Virginia.

Holland, R. 1986. Preliminary list of terrestrial natural communities of California. Department of Fish and Game, Sacramento, CA.

Johnson County Unified Development Ordinance. 2005. Johnson County Planning and Zoning Department. Chapter Eight: Property and Land Use. Internet Address: http://www.johnson-county.com/assets/0/145/763/9715812a-898b-4e60-b505-af870b24ac50.pdf . Last Accessed: October 1, 2010.

Major, Jack. 1988. California Climate in Relation to Vegetation. In Terrestrial Vegetation of California, edited by Michael G. Barbour and Jack Major, pp. 11-74. California Native Plant Society Special Publication 9. Sacramento, 1988. (Expanded edition, first published in 1977 by John Wiley and Sons, New York.

Midwest Research Institute, (MRI). 1996. Improvement of Specific Emission Factors (BACM Project No. 1) Prepared for South Coast Air Quality Management District. SCAQMD Contract 95040, Diamond Bar, CA. March 1996.

Mississippi Air National Guard. (2009). Environmental Assessment Proposed Temprary Beddown of MC-12T Project Liberty Aircraft at the 186th Air Refueling Wing, Key Field Meridian, Mississippi. Environmental Division National Guard Bureau.

Missouri Natural Heritage Program. 2011. Missouri species and communities of conservation concern checklist. Missouri Department of Conservation. Jefferson City, Missouri. pp. 55.

Platenkamp, G. A. J. 1998. Patterns of Vernal Pool Biodiversity at Beale Air Force Base. Pages 151-160 in: C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (Editors). Ecology, Conservation, and Management of Vernal Pool Ecosystems. Proceedings from a 1996 Conference. California Native Plant Society, Sacramento, CA. 1998.

QUAD Consultants 1992. North Marysville Specific Plan Environmental Setting and Constraints Investigation Report. Prepared for the City of Marysville, May 1992.

Reid, F.A.. 2006. A Field Guide to Mammals of North America, 4th Edition. Houghton Mifflin Co., New York, NY. 579 pp

Robins AFB 1998. Air Installation Compatible Use Zone (AICUZ), Volume I Robins AFB Georgia, 1998.

Robins AFB. 2002. Comprehensive General Plan; February 2002.

Robins AFB. 2005. Integrated Cultural Resources Management Plan; August 2005.

Robins AFB. 2006. Water Management Plan; December 2006.

Robins AFB. 2007. Robins AFB Water System Permit No. 1530042. 2006 Water Quality Report.

Robins AFB. 2007a. Integrated Natural Resources Management Plan 2006-2010. Robins AFB; May 2007.

Robins AFB. 2008a. Bird/Wildlife Aircraft Strike Hazard Plan; April 2008

Robins AFB. 2008. 2007 StormWater Pollution Prevention Plan; April 2008.

Robins AFB. 2010. Management Action Plan for Installation Restoration Program; June 2010.

U.S. Air Force (USAF). 2001. Environmental Assessment for Global Hawk Main Operating Base Beddown. March, 2001.

USAF. 2002. Beale AFB Corrosion Control Facility Environmental Assessment; November 2002.

USAF. 2009. Aircraft Noise: An Environmental Perspective. Published by HQ ACC Environmental Analysis Branch.

U.S. Bureau of Economic Analysis (BEA). 2010a. Beale data: Internet Website: http://www.bea.gov. http://www.bea.gov/regional/bearfacts/action.cfm?fips=06115&areatype=06115; Last updated: Thursday, April 22, 2010.

U.S. BEA. 2010b. Robins data: Internet Website: http://www.bea.gov. http://www.bea.gov/regional/bearfacts/action.cfm?fips=13153&areatype=13153 Last updated: Thursday, April 22, 2010.

U.S. BEA. 2010c. Whiteman data: Internet Website: http://www.bea.gov/regional/bearfacts/action.cfm?fips=29101&areatype=29101. Last updated: Thursday, April 22, 2010.

U.S. Census Bureau. 2008a. Internet Website: http://factfinder.census.gov/servlet/ACSSAFFFacts?_event=&geo_id=05000US06115&_geoContext=01000US%7C04000US06%7C05000US06115&_street=&_county=Yuba+County&_cityTown=Yuba+County&_state=04000US06&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=050&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=

U.S. Census Bureau. 2008b. Internet Website: http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=05000US06115&-qr_name=ACS_2008_3YR_G00_DP3YR3&-ds_name=ACS_2008_3YR_G00_&-_lang=en&-_sse=on.

U.S. Census Bureau. 2008c. Internet Website: http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=05000US06115&-qr_name=ACS_2008_EST_G00_DP4&-ds_name=ACS_2008_EST_G00_&-_lang=en&-_sse=on.

U.S. Census Bureau. 2008d. Internet Website: http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=05000US13153&-qr_name=ACS_2008_3YR_G00_DP3YR3&-ds_name=ACS_2008_3YR_G00_&-_lang=en&-_sse=on.

U.S. Census Bureau. 2008e. Internet Website: http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=05000US13153&-qr_name=ACS_2008_3YR_G00_DP3YR3&-ds_name=ACS_2008_3YR_G00_&-_lang=en&-redoLog=false&-_sse=on.

U.S. Census Bureau. 2008f. Internet Website: http://factfinder.census.gov/servlet/ACSSAFFFacts?_event=Search&geo_id=04000US13&_geoContext=01000US%7C04000US13&_street=&_county=Houston+County&_cityTown=Houston+County&_state=04000US13&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=040&_submenuId=factsheet_1&ds_name=ACS_2008_3YR_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=.

U.S. Census Bureau. 2008g. Internet Website: http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=05000US29101&-qr_name=ACS_2008_3YR_G00_DP3YR3&-ds_name=ACS_2008_3YR_G00_&-_lang=en&-redoLog=false&-_sse=on.

U.S. Census Bureau. 2008h. Internet Website: http://factfinder.census.gov/servlet/ADPTable?_bm=y& geo_id=05000US29101&-qr_name=ACS_2008_3YR_G00_DP3YR3&-ds_name=ACS_2008_3YR_G00_&-_lang=en&-redoLog=false&-_sse=on.

U.S. Census Bureau. 2008i. Internet Website:http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=04000US29&-qr_name=ACS_2008_3YR_G00_DP3YR3&-ds_name=ACS_2008_3YR_G00_&-_lang=en&-redoLog=false&-_sse=on.

U.S. Department of Agriculture (USDA). 2007. USDA Forest Service, Pacific Southwest Region. California's Watersheds, Sacramento River Basin. Internet Address: http://www.fs.fed.us/r5/publications/water_resources/html/sacramento_river_basin.html .

U.S. Environmental Protection Agency (USEPA). 2001. Procedures Document for National Emission Inventory, Criteria Air Pollutants 1985-1999. EPA-454/R-01-006. Office of Air Quality Planning and Standards Research Triangle Park NC 27711.

USEPA. 2003. Compliance With Floodplain and Wetland Environmental Review Requirements. Federal Register: August 27, 2003 (Volume 68, Number 166). Internet Address: http://www.epa.gov/EPA-WASTE/2003/August/Day-27/f21775.htm .

USEPA. 2005. User's Guide for the Final NONROAD2005 Model. EPA420-R-05-013 December 2005.

USEPA. 2005a. Emission Facts: Average In-Use Emissions from Heavy Duty Trucks. EPA 420-F-05-0yy, May 2005.

USEPA. 2005b. Emission Facts: Average In-Use Emission Factors for Urban Buses and School Buses. Office of Transportation and Air Quality EPA420-F-05-024 August 2005.

USEPA. 2005c. Emission Facts: Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks. EPA 420-F-05-022.

USEPA. 2006b. Greenhouse Gas Emission from the U.S. Transportation Sector 1990—2003. Office of Transportation and Air Quality. Accessed at http://www.epa.gov/otaq/climate/420r06003.pdf in December 2008.

USEPA. 2008. Clean Water Act (CWA) Section 303 (d) impaired waters list.

USEPA. 2009. USEPA Data Warehouse. Internet Address: http://oaspub.epa.gov/enviro/multisys2.get_list?facility_uin=110000781592 . Last Accessed: March 24, 2009.

USEPA. 2010. Welcome to the Green Book Nonattainment Areas for Criteria Pollutants www.epa.gov/oar/oaqps/greenbk.

USEPA. 2010a. National Ambient Air Quality Standards (NAAQS). Available online at: http://epa.gov/air/criteria.html.

U.S. Fish and Wildlife Service (USFWS) 1999. Conservation Guidelines for the Valley Elderberry Longhorn Beetle, 9 July 1999.

USFWS 2006. Giant Garter Snake (*Thamnophis gigas*), 5 –Year Review: Summary and Evaluation.

Warner Robins Chamber of Commerce. 2010. Internet website: http://www.warner-robins.com/our_community/RobinsAirForceBase.asp.

Warrensburg. 2010. Warrensburg High School Internet website: http://warrensburg.k12.mo.us/vw/scheuerell/verde/index.html

Whiteman AFB. 1998. StormWater Pollution Prevention Plan, Whiteman AFB, MO; July 1998.

Whiteman AFB. 2000. Whiteman AFB Integrated Natural Resources Management Plan.

Whiteman AFB. 2000a. Integrated Cultural Resources Management Plan.

Whiteman AFB. 2008. Whiteman General Plan; September 11, 2008.

Whiteman AFB. 2009. 509 BW Plan 91-15, Bird/Wildlife Aircraft Strike Hazard Program; June 2009.

Whiteman AFB. 2010b. Final Environmental Assessment for the Military Housing Privatization Initiative (MHPI). Whiteman Air Force Base, Missouri; March 2010.

Whiteman AFB. 2010c. Final Environmental Baseline Survey for the Military Housing Privatization Initiative (MHPI). Whiteman Air Force Base, Missouri; June 2010.

Wilson, L.A. 1998. Urban Wildlife. Georgia Wildlife Natural Georgia Series, Issue 3, 1998. Georgia Wildlife Federation: Covington, GA.

Yuba County General Plan. 2007. Biological Resources General Plan Update Background Report November 2007.

Yuba County Water Agency. 2006. Sacramento Hydrologic Region. Sacramento Valley Groundwater Basin. California's Groundwater Bulletin 118.

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7.0 LIST OF PREPARERS

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SECTION 8.0
LIST OF ACRONYMS

8.0 LIST OF ACRONYMS

ABW	Air Base Wing
ACC	Air Combat Command
ACHP	Advisory Council on Historic Preservation
AEF	Air and Space Expeditionary Force
AFB	Air Force Base
AFGSC	Air Force Global Strike Command
AFI	Air Force Instruction
AFISRA	Air Force Intelligence, Surveillance and Reconnaissance Agency
AFMC	Air Force Materiel Command
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection and Health
AGL	Above Ground Level
AHAS	Avian Hazard Advisory System
AICUZ	Air Installation Compatible Use Zone
ALC	Air Logistics Center
ANGB	Air National Guard Base
ANSI	American National Standards Institute
AOC	Area of Concern
AOR	Area of Responsibility
APZ	Accident Potential Zone
ARPA	Archaeological Resources Protection Act
ARTCC	Air Route Traffic Control Center
AST	Above-Ground Storage Tank
ATCAA	Air Traffic Control Assigned Airspace
AUTODIN	Automatic Digital Network
BAI	Backup Aircraft Inventory
BAM	Bird Avoidance Model
BASH	Bird/Wildlife Aircraft Strike Hazard
BEA	Bureau of Economic Analysis
BGS	Below Ground Surface
BIA	Bureau of Indian Affairs
BMP	Best Management Practice
BOS	Base Operating Services
BW	Bomb Wing
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAIS	Chemical Agent Identification Sets
CA DOC	California Department of Conservation
CARB	California Air Resources Board
CDC	Child Development Center
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive, Environmental Response, Compensation, Liability Act
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CH_4	Methane
CLS	Contractor Logistics Support

CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CONUS	Continental United States
CS	Communication Services
CSAF	Chief of Staff of the Air Force
CWA	Clean Water Act
CVFPB	Central Valley Flood Protection Board
CVRWQB	Central Valley Regional Water Quality Control Board
CZMA	Coastal Zone Management Act
dB	Decibel
dBA	A-Weighted Decibels
DCGS	Distributed Common Ground System
DDN	Defense Data Network
DGS	Deployable Ground Station
DISA	Defense Information Systems Agency
DISN	Defense Information System Network
DNL	Day-Night Average Sound Level
DoD	Department of Defense
DOPAA	Description of the Proposed Action and Alternatives
DSN	Defense Switched Network
DWQ	Division of Water Quality
EA	Environmental Assessment
EDMS	Emission and Dispersion Modeling System
EIAP	Environmental Impact Analysis Process
EISA	Energy Independence and Security Act
EO	Executive Order
EPA	Environmental Protection Agency
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ºF	Fahrenheit
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FICUN	Federal Interagency Committee on Urban Noise
FL	Flight Level
FONSI	Finding of No Significant Impact
FPPA	Farmland Policy Protection Act
FRAQMD	Feather River Air Quality Management District
ft	Feet
FY	Fiscal Year
GA	Georgia
GDNR	Georgia Department of Natural Resources
GHG	Greenhouse Gas
GIS	Geographic Information System
GPM	Gallons Per Minute
GSF	Gross Square Feet
GSRC	Gulf South Research Corporation
HFC	Hydrochlorofluorocarbons
HQ	Headquarters

HUD	Department of Housing and Urban Development
I	Interstate
ICP	Integrated Contingency Plan
ICRMP	Integrated Cultural Resources Management Plan
IFR	Instrument Flight Rules
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resource Management Plan
IRP	Installation Restoration Program
ISR	Intelligence, Surveillance and Reconnaissance
ISREC	Intelligence, Surveillance and Reconnaissance Exploitation Cells
JFO	Joint Fires Observers
JPTS	Jet Petroleum-Thermally Stable
J-STARS	Joint Surveillance Target Attack Radar System
JTACS	Joint Tactical Air Controllers
JWICS	Joint Worldwide Intelligence Communications System
kWh	Kilowatt per hour
KV	Kilovolt
LEED	Leadership in Energy and Environmental Design
LF	Linear Foot
m^3	Cubic Meter
MCF	Thousand Cubic Feet
MFH	Military Family Housing
mg	Milligrams
mgd	Million Gallons per Day
MILCON	Military Construction
MKW	Mega Kilowatts
MMRP	Military Munitions Response Program
MO	Missouri
MOA	Military Operations Area
MOG	Max on Ground
MQT	Mission Qualification Training
MRI	Midwest Research Institute
MS	Mississippi
MSA	Munitions Storage Area
MSL	Mean Sea Level
MVA	Million Volt Amps
MW	Megawatts
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAS	Naval Air Station
NEPA	National Environmental Policy Act
NFRAP	No Further Response Action Planned
NGVD29	National Geodetic Vertical Datum of 1929
NHPA	National Historic Preservation Act
NIPR	Non-Secure Internet Protocol Router
NIPRNET	Non-Secure Internet Protocol Router Network
NM	Nautical Miles
NO_x	Nitrogen Oxides
NO_2	Nitrogen Dioxide

NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOTAM	Notice to Airmen
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NVG	Night Vision Goggles
O_3	Ozone
OK	Oklahoma
OSHA	Occupational Safety and Health Administration
OSS	Operations Support Squadron
PAO	Public Affairs Office
PAVE PAWS	Perimeter Acquisition Vehicle Entry Phased-Array Warning System
Pb	Lead
PCPI	Per Capita Personal Income
PDAI	Primary Development/Test Aircraft Inventory
PG&E	Pacific Gas and Electric
PL	Public Law
PMAI	Primary Mission Aircraft Inventory
PM-2.5	Particulate Matter (less than 2.5 microns)
PM-10	Particulate Matter (less than 10 microns)
POL	Petroleum, Oil and Lubricants
PPE	Personal Protection Equipment
ppb	Parts Per Billion
ppm	Parts Per Million
PTAI	Primary Training Aircraft Inventory
PWSD	Public Water Supply District
R	Restricted
ROI	Region of Influence
RW	Reconnaissance Wing
SACS	Southern Association of Colleges and Schools
SAMP	Special Area Management Plan
SB-ESG	Strategic Basing – Executive Steering Committee
SCIF	Sensitive Compartmentalized Information Facility
SCX	Standard Computer Exchange
SecAF	Secretary of the Air Force
SecDef	Secretary of Defense
SF	Square Feet
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SIPR	Secure Internet Protocol Router
SIPRNET	Secure Internet Protocol Router Network
SO_2	Sulfur Dioxide
SOP	Standard Operating Procedure
SPCCP	Spill Prevention, Control and Countermeasures Plan
SPK	Sacramento District, USACE
Sq	Squadron
SSSP	Site-Specific Spill Plan
STE	Standard Telephone Equipment

SUA	Special Use Airspace
SVAB	Sacramento Valley Air Basin
SVE	Soil Vapor Extraction
SWMU	Solid Waste Management Plan
SWPPP	StormWater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T&E	Threatened and Endangered
TCE	Trichloroethylene
TDS	Total Dissolved Solids
TPI	Total Personal Income
TPH	Total Petroleum Hydrocarbon
TRACON	Terminal Radar Approach Control
U.S.	United States
USACE	U.S. Army Corps of Engineers
USAF	United States Air Force
USC	United States Code
USCENTCOM	U.S. Central Command
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
UXO	Unexploded Ordnance
UTBNI	Up To, But Not Including
VA	Virginia
VFR	Visual Flight Rules
VOC	Volatile Organic Compounds
VoSIP	Voice-over Secure Internet Protocol
WMA	Wildlife Management Area
WUS	Waters of the U.S.
WWTP	Wastewater Treatment Plant
µg	Microgram

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APPENDIX A
CORRESPONDENCE

U.S. Department
Of Transportation

Federal Aviation Administration

Central Region
Iowa, Kansas
Missouri, Nebraska

901 Locust
Kansas City, Missouri 64106-2325

November 16, 2010

Mr. Donald Calder, Jr.
HQ ACC/A7PS
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769

Re: Environmental Assessment (EA) for the proposed MC-12 Training Squadron Beddown

Dear Mr. Calder:

The Federal Aviation Administration (FAA) reviews other federal agency environmental documents from the perspective of the FAA's area of responsibility; that is, whether the proposal will have negative effects on aviation. We generally do not provide comments from an environmental standpoint. Therefore, we have reviewed the material furnished with your memo dated November 2, 2010 and have no comments regarding environmental matters.

Airspace Considerations

If structures are built, the project will require formal notice and review from an airspace standpoint under Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. Construction or alteration of objects can have an adverse impact to operations at any of the three proposed airports:

- Construction of objects may result in an increase to approach minimums to runways making landings more difficult in adverse weather conditions.
- The location of constructed objects may impact runway protection zones, safety areas, object free areas and obstacle free zones.
- The proposed project could impact the proper operation of navigational aide facilities at the airport.

Given the time required to conduct an aeronautical study, we recommend a 120-day notification to accommodate the review process and issue our determination letter.
Proposals may be filed at http://oeaaa.faa.gov (requires free registration).

I encourage you to submit a request for airspace study soon in order to determine if there are any potential effects to the airport from the proposed project. Be sure to submit information for any roads, objects, and temporary construction equipment (e.g. cranes) that exceed the notice criteria.

More information on this process may be found at:
http://www.faa.gov/airports/central/engineering/part77/

If you have questions, please contact me at glenn.helm@faa.gov or 816-329-2617.

Sincerely,

Glenn Helm, P.E.
Environmental Specialist

Nicole Forsyth

From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [donald.calder@langley.af.mil]
Sent: Wednesday, November 10, 2010 3:02 PM
To: Nicole Forsyth
Subject: FW: MC-12 Beddown

FYI - response from Volk Field (and thanks for your help!)

DC

-----Original Message-----
From: Dunlap, Michael J Maj USAF ANG WI CRTC/EM
[mailto:michael.dunlap.1@ang.af.mil]
Sent: Wednesday, November 10, 2010 3:34 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Subject: RE: MC-12 Beddown

Ahh, I see. Wouldn't be anything new for us to have strange training missions show up. No issues in our realm.

-----Original Message-----
From: Calder, Donald W Civ USAF HQ AF ACC/A7PS
[mailto:donald.calder@langley.af.mil]
Sent: Wednesday, November 10, 2010 2:24 PM
To: Dunlap, Michael J Maj USAF ANG WI CRTC/EM
Subject: RE: MC-12 Beddown

Maj Dunlap,

Volk Field Combat Readiness Training Center was listed as a possible large combined training facility that could be used by the MC-12 for joint/special training if stationed at Whiteman AFB. We sent a letter to all of the training facilities that could be used for each installation, which are all listed in the DOPAA (and pulled from ACC/A5B's site survey reports).

Don Calder
ACC/A7PS

-----Original Message-----
From: Dunlap, Michael J Maj USAF ANG WI CRTC/EM
[mailto:michael.dunlap.1@ang.af.mil]
Sent: Wednesday, November 10, 2010 9:41 AM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Subject: MC-12 Beddown

Mr. Calder,

Volk Field received the letter concerning the NEPA process you are undertaking for the beddown of the MC-12 at either Beale, Robins, or Whiteman. Question is this. Why do you seek comments from Volk Field? The letter was addressed specifically to us.

Maj Mike Dunlap

Volk Field CRTC/EM

DSN 871-1441

Comm 608-427-1441

Cell 608-886-0312

michael.dunlap@us.af.mil <mailto:michael.dunlap@us.af.mil>

Nicole Forsyth

From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [donald.calder@langley.af.mil]
Sent: Thursday, November 18, 2010 2:16 PM
To: Nicole Forsyth
Subject: FW: EPA Region 9 scoping comments on MC-12 Training Squadron Beddown EA

Nicole,

Here's EPA region 9's IICEP response; they have a few useful comments.

Don

-----Original Message-----
From: Vitulano.Karen@epamail.epa.gov [mailto:Vitulano.Karen@epamail.epa.gov]
Sent: Thursday, November 18, 2010 3:06 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Subject: EPA Region 9 scoping comments on MC-12 Training Squadron Beddown EA

----- Forwarded by Karen Vitulano/R9/USEPA/US on 11/18/2010 12:05 PM -----

From: Karen Vitulano/R9/USEPA/US
To: Donald.Calder@langly.af.mil
Cc: Joe Cothern/R7/USEPA/US@EPA, mueller.heinz@epa.gov, Kathleen Goforth/R9/USEPA/US@EPA
Date: 11/18/2010 11:56 AM
Subject: EPA Region 9 scoping comments on MC-12 Training Squadron Beddown EA

Mr. Calder Jr. -

EPA Region 9 is in receipt of your scoping notice for the proposed MC-12 Training Squadron Beddown Environmental Assessment (EA). Comments have already been submitted from our Region 7 office, pointing out the need to evaluate the potential for fire risk to vegetation, use of hazardous materials, and energy consumption and greenhouse gas emissions from travel to maintenance locations - for the 3 beddown sites being considered.

The only additional comments/question we had was whether the 700 permanent staff for the two squadrons would require the construction of new housing and facilities. If so, the energy requirements for the different sites should be evaluated. EPA recommends the use of Low Impact Development/Green Infrastructure techniques for stormwater management for any new development (see: http://www.epa.gov/owow/NPS/lid <http://www.epa.gov/owow/NPS/lid> and http://cfpub.epa.gov/npdes/home.cfm?program_id=298 <http://cfpub.epa.gov/npdes/home.cfm?program_id=298> for more information). We assume any new facilities will meet the DoD standard for Leadership in Energy and Environmental Design (LEED) Silver certification; however, the use of green building practices should be discussed in the EA. Finally, air pollutants, including diesel particulate matter, emitted during the construction phase should be evaluated and mitigation measures identified to reduce these emissions.

Thank you for the opportunity to comment.

~
Karen Vitulano

U.S. Environmental Protection Agency, Region 9 Environmental Review Office
75 Hawthorne St. CED-2
San Francisco, CA 94105
PHONE 415-947-4178
FAX 415-947-8026

Nicole Forsyth

From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [donald.calder@langley.af.mil]
Sent: Wednesday, November 10, 2010 2:25 PM
To: Nicole Forsyth
Subject: FW: Scoping for EA analyzing MC-12 aircraft Beddown locations

FYI...

-----Original Message-----
From: Cothern.Joe@epamail.epa.gov [mailto:Cothern.Joe@epamail.epa.gov]
Sent: Monday, November 08, 2010 1:27 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Cc: Mueller.Heinz@epamail.epa.gov; Goforth.Kathleen@epamail.epa.gov; Goschen.Kris@epamail.epa.gov
Subject: Scoping for EA analyzing MC-12 aircraft Beddown locations

Dear Mr. Calder,

Today I received Mr. Dryden's letter outlining the proposed MC-12 Training Squadron Beddown within the continental U.S. Three sites are being considered: Whiterman AFB, MO., Beale AFB, California , and Robbins AFB, Georgia, with Beale AFB as the stated preferred location. EPA has been invited to identified issues that may be considered in the EA.

I would suggest that the MC-12's use of the M-211 flares in training missions would be the most critical discriminator for site selection, in particular, the fire risk to vegetation. Specific geographic areas where the flares would be deployed, and measures that will be implemented to counter the fire risk should be discussed. For example...flight parameters/restrictions where flares would be armed and deployed (altitude or geographic training location/Military Training Area.....).

Secondly - operating environments at the 3 sites may present different hazardous materials support requirements (de-icing fluids, anti-microbials, oils/lubricants...), and the unique climate at each site affect the frequency at which fluids are replaced (dry, humid, sandy, wet....). This may make a difference in whether or not any of the sites has a meaningful benefit with regard to hazardous materials/waste minimization.

Third - The number of sorties at any of the sites would be equal (around 4,320 sorties/year), however, the proximity of the analyzed sites to overhaul and maintenance hubs may be significantly different, and could translate into significant energy consumption and greenhouse gas emissions over the MC-12's lifecycle. If the difference in Beddown vs maintenance location(s) is substantial, then the EA should provide a discussion on this matter.

Thank you for the opportunity to provide comments on this proposal. I am cc'ing my counterparts in EPA Regions 4 and 9, and Region 7's Federal Facility Coordinator in case they were not on the mailing list, and would wish to make additional comments. Please e-mail or call me if

clarification of any of these comments is needed.

Sincerely,

Joseph E. Cothern
NEPA Team Leader
U.S. Environmental Protection Agency
Region 7 - Kansas City
(913) 551-7148
cothern.joe@epa.gov

Nicole Forsyth

From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [donald.calder@langley.af.mil]
Sent: Wednesday, November 10, 2010 2:24 PM
To: Nicole Forsyth
Subject: FW: EA for the proposed MC-12 Training Squadron Beddown

FYI...

-----Original Message-----
From: James Munkres [mailto:jmunkres@osagetribe.org]
Sent: Wednesday, November 10, 2010 3:03 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Subject: EA for the proposed MC-12 Training Squadron Beddown

Donald Calder, Jr.

ACC Project Manager

HQ ACC/A7PS

129 Andrews Street, Suite 102

Langley AFB, VA 23665-2769

Dear Mr. Calder,

The Osage Nation Historic Preservation Office has received the notification for the proposed undertaking referenced as Environmental Assessment (EA) for the proposed MC-12 Training Squadron Beddown. Of the three potential locations, the Osage Nation currently has concerns only for Whiteman AFB in Missouri.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. The Osage Nation requests additional information regarding the referenced project specifically with regard to the proposed construction or ground-disturbing activities involved in the Beddown.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

James Munkres

Archaeologist I

Osage Nation Historic Preservation Office

627 Grandview

Pawhuska, OK 74056

jmunkres@osagetribe.org

Office: (918) 287-5226

Mobile: (918) 331-8660

Fax: (918) 287-5376

TRIBAL HISTORIC PRESERVATION OFFICE

Date: November 15, 2010 **File: 1011-559-MO-11**

RE: **Department of the Air Force Environmental Assessment for the proposed MC-12 Training Squadron Beddown at Whiteman AFB in Johnson County, Missouri**

Donald Calder, Jr.
ACC Project Manager
HQ ACC/A7PS
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769

Dear Mr. Calder,

The Osage Nation Historic Preservation Office has received the notification for the proposed Department of the Air Force Environmental Assessment for the proposed MC-12 Training Squadron Beddown. Of the three potential locations, the Osage Nation currently has concerns only for Whiteman AFB in Johnson County, Missouri.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. **The Osage Nation requests additional information regarding the referenced project specifically with regard to the proposed construction or ground-disturbing activities involved in the Beddown.**

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

James Munkres
Archaeologist I

627 Grandview, Pawhuska, OK 74056, (918) 287-5328, Fax (918) 287-5376

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Kip A. Steetler, Acting Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

November 17, 2010

Mr. Donald Calder, Jr.
ACC Project Manager
HQ ACC/A7PS
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769

RE: MC-12 Training Squadron Beddown, Whiteman AFB, Johnson County

Dear Mr. Calder:

The Department of Natural Resources, Division of State Parks, Planning and Development Program has reviewed the plans you sent regarding the above referenced project. Based on the information provided, we have determined that this project will have **no impact** to the state parks or federally funded parks located in this area.

This clearance applies only to the rules and regulations governing Missouri State Parks and the National Parks Service's Land and Water Conservation Fund program. Additional clearances from our department may be required.

Please feel free to contact Chris Buckland at (573) 751-0848 or write to Department of Natural Resources, P.O. Box 176, Jefferson City, Missouri 65102 if you have any questions. Thank you for the opportunity to serve the residents of Johnson County.

Sincerely,

DIVISION OF STATE PARKS

Jane Lale, Director
Planning and Development

JL/cbs

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Kip A. Steeler, Acting Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

November 15, 2010

Mr. Donald Calder, Jr.
HQ ACC/A7PS
129 Andrews Street, Suite 102
Langley AFB, VA 13665-2769

Re: Proposed MC-12 Training Squadron Beddown (USDOD) Johnson County, Missouri

Dear Mr. Calder:

Thank you for submitting information on the above referenced project for our review pursuant to Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which requires identification and evaluation of cultural resources.

