Draft
Air National Guard
F-15EX Eagle II & F-35A Lightning II
Operational Beddowns
Environmental Impact Statement
Appendices






January 2024

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A1 Agency Correspondence

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DEPARTMENT OF THE AIR FORCE
WASHINGTON, DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

Deputy Assistant Secretary of the Navy (EI&E)
1000 Navy Pentagon, Room 4A674
Washington DC, 20350

Dear Mr. Ohannessian:

The Department of the Air Force (DAF) as Lead Agency (40 C.F.R. § 1501.7)) requests the Department of the Navy's (DON) participation as a Cooperating Agency (CA) in preparation of an Environmental Impact Statement (EIS) for the F-35A and F-15 EX beddown and recapitalization of existing F-15 C/D aircraft at three Air National Guard (ANG) alternative locations. The DAF anticipates the DON having National Environmental Policy Act (NEPA) responsibilities as well, which could lead to a joint Record of Decision (40 C.F.R. § 1505.2).

Alternative locations include Naval Air Station Joint Reserve Base New Orleans, LA, Naval Air Station Lemoore, CA, Westfield-Barnes Regional Airport - Barnes, MA, and Fresno Yosemite International Airport - Fresno, CA. Of these, one location will be selected for basing the F-35A, and two locations will be selected for the F-15 EX.

This CA arrangement is established pursuant to 40 CFR § 1501.8, Cooperating Agencies. As the lead, the DAF requests the DON CA support by:

- Making staff available to enhance interdisciplinary capabilities;
- Participating in the scoping process;
- Assuming responsibility for developing information and preparing analyses on issues for which the DON has special expertise, upon request of the DAF;
- Using the DON funds for routine activities (40 CFR § 1503.3), while the DAF will fund major activities pursuant to its EIS contract;
- Consulting with the DAF in developing the milestone schedule, meeting the schedule and elevating issues that may affect any ability to meet the schedule (40 C.F.R.§ 1501.7(i)); and
- Responding, in writing, to this request.

The DAF will act as the Lead Agency for purposes of compliance with §7, Endangered Species Act (16 USC §1536); §106, National Historic Preservation Act (16 USC §470f); and similar regulatory consultation or coordination requirements, to include coordination with the DON. The DAF is amenable to development of a Memorandum of Understanding/Agreement, the content of which would be established between the CAs subsequent to this request.

Should you or your staff have further questions regarding this letter, our points of contact at Headquarters Air Force: Mr. Jack Bush, at (703) 614-0237 (jack.bush@us.af.mil), Headquarters National

Guard Bureau: Maj Jason Askins, (240) 612-8492 (jason.askins@us.af.mil) and Mr. Will Strickland, (240) 612-7042, (william.strickland.7@us.af.mil).

MORIARTY.ROBERT.E.1013267584 Digitally signed by MORIARTY.ROBERT.E.1013267584 Date: 2022.03.04 15:30:23 -05'00'

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

cc:
SAF/GCN
AF/A4C
OPNAV N45
NGB/A4A/A8/JA
AFLOA/JOAE

DEPARTMENT OF THE AIR FORCE
WASHINGTON, DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

Mr. Bob Craven, Director
Office of Airport Planning and Programming (APP)
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, DC 20591

Dear Mr. Craven:

The Department of the Air Force (DAF) as Lead Agency (40 C.F.R. § 1501.7)) requests the FAA participation as a Cooperating Agency (CA) in preparation of an Environmental Impact Statement (EIS) for the F-35A and F-15 EX beddown and recapitalization of existing F-15 C/D aircraft at three Air National Guard (ANG) alternative locations. The DAF anticipates the FAA having National Environmental Policy Act (NEPA) responsibilities as well, which could lead to a joint Record of Decision (40 C.F.R. § 1505.2).

Alternative locations include Naval Air Station Joint Reserve Base New Orleans, LA, Naval Air Station Lemoore, CA, Westfield-Barnes Regional Airport - Barnes, MA, and Fresno Yosemite International Airport - Fresno, CA. Of these, one location will be selected for basing the F-35A, and two locations will be selected for the F-15 EX.

This CA arrangement is established pursuant to 40 CFR § 1501.8, Cooperating Agencies. As the lead, the DAF requests the FAA CA support by:

- Making staff available to enhance interdisciplinary capabilities;
- Participating in the scoping process;
- Assuming responsibility, upon request by the DAF, for developing information and preparing analyses on issues for which the FAA has special expertise;
- Making staff support available to enhance interdisciplinary review capability and provide specific comments (40 CFR §1503.3);
- Provide review and comments within the timelines prescribed in the program milestone schedule; and
- Responding, in writing, to this request.

The DAF will act as the Lead Agency for purposes of compliance with §7, Endangered Species Act (16 USC §1536); §106, National Historic Preservation Act (16 USC §470f); and similar regulatory consultation or coordination requirements, to include coordination with the FAA. The DAF is amenable to development of a Memorandum of Understanding/Agreement, the content of which will be established between the Cooperating Agencies subsequent to this request.

Should you or your staff have further questions regarding this letter, our points of contact at Headquarters Air Force: Mr. Jack Bush, at (703) 614-0237 (jack.bush@us.af.mil), Headquarters NationalGuard Bureau: Maj Jason Askins, (240) 612-8492 (jason.askins@us.af.mil) and Mr. Will Strickland, (240) 612-7042, (william.strickland.7@us.af.mil).

MORIARTY.ROBERT.E.1013267584 Digitally signed by MORIARTY.ROBERT.E.1013267584 Date: 2022.03.09 07:20:29 -05'00'

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

cc:
SAF/GCN
AF/A4C
NGB/A4A/GC
AFLOA/JAOE

U.S. Department of Transportation
Federal Aviation Administration

Office of Airport Planning and Programming

800 Independence Ave, SW.
Washington, DC 20591

21 April 2022

Mr. Robert E. Moriarty
Deputy Assistant Secretary of the Air Force (Installations)
1665 Air Force Pentagon
Washington, DC 20330

Dear Mr. Moriarty:

Thank you for your 9 March letter requesting FAA participation as a cooperating agency to the Air Force's preparation of an Environmental Impact Statement (EIS) for proposed F-35A and F-15EX basing. We understand the alternative locations include 1-Naval Air Station Joint Reserve Base New Orleans, LA; 2-Naval Air Station Lemoore, CA; 3-Westfield-Barnes Regional Airport - Westfield, MA; and 4-Fresno Yosemite International Airport, Fresno, CA.

The FAA's Office of Airports (ARP) supports the Air Force's decision to prepare an EIS for this proposal and agrees to be a Cooperating Agency pursuant to 40 CFR §1501.8 for this EIS. As a Cooperating Agency, we agree to assign staff with the goal to help develop a single, comprehensive EIS and joint Record of Decision (ROD)[1] to meet each agency's distinct obligations under the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. §§ 4321 - 4374) to support the decision making of both agencies. In addition, FAA's ARP will:

- Participate in the scoping process.
- Participate in public meetings (as needed or appropriate).
- Upon the Air Force's request, to the extent practical, support the development of information and analyses, including portions of the EIS concerning issues for which ARP has special expertise, with the following exceptions:
  - During document reviews, ARP can develop descriptions specific to our action and role as a cooperating agency and make recommendations to the Air Force to correct missing information or deficiencies in the analysis associated with ARP's jurisdiction by law and special expertise.
  - ARP is relying on the Air Force, as lead agency, to fund major activities or analyses it requests from ARP pursuant to 40 CFR 1501.8(b)(3). Specifically, the modeling and analysis of military and civil aircraft noise impacts for each civil airport location.

[1] A determination to prepare a joint ROD is dependent on the DAF selected alternative once the Final EIS is completed. For example, if DAF selects an alternative that does not involve a civil airport location, a joint ROD may not be necessary.

- To the extent practicable, support the Air Force's interdisciplinary review capability pursuant to 40 CFR §1501.8 (b)(4).
- Consult with the Air Force in development of a schedule, meet the schedule, and elevate, as appropriate, to the senior Air Force official, any issues relating to purpose and need, alternatives, or other issues that may affect ARP's ability to meet the Air Force's schedule.
- Review and provide comments regarding matters for which ARP has jurisdiction by law and special expertise consistent with 40 CFR §1503.2 and specific comments pursuant to 40 CFR §1503.3, as well as ensuring the EIS is legally sufficient for the purposes of relying on this EIS pursuant to 40 CFR §1506.3 associated with ARP's separate but connected action.

We also support your offer to, and request that the Air Force develop a Memorandum of Understanding or Agreement with FAA's ARP, subsequent to receiving this response.

For the civil airports associated with the Air Force's proposed action, please note where FAA's ARP has jurisdiction by law, ARP will be an "action agency" on behalf of the FAA. Under the Airport and Airway Improvement Act of 1982 (49 U.S.C. 47101) and relevant implementing regulations, ARP must approve of any changes to an airport sponsor's Airport Layout Plan (ALP). This approval, consistent with provisions under 49 U.S.C 47101 and Section 163 of the 2018 FAA Reauthorization Act, is a major federal action requiring compliance with NEPA. ARP's action, however, is not substantially the same as the Air Force's action. Therefore, and in addition to being a Cooperating Agency, FAA's ARP needs to ensure the Air Force, as the lead agency, prepares an EIS that is sufficient for our independent obligation to comply with NEPA. This includes ensuring that the EIS meets statutory requirements pursuant to NEPA, regulatory requirements pursuant to 40 CFR Parts 1500-1508, and FAA Order 1050.1F "Environmental Impacts: Policies and Procedures for administering NEPA" so ARP may rely on the final EIS and sign a joint ROD.

We support and emphasize the importance of the development of joint environmental documents pursuant to 40 CFR §1501.7(g) and §1501.8(b)(8). If FAA's ARP is unable to make a determination the EIS is not sufficient for the purposes of our compliance with NEPA, this could cause a considerable delay in our environmental review process, which would ultimately delay the Air Force/NGB. This is because the Air Force/NGB proposals are not eligible for federal financial assistance from the FAA to the airport sponsor via the FAA's Airport Improvement Program, so the Air Force/NGB would have to fund development of a new analysis or the Airport Sponsor would have to fund it.

Since the Air Force's proposed action involves multiple locations nation-wide, the ARP Planning and Environmental Division (Headquarters) will be lead office within the FAA for the development of the EIS. However, we understand that in addition to, and in conjunction with the development of this EIS, the NGB is preparing two Environmental Assessments (EAs) for proposed F-15EX basing at two alternative locations, Kingsley Field Air National Guard Base (ANGB) in Klamath Falls, Oregon and Portland ANGB in Portland, Oregon. Since this NGB proposal involves two civilian airports, Klamath Regional Airport and Portland International Airport, within a single state, the local Airports District Office will be

the lead within the FAA for the development of the two EAs. However, we will ensure our participation in the NEPA processes for the EIS and the two EAs for these aircraft basing actions is consistent and we will coordinate internally, as appropriate.

I trust this is responsive to your request and we look forward to working with your team to develop an achievable schedule and support the Air Force throughout the NEPA process. If you or your staff have any questions or concerns, the headquarters point of contact is Ms. Susan Staehle at susan.staehle@faa.gov.

Sincerely,

Robert John Craven Digitally signed by Robert John Craven
Date: 2022.04.21 15:23:45 -04'00'

Robert J. Craven
Director, Office of Airport Planning and Programming

Cc:
Ms. Heather Fernuik, Director, Airports Division, Northwest Mountain Region
Ms. Ilon Logan, Environmental Protection Specialist, Airports Division, Northwest Mountain Region
Mr. Richard Doucette, Environmental Protection Specialist, Airports Division, New England Region
Mr. Dave Kessler, Environmental Protection Specialist, Airports Division, Western Pacific Region

The sample scoping letter following was distributed to the list below:

104th Fighter Wing, Barnes Air National Guard Base, MA

U.S. Fish and Wildlife Service, Northeast Regional Office, 300 Westgate Center Dr, Hadley, MA 01035
U.S. Environmental Protection Agency, Region 1, 5 Post Office Square, Ste 100, Boston, MA 02109-3912
U.S. Army Corps of Engineers, 696 Virginia Rd, Concord, MA 01742-2751
U.S. Department of Agriculture, Natural Resources Conservation Service, 451 West St, #1, Amherst, MA 01002-2995
Massachusetts Environmental Policy Act Office, 100 Cambridge St, Ste 900, Boston, MA 02114
Natural Heritage and Endangered Species Program, Massachusetts Division of Fisheries and Wildlife, 1 Rabbit Hill Rd, Westborough, MA 01581
Commissioner Ronald Amidon, Department of Fish and Game, 251 Causeway St, Ste 400, Boston, MA 02114
Mr. Andrew Madden, District Supervisor, Massachusetts Division of Fisheries and Wildlife, Western Wildlife District, 88 Old Windsor Rd, Dalton, MA 01226
Massachusetts Department of Transportation, 10 Park Plaza, Ste 4160, Boston MA, 02116
Massachusetts Division of Wildlife, Massachusetts Department of Conservation and Recreation, Division of Planning and Engineering, 251 Causeway St, 9th Fl, Boston, MA 02114
Massachusetts Department of Public Health, 250 Washington St, Boston, MA 02108
Pioneer Valley Planning Commission, 60 Congress St, Springfield, MA 01104
City of Westfield Planning Department, City Hall – Room 300, 59 Court St, Westfield, MA 01085
The Honorable Michael McCabe, Mayor of Westfield, City Hall – Room 202, 59 Court St, Westfield, MA 01085
Mr. Peter Miller, Director, City of Westfield, Community Development Department, City Hall – Room 300, 59 Court St, Westfield, MA 01085
Ms. Colleen D'Alessandro, Regional Administrator, Federal Aviation Administration, New England Region, 1200 District Ave, Burlington, MA 01803-5299
The Honorable Edward Markey, United States Senate, 255 Dirksen Senate Office Building, Washington, DC 20510
The Honorable Elizabeth Warren, United States Senate, 309 Hart Senate Office Building, Washington, DC 20510
The Honorable Richard Neal, U.S. House of Representatives, 372 Cannon House Office Building, Washington, DC 20515
The Honorable Kelly Pease, Commonwealth of Massachusetts, 24 Beacon St, Boston, MA 02133
The Honorable John Velis, Commonwealth of Massachusetts, 24 Beacon St, Room 70, Boston, MA 02133
The Honorable Charlie Baker, Governor, Massachusetts State House, 24 Beacon St, Office of the Governor, Room 280, Boston, MA 02133
Northeast States for Coordinated Air Use Management, 89 South St, Ste 602, Boston, MA 02111
Zoning Board of Appeals, City of Westfield, 59 Court St, Westfield, MA 01085
Westfield Public Schools, 94 N Elm St, Westfield, MA 01085
Mr. John Peters, Jr., Executive Director, Massachusetts Commission on Indian Affairs, 100 Cambridge St, Ste 300, Boston, MA 02114
City of Westfield Water Department, 28 Sackett St, Westfield, MA, 01085