We have reviewed the information provided concerning the above referenced project. A review of our files indicates that a Cultural Resource Management Plan (CRMP) was prepared for Whiteman Air Force Base in 1997. At that time, a comprehensive archaeological evaluation had been conducted of the 1997 boundaries, and no National Register of Historic Places eligible historic or prehistoric archaeological sites were identified. For architecture, Facility S-6 and T-12 were determined eligible, documented per the stipulations of a Memorandum of Agreement (MOA) and removed. The Oscar 1 facility was determined to be eligible for the National Register, and, to the best of our knowledge, is still extant

Please be advised that we are not aware of any update to the CRMP, and that in the time since additional properties may have achieved eligibility to the National Register. If Whiteman Air Force Base is selected for the proposed MC-12 Training Squadron Beddown, further consultation will be needed in order to determine if there are historic properties and what the effect of the project may be.

If you have any questions, please write Judith Deel at State Historic Preservation Office, P.O. Box 176, Jefferson City, Missouri 65102 or call 573/751-7862. Please be sure to include the SHPO Log Number (**004-JO-11**) on all future correspondence or inquiries relating to this project.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

Mark A. Miles
Director and Deputy
State Historic Preservation Officer

MAM:jd

GOVERNOR OF MISSOURI

JEFFERSON CITY
65102

JEREMIAH W. (JAY) NIXON
GOVERNOR

P.O. Box 720
(573) 751-3222

December 10, 2010

Larry Dryden
Chief, Sustainable Installations Branch
Headquarters Air Combat Command/A7PS
129 Andrews Street, Suite 102
Langley Air Force Base, Virginia 23665-2769

RE: Environmental Assessment for the Proposed MC-12 Training Squadron Beddown

Dear Mr. Dryden:

Thank you for your notification that the Air Force is considering Whiteman Air Force Base as a possible beddown location for the MC-12 training squadrons. We know of no specific or general environmental concerns that would impede the Air Force from stationing additional aircraft and units at Whiteman AFB. Indeed, there are ample reasons why Whiteman AFB should be chosen as the beddown location for the squadrons, including: little to no encroachment by surrounding development; substantial community and political support for the Air Force mission; and a strong, economically competitive quality of life for the personnel and families stationed there.

I stand ready to work with the Air Force in a concerted and expedited manner to work through any issues, whether related to environmental permitting or otherwise, that would allow the MC-12 squadrons to be stationed at Whiteman AFB. Please do not hesitate to contact my office with any additional questions or concerns.

Sincerely,

Jeremiah W. (Jay) Nixon
Governor

c: Donald Calder, Jr.

Nicole Forsyth

From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [donald.calder@langley.af.mil]
Sent: Wednesday, November 17, 2010 11:27 AM
To: Nicole Forsyth
Subject: FW: Heritage Review related to additional mission at Whiteman AFB
Attachments: Calder_Johnson_Military.pdf

Nicole,

Here's an IICEP response from the state of Missouri, and they provide an updated POC.

Don C

-----Original Message-----
From: Shannon Cave [mailto:Shannon.Cave@mdc.mo.gov]
Sent: Wednesday, November 17, 2010 12:16 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Cc: Doyle Brown; Peggy Barry; Christy Kormann
Subject: Heritage Review related to additional mission at Whiteman AFB

Attached is the heritage review, responsive to a memorandum from Larry H. Dryden regarding the possible bed-down of MC-12 training squadrons at Whiteman Air Force base.

The Missouri Natural Heritage database and records compile information from many state, federal, academic and private sector experts and collectively constitute the most comprehensive set of records of Missouri sites and species that are federal- or state-listed as endangered or threatened in Missouri. It also includes information on "special" lands designated as preserves, wilderness, etc. by government action.

. Heritage records note things that were positively identified at some date and time, marked at a location that may be more or less precise.

. Since animals and plants move around over time and live only so long, no set of records can tell what is actually present at a site today.

. 93% of land in Missouri is privately owned, and most locations have rarely or never been investigated carefully by biologists.

Because of this uncertainty, Heritage Reviews also provide some advisory material based on our knowledge of the general location, project type and landscape history to provide alerts to issues you might plausibly encounter.

Additional information may be found through a website (see http://tinyurl.com/heritagereview) jointly developed by the Missouri Department of Conservation, the U.S. Fish & Wildlife Service and the U. S. Army Corps of Engineers. Projects may use an on-line tool at that site to receive a similar report, including (for level 1 and level 2 responses) a

document releasing further requirement to consult with the U. S. Fish and Wildlife Service or MDC. If additional documentation is needed from the U.S. Fish and Wildlife Service, contact its Missouri Ecological Services office, 101 Park Deville Drive, Suite A, Columbia , Missouri 65203-0007, (Phone 573-234-2132).

Thanks for checking with us, and for your efforts to conserve Missouri's most at-risk wildlife, fish and habitats.

Please reply to this message to confirm receipt, and let me know if I may otherwise assist.

Shannon Cave

retired as of April 1, 2010

Please contact Peggy Barry (573-522-4115 ext 3367) for assistance.

Missouri Department of Conservation

Heritage Review Report

Policy Coordination Unit
P. O. Box 180
Jefferson City, MO 65102
heritage.review@mdc.mo.gov
573-522-4115 X 3367

Donald.Calder@langley.af.mil
Mr. Donald Calder, Jr.

Per memo from Larry H. Dryden

Project type:	New mission for facilities at Whiteman AFB
Location/Scope:	Sections 27, 28, 33, 34 & 35 of T46N R24W Sections 2, 3, 4 & 10 of T45N R24W
County:	Johnson
Query reference:	Whiteman AFB, MC-12 Aircraft
Query received:	November 15, 2010

Prepared by: Shannon Cave

Authenticity may be confirmed by Policy Coordination Unit, Missouri Department of Conservation, 573-522-4115.

This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it identifies public lands and sensitive resources known to have been located close to and/or potentially affected by the proposed project. *On-site verification is the responsibility of the project. Heritage records were identified at some date and location. This report considers records near but not necessarily at the project site. Animals move and, over time, so do plant communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean a protected species will not be encountered. These records only provide one reference and other information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Look for additional information about the biological and habitat needs of records listed in order to avoid or minimize impacts. More information is at http://mdc.mo.gov/discover-nature/places-go/natural-areas and mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx. Contact information for the department's Natural History Biologist is online at http://mdc.mo.gov/contact-us.*

Level 3 (federal-listed) and Level 2 (state listed) issues:

Records of listed species or critical habitats:

Heritage records identify no wildlife preserves, no designated wilderness areas or critical habitats, no state or federal endangered-list species records within one mile of the site, or in the public land survey sections listed above or sections adjacent, or within five miles downstream on streams draining the project site.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. ***Consult with the U.S. Fish and Wildlife Service*** *(101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132).*

Level 1 recommendations: Unlisted species/habitats tracked due to their rarity, but not listed as endangered or threatened or subject to special regulations.

The following unlisted records occur in these sections or adjacent sections.

Species	Common Name	State Rank	Quadrangle	Twp/Rng	Section	Last seen
Platanthera flava var. herbiola	Northern Rein Orchid	S2	Knob Noster	T46N R24W	29	2002
Lithobates areolatus circulosus	Northern Crawfish Frog	S3	Burtville	T45N R24W	4	1994
Lithobates areolatus circulosus	Northern Crawfish Frog	S3	Burtville	T45N R24W	2	2006
Mustela frenata	Long-tailed Weasel	S3	Burtville	T45N R24W	2	2000
Tyto alba	Barn Owl	S3	Burtville	T45N R24W	2	2005
Wet bottomland forest		S3	Knob Noster	T46N R24W	29	1999
Wolffia columbiana	Columbia Water-meal	SU	Burtville	T46N R24W	29	1988

State Rank codes: S1 (Critically imperiled); S2 (Imperiled) or S3 (Vulnerable). These are tracked due to their rarity and subject to general regulations in the Wildlife Code.

The state tracks species not listed as endangered, but sufficiently rare or challenged that special efforts to conserve them may be important to their survival and to avoid future listing. We encourage conservation of them if encountered. The Missouri Wildlife Code protects all wildlife species and it includes no special regulatory requirements for these.

General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific heritage records):

- This county has known karst geologic features (e.g. caves, springs, and sinkholes, all

characterized by subterranean water movement). Few karst features are recorded in heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are species of conservation concern) are influenced by changes to water quality, so check your project site for any karst features and make every effort to protect groundwater in the project area. See http://mdc.mo.gov/nathis/caves/manag_construc.htm for best management information.

- The proposed project occurs in the historic range of greater prairie chickens (*tympanuchus cupido*), a bird on the state's list of endangered species. Populations have been in serious decline for decades, and have reached a point where greater prairie chickens could be gone from Missouri within a few years. The dominant factor in their decline is conversion of native prairie habitats to other uses. Other prairie dependent species are also in serious decline for the same reason. Prairie chickens range over a broad territory perhaps nesting, breeding and foraging in grasslands several miles apart. Even if prairie chickens are not present, it is important to conserve as much as possible any grasslands dominated by native plant cover in the project area. See http://mdc.mo.gov/130 for best management recommendations.
- Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best management recommendations relating to streams and rivers may be found at http://mdc.mo.gov/79.
- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.
  - Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
  - Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
  - When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≧104° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Pre-screen heritage data requests at http://tinyurl.com/heritagereview. A "Level 1 response" makes further submission to MDC or USFWS unnecessary.

Jeremiah W. (Jay) Nixon
Governor

State of Missouri
OFFICE OF ADMINISTRATION
Post Office Box 809
Jefferson City, Missouri 65102
Phone: (573) 751-1851
Fax: (573) 751-1212

Kelvin L. Simmons
Commissioner

November 30, 2010

Larry Dryden
Department of Air Force Headquarters Air Combat Command
129 Andrews Steet
Suite 102
Langley AFB, VA 23665-2769
donald.calder@langley.af.mil

Dear Mr. Dryden:

Subject **1105020**
Legal Name: Department of Air Force Headquarters Air Combat Command
Assistance
CFDA: ()
Project Description: EA: Proposed MC-12 Training Squadron Beddown

The Missouri Federal Assistance Clearinghouse, in cooperation with state and local agencies interested or possibly affected, has completed the review on the above project application.

None of the agencies involved in the review had comments or recommendations to offer at this time. This concludes the Clearinghouse's review.

A copy of this letter is to be attached to the application as evidence of compliance with the State Clearinghouse requirements.

Please be advised that I am the contact for the Federal Funding Clearinghouse. You can send future requests to the following address: Sara VanderFeltz, Federal Funding Clearinghouse, 201 West Capitol, Room 125, and Jefferson City, Missouri 65101.

Sincerely,

Sara VanderFeltz
Administrative Assistant

cc:

Nicole Forsyth

From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [donald.calder@langley.af.mil]
Sent: Wednesday, November 10, 2010 2:25 PM
To: Nicole Forsyth
Subject: FW: Comments Solicited for EA for Proposed MC-12 Training Squadron Beddown

FYI...

-----Original Message-----
From: Carol Payton [mailto:cpayton@mg-rc.org]
Sent: Tuesday, November 09, 2010 2:49 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Cc: 'Barbara Jackson'
Subject: Comments Solicited for EA for Proposed MC-12 Training Squadron Beddown

Good afternoon! The Middle Georgia Regional Commission has no comments concerning the above mentioned project. Thank you.

Carol Payton

Middle Georgia Regional Commission

175 Emery Highway, Suite C

Macon, GA 31217

(478) 751-6160

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION

CHRIS CLARK
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

November 8, 2010

Larry H. Dryden, P.E.
Chief, Sustainable Installations Branch (A7PS)
Department of the Air Force
Headquarters Air Combat Command
Langley Air Force Base, Virginia
Attn: Donald Calder, Jr., Donald.Calder@langley.af.mil

RE: Robins AFB: MC-12 Training Squadron Beddown
Houston County, Georgia
HP-101105-004

Dear Mr. Dryden:

The Historic Preservation Division (HPD) has received initial information concerning the above referenced project. Our comments are offered to assist the US Department of the Air Force and Robins Air Force Base (Robins AFB) in complying with the provisions of Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended (NHPA).

Thank you for notifying our office of the evaluation of Robins AFB as a potential beddown site for MC-12 training squadrons. We look forward to receiving Section 106 documentation when it becomes available.

Please refer to project number **HP-101105-004** in future correspondence regarding this project. If we may be of further assistance, please do not hesitate to contact me at (404) 651-6624.

Sincerely,

Elizabeth Shirk
Environmental Review Coordinator

ES: mn

cc: Kristina Harpst, Middle GA RC

OFFICE OF PLANNING AND BUDGET

Sonny Perdue
Governor

Debbie Dlugolenski
Director

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Mr. Donald Calder, Jr.
HQ ACC/A7PS
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769

FROM: Barbara Jackson BJ
Georgia State Clearinghouse

DATE: November 5, 2010

SUBJECT: Preliminary solicitation for comments to be included in EA
Proposed MC-12 Training Squadron Beddown

I received your request concerning the above-referenced on November 5, 2010. However, Georgia State Clearinghouse itself does not have the knowledge or expertise to provide input concerning environmental issues. Our primary function will be to coordinate processing of this project once you are ready to submit the EA to us. Once ready, please submit one cover letter/memo, 1 hard copy and 5 CDs.

I have taken the initiative to forward on your correspondence about the project to several of our reviewing agencies, asking them to respond to you directly. However, I must inform you that some agencies may opt to wait and review the EA itself through Clearinghouse's intergovernmental review process.

/bj

Georgia Department of Natural Resources
2 Martin Luther King, Jr. Drive, S.E., Suite 1154, Atlanta, Georgia 30334
Chris Clark, Commissioner
Environmental Protection Division
F. Allen Barnes, Director
404/656-2833

December 3, 2010

Mr. Donald Calder, Jr.
ACC Project Manager
HQ ACC/A7PS
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769

RE: Preliminary Comments on the Environmental Assessment for the Proposed MC-12 Training Squadron Beddown

Dear Mr. Calder:

Thank you for the opportunity to provide preliminary comments on the Environmental Assessment (EA) for the Proposed MC-12 Training Squadron Beddown. While we have no preliminary comments, we look forward to reviewing and commenting on the EA.

Should you have any questions concerning this correspondence, please contact Amy Potter at (404) 656-2833.