144th Fighter Wing, Fresno Air National Guard Base, CA

The Honorable Jim Costa, U.S. House of Representatives, 2081 Rayburn HOB, Washington, DC 20515
The Honorable Diane Feinstein, U.S. Senate, 331 Hart Senate Office Building, Washington, DC 20510
The Honorable Alex Padilla, U.S. Senate, 112 Hart Senate Office Building, Washington, DC 20510

The Honorable Andreas Borgeas, California State Senate, 567 W Shaw Ave, Ste A-3, Fresno, CA 93704
The Honorable Joaquin Arambula, California State Assembly, 2550 Mariposa Mall, Room 5031, Fresno, CA 93721
USEPA Environmental Review Office, 75 Hawthorne St, San Francisco, CA 94105
U.S. Fish and Wildlife Service, San Joaquin Valley Branch Service, 2800 Cottage Way, Sacramento, CA 95825
U.S. Army Corps of Engineers, Sacramento District Planning Division, 1325 J St, Sacramento, CA 95814
Mr. Scott, Morgan, State of California Clearinghouse, Governor's Office, 1400 Tenth St, Room 100, Sacramento, CA 95814
San Joaquin Valley Air Pollution Control District, 1990 E Gettysburg Ave, Fresno, CA 93726
Fresno County Public Works and Planning Department, 2220 Tulare St, 6th Fl, Fresno, CA 93721
Council of Fresno County Governments, 2035 Tulare St, Ste 201, Fresno, CA 93721
City of Fresno, Economic Development Department, 2600 Fresno St, Room 2075, Fresno, CA 93721
Ms. Jennifer Clark, City of Fresno Planning Department, 2600 Fresno St, Room 3043, Fresno, CA 93721-3604
Mr. Mark Davis, Fresno Yosemite International Airport, Airport Administration, 4995 E Clinton Way, Fresno, CA 93727
Mr. Barry Franklin, Federal Aviation Administration, San Francisco Airports District Office, 1000 Marina Blvd, Ste 115, Brisbane, CA 94005-1863
Ms. Amy Dutschke, Regional Director, Bureau of Indian Affairs, Central California Agency, 650 Capitol Mall, Ste 8-500, Sacramento, CA 95814
Westlands Water District, 3130 N Fresno St, Fresno, CA, 93703

144th Fighter Wing, Naval Air Station Lemoore, CA

The Honorable Jim Costa, U.S. House of Representatives, 2081 Rayburn HOB, Washington, DC 20515
The Honorable Diane Feinstein, U.S. Senate, 331 Hart Senate Office Building, Washington, DC 20510
The Honorable Alex Padilla, U.S. Senate, 112 Hart Senate Office Building, Washington, DC 20510
The Honorable Melissa Hurtado, California State Senate, 1021 O St, Room 7310, Sacramento, CA 95814
Mr. The Honorable Rudy Salas, Jr., California State Assembly, PO Box 942849, Sacramento, CA 94249-0032
USEPA Environmental Review Office, 75 Hawthorne St, San Francisco, CA 94105
U.S. Fish and Wildlife Service, Pacific Southwest Region Headquarters, 2800 Cottage Way, Sacramento, CA 95825
U.S. Army Corps of Engineers, Sacramento District Planning Division, 1325 J St, Sacramento, CA 95814
Mr. Scott Morgan, State of California Clearinghouse, Governor's Office, 1400 Tenth St, Room 100, Sacramento, CA 95814
San Joaquin Valley Air Pollution Control District, 1990 E Gettysburg Ave, Fresno, CA 93726
Lemoore Public Works Department, 711 W Cinnamon Dr, #B, Lemoore, CA 93245
City of Lemoore, Community Development, 711 W Cinnamon Dr, Lemoore, CA 93245
Fresno Yosemite International Airport, Airport Administration, 4995 E Clinton Way, Fresno, CA 93727
Mr. Barry Franklin, Federal Aviation Administration, San Francisco Airports District Office, 1000 Marina Blvd, Ste 115, Brisbane, CA 94005-1863
Kings County Economic Development Corporation, 120 N Irwin St, Hanford, CA 93230
Ms. Amy Dutschke, Regional Director, Bureau of Indian Affairs, Central California Agency, 650 Capitol Mall, Ste 8-500, Sacramento, CA 95814
Ms. Christina Snider, Executive Secretary, California Native American Heritage Commission, 1550 Harbor Blvd, Ste 100, West Sacramento, CA 95691
Westlands Water District, 3130 N Fresno St, Fresno, CA, 93703

159th Fighter Wing, Naval Air Station Joint Reserve Base New Orleans, Belle Chasse, LA

The Honorable Bill, Cassidy, M.D., U.S. Senate, 520 Hart Senate Office Building, Washington, DC 20510
The Honorable John Kennedy, U.S. Senate, 416 Russell Senate Building, Washington, DC 20510
The Honorable Steve Scalise, U.S. House of Representatives, 2049 Rayburn HOB, Washington, DC 20515
The Honorable Mack Cormier, Louisiana House of Representatives, 8857 Highway 23, Belle Chasse, LA 70037
The Honorable Gary Carter, Jr., Louisiana State Senate, 2401 Westbend Parkway, Ste 3071, New Orleans, LA 70114
U.S. Environmental Protection Agency, Region 6, 1201 Elm St, Ste 500, Dallas, TX 75270
Mr. Jeff Roesel, New Orleans Regional Planning Commission, 10 Veterans Blvd, New Orleans, LA 70124
The Honorable John Bel Edwards, Governor of Louisiana, PO Box 94004, Baton Rouge, LA 70804
Mr. Keith Lovell, State of Louisiana, Department of Natural Resources, Office of Coastal Management, PO Box 94396, Baton Rouge, LA 70804-9396
State of Louisiana, Department of Wildlife and Fisheries, PO Box 98000, Baton Rouge, LA 70898
Mr. Tony Robinson, FEMA Region VI, Federal Regional Center, 800 North Loop 288, Denton, TX 76209
Mr. Chad Kacir, USDA NRCS, 3737 Government St, Alexandria, LA 71302
Louisiana Department of Transportation & Development, 1201 Capitol Access Rd, Baton Rouge, LA 70802
U.S. Fish and Wildlife Service, Louisiana Ecological Services, 200 Dulles Dr, Lafayette, LA 70506
Gulf Intracoastal Canal Association, PO Box 2698, Covington, LA 70434
U.S. Army Corps of Engineers, 7400 Leake Ave, #3651, New Orleans, LA 70118
Plaquemines Parish Economic Development, 333 F. Edward Hebert Blvd, Bldg 100, Belle Chasse, LA 70037
Mr. Kirk Lepine, Parish President, Plaquemines Parish, 333 F. Edward Hebert Blvd, Bldg 100, Belle Chasse, LA 70037
Ms. Ametra Rose, Plaquemines Parish, 333 F. Edward Hebert Blvd, Bldg 300, Belle Chasse, LA 70037
Plaquemines Parish Association of Business and Industry, 8207 LA-23, Belle Chasse, LA 70037
Mr. Benedict Rousselle, Plaquemines Parish Council, 333 F. Edward Hebert Blvd., Building 203, Room C107, Belle Chasse, LA 70037
Bureau of Indian Affairs, Eastern Regional Office, 545 Marriott Dr, Ste 700, Nashville, TN 37214
Plaquemines Parish Water Department, 333 F. Edward Hebert Blvd, Belle Chasse, LA 70037

Sample Agency Letter

NATIONAL GUARD BUREAU
3501 FETCHET AVENUE JOINT BASE ANDREWS 20762-5157

JUL 2 2 2022

NGB/A4AM

The Honorable Melissa Hurtado
California State Senate
1021 O St, Room 7310
Sacramento CA 95814

Dear Ms. Hurtado

The National Guard Bureau (NGB) pursuant to the National Environmental Policy Act of 1969 (NEPA) (42 United States [U.S.] Code 4321 et seq.), is preparing an Environmental Impact Statement (EIS) for the beddown of one squadron of 21 F-15EX aircraft at two of three alternative locations and one squadron of 21 F-35A aircraft at one of four alternative locations. The beddowns would include associated construction projects and a minor increase of personnel (approximately 80–100) in support of each of the aircraft beddowns. These beddowns would replace the existing F-15C/D aircraft that currently operate at each of the locations. Those existing aircraft would be retired from the inventory due to their age and resulting maintenance costs.

The alternative locations include:

- Westfield-Barnes Regional Airport, Massachusetts where the Air National Guard's (ANG's) 104th Fighter Wing resides;
- Fresno Yosemite International Airport, California, where the Air National Guard's 144th Fighter Wing resides;
- Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, Belle Chasse, Louisiana; where the Air National Guard's 159th Fighter Wing resides; and
- NAS Lemoore, California.

Each of these locations is a candidate for either the F-15EX or the F-35A aircraft, with the exception of NAS Lemoore, which is a candidate for the F-35A only. Additionally, should the decision-maker decide to not beddown either of these aircraft at one or more of these locations, it is feasible that any of these locations could continue operating with their existing legacy F-15C/D model aircraft for a limited time, in which case, construction associated with operating those legacy aircraft into the future is also being analyzed.

The purpose of the undertaking is to maintain combat capability and mission readiness in the full spectrum of Department of the Air Force (DAF) aircraft as the ANG faces deployments for conflicts abroad, while also providing for homeland defense. The proposed beddown and operation of the F-15EX and the F-35A would represent a significant step toward meeting the DAF's goals. The beddown action and follow-on training would ensure availability of combat-ready pilots utilizing the most advanced fighter aircraft in the world. The action is needed to replace aging F-15C/D aircraft, which would be retired from service due to the age of the aircraft and the resulting maintenance costs.

The DAF and the NGB are the lead agencies for the Proposed Action. The Federal Aviation Administration (FAA) and Department of the Navy (Navy) are cooperating agencies because two of the alternative locations are on joint-use airfields where the FAA may have a federal action in approving changes to the Airport Layout Plan, and two of the alternative locations are on Navy installations where the Navy has special expertise and may have a connected federal action.

The NGB invites you to attend a public scoping meeting at one of the times and locations listed below. We will be holding both virtual and in-person meetings for each location. For your convenience, the NGB is providing an in-person session for agency staff at each location during the workday (2:00–4:00 p.m.), though we welcome your attendance during the later time, which is open for the public (5:00–7:00 p.m.), and/or during the virtual meetings. The dates, times, and addresses for the public scoping meetings are:

Fresno ANGB **In-person meeting** August 9, 2022 2:00 to 4:00 p.m. and 5:00 to 7:00 p.m. Piccadilly Inn Airport 5115 E McKinley Ave Fresno, CA 93727 **Virtual meeting** August 25, 2022 5:30 to 6:30 p.m. www.ANGF15EX-F35A-EIS.com	**NAS Lemoore** **In-person meeting** August 10, 2022 2:00 to 4:00 p.m. and 5:00 to 7:00 p.m. L.T.A. Portuguese Hall 470 Champion St Lemoore, CA 93245 **Virtual meeting** August 25, 2022 5:30 to 6:30 p.m. www.ANGF15EX-F35A-EIS.com
NAS JRB New Orleans **In-person meeting** August 16, 2022 2:00 to 4:00 p.m. and 5:00 to 7:00 p.m. Belle Chasse Auditorium 8398 LA-23 Belle Chasse, LA 70037 **Virtual meeting** August 23, 2022 5:30 to 6:30 p.m. www.ANGF15EX-F35A-EIS.com	**Barnes ANGB** **In-person meeting** August 18, 2022 2:00 to 4:00 p.m. and 5:00 to 7:00 p.m. Westfield Intermediate School 350 Southampton Rd Westfield, MA 01085 **Virtual meeting** August 24, 2022 5:30 to 6:30 p.m. www.ANGF15EX-F35A-EIS.com

Further, the NGB requests information or agency-specific preliminary comments that would alleviate or highlight areas of concerns preceding this EIS. Areas of concern may include potential effects to: physical, ecological, social, cultural, and archaeological resources. The NGB also requests any information that your agency may have regarding other proposed, ongoing, or recently completed projects that could create or exacerbate impacts resulting from the Proposed Action.

Please respond within thirty (30) days of receipt of this letter to Will Strickland, ATTN: F-15EX, F-35A EIS, 3501 Fetchet Avenue, Joint Base Andrews, MD 20762-5157 or by email at NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil with the subject titled as ATTN: F-15EX, F-35A EIS. Thank you for your assistance.

Sincerely,

Will Strickland, NGB/A4AM
Environmental Planning Lead

JOE NEVES – DISTRICT 1
LEMOORE & STRATFORD

RICHARD VALLE – DISTRICT 2
AVENAL, CORCORAN, HOME GARDEN
& KETTLEMAN CITY

DOUG VERBOON – DISTRICT 3
NORTH HANFORD, ISLAND DISTRICT
&NORTH LEMOOORE

CRAIG PEDERSEN – DISTRICT 4
ARMONA & HANFORD

RICHARD FAGUNDES – DISTRICT 5
HANFORD & BURRIS PARK

COUNTY OF KINGS
BOARD OF SUPERVISORS

MAILING ADDRESS: KINGS COUNTY GOVERNMENT CENTER, HANFORD, CA 93230
OFFICES AT: 1400 W. LACEY BLVD., ADMINISTRATION BUILDING # 1, HANFORD
(559) 852-2362, FAX: (559) 585-8047
Web Site: http://www.countyofkings.com

August 2, 2022

EIS Project Manager
National Guard Bureau NGB/A4AM
Shepperd Hall, 3501 Fetchet Ave.
Joint Base Andrews MD 20762-5157

RE: Support for the F-35A Lightning II Operational Beddown at Naval Air Station Lemoore

To Whom It May Concern:

On behalf of the Kings County Board of Supervisors, we are writing to express our support for the F-35A Lightning II Operational Beddown at Naval Air Station (NAS) Lemoore. We are extremely pleased that the Department of the Air Force and the National Guard Bureau are considering Lemoore as one of the preferred locations for beddowns of these aircraft. Kings County has enjoyed a mutually beneficial relationship with NAS Lemoore since 1961 when the naval air station was first commissioned, and we fully support its continuing operation.

The Board of Supervisors wishes to formally communicate the views of its constituents, the residents of Kings County, as favoring the Department of the Air Force and National Guard Bureau's decision to consider NAS Lemoore as the location of the F-35A Lightning II.

NAS Lemoore is highly respected and considered a vital community in our county. We recognize the importance of the military in our great nation and applaud the families that commit their lives to defending our freedom. Many military families, based at NAS Lemoore, call Kings County home, and are integral to this county.

NAS Lemoore is a major economic driver for our local economy. According to the 2020 Economic Impact Assessment, NAS Lemoore contributed more than $947 million to local economies in Kings and Fresno counties. With an excess of 11,800 jobs attributed to the base, and a payroll exceeding $475 million, NAS Lemoore represents the single largest employer in Kings County. The continued success of NAS Lemoore is critical to our local economy.

We stand firm in our commitment to the support of NAS Lemoore – the nation's premier Naval master jet base. Please know that the County of Kings and the Kings County Board of Supervisors highly support the Department of the Air Force and National Guard Bureau's decision to consider locating the F-35A Lightning II at NAS Lemoore.

Sincerely,

Joe Neves
Chairman, Kings County Board of Supervisors

cc: Rear Admiral Bradley N. Rosen, Commander, Navy Region Southwest
Captain Douglas Petersen, Commanding Officer, NAS Lemoore
Senator Diane Feinstein
Senator Alex Padilla
Representative David G. Valadao
Lance Lippincott, Kings County EDC

From: Meng Heu
To: NGB A4/A4A NEPA COMMENTS Org
Subject: [Non-DoD Source] EIS for the beddown of 21 F-15Ex and 21 F-35A
Date: Monday, August 8, 2022 2:35:07 PM

Hello,

Has this document already been filed with SCH? If not, this can be done at https://ceqasubmit.opr.ca.gov/

Thank you.

Meng Heu
Office of Planning and Research (OPR)
State Clearing House
***Note*: No reply, response, or information provided constitutes legal advice.

From: Mouton, Mitchell - NRCS, ALEXANDRIA, LA
To: NGB A4/A4A NEPA COMMENTS Org
Cc: McDuffie, Windsor - NRCS, Alexandria, LA; Mendoza, Susana - FPAC-NRCS, ALEXANDRIA, LA
Subject: [Non-DoD Source] ATTN: F-15EX, F-35A EIS
Date: Wednesday, August 10, 2022 10:26:01 AM
Attachments: Response Letter - F-15EX & F-35A Operation Beddowns - NAS JRB New Orleans - Belle Chasse, LA.pdf

Attached is an NRCS response letter and AD-1006 for this project.

Please let me know if you have any questions!

Best Regards,

Mitchell Mouton
Louisiana State Soil Scientist
USDA-NRCS Soils Section
3737 Government Street
Alexandria, LA 71302
Work (318) 473-7789
Cell (318) 955-6118
Email: mitchell.mouton@la.usda.gov

USDA
United States Department of Agriculture

August 10, 2022

Will Strickland, NGB/A4AM, Environmental Planning Lead
Attn: F-15EX, F-35A EIS
3501 Fetchet Avenue
Joint Base Andrews, MD

RE: F-15EX, F-35A EIS
NAS JRB New Orleans, Belle Chasse, Louisiana

Dear Will:

I have reviewed the above referenced project for potential requirements of the Farmland Protection Policy Act (FPPA) and potential impact to Natural Resources Conservation Service projects in the immediate vicinity.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

The project map and narrative submitted with your request indicates that the proposed construction areas for either the F-15EX or F-35A at NAS JRB New Orleans, Belle Chasse, Louisiana will not impact prime farmland and therefore is exempt from the rules and regulations of the Farmland Protection Policy Act (FPPA)—Subtitle I of Title XV, Section 1539-1549. Furthermore, we do not predict impacts to NRCS work in the vicinity.

For specific information about the soils found in the project area, please visit our Web Soil Survey at the following location: http://websoilsurvey.nrcs.usda.gov/

Please direct all future correspondence to me at the address shown below.

Respectfully,

Mitchell J. Mouton
State Soil Scientist

Attachment

Natural Resources Conservation Service
State Office
3737 Government Street
Alexandria, Louisiana 71302
Voice: (318) 473-7751 Fax: (844) 325-6947

Helping People Help the Land

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 7/22/22
Name Of Project F-15EX, F-35A EIS - NAS JRB New Orleans	Federal Agency Involved DAF/NGB
Proposed Land Use Aircraft Beddown Locations	County And State Plaquemines Parish, LA
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 7/26/22

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).* Yes ☐ No ☑ Acres Irrigated Average Farm Size

Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined in FPPA Acres: %
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS **8/10/22**

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	0.0	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0	0	0	

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100		0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	0	0	0	0

Site Selected: Date Of Selection Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)
This form was electronically produced by National Production Services Staff

Clear Form

Form AD-1006 (10-83)

From: Rhonda Braud
To: NGB A4/A4A NEPA COMMENTS Org
Cc: Ennis Johnson
Subject: [Non-DoD Source] ATTN: F-15EX, F-35A EIS
Date: Friday, August 12, 2022 11:35:09 AM
Attachments: Letter_22jul22.pdf

Dear Will Strickland,

I have received notfication in the mail regarding the project noted above. (Team #3915 for my reference)

If the beddown is located in Louisiana, the applicant may be responsible for the following:

1) Obtaining a levee (408) permit/or letter of no objection from the United States Army Corps of Engineers, the Coastal Protection & Restoration Authority, and the local Louisiana Levee District
2) Obtaining a permit from the Louisiana Department of Transportation and Development if the project occurs within Louisiana DOTD right-of-way (eg crosses the road or discharges into a state-owned ditch)
3) Coordinating with the State Historic Preservation Office
4) Coordinating with the Parish Floodplain Coordinator
5) Obtaining a wetlands (404) permit from United States Army Corps of Engineers
6) Coordinating with the United States Fisheries and Wildlife Service, the National Oceanic and Atmospheric Administration, and/or the Louisiana Department of Wildlife and Fisheries regarding Endangered/Threatened Species/Habitat affected
7) Obtaining a permit from the Louisiana Department of Natural Resources if the project is within the Coastal Zone

The applicant is responsible for any additional local, state, or federal permits. Please contact the District Permit Specialist Ennis Johnson at (504) 437-3103 for more information.

Sincerely,

Rhonda F. Braud, P.E.

Environmental Engineer
LADOTD, Section 28
(225) 242-4532

From: Williams, Loukisha
To: NGB A4/A4A NEPA COMMENTS Org
Cc: jlandry@nola.gov
Subject: [Non-DoD Source] Attn: F-15EX, F-35A EIS
Date: Monday, August 15, 2022 3:21:21 PM
Attachments: image001.jpg
Belle Chase LA.pdf
Enviromental Review Belle Chase LA.docx

Will Strickland
Environmental Planning Lead
NGB/A4AM
3501 Fetchet Avenue
Joint Base Andrew, MD 20762

Mr. Strickland,

Thank you for contacting FEMA for information in reference to your questions pertaining to Request for comments for the beddown of one of your squadron of 21F-15EX aircraft construction project request for information. Please review our attached response.

Loukisha Williams
Program Support Assistant
Floodplain Management & Insurance
Mitigation-Region 6
O: 940-383-7228 Mobile: (202) 258-3794
Loukisha.Williams@fema.dhs.gov

U. S. Department of Homeland Security
FEMA Region 6
800 North Loop 288
Denton, TX 76209-3698

FEMA

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION 6
MITIGATION DIVISION

RE: Request for information: Attn: F-15EX, F-35A EIS

NOTICE REVIEW/ENVIRONMENTAL CONSULTATION

☐ We have no comments to offer. ☒ We offer the following comments:

WE WOULD REQUEST THAT THE COMMUNITY FLOODPLAIN ADMINISTRATOR BE CONTACTED FOR THE REVIEW AND POSSIBLE PERMIT REQUIREMENTS FOR THIS PROJECT. IF FEDERALLY FUNDED, WE WOULD REQUEST PROJECT TO BE IN COMPLIANCE WITH EO11988 & EO 11990.

New Orleans, LA
Jerome Landry
Floodplain Manager
Dept. of Safety and Permits
1300 Perdido Street, 7th FL
New Orleans, LA 70112
jlandry@nola.gov
(504) 658 – 7127

REVIEWER:

Loukisha Williams
Floodplain Management and Insurance Branch
Mitigation Division
(940) 383-7228 DATE: 08/15/2021

From: Meng Heu
To: NGB A4/A4A NEPA COMMENTS Org
Subject: [Non-DoD Source] RE: EIS for the beddown of 21 F-15Ex and 21 F-35A
Date: Tuesday, August 16, 2022 11:30:23 AM

Good Morning,

I am following up on my last email.

Has this document already been filed with SCH? If not, this can be done at https://ceqasubmit.opr.ca.gov/

Thank you.

From: Meng Heu
Sent: Monday, August 8, 2022 1:35 PM
To: ngb.a4.a4a.nepa.comments.org@us.af.mil
Subject: EIS for the beddown of 21 F-15Ex and 21 F-35A

Hello,

Has this document already been filed with SCH? If not, this can be done at https://ceqasubmit.opr.ca.gov/

Thank you.

Meng Heu
Office of Planning and Research (OPR)
State Clearing House
***Note*: No reply, response, or information provided constitutes legal advice.

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

August 30, 2022

Mr. Will Strickland
ATTN: F-15EX, F35A EIS
3501 Fetchet Avenue
Joint Base Andrews, MD 02762-5157

Project Name:	*Westfield-Barnes Regional Airport, Air National Guard (ANG) 104th Fighter Wing Candidate Location for Aircraft Replacement and/or Facility Modifications*
Proponent:	*National Guard Bureau (NGB) and Department of the Air Force (DAF)*
Location:	*Barnes ANG Base & Westfield-Barnes Regional Airport, Westfield MA*
Project Description:	*Beddown of one squadron of 21 F-15EX or F-35A aircraft with construction improvements (or retain existing F-15C/D aircraft with facility modifications)*
NHESP Tracking No.:	*10-28624*
Document Reviewed:	*NGB coordination letter noticing the preparation of an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA)*

Dear Mr. Srickland:

The Massachusetts Division of Fisheries and Wildlife's (MassWildlife) Natural Heritage & Endangered Species Program received a letter prepared by the NGB providing notice of the preparation of an EIS for the proposed beddown of one squadron of 21 F-15EX or 21 F-35A aircraft with construction improvements (or retain existing F-15C/D aircraft with facility modifications) at Barnes ANGB and Westfield-Barnes Regional Airport, Westfield, MA.

MassWildlife is the agency responsible for the protection and management of the inland fish and wildlife resources of the Commonwealth. The mission of MassWildlife also includes conserving and protecting endangered, threatened and species of special concern pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00) through the Natural Heritage & Endangered Species Program.

The purpose of MESA is to conserve and protect state-listed rare species and their habitats. The MESA prohibits the unauthorized Take of any state-listed species, which is defined "in reference to animals, to harass, harm, pursue, hunt, shoot, hound, kill, trap, capture, collect, process, disrupt the nesting, breeding, feeding or migratory activity or attempt to engage in any such conduct, or to assist such conduct, and in reference to plants, to collect, pick, kill, transplant, cut or process or attempt to engage or to assist in any such conduct" (M.G.L. c. 131A § 1). The MESA regulations further provide that "the disruption of nesting, feeding or migratory activity may result from, but is not limited to, the modification, degradation or destruction of habitat" (321 CMR 10.02).

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Barnes ANGB and Westfield-Barnes Regional Airport are mapped as Priority Habitat for state-listed species as delineated in the Massachusetts Natural Heritage Atlas. The following species have been documented at the site.

Scientific Name	Common Name	Taxonomic Group	MESA Status
Ammodramus savannarum	Grasshopper Sparrow	Vertebrate Animal	Threatened
Pooecetes gramineus	Vesper Sparrow	Vertebrate Animal	Threatened
Bartramia longicauda	Upland Sandpiper	Vertebrate Animal	Endangered
Sturnella magna	Eastern Meadowlark	Vertebrate Animal	Special Concern
Speranza exonerata	Pine Barrens Speranza	Invertebrate Animal	Special Concern
Zanclognatha martha	Pine Barrens Zanclognatha	Invertebrate Animal	Special Concern
Callophrys irus	Frosted Elfin	Invertebrate Animal	Special Concern
Apodrepanulatrix liberaria	New Jersey Tea Inchworm	Invertebrate Animal	Endangered
Ambystoma opacum	Marbled Salamander	Vertebrate Animal	Threatened
Terrapene carolina	Eastern Box Turtle	Vertebrate Animal	Special Concern
Liatris scariosa var. novae-angliae	New England Blazing Star	Vascular Plant	Special Concern

Based on the preliminary information available, there are several potential projects that may result in the loss of habitat for state-listed species. MassWildlife requests that the EIS provide detailed information on the natural community classifications for areas that may be impacted by anticipated construction projects as well as a calculation of the anticipated temporary and permanent impacts to the natural communities. MassWildlife recommends using Swain, 2016 (Classification of the Natural Communities of Massachusetts. Version 2.0. NHESP. (https://www.mass.gov/service-details/classification-of-natural-communities) as the classification scheme for the habitat and natural community assessment.

In addition to conceptual site plans or figures for the construction projects, MassWildlife recommends that the EIS include an assessment of potential project alternatives or a strategy for avoiding, minimizing, or mitigating potential impacts to state-listed species and their habitats, to the extent practicable.

We appreciate the opportunity to provide preliminary comments. MassWildlife looks forward to receipt of the EIS containing information to evaluate projects and any feasible alternatives or components that facilitate preservation of the state-listed species and their habitats. MassWildlife is available to the EIS project team to provide feedback relative to state-listed species, their habitats, and natural community classifications.

If you have any questions about this letter, please contact Amy Hoenig, Endangered Species Review Biologist, at (508) 389-6364 or Amy.Hoenig@mass.gov.

Sincerely,

Everose Schlüter

Everose Schlüter, Ph.D.
Assistant Director

MASS**WILDLIFE**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

September 2, 2022

Will Strickland
National Guard Bureau
NGB/A4AM
Shepperd Hall
3501 Fetchet Avenue
Joint Base Andrews, MD 20762-5157

Subject: Scoping Comments for the Air National Guard F-15EX Eagle II and F-35A Lightning II Beddowns, Barnes Air National Guard Base, Westfield-Barnes Regional Airport, Westfield, Massachusetts; Fresno Yosemite International Airport, Fresno, California; Naval Air Station Lemoore, Lemoore, California; and Naval Air Station Joint Reserve Base New Orleans, Belle Chasse, Louisiana

Dear Mr. Strickland:

The Environmental Protection Agency has reviewed the Notice of Intent (NOI) published on July 19, 2022 regarding the Department of the Air Force, National Guard Bureau's (NGB) decision to prepare an Environmental Impact Statement for the subject project. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and our NEPA review authority under Section 309 of the Clean Air Act.