Sincerely,

Jim Ussery, P.E.
Assistant Director

JU:ap
File: Robins AFB (NEPA)
S:\RDRIVE\AMY\DoD Unit\NEPA\Robins\no prelim comments MC-12 TSB at Robins.doc

Nicole Forsyth

From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [donald.calder@langley.af.mil]
Sent: Friday, November 12, 2010 1:54 PM
To: Stewart, Dale B Mr CIV USA IMCOM
Cc: Nicole Forsyth
Subject: RE: Ref for Request to Fort McCoy, WI for Environmental Assessment for the proposed MC-12 Training Squadron Beddown (UNCLASSIFIED)

Mr Stewart,

You're correct, Ft McCoy isn't a proposed beddown location for the MC-12, but rather, a potential 'training site' for the aircrews to work with Army & Nat'l Guard ground units. The MC-12 won't drop flares on every sortie, but we felt it was prudent to list flare use as it is a capability of the aircraft. I believe the MC-12 won't have much of an impact for Ft McCoy, but you'll be able to confirm that in the next few weeks when the preliminary draft document is produced. We just wanted to make sure we made contact with you/Ft McCoy early on in the environmental impact analysis process, and not let it be a 'surprise' to you toward the end of the process. I'll be TDY next week to Holloman AFB, NM, but should be able to check e-mail if you have any specific questions or concerns. Sincerely,

Don Calder
ACC/A7PS (Sustainable Installations Branch)

-----Original Message-----
From: Stewart, Dale B Mr CIV USA IMCOM [mailto:dale.stewart@us.army.mil]
Sent: Wednesday, November 10, 2010 4:39 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Subject: Ref for Request to Fort McCoy, WI for Environmental Assessment for the proposed MC-12 Training Squadron Beddown (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Mr. Calder,
Pls call me at your earliest convenience to discuss your request for Fort McCoy, WI input to your EA. I am not quite sure what you are looking to accomplish since the A/C and crews will not beddown here.
Are you asking to drop flares as part of training and the environmental impact of the M-211 flare at Fort McCoy?

Scouts Out,
Brad Stewart
Director, DPTMS
110 E. Headquarters Street
Fort McCoy, WI 54656
COM 608-388-2203
DSN 280-2203
BB 608-630-6088
NIPR: dale.stewart@us.army.mil

Classification: UNCLASSIFIED
Caveats: FOUO

DEPARTMENT OF THE ARMY
HEADQUARTERS, NATIONAL TRAINING CENTER AND FORT IRWIN
FORT IRWIN, CALIFORNIA 92310-5000

REPLY TO
ATTENTION OF

AFZJ-G3

6 December 2010

MEMORANDUM THRU

Chief Of Staff, NTC and Ft. Irwin, CA 92310

FOR Headquarters, ACC/A7PS, 129 Andrews Street, Suite 102, Langley AFB, VA 23665-2769

SUBJECT: Environmental Assessment (EA) for the proposed MC-12 Training Squadron Beddown

1. Ft. Irwin is the home of the National Training Center (NTC). The NTC is the preeminent training location for preparing DOD, Allied Forces and other government agencies, for deployment to operations Enduring and Iraqi Freedom, as well as preparation for future combat operations against a hybrid threat. Our mission is to conduct integrated force-on-force and live-fire training centered around a U.S. Army Brigade Combat Team. This training is supported by numerous Army, Joint and Interagency enablers and consists of live-virtual-constructive training against a highly lethal and capable COFOR, controlled by an expert and experienced Operations Group. The brigades and their joint partners use the full complement of its combat, combat support and combat service support systems in an expansive NTC maneuver area that has multiple urban operations sites and portrays the complexity and human dimension of the modern battlefield.

2. Joint training at the NTC will provide a unique opportunity for MC-12W aircrews training with DOD and other government agencies. Aircrews will build critical skills in support of their ground partners as well as integrating with Green Flag West assets. The ground commander will benefit from this vital ISR platform by integrating provided information into a holistic battle plan. These training scenarios will transfer directly along with the units during their deployments in support of Operations Iraqi Freedom and Enduring Freedom.

3. The NTC is co-located within R-2502 A/E/N. Within the restricted area we have flight following and air traffic deconfliction for manned and unmanned aircraft twenty-four hours a day year round. This airspace is also part of the overall R-2508 complex. As such aircrews will be able to perform realistic training missions without influence from or affecting commercial air traffic within the restricted airspace. Operations within this airspace will allow aircraft to

conduct flare operations. Aircrews need only coordinate with NTC G3 in accordance with the NTC Aviation Procedure Guide.

4. The NTC is the premier training facility providing rotational units an opportunity to conduct full spectrum operations in preparation for upcoming combat deployments. We are fully capable of supporting and integrating this capability into our rotational training.

5. Point of contact is CW4 Choat, G3 Aviation Office, DSN: 470-6156, COM: 760-386-6156, curtis.choat@conus.army.mil.

MICHAEL C. KASALES
Colonel, AR
NTC G3

Nicole Forsyth

From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [donald.calder@langley.af.mil]
Sent: Wednesday, November 17, 2010 10:35 AM
To: Walker, Harold A US USA TRADOC
Cc: Auer, Charles H LTC MIL USA TRADOC; Nicole Forsyth
Subject: RE: TRADOC tasking (UNCLASSIFIED)

Mr. Walker,

One of MC-12 beddown locations is Robins AFB, GA, and during the site survey that took place there, the base identified Ft Benning (and its associated ranges) as a probable training location for MC-12 sorties. The aircrews would typically train with the aircraft's electronic sensor capabilities, and occasionally drop flares. We expect the impact on your ranges to be minimal, but we want to give due diligence to the procedural nature of the National Environmental Policy Act. Let me know if that answers your questions,

Don Calder
ACC/A7PS

-----Original Message-----
From: Walker, Harold A US USA TRADOC [mailto:harold.walker1@us.army.mil]
Sent: Wednesday, November 17, 2010 11:18 AM
To: Donald.calder@us.af.mil
Cc: Auer, Charles H LTC MIL USA TRADOC
Subject: FW: TRADOC tasking (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Sir,

My name is Harold A. Walker from the MCoE G3 at FBGA. We received the attached memorandum from Langley AFB. Memo deals with basing 2 Squadrons of MC-12s at three different AF bases across the US (Para 2b). They are asking for input from the MCoE but I really don't understand why.

Why would HQs ACC/A7PS ask the MCoE for EIS opinions/impacts/concerns if Benning' LAAF is not one of the three bed down locations?

Harold A. Walker
Central Tasking Office (Specialist)
MCoEG-35, Future Operation
Operation Analyst
Ft. Benning, Georgia 31905
C: (706) 545-2322/ DSN : 835
harold.walker1@conus.army.mil
Science Applications International Corporation

FEATHER RIVER AIR QUALITY MANAGEMENT DISTRICT
Serving Sutter and Yuba Counties

1007 Live Oak Blvd. Suite B-3
Yuba City, CA 95991
(530) **634-7659**
FAX (530) **634-7660**
www.fraqmd.org

David A. Valler, Jr.
Air Pollution Control Officer

December 10, 2010

Mr. Donald Calder, Jr.
ACC Project Manager
HQ ACC/A7PS
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769
Email: Donald.Calder@langley.af.mil

RE: Environmental Assessment (EA) for the proposed MC-12 Training Squadron Beddown.

Dear Mr. Calder Jr.,

Feather River Air Quality Management District (District) appreciates the opportunity to review and comment on the above referenced project. The District has reviewed the proposed project and would like to provide the following comments regarding potential air quality impacts should the MC-12 Training Squadron be beddown at Beale Air Force Base (AFB) in California.

- The additional base operating support personnel and contracted maintenance and logistics personnel may result in an increase in air emissions. The EA should consider increased emissions, including those from additional vehicle trips, and recommend mitigation measures should the emissions exceed the District's thresholds of significance.
- If construction of new facilities will occur, measures to reduce fugitive dust emissions and emissions from construction equipment should be implemented.
- Fuel tanks, generator sets, or other emissions generating equipment may require a permit to operate from the District. For questions regarding permitting please contact Mr. Matt Baldwin, Air Quality Engineer, at (530) 634-7659 ext 308.

District staff are available to assist the Lead Agency and Project Proponent as needed. Please call (530) 634-7659 ext 210 for assistance.

Sincerely,

Sondra Andersson Spaethe
Air Quality Planner

File: Chron

ACC response to USFWS

From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [donald.calder@langley.af.mil]
Sent: Tuesday, February 22, 2011 1:59 PM
To: Ben_Watson@fws.gov
Cc: Christopherson, Kirsten E Civ USAF ACC 9 CES/CEAN; Nicole Forsyth
Subject: RE: Environmental Assessment for the Proposed MC-12 Squadron Beddown
Attachments: MC_12_PublicDraft_EA_revised.pdf

Mr. Watson,

Since receiving your response on 8 February, we've been working with Kirsten Christopherson at Beale AFB, and I believe we've made some changes to the proposed dorm location that we believe will lead to a "no affect" concurrence from USFWS.

I have attached the revised Draft EA document, and would point you first to section 4.1.5 on page 130. Kirsten and her construction design counterparts at Shaw provided us a better-defined Dormitory footprint that relocates it greater than 250 feet from the nearest Vernal Pool. You can verify this on the site map they provided which we've inserted into the document on page 70.

Other changes related to this issue (and highlighted in yellow to aid your review) are on pages: FONSI-3, ES-4, pg 34 (Table 2-12), and pgs 131-132.

Kirsten, our GSRC Contractor (Nicole Forsyth), and I would like to telephone you about these changes tomorrow morning 09:30 PST. Would that be possible?

Don Calder
NEPA Program Manager
ACC/A7PS
Langley AFB, VA
(757)764-6156

-----Original Message-----
From: Ben_Watson@fws.gov [mailto:Ben_Watson@fws.gov]
Sent: Tuesday, February 08, 2011 8:05 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Subject: RE: Environmental Assessment for the Proposed MC-12 Squadron Beddown

Mr. Calder,

Thank you for providing the Service with the opportunity to review and comment on the EA for this project. While I do not have any substantive comments on the EA, the level of detail contained within is not sufficient for us to provide concurrence that the project is not likely to adveresely affect federally-listed species under section 7 of the Endangered Species Act.

Please contact me with any questions or concerns.

Ben Watson
Fish and Wildlife Biologist
Endangered Species Program
US Fish & Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, CA 95825
916-414-6628

USFWS Sacramento response2

From: Ben_Watson@fws.gov
Sent: Tuesday, February 22, 2011 2:47 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Cc: Christopherson, Kirsten E Civ USAF ACC 9 CES/CEAN; Nicole Forsyth
Subject: RE: Environmental Assessment for the Proposed MC-12 Squadron Beddown

Hi Don,

It is up to the lead agency to make the determination that a project will have "no effect" on listed species, and the Service generally does not provide written concurrence when this determination is made. A "no effect" determination is generally appropriate when the project area does not occur within potential habitat for any listed species.

Having said that, I agree that the proposed project would not be expected to affect vernal pool fairy shrimp or vernal pool tadpole shrimp if the project occurs more than 250 feet from potential habitat (in this case, vernal pools and/or seasonal wetlands).

Please call me with any questions.

Thanks

Ben Watson
Fish and Wildlife Biologist
Endangered Species Program
US Fish & Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, CA 95825
916-414-6628

The USFWS office in Columbia, MO replied directly onto the letter we sent them – See response on Page 2 from Field Supervisor Charles Scott

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

MEMORANDUM FOR: U.S. Fish and Wildlife Service
Columbia Ecological Services Field Office
Attn: Mr. Charlie Scott, Field Supervisor
101 Park DeVille Drive, Suite A
Columbia, MO 65203-0057

18 January 2011

RECEIVED
JAN 21 2011
By

FROM: HQ ACC/A7PS
129 Andrews Street, Ste 102
Langley AFB VA 23665-2769

SUBJECT: Environmental Assessment (EA) for the proposed MC-12 Squadron Beddown

1. Enclosed for your review is a copy of the draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) prepared by the U.S. Air Force, Air Combat Command (ACC), and U.S. Army Corps of Engineers (USACE) Sacramento District. We prepared this EA to analyze potential environmental impacts from the beddown of two MC-12 aircraft squadrons and 42 MC-12 aircraft.

2. The MC-12 mission would provide intelligence, surveillance, and reconnaissance (ISR) support directly to ground forces in the U.S. Central Command's (USCENTCOM) Area of Responsibility (AOR). ACC has been tasked with finding a permanent beddown location for the MC-12 mission. The proposed action would provide a continental U.S. based permanent beddown location for the MC-12 crews and aircraft prior to their deployment to the USCENTCOM AOR. Currently, there is a temporary mission qualification training (MQT) detachment for the MC-12 aircraft at Key Field Air National Guard Base (ANGB) in Meridian, Mississippi. This temporary MQT mission does not allow permanent party crew members to be assigned to the aircraft, which limits the operating experience level for the MC-12 crew. To rectify this, the MC-12 aircraft currently stationed at Key Field ANGB would be relocated to the permanent installation once it is selected.

a. The MC-12 aircraft is a manned, medium-to-low-altitude, ISR asset built around a C-12 aircraft, which is a modified Beechcraft King Air 350. The MC-12 is a twin-engine, turbo prop aircraft that is capable of coordinated air-to-ground operations, providing real-time data and information.

b. Three bases are being evaluated as potential beddown sites for this proposed action: Beale Air Force Base (AFB), California; Robins AFB, Georgia; and Whiteman AFB, Missouri. Beale AFB is the preferred alternative for the beddown.

c. Approximately 700 permanent staff for the two squadrons, including base operating support personnel, and 160 contracted maintenance and logistics personnel would be assigned to the selected installation.

See page 2 →

d. Annual sorties anticipated for MC-12 training would be approximately 3,420 day-time sorties and 900 night-time sorties for a total of 4,320 sorties per year. Annual airfield operations are anticipated to be approximately 15,000 operations per year.

e. The MC-12 carries M-211 flares and required flare drop training is described in Chapter 2. It is anticipated that each crew would drop flares once per quarter as a training requirement. Annual munitions expenditures (flare drops) anticipated to be required for MC-12 training would be approximately 4,694 day-time and 2,346 night-time expenditures per year.

3. The proposed action at Whiteman AFB would include construction/renovation activities. The base would leverage existing facilities (previously disturbed) to support the beddown and minimize impact on biological resources. A new dormitory would also be built for the mission but would not have any impact on biological resources. These activities would not affect any Federally or state-listed species. Noise associated with MC-12 flight operations would have no impact on wildlife in the area.

4. ACC and USACE Sacramento District would appreciate your comments and written concurrence with our finding.

5. Please forward any issues or concerns to our ACC project manager, Mr. Donald Calder. The deadline for receipt of comments is 26 February 2011, 30 days after the published notice of availability. Mr. Calder can be reached at the above address or e-mailed at Donald.Calder@langley.af.mil.

LARRY H. DRYDEN, P.E.
Chief, Sustainable Installations Branch (A7PS)

Attachment:
MC-12 Draft EA/FONSI document

"The U.S. Fish and Wildlife Service (Service) has reviewed the proposed action and determined that no federally listed species, candidate species, or designated critical habitat occurs within the project area. Furthermore, the Service has determined that this action will have negligible impacts on wetlands, migratory birds, and other priority fish and wildlife resources."

Field Supervisor — Date 1/31/2011

RE Ft Irwin Comments on MC-12 Draft EA (UNCLASSIFIED)

From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [donald.calder@langley.af.mil]
Sent: Wednesday, February 09, 2011 9:40 AM
To: Choat, Curtis E CW4 MIL USA FORSCOM
Cc: Nicole Forsyth
Subject: RE: Ft Irwin Comments on MC-12 Draft EA (UNCLASSIFIED)
Attachments: MC-12_PDEA_Consolidated_Comment_Matrix.doc

CW4 Choat,

Thanks for the reply - I reviewed the previous memo, as well as the consolidated comment matrix (attached; Ft Irwin's comment is #15 in the Matrix). Just to make it painfully plain to me, just a note saying Ft Irwin concurs with the Draft EA as written is all I need. If that's indeed the case, you can reply to this note to confirm.