The NGB, in cooperation with the Navy and Federal Aviation Administration, proposes to replace the legacy F-15C/D aircraft, which are reaching the end of their service life, with F-15EX and F-35A aircraft. The NGB proposes to beddown one squadron of F-15EX aircraft at two of three alternative locations and one squadron of F-35A aircraft at one of four alternative locations. The proposed basing alternatives include the 104th Fighter Wing at Barnes Air National Guard Base, Westfield-Barnes Regional Airport, Westfield, Massachusetts; the 144th Fighter Wing at Fresno Yosemite International Airport, Fresno, California; the 144th Fighter Wing at Naval Air Station Lemoore, Lemoore, California; and the 159th Fighter Wing at Naval Air Station Joint Reserve Base New Orleans, Belle Chasse, Louisiana. The proposed action also includes personnel needed to operate and maintain the F-15EX and F-35A (100 and 80 personnel respectively), and construction of new and/or modification of existing facilities on the installations supporting the beddowns.

We have the following suggestions for your consideration when preparing the Draft Environmental Impact Statement (DEIS):

Noise Impacts
The NGB acknowledges in the NOI the potential for significant impacts from noise. During the virtual public scoping meeting on August 23, 2022, the NGB stated that they did not yet have the noise characteristics for the F-15EX and are committed to doing the studies to obtain that information this year, but expects that noise levels from the F-15EX to be slightly higher than the F-15s they would

replace. The NGB stated that F-35s are "quite a bit louder" than F-15s although the specific flight procedures regarding takeoff and landing could affect noise exposures. According to the NGB, this information would be documented in the DEIS.

Noise is an important impact area that is of interest to the public; therefore, the noise impact assessment should be comprehensive. We recommend the following noise issue areas be addressed in the DEIS:

Impact Assessment Methodology – Significance Thresholds
The Federal agencies participating in the Federal Interagency Committee on Urban Noise (FICUN), which included the EPA, Department of Defense, and the U.S. Department of Transportation, including the Federal Aviation Administration, agreed to the use of the A-weighted 65 decibel (dB) Day-Night Average Sound Level (DNL) significance criterion as a metric for noise impact assessments along with the consolidated Federal agency land use compatibility guidelines which indicate that noise levels below 65 dB DNL were generally compatible with residential and public/recreational land use. EPA agrees with the use of this metric and the 65 dB significance criterion as a predictor of annoyance - the primary effect of noise on residential populations; however, it should not be the sole indicator, since, as an averaging metric, it is not always meaningful for the public.[1] This is primarily because a cumulative, 24-hour time-weighted average level is an abstract concept that cannot be directly experienced. Therefore, we recommend the change in noise level over the existing condition also be clearly disclosed in the DEIS for the replacement aircraft. Interpret this change in level for the reader, such as indicating that a 3 dB increase in noise is characterized as "a large change" in the level of noise exposure when the existing condition is below 65 dB, and that this increase can be perceived by people as a degradation of their noise environment. Also disclose that because decibels are on a logarithmic scale, an increase of 10 dBs is experienced as a subjective doubling of loudness.[2] Incorporate recent information regarding annoyance levels obtained from FAA's Neighborhood Environmental Survey. If the noise impact assessment predicts levels at 80 DNL or above, assess the potential for hearing loss, consistent with DoD policy.

If flying procedures to reduce noise are incorporated into noise modeling, clearly disclose this and indicate how much noise reduction in the output is a result of these adjustments. When supplying updated noise contours that would occur under the project, include the number of individuals that would experience each noise contour area, and not just the acreage that would experience the change.

Special Use Airspace/Impacts from Training
The project website indicates that the ANG would use the same special use airspace (SUA) that it currently uses for the F-15C/D models, and that noise impacts will be evaluated at the airfield and in the training airspace. For changes in noise in SUAs such as military operation areas and military training routes, the DNL metric is less appropriate since this flight activity is highly sporadic and typically different from that associated with airfield operations for which the 65 DNL significance threshold was intended. As opposed to patterned or continuous noise environments associated with airfields, overflights within these areas can be highly variable in occurrence and location. We recommend the DEIS indicate the change in noise level that would occur for a given area or landmark, and identify the maximum noise levels from training overflights (Lmax) and/or the Sound Exposure Level (SEL) which would capture all the acoustic energy of an individual noise event. Even small noise increases could

[1] The Government Accountability Office found that providing information on potential noise impacts grounded in DNL was not clear enough for communities to understand planned changes. https://www.gao.gov/assets/gao-22-105844.pdf
[2] Federal Interagency Committee on Noise (FICON), August 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues*. p. 3-5. Available: https://fican1.files.wordpress.com/2015/10/reports_noise_analysis.pdf

cause a moderate impact on small communities and isolated homes under SUA where training occurs. Low human population density does not itself equate with low noise sensitivity.

The NGB indicated, in the first virtual public scoping meeting, that none of the SUA associated with the project locations include low flight floors such as 100 or 500-feet above ground level. The DEIS should identify the floor elevations in use in the airspace affected by the project, and indicate whether the Air Force is contemplating lowering the floors or otherwise changing the airspace in the future. We are aware that designated SUA becomes antiquated when aircraft are upgraded and frequently needs to be modified after such upgrades. We have seen aircraft replacement projects and changes in training occurring in separate environmental impact assessments for the same base. We recommend the ANG disclose in the DEIS whether the particular airspace for each of the alternative locations would require future modifications to accommodate the F-35s or F-15EXs. In an attempt to avoid segmenting impacts, efforts should be made to include impacts from any changes to training that the aircraft upgrades would induce.

Need for Use of Supplemental Metrics, especially Sleep Interference
Communicating noise impacts using supplemental noise metrics such as speech interference and sleep disturbance improves public understanding of noise exposure and decision makers' ability to make better informed decisions (DoD Technical Bulletin *Using Supplemental Noise Metrics and Analysis Tools,* 2009). Noise-induced sleep disturbance is considered the most deleterious non-auditory effect of environmental noise exposure.[3] We recommend the DEIS include these supplemental metrics.

Noise Impacts on Communities with Environmental Justice Concerns
Consistent with Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 16, 1994), Executive Order 13985 - *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government* (January 20, 2021) and others, the DEIS should identify minority and low-income census block groups among the population that would experience increased noise impacts and indicate whether these would disproportionately affect low income or minority populations. See the general comment below for more of our recommendations regarding the environmental justice analysis in the DEIS.

Noise Impacts to Children's Learning
The DEIS should acknowledge Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* and disclose that children are vulnerable populations that may suffer more disproportionately from environmental health and safety risks than adults. Short-term exposure of elevated environmental noise can interfere with classroom learning due to increased difficulty in speech intelligibility, and long-term exposure has been correlated to decreased reading comprehension and reduced learning motivation. According to the National Academy of Sciences and the Transportation Research Board, reading, motivation, language and speech, and memory are affected by elevated noise.[4] These represent acoustical barriers to learning, especially for young children since they are more susceptible than adults to the effects of background noise on spoken communication.

Noise impacts may pose a disproportionate health and safety risk to children. The DEIS should identify all schools and daycare centers that could be impacted by noise increases and identify the noise levels from the proposed action and alternatives predicted to classroom interiors, which considers the most

[3] Aviation Noise Impacts: State of the Science. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5437751/?report=printable
[4] http://onlinepubs.trb.org/onlinepubs/acrp/acrp_webdoc_034EducatorsHandbook.pdf

common building construction materials for sound level attenuation, and modeled to estimate interior noise levels with windows open and closed. Discuss these predicted noise levels in the context of the American National Standards Institute (ANSI) standard (ANSI S12.60-2002, *Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools*). The guidelines are keyed to the acoustical qualities needed to achieve a high degree of speech intelligibility in learning spaces. The standard recommends that core learning spaces having enclosed volumes not greater than 20,000 cubic feet not be exposed to greater than 40 dB of A-weighted unsteady background noise from transportation noise sources for more than 10% of the noisiest hour; for core learning spaces having enclosed volumes greater than 20,000 cubic feet, this level of exposure should not exceed 45 dB for more than 10% of the noisiest hour.

Discuss potential mitigation for schools and daycare centers, including no fly zones over schools. All reasonable mitigation measures should be identified, including a discussion of retrofitting impacted schools with appropriate measures such as adding insulation, adding a second windowpane or replacing windows with better sound attenuation, sealing gaps or leaks in windows and doors, installing baffles in vents and improving the exterior roofing, consistent with radon safety. Identify possible funding sources for this mitigation, even if DoD cannot fund such projects on non-DoD land. Identify the locations that are eligible to receive Airport Improvement Program funding from the FAA and discuss how the ANG can assist in helping schools access these funds as a mitigation measure.

Non-auditory Health Impacts from Noise, Including to Children
While there is uncertainty in studies on non-auditory health impacts from noise, there is increasing evidence for a link between exposure to high levels of environmental noise and ill-health, especially regarding cardio-vascular and endocrine health, immune function, sleep loss, and mental health. A 2017 literature review by the International Civil Aviation Organization titled *Aviation Noise: State of the Science* concluded that there is a "good biological plausibility by which noise may affect health in terms of impacts on the autonomic system, annoyance and sleep disturbance," and that "studies are suggestive of impacts on cardiovascular health especially hypertension."

For children, Goines and Hagler, in their 2007 review article[5] that summarized several studies from the National Library of Medicine database on the adverse health effects of noise, concluded that children are particularly vulnerable to the effects from noise interference with spoken communication. The inability to comprehend normal speech may lead to a number of personal disabilities, handicaps, and behavioral changes. Children who live in noisy environments have been found to have heightened sympathetic arousal indicated by increased levels of stress-related hormones and elevated resting blood pressure. Noise is assumed to accelerate and intensify the development of latent mental disorders and children may be particularly vulnerable to these effects because they may lack adequate coping mechanisms. The review article concludes that because children are particularly vulnerable to noise-induced abnormalities, they need special protection. We recommend the DEIS identify the health vulnerabilities from noise that are particular to children, and how the ANG would ensure children are protected to the maximum extent under the proposed action.

Supersonic Noise Impacts
The ANG indicated in the August 23, 2022 virtual scoping meeting that there would be no supersonic noise impacts. If it is determined otherwise, such as when discussing impacts from training in SUA,

[5] Goines, Lisa RN and Hagler, Louis MD. 2007. "Noise Pollution: A Modern Plague", *Southern Medical Journal*: Volume 100 - Issue 3 - pp 287-294. Available: https://pubmed.ncbi.nlm.nih.gov/17396733/

identify predicted sonic boom overpressures under the proposed action and alternatives and their associated impacts to structures and historic resources.

Environmental Justice Analysis
In addition to noise impacts, assess impacts to all relevant resource areas on communities with environmental justice concerns. Identify the specific outreach that was conducted for these populations, including efforts to address non-English speaking residents and efforts to accommodate the public and address barriers to participation.

EJScreen
The ANG may want to utilize the information in the EPA tool EJ Screen. EJScreen is EPA's nationally consistent environmental justice screening and mapping tool that offers a variety of powerful data and mapping capabilities that enable users to understand details about the population of an area and its environmental conditions. The tool provides information on environmental and socioeconomic indicators as well as pollution sources, health disparities, critical service gaps, and climate change data. The data is displayed in color-coded maps and standard data reports which feature how a selected location compares to the rest of the nation and state.

Accessing EJScreen information is a useful first step in understanding or highlighting locations that may be candidates for further review and outreach. For purposes of NEPA review, a project is considered to be in an area of potential EJ concern when an EJScreen analysis for the impacted area shows one or more of the twelve EJ Indexes at or above the 80th percentile in the nation and/or state. An area may also warrant additional review if other information suggests the potential for EJ concerns. An EJScreen analysis which does not reveal the potential for EJ concerns should not be interpreted to mean that there are definitively no EJ concerns present.

At a minimum, it is recommended to consider EJScreen information for the block groups which contain the proposed action and a one-mile radius around that area. However, it is important to consider all areas which may be impacted by the proposed action. Areas of impact can be very focused and contained within a single block group or be broader, spanning across several block groups and communities. When assessing large geographic areas, it is recommended to consider the individual block groups within the project area in addition to an area wide assessment. This can help identify individual areas within the overall project area that may warrant further consideration, analysis or outreach. EJScreen also provides information on linguistic isolation and languages spoken, which can help inform community outreach and engagement. EPA is available to provide a training to ANG staff on the use of EJScreen.

Promising Practices for EJ Methodologies in NEPA Reviews
Additionally, we recommend consulting the guidance document Promising Practices for EJ Methodologies in NEPA Reviews by the Environmental Justice Interagency Working Group. This document provides ways to both consider environmental justice concerns during environmental analyses and encourage effective participation by communities with environmental justice concerns. The Promising Practices Report is a compilation of methodologies gleaned from current agency practices concerning the interface of environmental justice considerations through NEPA processes. For example, the Promising Practices Report suggests initiating meaningful engagement with communities early and often; providing potentially affected communities with an agency-designated point of contact; and convening project-specific community advisory committees, as appropriate. The outreach the NGB

conducts for these communities should be documented in the DEIS. Identify the concerns raised by these populations and how the ANG could address them.

Outreach and Stakeholder Involvement
A critical part of achieving environmental justice is ensuring appropriate, timely and meaningful stakeholder involvement into decisions affecting communities with environmental justice concerns. We encourage the ANG to use the tools identified above to fully analyze environmental justice issues and develop focused outreach efforts to ensure that affected communities are informed and provided opportunities to meaningfully engage in decision making regarding the project. This would include community outreach materials written in plain language and translation and interpretive services for any linguistically isolated populations. We recommend the DEIS include an inventory of outreach efforts to date and develop a forward-looking outreach plan.

Air Quality
The DEIS should include a detailed discussion of ambient air conditions (i.e., baseline or existing conditions), the area's attainment or nonattainment status for all National Ambient Air Quality Standards (NAAQS), and potential air quality impacts (including cumulative and indirect impacts) from the construction and operation of the project for each alternative location.

Describe and estimate air emissions from potential construction and operations for the new facilities at the basing locations, as well as the changes in emissions from replacing the legacy aircraft.

General Conformity
The DEIS should discuss whether conformity requirements of the Clean Air Act Section 176(c) would be applicable to the project locations. General conformity regulations can be found in 40 CFR Part 93.150-165. The general conformity rule applies to Federal actions in areas designated as nonattainment or maintenance for NAAQS. Federal agencies need to ensure that their actions, including construction emissions subject to state jurisdiction, conform to an approved implementation plan. Mitigation may be available to reduce the project's air emissions.

Westfield-Barnes Municipal Airport is located in the Springfield (W. Mass) area, which is classified as "Moderate" nonattainment for the 1997 ozone NAAQS. Naval Air Station Lemoore, Lemoore, California, and Fresno Yosemite International Airport are both located in areas designated as nonattainment for ozone and particulate matter less than 2.5 microns ($PM_{2.5}$) and in a maintenance area for PM_{10}. Fresno Yosemite International Airport is also in a maintenance area for Carbon Monoxide (CO), therefore while this area is no longer in nonattainment for CO and PM_{10}, general conformity still applies because of its maintenance designation. Because of these air basins' nonattainment status for several NAAQS, it is important to reduce emissions of ozone precursors and particulate matter from this project as much as possible if these locations are selected. Emissions authorized by a CAA permit issued by the State or the local air pollution control district would not be assessed under general conformity but through the permitting process.