Don Calder
ACC/A7PS
DSN 574-6156

Attachment: Consolidated PDEA Comment Matrix

-----Original Message-----
From: Choat, Curtis E CW4 MIL USA FORSCOM [mailto:curtis.choat@us.army.mil]
Sent: Thursday, January 27, 2011 11:46 AM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Cc: Kasales, Michael C COL MIL USA FORSCOM; Thrasher, Stephen W LTC MIL USA FORSCOM; Reischl, Timothy Mr CIV USA FORSCOM
Subject: MC-12W (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Sir,

We received the MC-12W environmental assessment with a cover letter.

All our comments were contained in the previously sent memo.

My command wanted me to ensure we don't owe you anything else reference this. Please let us know if you need anything else.

V/R
Curtis

CW4 Curtis E. Choat
Installation Standardization Officer
Ft. Irwin, CA 92310
Com: 760-380-6156
DSN: 380-6156
Cell: 760-217-5824
curtis.choat@conus.army.mil

Classification: UNCLASSIFIED
Caveats: FOUO

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Donald Calder
HQ ACC/A7PS
Dept. of the Air Force
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769

FROM: Barbara Jackson

DATE: 1/25/2011

APPLICANT: Department of the Air Force

PROJECT: Draft EA/FONSI: MC-12 Training Squadron Beddown

CFDA #:

STATE ID: GA110125002

FEDERAL ID:

Material related to the above project was received by the Georgia State Clearinghouse on 1/25/2011. The review has been initiated and every effort is being made to ensure prompt action. The project will be reviewed for its consistency with goals, policies, plans, objectives, programs, environmental impact, criteria for Developments of Regional Impact (DRI) or inconsistencies with federal executive orders, acts and/or rules and regulations, and if applicable, with budgetary restraints.

The initial review process should be completed by 2/23/2011 (*approximately*). If the Clearinghouse has not contacted you by that date, please call (404) 656-3855, and we will check into the delay. We appreciate your cooperation on this matter.

When emailing or calling about this project, please reference the State Application Identifier number shown above. If you have any questions regarding this project, please contact us at the above number.

Form SC-1
Aug. 2010

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

January 31, 2011

Mr. Donald Calder
ACC Project Manager
HQ ACC/A7PS
129 Andrews St., Ste 102
Langley AFB, VA 23665-2769

RE: MC-12 Training Squadron Beddown, Whiteman AFB, Johnson County

Dear Mr. Calder:

The Department of Natural Resources, Division of State Parks, Planning and Development Program has reviewed the plans you sent regarding the above referenced project. Based on the information provided, we have determined that this project will have **no impact** to the state parks or federally funded parks located in this area.

This clearance applies only to the rules and regulations governing Missouri State Parks and the National Parks Service's Land and Water Conservation Fund program. Additional clearances from our department may be required.

Please feel free to contact Chris Buckland at (573) 751-0848 or write to Department of Natural Resources, P.O. Box 176, Jefferson City, Missouri 65102 if you have any questions. Thank you for the opportunity to serve the residents of Johnson County.

Sincerely,

DIVISION OF STATE PARKS

Jane Lale, Director
Planning and Development

JL/cbs

Jeremiah W. (Jay) Nixon
Governor

State of Missouri
OFFICE OF ADMINISTRATION
Post Office Box 809
Jefferson City, Missouri 65102
Phone: (573) 751-1851
Fax: (573) 751-1212

Kelvin L. Simmons
Commissioner

February 8, 2011

Donald Calder
HQ ACC/A&PS
129 andrews Street
STE 102
Langley AFB, VA 23665-2769
donald.calder@langley.af.mil

Dear Mr. Calder:

Subject **1107040**
Legal Name: HQ ACC/A&PS
Assistance
CFDA: ()
Project Description: EA: Proposed MC-12 Squadron Beddown

The Missouri Federal Assistance Clearinghouse, in cooperation with state and local agencies interested or possibly affected, has completed the review on the above project application.

None of the agencies involved in the review had comments or recommendations to offer at this time. This concludes the Clearinghouse's review.

A copy of this letter is to be attached to the application as evidence of compliance with the State Clearinghouse requirements.

Please be advised that I am the contact for the Federal Funding Clearinghouse. You can send future requests to the following address: Sara VanderFeltz, Federal Funding Clearinghouse, 201 West Capitol, Room 125, and Jefferson City, Missouri 65101.

Sincerely,

Sara VanderFeltz
Administrative Assistant

cc:

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION

MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

February 10, 2011

Larry H. Dryden, P.E.
Chief, Sustainable Installations Branch (A7PS)
Department of the Air Force
Headquarters Air Combat Command
Langley Air Force Base, Virginia
Attn: Donald Calder, Jr., Donald.Calder@langley.af.mil

RE: Robins AFB: MC-12 Training Squadron Beddown
Houston County, Georgia
HP-101105-004

Dear Mr. Dryden:

The Historic Preservation Division (HPD) has reviewed the draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) prepared by the U.S. Air Force, Air Combat Command (ACC) and the U.S. Army Corps of Engineers (USACE) Sacramento District and dated January 2011. Our comments are offered to assist federal agencies in complying with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended.

Based on the information provided in the draft EA, HPD concurs with the findings. Specifically, HPD concurs that if Alternative 1 (Robins AFB) is selected as the Beddown Area for the MC-12 Training Squadron, the project as proposed will have **no adverse effect** to historic properties **provided** plans for alterations to Building 12, which is considered eligible for listing in the National Register of Historic Places, are submitted to our office for review and comment when available to ensure that the work conforms to the Secretary of the Interior's *Standards for Treatment of Historic Properties*.

We look forward to further consultation with Robins AFB if Alternative 1 is selected. If you have any questions, please feel free to contact Elizabeth (Betsy) Shirk, Environmental Review Coordinator, at (404) 651-6624 or via email at Elizabeth.shirk@dnr.state.ga.us.

Sincerely,

Karen Anderson-Córdova, Program Manager
Environmental Review & Preservation Planning

KAC/ECS

cc: Kristi Harpst, Middle Georgia RC

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT MCCOY
2171 SOUTH 8TH AVENUE
FORT MCCOY, WI 54656-5136

IMNE-MCY-PWEC

22 February 2011

MEMORANDUM FOR Department of the Air Force, Headquarters Air Combat Command, HQ ACC/A7PS, 129 Andrews Street, Suite 102 Langley Air Force Base, VA 23665-2769

SUBJECT: Environmental Assessment (EA) for the proposed MC-12 Squadron Beddown

1. Fort McCoy has reviewed the Environmental Assessment (EA) for the proposed MC-12 Training Squadron Beddown. We have no comments concerning the establishment of two MC-12 squadrons and beddown of 42 MC-12 aircraft at any of the permanent locations that are discussed in the EA.

2. We do request that if Fort McCoy is considered for future training of the MC-12 aircraft as mentioned in the EA; that prior coordination is made with Fort McCoy's Directorate of Plans, Training, Mobilization and Security Scheduling Section at (608) 388-3721 to properly accommodate the training request.

3. If you have any questions, please contact me at (608) 388-4776.

Sincerely,

Alan L. Balliett

Alan L. Balliett
Chief, Environmental Division
Directorate of Public Works

Nicole Forsyth

From: Kurtz, Becky CIV NAVFAC SW [Becky.Kurtz@navy.mil]
Sent: Wednesday, March 02, 2011 2:41 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Cc: Seeley, Dale L CDR NAVFAC SW; Ryan, Gary L CTR NSAWC, N58 GEN. DYNAMICS; Tawney, Lynn H CIV NSAWC, N38; Herrmann, James W CTR USAF ACC /A5BA; Nicole Forsyth; Yates, William S CDR NAS Fallon, N3
Subject: RE: NAS Fallon Comments MC-12 Beddown EA
Attachments: NAS Fallon Comment Sheet MC-12 Beddown.docx

Mr. Calder,
NSAWC representatives and the NAVFAC Environmental Division at NAS Fallon, Nevada have reviewed the revised text for the MC-12 Training Squadron EA as discussed via telecon and presented in the response section of the attached comment sheet.

The revised text is acceptable and satisfies concerns regarding range scheduling and flare use.

It is requested that the appropriate Air Force office contact the NSAWC Range department regarding flare types and usage as soon as possible so that the potential use and requirements may be addressed in the local range user's manual.

Comment noted that pertinent correspondence, as stated in your e-mail below, between NAS Fallon and ACC will be documented in the appendices of the final draft.

Thank you for your cooperation. R/ Becky Kurtz

Becky Kurtz
NEPA/Compliance
NAVFAC Environmental Division
Naval Air Station Fallon, Nevada
(o) 775-426-2242
(f) 775-426-2663

-----Original Message-----
From: Calder, Donald W Civ USAF HQ AF ACC/A7PS [mailto:donald.calder@langley.af.mil]
Sent: Tuesday, March 01, 2011 12:56
To: Kurtz, Becky CIV NAVFAC SW
Cc: Seeley, Dale L CDR NAVFAC SW; Ryan, Gary L CTR NSAWC, N58 GEN. DYNAMICS; Tawney, Lynn H CIV NSAWC, N38; Herrmann, James W CTR USAF ACC /A5BA; Nicole Forsyth
Subject: RE: NAS Fallon Comments MC-12 Beddown EA

Becky and Gary,

Per our telephone conversation this afternoon, I'm providing the revised text we discussed for the draft EA in the attachment, in the form of responses in the attached comment matrix. Please let me know if this accurately captures what we discussed, which should allow us to proceed with FONSI signature, once the changes are incorporated into the document.

I will also have our EA contractor look for our IICEP letter to NAS Fallon for inclusion in Appendix A as well as this correspondence.

Don Calder

-----Original Message-----
From: Kurtz, Becky CIV NAVFAC SW [mailto:Becky.Kurtz@navy.mil]
Sent: Friday, February 25, 2011 1:50 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Cc: Seeley, Dale L CDR NAVFAC SW; Ryan, Gary L CTR NSAWC, N58 GEN. DYNAMICS; Tawney, Lynn H CIV NSAWC, N38
Subject: NAS Fallon Comments MC-12 Beddown EA

Mr. Calder,
Attached are the comments provided by NAS Fallon, Nevada regarding the MC-12 Training Squadron Beddown Environmental Assessment. A formal letter with comments will be forthcoming via U.S. Postal service. It is requested that these comments sent via e-mail be acknowledged as received. If you have any questions regarding these comments, please feel free to call me. R/ Becky Kurtz

Becky Kurtz
NEPA/Compliance
NAVFAC Environmental Division
Naval Air Station Fallon, Nevada
(o) 775-426-2242
(f) 775-426-2663

Review Comments

Cmt	Page	Line	Commenter	Comment	Response
1.	Page 14	18 and 19	Lynn Tawney, Assistant Range Officer, NSAWC	This sentence identifies the requirement for the MC-12 to drop M-211 flares. Currently these flares are not listed in the Range Users Manual as authorized within the Fallon Range Training Complex (FRTC).	Telephone conversation between ACC/A7PS (D. Calder) and NAVFAC SW (B. Kurtz) on 1 Mar 11 indicated that aircraft flare usage occurs on NAS Fallon ranges, though not specifically the M211 flare system. The M211 flares will need to be formally added to the Range Users Manual in order to authorize their use at NAS Fallon.
2.	Page 20	10-15	Lynn Tawney, Assistant Range Officer, NSAWC	This paragraph discusses the laser requirements of the MC-12 and states that "NAS Fallon has sufficient capacity to support the MC-12 training requirements". Existing laser training areas (LTA's) on the ranges within the FRTC are small in size, of limited number, and scheduling for the MC-12 would be based upon a priority system that would put existing training events ahead of MC-12 training. In addition, weather conditions limiter use of the LTA's at range B-20 and laser use at range B-16 is not authorized. Based upon the limited available of the other two (B-17 and B-19) FRTC ranges for laser training, the statement "NAS Fallon has sufficient capacity to support the MC-12 training requirements" is not accurate.	Telephone conversation between ACC/A7PS (D. Calder) and NAVFAC SW (B. Kurtz) on 1 Mar 11 developed the following replacement text for lines 14-15 on page 20 of Draft EA: "NAS Fallon has sufficient resources to support the MC-12 training, however utilization of these resources is dependent upon scheduling priorities and will require intense, coordinated scheduling between Beale AFB and NAS Fallon."
3.	Page 81	42-48	Lynn Tawney, Assistant Range Officer, NSAWC	"Coordinated scheduling has allowed needs of DoD users to be met, although with perturbations, is true, but does not guarantee available airspace for the MC-12 in the future. The assumption of available airspace is not accurate.	Telephone conversation between ACC/A7PS (D. Calder) and NAVFAC SW (B. Kurtz and G. Ryan) on 1 Mar 11 developed the following replacement text for lines 45-45 on page 81: "Utilization of NAS Fallon range resources is dependent upon scheduling priorities and will require intense, coordinated scheduling between Beale AFB and NAS Fallon."

U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of the Regional Administrator
Western-Pacific Region

P. O. Box 92007
Los Angeles, California

February 3, 2011

Mr. Larry H. Dryden, P.E.
Chief, Sustainable Installations Branch
HQ ACC/A7PS
129 Andrews Street, Ste 102
Langley AFB, VA 23665-2769

Dear Mr. Dryden:

We have reviewed the Environmental Assessment for the proposed MC-12 Squadron Beddown at Beale Air Force Base and have no comment.

If you have any questions concerning our review, contact Larry Tonish, Special Programs Staff Specialist at (310) 725-3817.

Barry Brayer
Manager, Special Programs Staff
Western-Pacific Region

CAL DTSC comments

From: Terry Escarda [TEscarda@dtsc.ca.gov]
Sent: Friday, February 25, 2011 7:39 PM
To: Kirsten.Christopherson@beale.af.mil
Cc: kent.hawley@beale.af.mil.; Nancy Ritter; Tim Miles; state.clearinghouse@opr.ca.gov
Subject: MC-12 Training Squadron Beddown Environmental Assessment (E.A.) Comments

Hello Kirsten,

I was unable to locate an e-mail address for Mr. Calder. I had tried to reach him earlier by phone but had problems. Was able to leave a msg but after working hours on the east coast today. Could you please see that these comments are forwarded to him? Thank you, Terry Escarda

To:

Mr. Don Calder, MC-12 E.A. Contact
USAF Air Combat Command
129 Andrews Street, Ste. 102
Langley Air Force Base, VA 23665
(757) 764-6156

I am the California Department of Toxic Substances Control's (DTSC) Project Manager for hazardous waste remediation activities at Beale AFB. Thank you for the opportunity to comment on the subject E.A., received February 7, 2011. The E.A. notes that the preferred action is to place the two squadrons (42 aircraft and approximately 900 personnel) at Beale AFB. The MC-12 is an un-manned, modified twin-engine turboprop Beechcraft King Air 350 reconnaissance aircraft. The E.A. further notes that annual airfield operations are expected to be about 15,000 sorties and would require dropping M-211 flares about 7,000 times per year at designated training ranges. The action that potentially may have a significant impact is the construction of a dormitory that is approximately 150 feet from vernal pools.

1. DTSC requests that the AF coordinate placement of the dormitory with the Beale AFB Environmental Restoration, Military Munitions Response, and Natural Resources Programs, DTSC, and the California Department of Fish and Game. DTSC also notes that the site of proposed dormitory is appears to be existing Environmental Restoration Program (ERP) site 36.

2. DTSC requests more detailed information on the potential impacts of dropping flares. Is perchlorate, a California-regulated hazardous substance, a constituent of the flares? Where will they be dropped? How will they be tracked? DTSC and Beale AFB are currently cleaning up perchlorate contamination at the base.

3. The E.A. notes that activities will increase at Building 1086, which is part of Site 32 of the ERP. There are concerns about potential vapor intrusion from soil and groundwater chlorinated solvents - has the E.A. evaluated the risks to a larger group of personnel based at that building?

4. While the base is operating under capacity, this does have the potential to increase the use of fuel spills or aircraft crashes, as well as bird strikes. What are the details of these evaluations, as the E.A. says there are no anticipated impacts?

5. Lastly, DTSC would like to note that the document appears very comprehensive and includes discussion of Greenhouse Gas Emissions, a recent addition to items of concern. DTSC recommends that the Air Force provide for comment and use standard construction air quality emission mitigation measures such as clean fuel equipment, particulate matter minimization controls such as

seeping, tarping, equipment washing, etc. Please contact the Beale AFB ERP or the DTSC Project Manager for information on many mitigation measures already recommended for previous activities at Beale AFB.

To summarize, thank you for the opportunity to comment. It appears that any potential impacts can be avoided or mitigated. DTSC and other California agencies will be pleased to assist the Air Force in identifying or mitigating any issues that may arise.

Sincerely,

Terry M. Escarda, P.E.
Hazardous Substances Engineer
California Department of Toxic Substances Control N. California Cleanup Program 8800 Cal Center Drive Sacramento, CA 95826-3200
Tel: (916) 255-3714 Fax: 255-3734

Cal DTSC response

From: Terry Escarda [TEscarda@dtsc.ca.gov]
Sent: Tuesday, March 08, 2011 2:23 PM
To: Donald W Civ USAF HQ AF ACC/A7PS Calder
Cc: Tim Miles; Nicole Forsyth; state.clearinghouse@opr.ca.gov
Subject: Re: FW: Revised MC-12 EA and comment matrix

Don and Nicole,

I have reviewed the responses to comments and the changes and concur. Thank you for addressing our concerns in such a timely manner.

Sincerely,

Terry M. Escarda, P.E.
Hazardous Substances Engineer
California Department of Toxic Substances Control N. California Cleanup Program 8800 Cal Center Drive Sacramento, CA 95826-3200
Tel: (916) 255-3714 Fax: 255-3734

>>> "Calder, Donald W Civ USAF HQ AF ACC/A7PS"
>>> <donald.calder@langley.af.mil> 3/8/2011 10:09 AM >>>

-----Original Message-----
From: Nicole Forsyth [mailto:nforsyth@gsrcorp.com]
Sent: Thursday, March 03, 2011 3:55 PM
To: Calder, Donald W Civ USAF HQ AF ACC/A7PS
Subject: Revised MC-12 EA and comment matrix

Revised Final EA and comment matrix attached. Let me know if you approve.

Nicole Forsyth

Gulf South Research Corporation (GSRC)

8081 GSRI Avenue

Baton Rouge, LA 70820

225-757-8088

OFFICE OF PLANNING AND BUDGET

Nathan Deal
Governor

Debbie Dlugolenski
Director

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Donald Calder
HQ ACC/A7PS
Dept. of the Air Force
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769

FROM: Barbara Jackson
Georgia State Clearinghouse

DATE: 2/23/2011

PROJECT: Draft EA/FONSI: MC-12 Training Squadron Beddown

STATE ID: GA110125002

The applicant/sponsor coordinated directly with DNR's Historic Preservation Division, one of our state reviewers for this type project.

/bj
Enc.: Middle Georgia RC, Jan. 31, 2011
GA DOT, Feb. 3, 2011
DNR/EPD, Feb. 22, 2011
EPD/WLRD, Feb. 23, 2011

Form NCC
Oct. 2008

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

FROM: MS. CAROL PAYTON
MIDDLE GEORGIA RC

APPLICANT: Department of the Air Force

PROJECT: Draft EA/FONSI: MC-12 Training Squadron Beddown

STATE ID: GA110125002

FEDERAL ID:

DATE: 1/31/11

☑ This project is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

This project is not consistent with:

☐ The goals, plans, policies, or fiscal resources with which this organization is concerned. (Line through inappropriate word or words and prepare a statement that explains the rationale for the inconsistency. (Additional pages may be used for outlining the inconsistencies. Be sure to put the GA State ID number on all pages).

☐ The criteria for developments of regional impact, federal executive orders, acts and/or rules and regulations administered by your agency. Negative environmental impacts or provision for protection of the environment should be pointed out. (Additional pages may be used for outlining the inconsistencies. Be sure to put the GA State ID number on all pages).

☐ This project does not impact upon the activities of the organization.

NOTE: Should you decide to FAX this form (and any attached pages), it is <u>not</u> necessary to mail the originals to us. [770-344-3568]

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STATE CLEARINGHOUSE

Form SC-3
Aug. 2010

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

FROM: AVIATION PROGRAMS
GEORGIA DOT

APPLICANT: Department of the Air Force

PROJECT: Draft EA/FONSI: MC-12 Training Squadron Beddown

STATE ID: GA110125002

FEDERAL ID:

DATE: 2/1/2011

☑ This project is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

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GEORGIA
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Form SC-3
Aug. 2010

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

FROM: MR. F. ALLEN BARNES F. Allen Barnes
GA DNR-EPD DIRECTOR'S OFFICE

APPLICANT: Department of the Air Force

PROJECT: Draft EA/FONSI: MC-12 Training Squadron Beddown

STATE ID: GA110125002

FEDERAL ID:

DATE: Feb 22, 2011

☑ This project is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

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Form SC-3
Aug. 2010

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

FROM: MR. TERRY WEST
GA DNR WILDLIFE RESOURCES DIV.

APPLICANT: Department of the Air Force

PROJECT: Draft EA/FONSI: MC-12 Training Squadron Beddown

STATE ID: GA110125002

FEDERAL ID:

DATE:

☑ This project is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

This project is not consistent with:

☐ The goals, plans, policies, or fiscal resources with which this organization is concerned. (Line through inappropriate word or words and prepare a statement that explains the rationale for the inconsistency. (Additional pages may be used for outlining the inconsistencies. Be sure to put the GA State ID number on all pages).

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Form SC-3
Aug. 2010

The Telegraph

120 Broadway, Macon GA 31201
www.macon.com

AFFIDAVIT

I, Phil Bridges (Name) in my capacity as National Accounts Representative (Title) of the newspaper

The Telegraph (Newspaper Name) in Macon (City), GA (State).

hereby certify that the ☐ ROP advertisement for Gulf South Research Corp. (Advertiser)

Notice of Availability. (Ad Headline)

was published in the above newspaper on January 26th, 2011 (Run Date (s))

Phil Bridges
Signature of Person Making Affidavit

Subscribed and sworn to before me in the County of Bibb (County) in the State of Georgia (State), on this 26th (Date) day of January (Month), 2011 (Year).

Notary Public Seal:

Kathleen Jones
Notary Public Signature

January 5, 2014
Commission Expires

AFFIDAVIT OF PUBLICATION

(Space above for recording information)

STATE OF MISSOURI) ss.
COUNTY OF PETTIS)

I, David Phillips, being duly sworn according to law, state that I am the Publisher of the Sedalia Democrat a daily newspaper of general circulation in the County of Pettis, State of Missouri, where located; which newspaper has been admitted to the Post Office as periodical class matter in the City of Sedalia, Missouri, the city of publication, which newspaper has been published regularly and consecutively for a period of three years and has a list of bona fide subscribers, voluntarily engaged as such who have paid or agreed to pay a stated price for a subscription for a definite period of time, and that such newspaper has complied with the provision of Section 493.050, Revised Statutes of Missouri 2000, and Section 59.310, Revised Statutes of Missouri 2000. The affixed notice appeared in said newspaper for one time as follows:

1st Insertion: Vol.	143	No. 26	26th	day of	January	20 11
2nd Insertion: Vol.		No.		day of		20
3rd Insertion: Vol.		No.		day of		20
4th Insertion: Vol.		No.		day of		20
5th Insertion: Vol.		No.		day of		20
6th Insertion: Vol.		No.		day of		20
7th Insertion: Vol.		No.		day of		20

Signed _____

Subscribed and sworn to before me this 26th day of January 20 11

Eddie E. Crouch

Eddie E. Crouch, Notary Public

My commission expires 12-6-2013

EDDIE E. CROUCH
Notary Public - Notary Seal
STATE OF MISSOURI
Pettis County
Commission #09904170
My Commission Expires Dec. 6, 2013

NOTICE OF AVAILABILITY

DRAFT ENVIRONMENTAL ASSESSMENT

FOR THE MC-12 SQUADRON BEDDOWN

This announcement provides public notification for the availability of the draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) prepared by the U.S. Department of the Air Force and U.S. Army Corps of Engineers Sacramento District for the beddown of two MC-12 squadrons and 42 MC-12 aircraft at a permanent location. The draft EA discusses the potential environmental effects of the proposed renovation and construction of facilities to support the beddown and the operation and maintenance of the MC-12s. Three bases, Beale Air Force Base (AFB), California; Robins AFB, Georgia; and Whiteman AFB, Missouri are being evaluated as potential sites for the proposed beddown. The draft EA and draft FONSI will be available for review for 30 days beginning Wednesday January 26, 2011. Copies are available for review at the following public libraries: Hub Zemke Memorial Library, Beale AFB Education Center, Beale AFB, CA 95903; Yuba County Library, 303 Second St., Marysville, CA 95901; Robins AFB Library, Building 905, Robins AFB, GA 31098; Nola Brantley Memorial Library, 721 Watson Blvd., Warner Robins, GA 31093; Whiteman AFB Library, 511 Spirit Blvd #515, Whiteman AFB, MO 65305; and Trails Regional Library, Knob Noster Branch, 109 E. Mcpherson, Knob Noster, MO 65336. Comments and requests for copies should be sent to Mr. Don Calder, ACC/A7PS, U.S. Department of the Air Force, Headquarters Air Combat Command, 129 Andrews Street, Suite 102, Langley Air Force Base, Virginia 23665-2769 or emailed to Donald.Calder@langley.af.mil.

SPEECH FROM 1A

more competitive, alongside pledges, in the strongest terms of his presidency, to cut the deficit and smack down spending deemed wasteful to America.

Yet he never explained how he'd pull that off or what specifically would be cut.

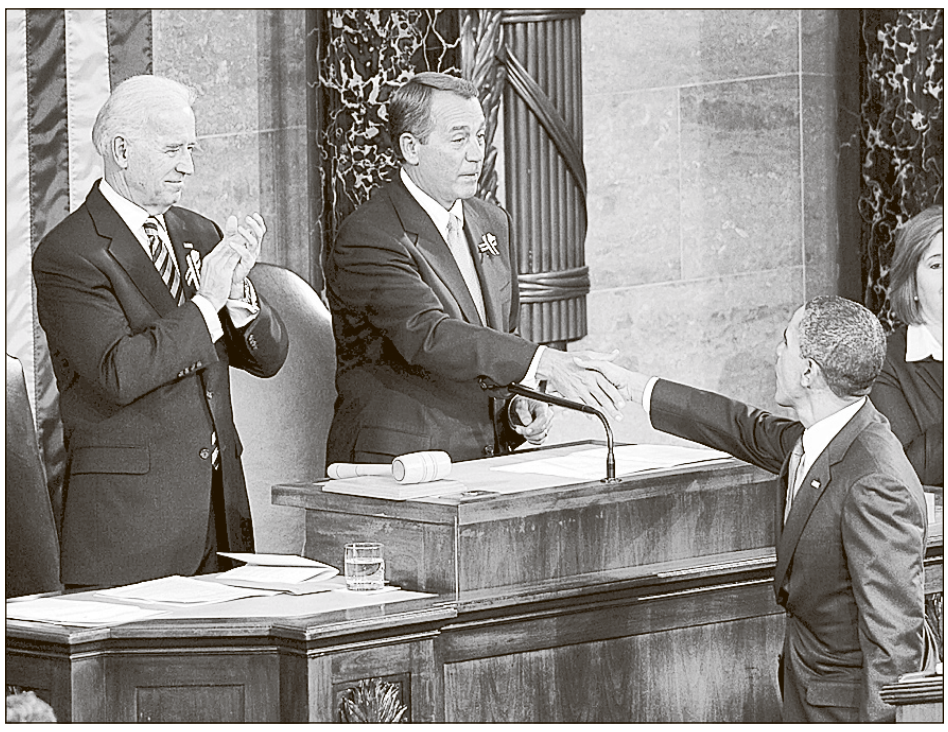
Obama did pledge to veto any bill with earmarks, the term used for lawmakers' pet projects. House Speaker John Boehner and other Republicans applauded.

But Obama's promise drew a rebuke from his own party even before he spoke, as Senate Majority Leader Harry Reid, D-Nev., said the president had "enough power already" and that plans to ban earmarks were "a lot of pretty talk."

Obama's proposals Tuesday night included cutting the corporate tax, providing wireless services for almost the whole nation, consolidating government agencies and freezing most discretionary federal spending for the next five years. In the overarching theme of his speech, the president told the lawmakers that the nation needed to "win the future."

Yet, Republicans have dismissed his "investment" proposals as merely new spending.

Republican Rep. Paul Ryan of Wisconsin, giving the GOP's response, said the nation was at a tipping point leading to a dire future if federal deficits aren't trimmed. Ryan promoted budget cuts as essential to responsible governing, speaking from the hearing room of the House Budget Committee, which he now chairs.



SUSAN WALSH/ASSOCIATED PRESS

House Speaker John Boehner of Ohio, center, shakes hands Tuesday with President Barack Obama on Capitol Hill in Washington prior to Obama's State of the Union address. Vice President Joe Biden is at left.

Obama entered the House chamber to prolonged applause, and to the unusual sight of Republicans and Democrats seated next to one another rather than on different sides of the center aisle. And he began with a political grace note, taking a moment to congratulate Boehner, the new Republican speaker of the House.

Calling for a new day of cooperation, Obama said: "What comes of this moment will be determined not by whether we can sit together tonight but whether we can work together tomorrow."

On a night typically known for its political theater, the lawmakers sometimes seemed subdued, as if still in the shadow of the Arizona shootings. Many in both parties wore black-and-white lapel ribbons, signifying the deaths in Tucson and the hopes of the survivors. Giffords' husband was watching the speech from her bedside, as he held her hand.

At times, Obama delivered lighter comments, seeming to surprise his audience with the way he lampooned what he suggested was the government's illogical regulation of salmon.

Halfway through his term, Obama stepped into this moment on the upswing, with a series of recent legislative wins in his pocket and praise from all corners for the way he responded to the shooting rampage in Arizona. But he confronts the political reality is that he must to lead a divided government for the first time, with more than half of all Americans disapproving of the way he is handling the economy.