Construction Emissions Mitigation
The DEIS should include an analysis of impacts from the construction of the proposed project alternatives, including emission estimates for criteria pollutants. EPA also recommends that the DEIS disclose the available information about the health risks associated with vehicle emissions and mobile source air toxics (see https://www.epa.gov/mobile-source-pollution/how-mobile-source-pollution-affects-your-health). Mitigation measures should be considered to reduce impacts associated with

emissions of ozone precursors, particulate matter and other toxics from construction-related activities, especially for the alternatives in California. We recommend:

- Locating diesel engines, motors, and equipment staging areas as far as possible from residential areas and sensitive receptors (schools, daycare centers, and hospitals). It is well documented that children are more susceptible to many environmental factors, including exposure to mobile source air pollution, particulate matter from construction and diesel emissions, and lead and other heavy metals present in construction and demolition debris.
- Reducing construction-related trips of workers and equipment, including trucks. Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Leasing or buying newer, cleaner equipment using a minimum of 75 percent of the equipment's total horsepower.
- Using lower-emitting engines and fuels, including electric, liquified gas, hydrogen fuel cells, and/or alternative diesel formulations.
- Implementing Fugitive Dust Controls

Greenhouse Gases / Climate Change

The DEIS should include estimates of GHG emissions for the proposed action and alternatives and provide a context to help decision makers and the public understand these emissions and climate change effects. This can include monetization of GHGs, and/or a discussion of how the net GHG emissions would help meet or detract from relevant climate action goals and commitments. The Council on Environmental Quality (CEQ) is currently updating its guidance on the consideration of GHGs in NEPA reviews but has stated that in the interim, agencies should consider all available tools and resources in assessing GHG emissions and climate change effects of their proposed actions, including, as appropriate and relevant, CEQ's 2016 GHG Guidance. We note the 2016 GHG Guidance discourages statements in NEPA documents that the emissions from a particular proposed action represent only a small fraction of local, national, or international emissions, as not helpful to the decision-maker or public.

While aviation, in general, represents a small percentage of fossil fuel use, it is important to discuss the unique impacts aviation emissions contribute due to their release at altitude. Most aircraft emissions occur high in the atmosphere and the impact of burning fossil fuels at altitude is approximately double that of burning the same fuels at ground level.[6] In addition to Carbon Dioxide (CO_2) emissions, other factors[7] increase the climate change impacts of aviation, and the Intergovernmental Panel on Climate Change estimated aviation's total climate change impact could be from two to four times that of its CO_2 emissions alone.[8]

Mitigation of GHGs during construction projects should be discussed and implemented, as such measures are likely to have the co-benefits of also reducing criteria pollutants.

[6] Military Aviation and the Environment: Historical Trends and Comparison to Civil Aviation. Available: http://web.mit.edu/aeroastro/sites/waitz/publications/Mil.paper.pdf
[7] https://research.noaa.gov/article/ArtMID/587/ArticleID/2667/Aviation-is-responsible-for-35-percent-of-climate-change-study-finds
[8] Congressional Research Service, 2020. *Aviation and Climate Change.* Available: https://crsreports.congress.gov/product/pdf/IF/IF11696/2

Water Resources

Clean Water Act Section 404

The DEIS should identify whether the project would involve the discharge of dredged or fill material into jurisdictional wetlands and waterways, which would require a Clean Water Act Section 404 permit. There are a number of water features at Naval Air Station Joint Reserve Base New Orleans, and according to the National Wetlands Inventory, the location identified for new construction of facilities on the project fact sheet appears to contain Freshwater Forested/Shrub Wetland. We recommend maximum avoidance of these features and that the DEIS identify practicable alternatives for any discharges of dredged or fill material. If avoidance is not practicable, we recommend consulting early with the U.S. Army Corps of Engineers. If a 404 permit is required, EPA will review the project for compliance with Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA ("404(b)(1) Guidelines"). Pursuant to 40 CFR 230, any permitted discharge into waters of the U.S. must be the least environmentally damaging practicable alternative (LEDPA) available to achieve the project purpose. The DEIS should include, and craft NEPA alternatives consistent with, evaluating project alternatives in this context, in order to demonstrate the project's compliance with the 404(b)(1) Guidelines.

Clean Water Act Section 303(d)

The DEIS should identify any impaired waterways or bodies that would receive new discharges from the proposed action. For the Naval Air Station Joint Reserve Base New Orleans, the Intracoastal Waterway-From Bayou Villars to Mississippi River (Estuarine) does not meet water quality standards and is on the CWA Section 303(d) list for turbidity. Indicate what actions the ANG would take to ensure it does not contribute to this impairment.

Water Supply

The DEIS should estimate the quantity of water the project will require, identify the source of the water, and discuss potential effects of this water use on other water users and natural resources in the project's area of influence. The Fresno Yosemite International Airport alternative is located over the Fresno County Sole Source Aquifer (SSA), designated by EPA under section 1424(e) of the Safe Drinking Water Act of 1974. SSA's supply at least 50 percent of the drinking water consumed in the area overlying the aquifer. Fresno has supplemented its drinking water supply with surface water sources in recent years; however, the area is in exceptional drought, the highest drought designation. Naval Air Station Lemoore, Lemoore, California is also in exceptional drought and is experiencing land subsidence. For these alternatives, ensure water- conserving fixtures, such as those certified with the EPA's WaterSense label are included in facility designs. Identify other water conservation measures for these locations.

Hazardous Substances

The DEIS should identify hazardous contaminants that are associated with the development areas on each base and indicate if and how the proposed construction could interface with any cleanup actions. The DEIS should indicate whether the physical development of the proposed action could expose construction and maintenance workers, visitors, occupants, or ecological systems to potential hazards associated with contaminants.

Discuss existing contamination by Polyfluoroalkyl substances (PFAS), the continued use of firefighting foams and other products containing PFAS, and how discharges or waste would be managed to protect surface and groundwater resources.

8

For new facilities that would be constructed, briefly identify solid and hazardous waste generation and handling/disposal from construction and operation of the proposed project, and the applicability of state and federal hazardous waste requirements.

Tribal Consultation
The DEIS should identify any affected Tribes near the basing alternatives or SUA that could be impacted by the proposed actions and consult, pursuant to Executive Order 13175 regarding government-to-government consultation, as appropriate.

EPA appreciates the opportunity to comment on preparation of the DEIS. Once the DEIS is released for public review, please send one electronic copy to me at vitulano.karen@epa.gov. If you have any questions, please contact me by email or at 415-947-4178.

Sincerely -

KAREN VITULANO
Digitally signed by KAREN VITULANO
Date: 2022.09.02 11:33:47 -07'00'

Karen Vitulano
Environmental Review Branch

9

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

September 2, 2022

Will Strickland
F-15EX, F-35A EIS
3501 Fetchet Avenue
Joint Base Andrews MD 20762-5157
City, State, Zip

Project: Air National Guard F-15EX Eagle II & F-35A Lightning II Operational Beddowns -15EX, F-35A EIS

District CEQA Reference No: 20221025

Dear Mr. Strickland:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the Notice to Prepare an Environmental Impact Statement (EIS) from the National Guard Bureau (NGB) for the F-15EX and F-35 Operational Beddowns. Per the Notice to Prepare an EIS, the project is for the beddown of one squadron (21 jets) of F-15EX aircraft at two of three alternative locations and one squadron (21 jets) of F-35A aircraft at one of four alternative locations (Project). These beddowns would replace the F-15C/D aircraft where they are currently based. Those existing 15C/D aircraft would be retired from the inventory due to their age and resulting maintenance costs. The Project also includes personnel needed to operate and maintain the F-15EX and F-35A, and construction of new and/or modification of existing facilities supporting the beddowns. The alternative locations for the Project could be one or more of the following naval stations:

- Barnes Air National Guard Base at Westfield-Barnes Regional Airport, Westfield, Massachusetts
- Fresno National Air Guard Base at Fresno Yosemite International Airport, Fresno, California
- Naval Air Station (NAS) Lemoore, Lemoore, California
- NAS Joint Reserve Base New Orleans, Belle Chasse, Louisiana

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

www.valleyair.org www.healthyairliving.com

The District offers the following comments regarding the Project if the alternative location chosen is in the San Joaquin Valley:

1) Project Related Emissions

At the federal level under the National Ambient Air Quality Standards (NAAQS), the District is designated as extreme nonattainment for the 8-hour ozone standards and serious nonattainment for the particulate matter less than 2.5 microns in size (PM2.5) standards. At the state level under California Ambient Air Quality Standards (CAAQS), the District is designated as nonattainment for the 8-hour ozone, PM10, PM2.5 standards.

The documents submitted to the District does not provide sufficient information to allow the District to assess the Project's potential impact on air quality. As such, the EIS should include a Project summary detailing, at a minimum, estimated construction related emissions for the required modification and new construction at the existing facility, estimates of potential mobile and stationary emission sources, proximity to sensitive receptors and existing emission sources. The District recommends that a more detailed preliminary review of the Project be conducted for the Project's construction and operational emissions.

1a) Construction Emissions

The District recommends, to reduce impacts from construction-related diesel exhaust emissions, the Project should utilize the cleanest available off-road construction equipment, including the latest tier equipment.

1b) Operational Emissions

Operational (ongoing) air emissions from mobile sources and stationary sources should be analyzed separately. For reference, the District's significance thresholds are identified in the District's Guidance for Assessing and Mitigating Air Quality Impacts: https://www.valleyair.org/transportation/GAMAQI.pdf.

Recommended Mitigation Measure: At a minimum, project related impacts on air quality should be reduced to levels of significance through incorporation of design elements such as the use of cleaner Heavy Heavy-Duty (HHD) trucks and vehicles, measures that reduce Vehicle Miles Traveled (VMTs), and measures that increase energy efficiency. More information on transportation mitigation measures can be found at: http://www.valleyair.org/transportation/Mitigation-Measures.pdf.

1c) Recommended Model for Quantifying Air Emissions

Project-related criteria pollutant emissions from construction and operational sources should be identified and quantified. Emissions analysis should be performed using the California Emission Estimator Model (CalEEMod), which uses the most recent CARB-approved version of relevant emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

2) Health Risk Screening/Assessment

The NGB should evaluate the risk associated with the Project for sensitive receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) in the area and mitigate any potentially significant risk to help limit exposure of sensitive receptors to emissions.

To determine potential health impacts on surrounding receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) a Prioritization and/or a Health Risk Assessment (HRA) should be performed for the Project. These health risk determinations should quantify and characterize potential Toxic Air Contaminants (TACs) identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) that pose a present or potential hazard to human health.

Health risk analyses should include all potential air emissions from the project, which include emissions from construction of the project, including multi-year construction, as well as ongoing operational activities of the project. Note, two common sources of TACs can be attributed to diesel exhaust emitted from heavy-duty off-road earth moving equipment during construction, and from ongoing operation of heavy-duty on-road trucks.

Prioritization (Screening Health Risk Assessment):
A "Prioritization" is the recommended method for a conservative screening-level health risk assessment. The Prioritization should be performed using the California Air Pollution Control Officers Association's (CAPCOA) methodology.

The District recommends that a more refined analysis, in the form of an HRA, be performed for any project resulting in a Prioritization score of 10 or greater. This is because the prioritization results are a conservative health risk representation, while the detailed HRA provides a more accurate health risk evaluation.

To assist land use agencies and project proponents with Prioritization analyses, the District has created a prioritization calculator based on the aforementioned CAPCOA guidelines, which can be found here: http://www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORITIZATION-CALCULATOR.xls

Health Risk Assessment:
Prior to performing an HRA, it is strongly recommended that land use agencies/ project proponents develop and submit for District review a health risk modeling protocol that outlines the sources and methodologies that will be used to perform the HRA. This step will ensure all components are addressed when performing the HRA.

A development project would be considered to have a potentially significant health risk if the HRA demonstrates that the project-related health impacts would exceed the District's significance threshold of 20 in a million for carcinogenic risk, or 1.0 for either the Acute or Chronic Hazard Indices.

A project with a significant health risk would trigger all feasible mitigation measures. The District strongly recommends that development projects that result in a significant health risk not be approved by the land use agency.

The District is available to review HRA protocols and analyses. For HRA submittals please provide the following information electronically to the District for review:

- HRA (AERMOD) modeling files
- HARP2 files
- Summary of emissions source locations, emissions rates, and emission factor calculations and methodologies.

For assistance, please contact the District's Technical Services Department by:

- E-Mailing inquiries to: hramodeler@valleyair.org
- Calling (559) 230-5900

Recommended Measure: Development projects resulting in TAC emissions should be located an adequate distance from residential areas and other sensitive receptors in accordance to CARB's Air Quality and Land Use Handbook: A Community Health Perspective located at https://ww3.arb.ca.gov/ch/handbook.pdf.

3) Ambient Air Quality Analysis

An Ambient Air Quality Analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of State or

National Ambient Air Quality Standards. The District recommends an AAQA be performed for the Project if emissions exceed 100 pounds per day of any pollutant.

An acceptable analysis would include emissions from both project-specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis.

Specific information for assessing significance, including screening tools and modeling guidance, is available online at the District's website: www.valleyair.org/ceqa.

4) Voluntary Emission Reduction Agreement

Criteria pollutant emissions may result in emissions exceeding the District's significance thresholds, potentially resulting in a significant impact on air quality. When a project is expected to have a significant impact, the District recommends the EIS also include a discussion on the feasibility of implementing a Voluntary Emission Reduction Agreement (VERA) for this Project.

A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds for the District's incentives programs. The funds are disbursed by the District in the form of grants for projects that achieve emission reductions. Thus, project-related impacts on air quality can be mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors.

In implementing a VERA, the District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project-related emissions have been mitigated. To assist the Lead Agency and project proponent in ensuring that the environmental document is compliant with CEQA, the District recommends the environmental document includes an assessment of the feasibility of implementing a VERA.

5) Electric On-Site Off-Road and On-Road Equipment

Since the Project includes the beddown of two squadrons of aircrafts, the Project may have the potential to result in increased use of off-road equipment (e.g., forklifts) and on-road equipment (e.g., mobile yard trucks with the ability to move materials). The District recommends that the EIS include requirements for project proponents to utilize electric or zero emission off-road and on-road equipment.

6) Vegetative Barriers and Urban Greening

There are residential units located south and east in both of the possible alternative locations in the San Joaquin Valley for the Project. The District suggests the NGB consider the feasibility of incorporating vegetative barriers and urban greening as a measure to further reduce air pollution exposure on sensitive receptors (e.g., residential units).