Over his shoulder a reminder of the shift in power on Capitol Hill: Boehner, in the seat that had been held by Democratic Speaker Nancy Pelosi.

Obama conceded that everything he asked for would prompt more partisan disputes. "It will take time," he said. "And it will be harder because we will argue about everything. The cost. The details. The letter of every law."

Obama used the stories of some of the guests sitting with his wife, Michelle, to illustrate his points, including a small business owner who, in the tradition of American ingenuity, designed a drilling technology that helped rescue the Chilean miners.

The president cast the challenges facing the United States as bigger than either party.

He said the nation was facing a new "Sputnik" moment, and he urged efforts to create a wave of innovation to create jobs and a vibrant economic future, just as the nation vigorously responded to the Soviets beating the U.S. into space a half century ago.

There was less of the seesaw applause typical of State of the Union speeches in years past, where Democrats stood to applaud certain lines and Republicans embraced others. Members of the two parties found plenty of lines worthy of bipartisan applause.

In a speech with little focus on national security, Obama appeared to close the door on keeping any significant U.S. military presence in Iraq beyond the end of the year. "This year, our civilians will forge a lasting partnership with the Iraqi people while we finish the job of bringing our troops out of Iraq," the president said.

REACTION FROM 1A

say the speech was long on spending but short on funding.

Rep. Austin Scott, R-Ga., said freezing federal spending doesn't mean capping or cutting salaries.

"We will have to see the details, but talking about spending as a whole, we as Republicans would prefer to see cuts other than defense. With wars in Iraq and Afghanistan, and whatever could happen with North Korea at any given moment, you would not look to defense as a place to cut," Scott told The Telegraph shortly after the speech.

"The freeze in domestic spending doesn't mean a five year pay freeze," Scott said.

Sen. Saxby Chambliss, R-Ga., said the proposals would end up adding to America's deficit.

"I am disappointed that the president has proposed what amounts to a new stimulus plan under another name," Chambliss said in a statement. "We all remember the last economic stimulus plan — nearly $1 trillion committed to 'shovel-ready' projects, most of which never came to pass. And unemployment in Georgia has actually increased since then. We don't need a new stimulus at a time when Americans are worried about overspending and our nation's financial future."

Chambliss said American voters last November "sent a very clear message to Washington: Reduce spending and focus on America's economic health."

Scott did note there would be bipartisan support in the Republican controlled House for Obama's suggested lowering of corporate income tax rates and legal, or tort, reforms in health care regulations.

"I think you would see us work with him on that and gain Republican support," Scott said.

A federal spending freeze would take about $80 million in yearly payroll growth out of Robins Air Force Base's economic impact. Robins pays more than $1.2 billion a year in salary and benefits.

The freeze would also slow direct contract spending, which has grown by about $20 million a year over the past five years. In 2009, Robins paid out $282 million in various contracts across the state, with the bulk of those concentrated in Middle Georgia, according to official Robins figures.

The freeze would lower the U.S. deficit spending gap by $400 billion, Obama told members of Congress gathered in the House of Representatives chamber.

Obama wants to increase high-speed rail use and access across the nation and bring high speed Internet into more homes.

The president mentioned the wars in Afghanistan and Iraq and pointed out the successful troop drawdowns in Iraq, but made no mention when American fighting might end in the two nations. He also pledged to "forge new alliances for progress" in Latin and Central America, pointing out he plans a trade mission toe Brazil, Chile and El Salvador.

To contact writer Shelby G. Spires, call 744-4494.

NOTICE OF AVAILABILITY DRAFT ENVIRONMENTAL ASSESSMENT FOR THE MC-12 SQUADRON BEDDOWN

This announcement provides public notification for the availability of the draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) prepared by the U.S. Department of the Air Force and U.S. Army Corps of Engineers Sacramento District for the beddown of two MC-12 squadrons and 42 MC-12 aircraft at a permanent location. The draft EA discusses the potential environmental effects of the proposed renovation and construction of facilities to support the beddown and the operation and maintenance of the MC-12s. Three bases, Beale Air Force Base (AFB), California; Robins AFB, Georgia; and Whiteman AFB, Missouri are being evaluated as potential sites for the proposed beddown. The draft EA and draft FONSI will be available for review for 30 days beginning Wednesday January 26, 2011. Copies are available for review at the following public libraries: Hub Zemke Memorial Library, Beale AFB Education Center, Beale AFB, CA 95903; Yuba County Library, 303 Second St., Marysville, CA 95901; Robins AFB Library, Building 905, Robins AFB, GA 31098; Nola Brantley Memorial Library, 721 Watson Blvd., Warner Robins, GA 31093; Whiteman AFB Library, 511 Spirit Blvd #515, Whiteman AFB, MO 65305; and Trails Regional Library, Knob Noster Branch, 109 E. Mcpherson, Knob Noster, MO 65336. Comments and requests for copies should be sent to Mr. Don Calder, ACC/A7PS, U.S. Department of the Air Force, Headquarters Air Combat Command, 129 Andrews Street, Suite 102, Langley Air Force Base, Virginia 23665-2769 or emailed to Donald.Calder@langley.af.mil.

AFFIDAVIT OF PUBLICATION

Daily Star Journal, 135 East Market St., Warrensburg, MO 64093

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GULF SOUTH RESEARCH CORPORATION
8081 GSRI AVE

County of Johnson
State of Missouri

I, CAROLYN SIVILS, being duly sworn according to law, state that I am an Agent of THE DAILY STAR JOURNAL, a daily newspaper of general circulation in the County of Johnson, State of Missouri, where located; which newspaper has been admitted to the Post Office as periodical class matter in the City of Warrensburg, Missouri, the city publication; which newspaper has been published regularly and consecutively for a period of more than three years and has a list of bona fide subscribers, voluntarily engaged as such who have paid or agreed to pay a stated price for a subscription for a definite period of time, and that such newspaper has complied with the provisions of Section 493.050, revised Statutes of Missouri 2000, and Section 59.310, revised Statutes of Missouri 2000. The affixed notice appears in said newspaper on the following consecutive dates:

Run Dates: 01/26/11 to 01/26/11
Appearances: 1
AD SPACE: 110

(Signed) Carolyn Sivils

Subscribed and sworn before me this 26th day of January 2011

Clara D. Young
Notary Public

CLARA D. YOUNG
My Commission Expires
August 5, 2011
Johnson County
Commission #07420229

My Commission Expires: 08-05-11

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APPENDIX B
AIR QUALITY CALCULATIONS

CALCULATION SHEET-COMBUSTIBLE EMISSIONS-CONSTRUCTION BEAL AFB

Assumptions for Combustible Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	1	300	8	30	72000
Diesel Road Compactors	0	100	8	40	0
Diesel Dump Truck	1	300	8	15	36000
Diesel Excavator	0	300	8	10	0
Diesel Hole Trenchers	1	175	8	10	14000
Diesel Bore/Drill Rigs	1	300	8	10	24000
Diesel Cement & Mortar Mixers	1	300	8	15	36000
Diesel Cranes	1	175	8	15	21000
Diesel Graders	0	300	8	10	0
Diesel Tractors/Loaders/Backhoes	1	100	8	30	24000
Diesel Bull Dozers	1	300	8	10	24000
Diesel Front End Loaders	1	300	8	10	24000
Diesel Fork Lifts	1	100	8	30	24000
Diesel Generator Set	1	40	8	60	19200

Emission Factors							
Type of Construction Equipment	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	PM-10 g/hp-hr	PM-2.5 g/hp-hr	SO2 g/hp-hr	CO2 g/hp-hr
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740	536.200
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740	536.300
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740	535.800
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730	529.700
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730	529.700
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730	530.200
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740	536.300
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950	691.100
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740	536.300
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740	536.200
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950	690.800
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

CALCULATION SHEET-COMBUSTIBLE EMISSIONS-CONSTRUCTION BEAL AFB

Emission factors (EF) were generated from the NONROAD2005 model for the 2006 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD2005 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD2005 model is based on the population in U.S. for the 2006 calendar year.

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.035	0.164	0.436	0.033	0.032	0.059	42.528
Diesel Road Paver	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Dump Truck	0.017	0.082	0.218	0.016	0.016	0.029	21.264
Diesel Excavator	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Hole Cleaners\Trenchers	0.008	0.038	0.090	0.007	0.007	0.011	8.266
Diesel Bore/Drill Rigs	0.016	0.061	0.189	0.013	0.013	0.019	14.010
Diesel Cement & Mortar Mixers	0.024	0.092	0.289	0.019	0.019	0.029	21.014
Diesel Cranes	0.010	0.030	0.132	0.008	0.008	0.017	12.270
Diesel Graders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Tractors/Loaders/Backhoes	0.049	0.217	0.191	0.036	0.035	0.025	18.278
Diesel Bull Dozers	0.010	0.036	0.126	0.009	0.008	0.020	14.184
Diesel Front End Loaders	0.010	0.041	0.132	0.009	0.009	0.020	14.181
Diesel Aerial Lifts	0.052	0.205	0.226	0.037	0.036	0.025	18.270
Diesel Generator Set	0.026	0.080	0.126	0.015	0.015	0.017	12.426
Total Emissions	**0.257**	**1.046**	**2.155**	**0.202**	**0.197**	**0.271**	**196.693**

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-TRANSPORTATION COMBUSTIBLE EMISSIONS-CONSTRUCTION BEAL AFB

Construction Worker Personal Vehicle Commuting to Construction Site-Passenger and Light Duty Trucks									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	120	10	10	0.11	0.13	0.24
CO	12.4	15.7	60	120	10	10	0.98	1.25	2.23
NOx	0.95	1.22	60	120	10	10	0.08	0.10	0.17
PM-10	0.0052	0.0065	60	120	10	10	0.00	0.00	0.00
PM 2.5	0.0049	0.006	60	120	10	10	0.00	0.00	0.00
CO2	369	511	60	120	10	10	29.28	40.54	69.82

Heavy Duty Trucks Delivery Supply Trucks to Construction Site									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig	Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	0.29	0.55	60	120	2	2	0.00	0.01	0.01
CO	1.32	3.21	60	120	2	2	0.02	0.05	0.07
NOx	4.97	12.6	60	120	2	2	0.08	0.20	0.28
PM-10	0.12	0.33	60	120	2	2	0.00	0.01	0.01
PM 2.5	0.13	0.36	60	120	2	2	0.00	0.01	0.01
CO2	536	536	60	120	2	2	8.51	8.51	17.01
Daily Commute New Staff Associated with HC/MC - 130J Recap									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of Cars	Number of trucks	Total Emissions cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	20	240	437	437	3.14	3.72	6.87
CO	12.4	15.7	20	240	437	437	28.66	36.29	64.95
NOx	0.95	1.22	20	240	437	437	2.20	2.82	5.02
PM-10	0.0052	0.0065	20	240	437	437	0.01	0.02	0.03
PM 2.5	0.0049	0.006	20	240	437	437	0.01	0.01	0.03
CO2	369	511	20	240	437	437	852.96	1181.20	2,034.17

Truck Emission Factor Source: MOBILE6.2 USEPA 2005 Emission Facts: Average annual emissions and fuel consumption for gasoline-fueled passenger cars and light trucks. EPA 420-F-05-022 August 2005. Emission rates were generated using MOBILE.6 highway.

CALCULATION SHEET-TRANSPORTATION COMBUSTIBLE EMISSIONS-CONSTRUCTION BEAL AFB

Conversion factor:	gms to tons
	0.000001102

Carbon Equivalents	Conversion Factor
N2O or NOx	311
Methane or VOCs	25

Source: EPA 2010 Reference, Tables and Conversions, Inventory of U.S. Greenhouse Gas Emissions and Sinks; http://www.epa.gov/climatechange/emissions/usinventoryreport.html

CARBON EQUIVALENTS

Construction Commuters	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	5.89	
NOx	311	0.17	
Total		6.06	75.89

Delivery Trucks	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	0.33	
NOx	311	86.71	
Total		87.04	104.06

Kirtland AFB staff and Students	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	171.63	
NOx	311	1,560.00	
Total		1,731.63	3,765.80

CALCULATION SHEET-FUGITIVE DUST-CONSTRUCTION BEAL AFB

Construction Fugitive Dust Emissions

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
General Construction Activities	0.19	ton PM10/acre-month	MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42	ton PM10/acre-month	MRI 1996; EPA 2001; EPA 2006

PM2.5 Emissions

PM2.5 Multiplier	0.10	(10% of PM10 emissions assumed to be PM2.5)	EPA 2001; EPA 2006
Control Efficiency	0.50	(assume 50% control efficiency for PM10 and PM2.5 emissions)	EPA 2001; EPA 2006

Project Assumptions

Construction Area (0.19 ton PM10/acre-month)

			Conversion Factors	
Duration of Construction Project	6	months	0.000022957	acres per feet
Length	0	miles	5280	feet per mile
Length (converted)	0	feet		
Width	0	feet		
Area	4.00	acres		

Staging Areas

Duration of Construction Project		months
Length		miles
Length (converted)		feet
Width		feet
Area	0.00	acres

	Project Emissions (tons/year)			
	PM10 uncontrolled	PM10 controlled	PM2.5 uncontrolled	PM2.5 controlled
Construction Area (0.19 ton PM10/ac	4.56	2.28	0.46	0.23
Staging Areas	0.00	0.00	0.00	0.00
Total	**4.56**	**2.28**	**0.46**	**0.23**

Construction Fugitive Dust Emission Factors

General Construction Activities Emission Factor

0.19 ton PM10/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM10/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM10/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions from Construction Operations, calculated the 0.19 ton PM10/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM10/acre-month) and 75% of the average emission factor (0.11 ton PM10/acre-month).

The 0.19 ton PM10/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM10/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particle (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District and the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas.

New Road Construction Emission Factor

0.42 ton PM10/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM10/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM10/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

PM2.5 Multiplier **0.10**

PM2.5 emissions are estimated by applying a particle size multiplier of 0.10 to PM10 emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM10 and PM2.5 **0.50**

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas. Wetting controls will be applied during project construction (EPA 2006).

References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999.* EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants.* Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1).* Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

CALCULATION SHEET-SUMMARY OF EMISSIONS-BEAL AFB

Proposed Action Construction Emissions for Criteria Pollutants (tons per year)									
Emission Source	VOC	CO	NOx	PM-10	PM-2.5	SO2	CO2	CO2 Equivalents	Total CO2
Combustible Emissions	0.26	1.05	2.16	0.20	0.20	0.27	197	677	873
Construction Site-Fugitive PM-10	NA	NA	NA	2.28	0.23	NA	NA	NA	NA
Construction Workers Commuter & Trucking	0.25	2.30	0.45	0.01	0.01	NA	70	146	216
Total emissions	**0.51**	**3.35**	**2.61**	**2.49**	**0.43**	**0.27**	267	823	1,090
Annual Auto Emissions New Staff	6.87	64.95	5.02	0.03	0.03	NA	2,034	1,732	3,766
Annual Emissions Increase Flight Operations	13.13	69.20	1.36	0.00	0.00	0.69	1,672	752	2,424
Total Ongoing Emission/yr	20.00	134.15	6.38	0.03	0.03	0.69	3,706	2,484	6,190
De minimis Threshold (1)	50.00	NA	50.00	100.00	100.00	NA	25,000	25,000	25,000

1. Note that Yuba County is in non-attainment for PM-2.5 at the Federal level and in non-attainment for one hour ozone, eight hour ozone, PM-10, and PM-2.5 at the state level.