While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, vegetative barriers have been shown to be an additional measure to potentially reduce a population's exposure to air pollution through the interception of airborne particles and the update of gaseous pollutants. Examples of vegetative barriers include, but are not limited to the following: trees, bushes, shrubs, or a mix of these. Generally, a higher and thicker vegetative barrier with full coverage will result in greater reductions in downwind pollutant concentrations. In the same manner, urban greening is also a way to help improve air quality and public health in addition to enhancing the overall beautification of a community with drought tolerant, low-maintenance greenery.

7) Nuisance Odors

While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often resulting in citizen complaints.

The NGB should consider all available pertinent information to determine if the Project could have a significant impact related to nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration the proposed business or industry type and its potential to create odors, as well as proximity to off-site receptors that potentially would be exposed to objectionable odors. The intensity of an odor source's operations and its proximity to receptors influences the potential significance of malodorous emissions. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact.

According to the District Guidance for Assessing and Mitigating air Quality Impacts (GAMAQI), a significant odor impact is defined as more than one confirmed

complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period. An unconfirmed complaint means that either the odor or air contaminant release could not be detected, or the source of the odor could not be determined.

The District is available to assist the NGB with information regarding specific facilities and categories of facilities, and associated odor complaint records.

8) District Rules and Regulations

The District issues permits for many types of air pollution sources, and regulates some activities that do not require permits. A project subject to District rules and regulations would reduce its impacts on air quality through compliance with the District's regulatory framework. In general, a regulation is a collection of individual rules, each of which deals with a specific topic. As an example, Regulation II (Permits) includes District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 2520 (Federally Mandated Operating Permits), and several other rules pertaining to District permitting requirements and processes.

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm. To identify other District rules or regulations that apply to future projects, or to obtain information about District permit requirements, the project proponents are strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

8a) District Rules 2010 and 2201 - Air Quality Permitting for Stationary Sources

Stationary Source emissions include any building, structure, facility, or installation which emits or may emit any affected pollutant directly or as a fugitive emission. District Rule 2010 (Permits Required) requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO) from the District. District Rule 2201 (New and Modified Stationary Source Review) requires that new and modified stationary sources of emissions mitigate their emissions using Best Available Control Technology (BACT).

This Project may be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and may require District permits. Prior to construction, the Project proponent should submit to the District an application for an ATC. For further information or assistance, the project proponent may contact the District's SBA Office at (559) 230-5888.

8b) District Rule 9510 - Indirect Source Review (ISR)

The purpose of District Rule 9510 is to reduce the growth in both NOx and PM emissions associated with development and transportation projects from mobile and area sources; specifically, the emissions associated with the construction and subsequent operation of development projects.

At this time, there is not enough information for the District to determine the applicability of Rule 9510 to the Project. Please contact the District by phone at (559) 230-5900 or by email at ISR@valleyair.org for assistance with determining if the Project will be subject to Rule 9510.

8c) District Rule 9410 (Employer Based Trip Reduction)

The Project may be subject to District Rule 9410 (Employer Based Trip Reduction) if the project would result in employment of 100 or more "eligible" employees. District Rule 9410 requires employers with 100 or more "eligible" employees at a worksite to establish an Employer Trip Reduction Implementation Plan (eTRIP) that encourages employees to reduce single-occupancy vehicle trips, thus reducing pollutant emissions associated with work commutes. Under an eTRIP plan, employers have the flexibility to select the options that work best for their worksites and their employees.

Information about District Rule 9410 can be found online at: www.valleyair.org/tripreduction.htm.

For additional information, you can contact the District by phone at 559-230-6000 or by e-mail at etrip@valleyair.org

8d) District Rule 4002 (National Emissions Standards for Hazardous Air Pollutants)

In the event an existing building will be renovated, partially demolished or removed, the Project may be subject to District Rule 4002. This rule requires a thorough inspection for asbestos to be conducted before any regulated facility is demolished or renovated. Information on how to comply with District Rule 4002 can be found online at: http://www.valleyair.org/busind/comply/asbestosbultn.htm.

8e) District Rule 4601 (Architectural Coatings)

The Project may be subject to District Rule 4601 since it may utilize architectural coatings. Architectural coatings are paints, varnishes, sealers, or stains that are applied to structures, portable buildings, pavements or curbs. The purpose of this rule is to limit VOC emissions from architectural coatings.

In addition, this rule specifies architectural coatings storage, cleanup and labeling requirements. Additional information on how to comply with District Rule 4601 requirements can be found online at:
http://www.valleyair.org/rules/currntrules/r4601.pdf

8f) District Regulation VIII (Fugitive PM10 Prohibitions)

The project proponent may be required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to commencing any earthmoving activities as described in Regulation VIII, specifically Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.*

Should the project result in at least 1-acre in size, the project proponent shall provide written notification to the District at least 48 hours prior to the project proponents intent to commence any earthmoving activities pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). Also, should the project result in the disturbance of 5-acres or more, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials, the project proponent shall submit to the District a Dust Control Plan pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). For additional information regarding the written notification or Dust Control Plan requirements, please contact District Compliance staff at (559) 230-5950.

The application for both the Construction Notification and Dust Control Plan can be found online at:
https://www.valleyair.org/busind/comply/PM10/forms/DCP-Form.docx

Information about District Regulation VIII can be found online at:
http://www.valleyair.org/busind/comply/pm10/compliance_pm10.htm

8g) Other District Rules and Regulations

The Project may also be subject to the following District rules: Rule 4102 (Nuisance) and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).

If you have any questions or require further information, please contact Michael Corder by e-mail at Michael.Corder@valleyair.org or by phone at (559) 230-5818.

Sincerely,

Brian Clements
Director of Permit Services

For: Mark Montelongo
Program Manager

U.S. Department of Homeland Security
FEMA Region 6
800 N. Loop 288
Denton, TX 76209

FEMA

Mr. Sheppard Hall
EIS Project Manager
National Guard Bureau
NGB/A4AM
3501 Fetchet Ave.
Joint Base Andrews, Maryland 20762-5157

RE: NGB-Environmental Impact Statement

Dear Mr. Hall,

We acknowledge receipt of your request for review/environmental consultation in reference to the NGB-Environmental Impact Statement.

☐ We have no comments to offer.

☒ We offer the following comments:

We would request that the community Floodplain Administrator be contacted for the review and possible permit requirements for this project. If federally funded, we would request the project maintain compliance with EO11988 & EO 11990.

The Community Floodplain Administrator for your project contact information is listed below:

City of New Orleans, LA
Jerome Landry
Floodplain Manager
Dept. of Safety and Permits
1300 Perdido Street, 7th FL
New Orleans, Louisiana 70112
jlandry@nola.gov
(504) 658– 71237

REVIEWER:

Loukisha Williams
Floodplain Management and Insurance Branch
Mitigation Division
(940) 383-7228 DATE: 04/04/2023

www.fema.gov

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To:
Project code: 2024-0004495
Project Name: AIR NATIONAL GUARD F-15EX EAGLE II & F-35A LIGHTNING II OPERATIONAL BEDDOWNS

October 13, 2023

Subject: Consistency letter for the project named 'AIR NATIONAL GUARD F-15EX EAGLE II & F-35A LIGHTNING II OPERATIONAL BEDDOWNS' for specified threatened and endangered species that may occur in your proposed project location pursuant to the Louisiana Endangered Species Act project review and guidance for other federal trust resources determination key (Louisiana DKey).

Dear Matthew Martin:

The U.S. Fish and Wildlife Service (Service) received on October 13, 2023 your effects determination(s) for the 'AIR NATIONAL GUARD F-15EX EAGLE II & F-35A LIGHTNING II OPERATIONAL BEDDOWNS' (the Action) using the Louisiana DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers, and the assistance in the Service's Louisiana DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*)	Threatened	NLAA
Pallid Sturgeon (*Scaphirhynchus albus*)	Endangered	NLAA
West Indian Manatee (*Trichechus manatus*)	Threatened	NLAA

Consultation with the Service is not complete. The "may affect - not likely to adversely affect" determination(s) becomes effective when the lead Federal action agency or designated non-federal representative uses it to ask the Service to rely on the Louisiana Endangered Species Act project review and guidance for other federal trust resources key to satisfy the agency's consultation requirements for this project.

Please sign below verifying your species determination(s) listed above and submit your project to the Louisiana Field Office for concurrence.

George K Ewing — 10/26/2023

Project Representative — Date

Based on the information provided in this report, as well as any pertinent correspondence and documentation saved to the project file at our office (if applicable), the Service agrees with your determination(s) for the species listed above for the proposed Federal Action:

BRIGETTE FIRMIN Digitally signed by BRIGETTE FIRMIN Date: 2023.11.15 11:36:12 -06'00' —

Louisiana Ecological Services Office — Date
U.S. Fish and Wildlife Service
Consultation on the proposed action is concluded when you receive signature from this office.

The Service recommends that your agency contact the Louisiana Ecological Services Field Office or re-evaluate the project in IPAC if: 1) the scope or location of the proposed project is changed significantly, 2) new information reveals that the action may affect listed species or designated critical habitat; 3) the action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Louisiana Ecological Services Field Office should take place before project changes are final or resources committed.

This IPaC-generated letter only applies to the species in the above table and **does not** apply to the following ESA-protected species that also may occur in the Action Area:

- Alligator Snapping Turtle *Macrochelys temminckii* Proposed Threatened
- Monarch Butterfly *Danaus plexippus* Candidate

Please Note: If the Federal Action may impact bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d) may be required. Please contact Ulgonda Kirkpatrick (phone: 321/972-9089, e-mail: ulgonda_kirkpatrick@fws.gov) with any questions regarding potential impacts to bald or golden eagles.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

AIR NATIONAL GUARD F-15EX EAGLE II & F-35A LIGHTNING II OPERATIONAL BEDDOWNS

2. Description

The following description was provided for the project 'AIR NATIONAL GUARD F-15EX EAGLE II & F-35A LIGHTNING II OPERATIONAL BEDDOWNS':

> The United States (U.S.) Department of the Air Force (DAF) and National Guard Bureau (NGB) propose to maintain the combat capability of the Air National Guard (ANG) fighter wings currently flying the F-15C/D aircraft. These aircraft have reached the end of their lifespan and will be phased out due to safety and maintenance concerns. These fighter wings (that are not already undergoing similar evaluation) include the 104th Fighter Wing (104 FW) at Westfield-Barnes Regional Airport (BAF) in Westfield, Massachusetts; the 144th Fighter Wing (144 FW) at Fresno Yosemite International Airport (FAT) in Fresno, California; and the 159th Fighter Wing (159 FW) at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, in Belle Chasse, Louisiana. The proposal is the beddown, operation, and associated infrastructure construction of one squadron of F-15EX Eagle II (F-15EX) aircraft at two of these fighter wings and one squadron of F-35A Lightning II (F-35A) aircraft at one of these fighter wings. These aircraft would replace the aging F-15C/D fighter aircraft at the selected wings. It is also conceivable that one or more of these fighter wings would retain the legacy F-15C/D aircraft for the foreseeable future and construction associated with that alternative would be implemented to support the current legacy aircraft.
> The Proposed Action also includes additional personnel needed to operate and maintain the F-15EX or F-35A, and construction of new and/or modification of existing facilities on the installations supporting the beddowns. Pilots operating the aircraft would conduct training from the installation and in existing Special Use Airspace (SUA) associated with each proposed location. No new SUA or reconfiguration of existing SUA is proposed to support the ANG beddowns for any of these fighter wings; however, there would likely be an increase in operations within the SUA.
> An Environmental Impact Statement (EIS) is being prepared to evaluate the environmental impacts associated with the Proposed Action at the three fighter wings. However, this Biological Assessment is specific to the 159 FW at NAS JRB New Orleans; therefore, only those portions of the Proposed Action specific to the 159 FW are discussed herein and carried forward for analysis of effects on federally listed species.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@29.81880165,-90.0061826205039,14z


Metairie
New Orleans

QUALIFICATION INTERVIEW

1. Is the action authorized, funded, or being carried out by a Federal agency?
   Yes
2. Is the action authorized, funded, or being carried out by the:
   d. Other
3. Please identify your agency or organization type:
   a. Federal agency
4. Have you determined that the project will have "no effect" on federally listed species? (If unsure select "No")
   No
5. [Hidden Semantic] Does the project intersect the eastern black rail AOI?
   Automatically answered
   Yes
6. Will the proposed project involve human disturbance or ground disturbance (such as foot traffic, vehicles, tracked equipment, excavating, grading, placing fill material, etc.)?
   No
7. [Hidden Semantic] Does the project intersect the west indian manatee AOI?
   Automatically answered
   Yes
8. (Semantic) Is the project located within the manatee consultation zone, excluding the Mississippi River?
   Automatically answered
   Yes
9. Is the project footprint entirely on land?
   No
10. Is the water depth within the project greater than 2 feet (at mean high tide)?
    No
11. [Hidden Semantic] Does the project intersect the pink mucket mussel AOI ?
    Automatically answered
    No
12. [Hidden Semantic] Does the project intersect the pallid sturgeon AOI?
    Automatically answered
    Yes
13. Will the project result in riverine pathway obstruction (such as construction of dams, hydropower plants, etc.)?
    No

14. Will the project include the addition of or modification to water intake structures?
No
15. Will the project involve modifications to existing or construction of new diversion structure or turbines?
No
16. Will the project involve dredging activities?
No
17. (Semantic) Does the project intersect the Louisiana black bear Range?
Automatically answered
No

IPAC USER CONTACT INFORMATION

Agency: Navy
Name: Matthew Martin
Address: PO BOX 102 NAS AIR STATION
City: JACKSONVILLE
State: FL
Zip: 32212
Email matthew.spencer.martin@gmail.com
Phone: 9045421414

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Navy

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To: October 13, 2023
Project Code: 2024-0004495
Project Name: AIR NATIONAL GUARD F-15EX EAGLE II & F-35A LIGHTNING II OPERATIONAL BEDDOWNS

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and may be affected by your proposed project. The Fish and Wildlife Service (Service) is providing this list under section 7 (c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Changes in this species list may occur due to new information from updated surveys, changes in species habitat, new listed species and other factors. Because of these possible changes, feel free to contact our office (337-291-3109) for more information or assistance regarding impacts to federally listed species. The Service recommends visiting the IPaC site or the Louisiana Ecological Services Field Office website (https://www.fws.gov/southeast/lafayette) at regular intervals during project planning and implementation for updated species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)).

Bald eagles have recovered and were removed from the List of Endangered and Threatened Species as of August 8, 2007. Although no longer listed, please be aware that bald eagles are

protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 et seq.). The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance", which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: https://www.fws.gov/migratorybirds/pdf/management/nationalbaldeaglenanagementguidelines.pdf

Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. Onsite personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: https://www.fws.gov/southeast/our-services/eagle-technical-assistance/. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. The Division of Migratory Birds for the Southeast Region of the Service (phone: 404/679-7051, e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting any necessary consultation.