Carbon Equivalents	Conversion Factor
N2O or NOx	311
Methane or VOCs	25

Source: EPA 2010 Reference, Tables and Conversions, Inventory of U.S. Greenhouse Gas Emissions and Sinks; http://www.epa.gov/climatechange/emissions/usinventoryreport.html

18068 Federal Register/Vol. 63, No. 70/Monday, April 13, 1998/Notices

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Docket No. 29194]

RIN 2120-AC22

Emissions and Dispersion Modeling System Policy for Airport Air Quality Analysis; Interim Guidance to FAA Orders 1050.1D and 5050.4A

AGENCY: Federal Aviation Administration, DOT.

ACTION: Policy Statement.

SUMMARY: This document provides a statement of Federal Aviation Administration (FAA) policy concerning the required use of the FAA Emissions and Dispersion Modeling System (EDMS) to assess the air quality impacts of proposed airport development projects. To date, the EDMS has been considered an FAA preferred model for airport air quality analysis. The policy statement is intended to ensure consistency and quality of analysis performed to assess the air quality impacts of airport emission sources for purposes of complying with the National Environmental Policy Act of 1969, as amended, 42 USC §§4321 et seq (NEPA) and the Clean Air Act as amended, 42 USC 7401, 7506(c) general conformity (general conformity) requirements.

EFFECTIVE DATE: April 13, 1998.

FOR FURTHER INFORMATION CONTACT: Ms. Julie Ann Draper, Analysis and Engineering Branch (AEE-120), Technology Division, Office of Environment and Energy, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591, telephone (202) 267-3494.

SUPPLEMENTARY INFORMATION: The EDMS was developed by the FAA in cooperation with the U.S. Air Force (USAF) in the mid-1980's as a complex source microcomputer model to assess the air quality impacts of proposed airport development projects. It has since been the FAA preferred model for airport air quality analysis. On July 20, 1993, the Environmental

Protection Agency (EPA) accepted the EDMS as a formal EPA "Preferred Guideline" model for use in civil airports and military bases. In response to the growing needs of the air quality analysis community and changes in regulations, the FAA in cooperation with the USAF re-engineered and enhanced EDMS in 1997 to create EDMS Version 3.0. EDMS Version 3.0 was built under the guidance of a government and industry advisory board composed of experts from the scientific, environmental policy, and analysis fields.

The FAA provides guidance on the use of EDMS in FAA Report No. AEE-AEE-97-03, "Air Quality Procedures for Civilian Airports and Air Force Bases," which updates and replaces the original version of the handbook, FAA Report No. FAA-82-21.

The FAA is taking this opportunity to identify EDMS as the *required* model to perform the air quality analyses for aviation emission sources from airport projects instead of the *preferred* model, as stated in the FAA's "Air Quality Procedures for Civilian Airports and Air Force Bases." This policy statement will serve as the interim written document until the revised FAA Orders 1050, Policies and Procedures for Considering Environmental Impacts, and 5050, Airport Environmental Handbook, are published.

Policy Statement

EDMS is designed to assess the air quality impacts of airport emission sources, particularly *aviation* sources, which consist of aircraft, auxiliary power units, and ground support equipment. EDMS also offers the capability to model other airport emission sources that are not aviation-specific, such as power plants, fuel storage tanks, and ground access vehicles.

Except for air toxics or where advance written approval has been granted to use an equivalent methodology and computer model by the FAA Office of Environment and Energy (AEE-120), the air quality analyses for aviation emission sources from airport projects conducted to satisfy NEPA and general conformity requirements under the Clean Air Act must be prepared using the most recent EDMS model available at the start of the environmental analysis process. In the event that EDMS is updated after the environmental analysis process is underway, the updated version of EDMS may be used to provide additional disclosure concerning air quality but use is not required. A complete description of all inputs, particularly the specification of non-default data, should be included in the documentation of the air quality analysis for purposes of complying with NEPA and general conformity requirements. Users also must provide one copy of EDMS input files used in the analysis and the corresponding output files to the FAA responsible official on magnetic media specified by the FAA responsible official.

As stated above, EDMS currently is not designed to perform air toxic analyses for aviation sources, and may be supplemented with other air toxic methodology and models in consultation with the appropriate FAA regional program office. Use of supplemental methodology and models for more refined analysis of *non-aviation* sources also is permitted in

consultation with the appropriate FAA regional program office.

This policy is being issued in order to ensure consistency and quality of analysis performed to assess the air quality impacts of airport emission sources for purposes of complying with NEPA and general conformity requirements.

Issued in Washington, DC, on April 6, 1998.

Paul R. Dykeman,

Deputy Director of Environment and Energy.

[FR Doc. 98-9641 Filed 4-10-98; 8:45am]

EDMS 5.1 Model Inputs for Beal AFB Study

Study Created:	Thu Jul 08 15:37:49 2010
Report Date:	Wed Oct 06 11:26:33 2010
Study Pathname:	C:\EDMS 5.1\Beal AFB\Beal AFB.edm

Study Setup

Unit System:	Metric
Dispersion Modeling:	Dispersion is not enabled for this study
Speciated Hydrocarbon Modeling:	Speciated Hydrocarbon Modeling is not enabled for this study
Analysis Years:	2010

Scenarios

Scenario Name:	Description:	Add a description.
Baseline	Aircraft Times in Mode Basis:	Performance-Based
	Taxi Time Modeling:	User-specified Taxi Times
	FOA3 Sulfur-to-Sulfate Conversion Rate:	2.400000 %

Airports

Airport Name:	Beale Afb
IATA Code:	BAB
ICAO Code:	KBAB
FAA Code:	
Country:	US
State:	California
City:	Marysville
Airport Description:	Beale Afb
Latitude:	39.136°
Longitude:	-121.437°
Northing:	4333032.82
Easting:	635119.03
UTM Zone:	10
Elevation:	113.00 feet
PM Modeling Methodology:	FOA3a (Sulfur-to-Sulfate Conversion Rate = 5.0%, Fuel Sulfur Content = 0.068%)

Scenario-Airport: Baseline, Beale Afb

Weather

Baseline, Beale Afb

Mixing Height:	914.40 meters
Temperature:	16.67 °C
Daily High Temperature:	22.42 °C
Daily Low Temperature:	10.92 °C
Pressure:	101320.73 Pa
Sea Level Pressure:	101557.78 Pa
Relative Humidity:	61.99
Wind Speed:	11.46 kph
Wind Direction:	0.00 °
Ceiling:	30480.00 m
Visibility:	80.47 km

The user has used annual averages.

Base Elevation:	34.44 meters
Date Range:	Thursday, January 01, 2004 to Friday, December 31, 2004
Source Data File Location:	
Upper Air Data File Location:	

Quarter-Hourly Operational Profiles

Baseline, Beale Afb

Name: DEFAULT

Quarter-Hour	Weight	Quarter-Hour	Weight	Quarter-Hour	Weight	Quarter-Hour	Weight
12:00am to 12:14 am	1.000000	6:00am to 6:14am	1.000000	12:00pm to 12:14 pm	1.000000	6:00pm to 6:14pm	1.000000
12:15am to 12:29 am	1.000000	6:15am to 6:29am	1.000000	12:15pm to 12:29 pm	1.000000	6:15pm to 6:29pm	1.000000
12:30am to 12:44 am	1.000000	6:30am to 6:44am	1.000000	12:30pm to 12:44 pm	1.000000	6:30pm to 6:44pm	1.000000
12:45am to 12:59 am	1.000000	6:45am to 6:59am	1.000000	12:45pm to 12:59 pm	1.000000	6:45pm to 6:59pm	1.000000
1:00am to 1:14am	1.000000	7:00am to 7:14am	1.000000	1:00pm to 1:14pm	1.000000	7:00pm to 7:14pm	1.000000
1:15am to 1:29am	1.000000	7:15am to 7:29am	1.000000	1:15pm to 1:29pm	1.000000	7:15pm to 7:29pm	1.000000
1:30am to 1:44am	1.000000	7:30am to 7:44am	1.000000	1:30pm to 1:44pm	1.000000	7:30pm to 7:44pm	1.000000
1:45am to 1:59am	1.000000	7:45am to 7:59am	1.000000	1:45pm to 1:59pm	1.000000	7:45pm to 7:59pm	1.000000
2:00am to 2:14am	1.000000	8:00am to 8:14am	1.000000	2:00pm to 2:14pm	1.000000	8:00pm to 8:14pm	1.000000
2:15am to 2:29am	1.000000	8:15am to 8:29am	1.000000	2:15pm to 2:29pm	1.000000	8:15pm to 8:29pm	1.000000
2:30am to 2:44am	1.000000	8:30am to 8:44am	1.000000	2:30pm to 2:44pm	1.000000	8:30pm to 8:44pm	1.000000
2:45am to 2:59am	1.000000	8:45am to 8:59am	1.000000	2:45pm to 2:59pm	1.000000	8:45pm to 8:59pm	1.000000
3:00am to 3:14am	1.000000	9:00am to 9:14am	1.000000	3:00pm to 3:14pm	1.000000	9:00pm to 9:14pm	1.000000
3:15am to 3:29am	1.000000	9:15am to 9:29am	1.000000	3:15pm to 3:29pm	1.000000	9:15pm to 9:29pm	1.000000
3:30am to 3:44am	1.000000	9:30am to 9:44am	1.000000	3:30pm to 3:44pm	1.000000	9:30pm to 9:44pm	1.000000
3:45am to 3:59am	1.000000	9:45am to 9:59am	1.000000	3:45pm to 3:59pm	1.000000	9:45pm to 9:59pm	1.000000
4:00am to 4:14am	1.000000	10:00am to 10:14am	1.000000	4:00pm to 4:14pm	1.000000	10:00pm to 10:14pm	1.000000
4:15am to 4:29am	1.000000	10:15am to 10:29am	1.000000	4:15pm to 4:29pm	1.000000	10:15pm to 10:29pm	1.000000
4:30am to 4:44am	1.000000	10:30am to 10:44am	1.000000	4:30pm to 4:44pm	1.000000	10:30pm to 10:44pm	1.000000
4:45am to 4:59am	1.000000	10:45am to 10:59am	1.000000	4:45pm to 4:59pm	1.000000	10:45pm to 10:59pm	1.000000
5:00am to 5:14am	1.000000	11:00am to 11:14am	1.000000	5:00pm to 5:14pm	1.000000	11:00pm to 11:14pm	1.000000
5:15am to 5:29am	1.000000	11:15am to 11:29am	1.000000	5:15pm to 5:29pm	1.000000	11:15pm to 11:29pm	1.000000
5:30am to 5:44am	1.000000	11:30am to 11:44am	1.000000	5:30pm to 5:44pm	1.000000	11:30pm to 11:44pm	1.000000
5:45am to 5:59am	1.000000	11:45am to 11:59am	1.000000	5:45pm to 5:59pm	1.000000	11:45pm to 11:59pm	1.000000

Daily Operational Profiles

Baseline, Beale Afb

Name: DEFAULT

Day	Weight	Day	Weight
Monday	1.000000	Friday	1.000000
Tuesday	1.000000	Saturday	1.000000
Wednesday	1.000000	Sunday	1.000000
Thursday	1.000000		

Monthly Operational Profiles

Baseline, Beale Afb

Name: DEFAULT

Month	Weight	Month	Weight
January	1.000000	July	1.000000
February	1.000000	August	1.000000
March	1.000000	September	1.000000
April	1.000000	October	1.000000
May	1.000000	November	1.000000
June	1.000000	December	1.000000

Aircraft

Baseline, Beale Afb

Default Taxi Out Time: 19.000000 min

Default Taxi In Time: 7.000000 min

Year:	Uses Schedule?	Schedule Filename:
2010	No	(None)

Aircraft Name:
Raytheon King Air 90
Engine Type:
PT6A-60
Identification:
#1
Category:
SGTB

Take Off weight:	5670.00 Kgs
Approach Weight:	5021.00 Kgs
Glide Slope:	3.00°
APU Assignment:	None
APU Departure OP Time:	13.00 min
APU Arrival OP Time:	13.00 min
Gate Assignment:	None

Assigned GSE/AGE:	FUEL	Arrival Op Time (mins)	Departure Op Time (mins)	Horsepower (hp)	Load Factor (%)	Manufactured Year
Baggage Tractor (Stewart & Stevenson TUG MA 50)	Gasoline	17.00	18.00	107.00	55.00	
Fuel Truck (F750, Dukes Transportation Services, DART 3000 to 6000 gallon)	Diesel	0.00	10.00	175.00	25.00	
Ground Power Unit (TLD, 28 VDC)	Diesel	0.00	40.00	71.00	75.00	

Year:
2010

Annual Departures:	7500
Annual Arrivals:	7500
Annual TGOs:	0
Taxi Out Time:	Determined by Sequencing model
Taxi In Time:	Determined by Sequencing model

Departure Quarter-Hourly Operational profile:	DEFAULT
Departure Daily Operational Profile:	DEFAULT
Departure Monthly Operational Profile:	DEFAULT
Arrival Quarter-Hourly Operational profile:	DEFAULT
Arrival Daily Operational Profile:	DEFAULT
Arrival Monthly Operational Profile:	DEFAULT
Touch & Go Quarter-Hourly Operational profile:	DEFAULT
Touch & Go Daily Operational Profile:	DEFAULT
Touch & Go Monthly Operational Profile:	DEFAULT

GSE Population — Baseline, Beale Afb

None.

Parking Facilities — Baseline, Beale Afb

None.

Roadways — Baseline, Beale Afb

None.

Stationary Sources — Baseline, Beale Afb

None.

Training Fires — Baseline, Beale Afb

None.

Gates — Baseline, Beale Afb

None.

Taxiways — Baseline, Beale Afb

None.

Runways — Baseline, Beale Afb

None.

Taxipaths — Baseline, Beale Afb

None.

Configurations — Baseline, Beale Afb

None.

Buildings — Baseline, Beale Afb

None.

Discrete Cartesian Receptors — Baseline, Beale Afb

None.

Discrete Polar Receptors — Baseline, Beale Afb

None.

Cartesian Receptor Networks — Baseline, Beale Afb

None.

Polar Receptor Networks — Baseline, Beale Afb

None.

User-Created Aircraft — Baseline, Beale Afb

None.

User-Created GSE — Baseline, Beale Afb

None.

User-Created APU — Baseline, Beale Afb

None.

Emissions Inventory Summary

(Metric Tons per Year)

Baseline - Beale Afb 2010

Category	CO2	CO	THC	NMHC	VOC	TOG	NOx	SOx	PM-10	PM-2.5
Aircraft	1,672.378	69.206	11.417	13.201	13.132	13.201	1.364	0.685	N/A	N/A
GSE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
APUs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Parking Facilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roadways	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stationary Sources	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Training Fires	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grand Total	1,672.378	69.206	11.417	13.201	13.132	13.201	1.364	0.685	N/A	N/A