Activities that involve State-designated scenic streams and/or wetlands are regulated by the Louisiana Department of Wildlife and Fisheries and the U.S. Army Corps of Engineers, respectively. We, therefore, recommend that you contact those agencies to determine their interest in proposed projects in these areas.

Activities that would be located within a National Wildlife Refuge are regulated by the refuge staff. We, therefore, recommend that you contact them to determine their interest in proposed projects in these areas.

Additional information on Federal trust species in Louisiana can be obtained from the Louisiana Ecological Services website at: https://www.fws.gov/southeast/lafayette

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds

- Marine Mammals

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
(337) 291-3100

PROJECT SUMMARY

Project Code: 2024-0004495

Project Name: AIR NATIONAL GUARD F-15EX EAGLE II & F-35A LIGHTNING II OPERATIONAL BEDDOWNS

Project Type: Military Operations

Project Description: The United States (U.S.) Department of the Air Force (DAF) and National Guard Bureau (NGB) propose to maintain the combat capability of the Air National Guard (ANG) fighter wings currently flying the F 15C/D aircraft. These aircraft have reached the end of their lifespan and will be phased out due to safety and maintenance concerns. These fighter wings (that are not already undergoing similar evaluation) include the 104th Fighter Wing (104 FW) at Westfield-Barnes Regional Airport (BAF) in Westfield, Massachusetts; the 144th Fighter Wing (144 FW) at Fresno Yosemite International Airport (FAT) in Fresno, California; and the 159th Fighter Wing (159 FW) at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, in Belle Chasse, Louisiana. The proposal is the beddown, operation, and associated infrastructure construction of one squadron of F-15EX Eagle II (F-15EX) aircraft at two of these fighter wings and one squadron of F-35A Lightning II (F-35A) aircraft at one of these fighter wings. These aircraft would replace the aging F-15C/D fighter aircraft at the selected wings. It is also conceivable that one or more of these fighter wings would retain the legacy F-15C/D aircraft for the foreseeable future and construction associated with that alternative would be implemented to support the current legacy aircraft.
The Proposed Action also includes additional personnel needed to operate and maintain the F-15EX or F 35A, and construction of new and/or modification of existing facilities on the installations supporting the beddowns. Pilots operating the aircraft would conduct training from the installation and in existing Special Use Airspace (SUA) associated with each proposed location. No new SUA or reconfiguration of existing SUA is proposed to support the ANG beddowns for any of these fighter wings; however, there would likely be an increase in operations within the SUA. An Environmental Impact Statement (EIS) is being prepared to evaluate the environmental impacts associated with the Proposed Action at the three fighter wings. However, this Biological Assessment is specific to the 159 FW at NAS JRB New Orleans; therefore, only those portions of the Proposed Action specific to the 159 FW are discussed herein and carried forward for analysis of effects on federally listed species.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@29.81880165,-90.00618262605039,14z

Counties: Louisiana

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
West Indian Manatee *Trichechus manatus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. ***This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.*** Species profile: https://ecos.fws.gov/ecp/species/4469	Threatened

BIRDS

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

FISHES

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7162	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

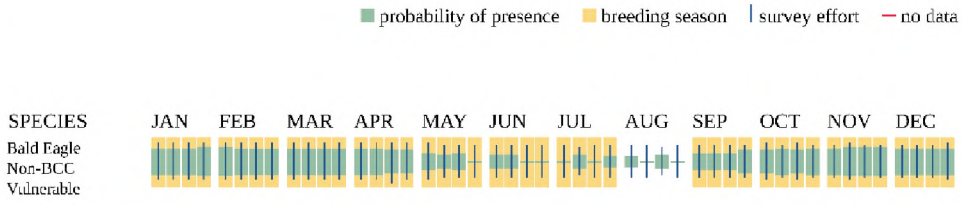
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management

- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Black Skimmer *Rynchops niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15

NAME	BREEDING SEASON
Cerulean Warbler *Dendroica cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 25 to Jul 20
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Dickcissel *Spiza americana* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9453	Breeds May 5 to Aug 31
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	Breeds May 1 to Aug 20
Gull-billed Tern *Gelochelidon nilotica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9443	Breeds Apr 20 to Aug 20
King Rail *Rallus elegans* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Little Blue Heron *Egretta caerulea* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9477	Breeds Mar 10 to Oct 15
Painted Bunting *Passerina ciris* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9511	Breeds Apr 25 to Aug 15

NAME	BREEDING SEASON
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9513	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Reddish Egret *Egretta rufescens* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7617	Breeds Mar 1 to Sep 15
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/10633	Breeds elsewhere
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Sandwich Tern *Thalasseus sandvicensis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9731	Breeds Apr 25 to Aug 31
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Swallow-tailed Kite *Elanoides forficatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30

NAME	BREEDING SEASON
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

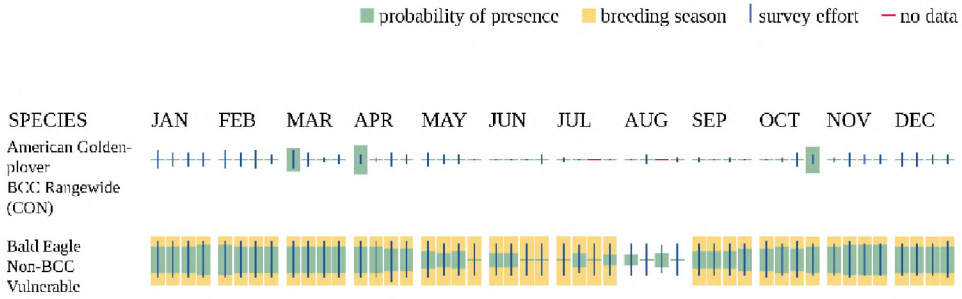
Probability of Presence (▪)

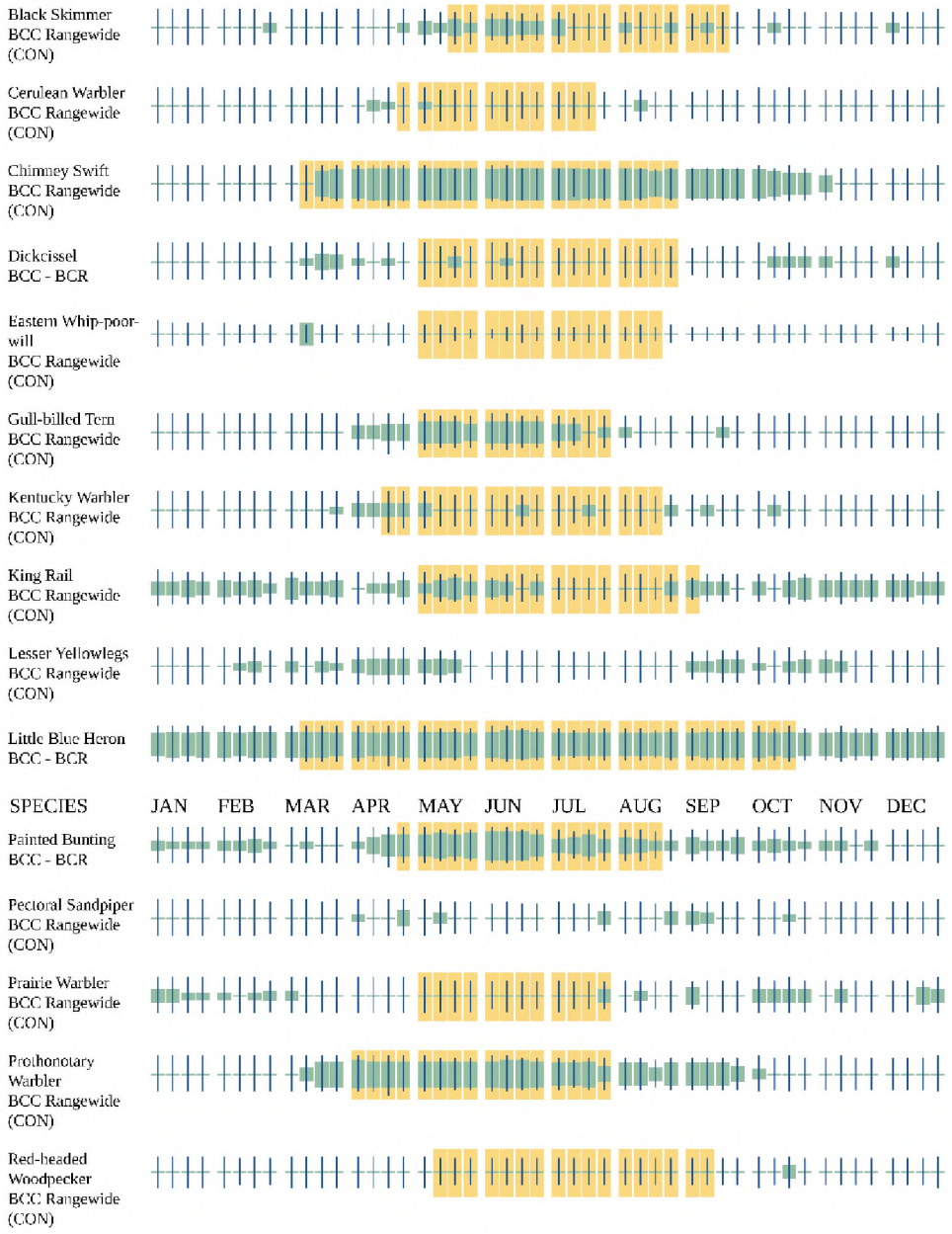
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

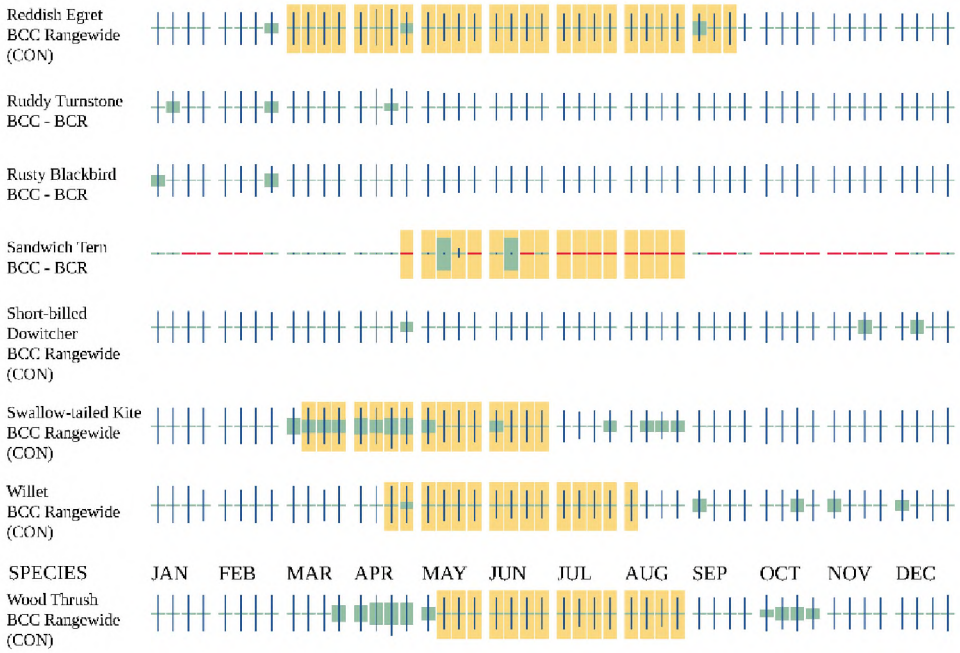
Breeding Season (▪)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.




Black Skimmer BCC Rangewide (CON)
Cerulean Warbler BCC Rangewide (CON)
Chimney Swift BCC Rangewide (CON)
Dickcissel BCC - BCR
Eastern Whip-poor-will BCC Rangewide (CON)
Gull-billed Tern BCC Rangewide (CON)
Kentucky Warbler BCC Rangewide (CON)
King Rail BCC Rangewide (CON)
Lesser Yellowlegs BCC Rangewide (CON)
Little Blue Heron BCC - BCR
SPECIES
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Painted Bunting BCC - BCR
Pectoral Sandpiper BCC Rangewide (CON)
Prairie Warbler BCC Rangewide (CON)
Prothonotary Warbler BCC Rangewide (CON)
Red-headed Woodpecker BCC Rangewide (CON)



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- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MARINE MAMMALS

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries[3] [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on

this list; for additional information on those species please visit the Marine Mammals page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

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1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NAME

West Indian Manatee *Trichechus manatus*
Species profile: https://ecos.fws.gov/ecp/species/4469

IPAC USER CONTACT INFORMATION

Agency: Navy
Name: Matthew Martin
Address: PO BOX 102 NAS AIR STATION
City: JACKSONVILLE
State: FL
Zip: 32212
Email matthew.spencer.martin@gmail.com
Phone: 9045421414

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Navy

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND SOUTHEAST
JACKSONVILLE, FL 32212-0030

5090
Ser EV21/00639
November 9, 2023

Mr. James Bondy
Louisiana Department of Natural Resources
P. O. Box 44487
Baton Rouge, LA 70808-4487

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT

The United States Department of the Air Force (DAF) and Air National Guard Bureau (NGB), both serving as co-leading agencies is preparing an Environmental Impact Statement for the proposed beddown, operation and associated infrastructure construction of one squadron of F-15EX Eagle II (F-15EX) or one squadron of F-35A Lightning II (F-35A) or construction associated with the retention of the current F-15C/D at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, located in Belle Chasse, Plaquemines Parish, Louisiana. The United States Department of the Navy (DON), as landowner is serving as a cooperating agency. In accordance with the Coastal Zone Management Act, 16 United States Code 1456(c) and 15 Code of Federal Regulations Part 930, the DON has prepared a Coastal Consistency Determination and is requesting coordination with the Louisiana Coastal Resources Program (LCRP) concerning the potential effects to coastal resources.

The Proposed Action includes training, construction of new and/or modification of existing facilities and additional personnel. The purpose of the Proposed Action is to maintain combat capability and mission readiness for the NGB 159th fighter wing. The Proposed Action is needed because the current aircraft, the F-15C/D is no longer being manufactured, reaching the end of its service life and aircraft use is not expected beyond fiscal year 2026. If the 159th fighter wing is not selected to receive the F-15EX or the F-35A aircraft, then the 159th could still implement construction and modification to support and extend their F-15C/D aircraft and mission.

Based on a consistency review of the approved LCRP, the DON has determined that the project will not have an effect on the coastal use or resources of Louisiana's coastal zone and is consistent to the maximum extent practicable with the federally enforceable policies of the enclosed LCRP and requests concurrence with this determination. Please provide your response within 60 days of receipt of this correspondence.

Point of contact for this matter is Mrs. Adonna Clayton who may be reached at adonna.n.clayton.civ@us.navy.mil or (904) 763-5974. Letter correspondence can be addressed to: NAVFAC SE EV, Attn: Mrs. Adonna Clayton (EV21), PO Box 30A, Bldg. 903, Jacksonville, FL 32212-0030.

Sincerely,

M. B. OXENDINE, PE
Environmental Director
By direction of the
Commanding Officer

Enclosure

Copy to: Ms. Emilie Rogers, NAS JRB New Orleans
Mr. William Strickland, NGB

Air National Guard F-15EX Eagle II & F-35A Lightning II Operational Beddowns
Environmental Impact Statement
Coastal Consistency Determination

Project Description and
Louisiana Coastal Resources Program Consistency Review

Introduction

This document provides the State of Louisiana with the United States (U.S.) Department of the Air Force (DAF), National Guard Bureau (NGB), and Department of the Navy (as a cooperating agency) Consistency Determination under Coastal Zone Management Act (CZMA) 16 United States Code (U.S.C.) § 1456 Section 307 (c) and 15 Code of Federal Regulations (CFR) § 930 (c), for the Air National Guard (ANG) F-15EX Eagle II & F-35A Lightning II Operational Beddowns Environmental Impact Statement. The information in this Consistency Review is provided pursuant to 15 CFR § 930.39 and the requirements of the Louisiana Coastal Resources Program.

Project Location

The project location is the 159th Fighter Wing (159 FW) installation located entirely within the boundaries of Naval Air Station Joint Reserve Base (NAS JRB) New Orleans, which is a military installation. The 159 FW installation location within Plaquemines Parish is shown in *Figure 1*. The individual construction project areas are shown in *Figure 2* through *Figure 4*.

Description of the Proposed Action

The DAF and NGB propose to maintain the combat capability of the ANG fighter wings currently flying the F-15C/D aircraft. These aircraft have reached the end of their lifespan and will be retired due to safety and maintenance concerns. One of the fighter wings being considered for the Proposed Action is the 159 FW at NAS JRB New Orleans, in Belle Chasse, Louisiana (LA). The proposal for the 159 FW and the focus of this Consistency Determination is the beddown, operation, and associated infrastructure construction for one squadron of F-15EX Eagle II (F-15EX) aircraft, or one squadron of F-35A Lightning II (F-35A) aircraft, or construction associated with the retention of the current F-15C/D at NAS JRB New Orleans.

To support the proposed operations, additional infrastructure and facilities would be required at the 159 FW installation. These construction and modification projects would vary depending on the proposed aircraft selected but would primarily include the construction of new facilities on currently paved areas or actively managed (i.e., mowed and landscaped) areas and/or the renovation of existing facilities. Under the Proposed Action alternatives at NAS JRB New Orleans, proposed construction and modification activities would result in up to 100,800 square feet (SF) of new impervious surfaces. Construction and operations under Proposed Action alternatives would take place within the coastal zone; however, none of the areas designated for proposed construction projects would occur within proximity of wetlands. In addition, site-specific Stormwater Pollution Prevention Plans (SWPPPs) would be prepared for each construction project to ensure that runoff would be contained on-site. Predevelopment hydrology would be maintained through compliance with low impact development (LID) and Section 438 of the Energy Independence and Security Act of 2007 (EISA). Best management

practices (BMPs) would continue to be implemented to minimize impacts to both surface water and groundwater. Some of the proposed construction or modification projects would be located within the 100-year floodplain; however, impacts to floodplains would not be significant and would be in compliance with Executive Order (EO) 11988, and with preparation of a Finding of No Practicable Alternative. Impacts to water resources as a result of the proposed beddown of the F-15EX, F-35A, or retention of the F-15C/D aircraft at NAS JRB New Orleans would not be significant.

Federal Consistency Review

Louisiana Coastal Resources Program is composed of state statutes, which constitute the enforceable policies of the Coastal Resources Program. Statutes addressed as part of the Louisiana Coastal Resources Program consistency review and considered in the analysis of the Proposed Action are discussed in Table 1.

Conclusion

The Navy (a cooperating agency on the EIS and the owner of NAS JRB New Orleans) has reviewed the Louisiana Coastal Resources Program and reviewed its Proposed Action for how and to what degree the activities could affect Louisiana's coastal zone uses and resources. The Navy has determined that the Proposed Action will not have an effect on a coastal use or resources of Louisiana's coastal zone and is consistent to the maximum extent practicable with the applicable enforceable policies of the Louisiana Coastal Resources Program.

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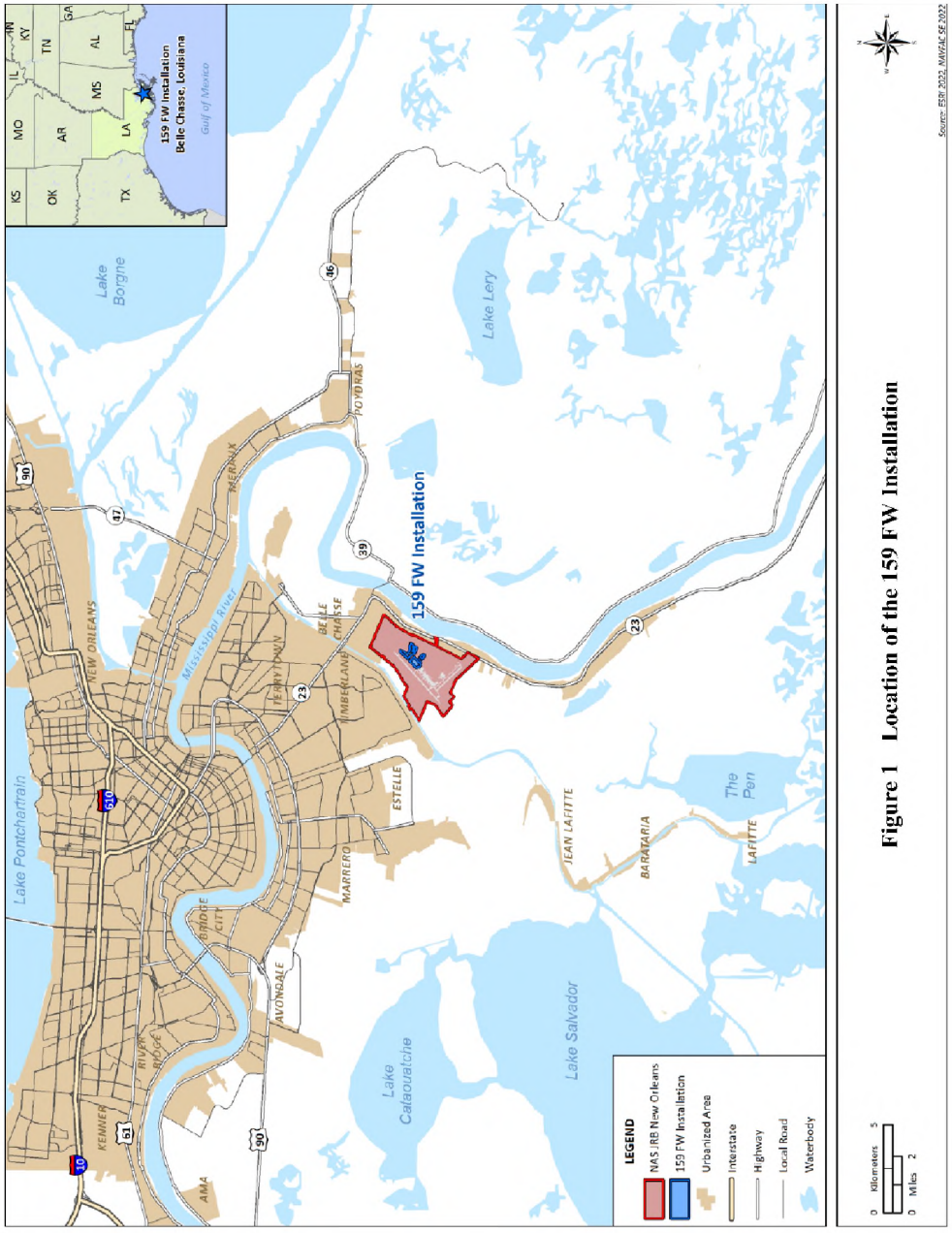

Figure 1 Location of the 159 FW Installation

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Figure 2 Proposed Construction and Modification for the F-15EX Beddown at the 159 FW Installation

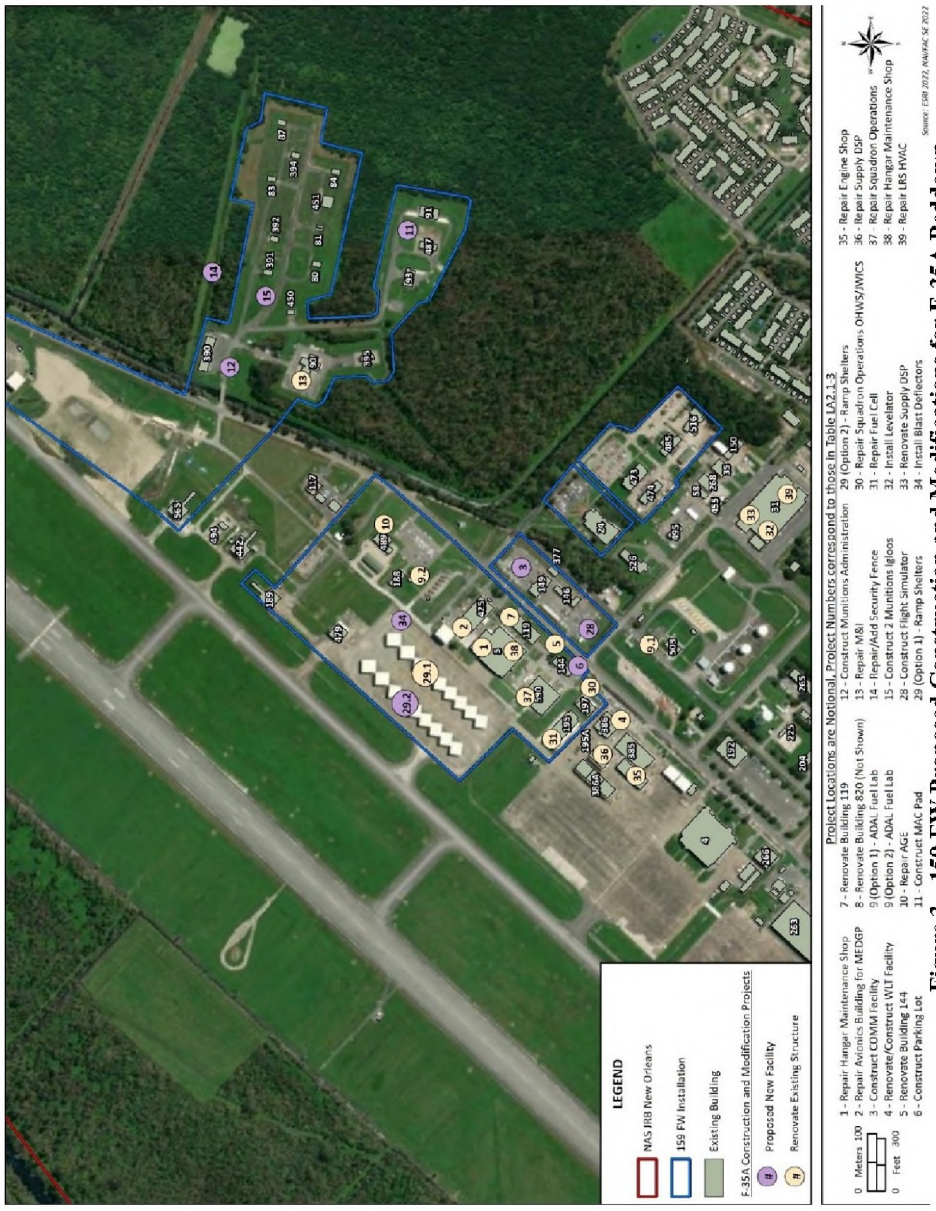

Figure 3 159 FW Proposed Construction and Modifications for F-35A Beddown

Figure 4 159 FW Proposed Construction and Modifications for Legacy Aircraft

Air National Guard F-15EX Eagle II & F-35A Lightning II Operational Beddowns
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Table 1 Louisiana Enforceable Statutes and Federal Consistency Review

Louisiana Administrative Code, Title 43 Part I	Legal Scope	Consistency Evaluation
Section 701 (G). Guidelines Applicable to All Uses	It is the policy of the coastal resources program to avoid the following adverse impacts. To this end, all uses and activities shall be planned, sited, designed, constructed, operated, and maintained to avoid to the maximum extent practicable significant: **Part 1**: reductions in the natural supply of sediment and nutrients to the coastal system by alterations of freshwater flow; **Part 2**: adverse economic impacts on the locality of the use and affected governmental bodies; **Part 3**: detrimental discharges of inorganic nutrient compounds into coastal waters; **Part 4**: alterations in the natural concentration of oxygen in coastal waters; **Part 5**: destruction or adverse alterations of streams, wetland, tidal passes, inshore waters and water bottoms, beaches, dunes, barrier islands, and other natural biologically valuable areas or protective coastal features; **Part 6**: adverse disruption of existing social patterns; **Part 7**: alterations of the natural temperature regime of coastal waters; **Part 8**: detrimental changes in existing salinity regimes; **Part 9**: detrimental changes in littoral and sediment transport processes;	**Part 1**: The Proposed Action does not include alterations of freshwater flow in the coastal zone. The Proposed Action does not include any changes to the existing drainage ditches or canals on the military installation. **Part 2**: The Proposed Action does not include impacts to the locality of the use and affected governmental bodies. **Part 3**: The Proposed Action does not include discharges of inorganic nutrient compounds. **Part 4**: The Proposed Action does not include alterations to oxygen concentrations in coastal waters. **Part 5**: The Proposed Action does not include destruction or adverse alterations of streams, wetlands, tidal passes, inshore waters and water bottoms, beaches, dunes, barrier islands, and other natural biologically valuable areas or protective coastal features of the coastal zone. **Part 6**: The Proposed Action does not include disruptions of existing social patterns. **Part 7**: The Proposed Action does not include alterations of coastal waters natural temperature regime. **Part 8**: The Proposed Action does not include alterations in existing salinity regimes. **Part 9**: The Proposed Action does not include changes in littoral and sediment transport processes.
Section 701 (G). Guidelines Applicable to All Uses (*continued*)	**Part 10**: adverse effects of cumulative impacts; **Part 11**: detrimental discharges of suspended solids into coastal waters, including turbidity resulting from dredging; **Part 12**: reductions or blockage of water flow or natural	**Part 10**: Analysis in the Draft EIS concluded that the incremental contribution of the Proposed Action to cumulative impacts on noise, airspace, air quality/climate change, socioeconomics/environmental justice, land use/noise compatible land use, Department of Transportation Act Section 4(f), water resources/floodplains/wild and scenic rivers, geological resources/soils/farmland, cultural resources, safety,

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Louisiana Administrative Code, Title 43 Part I	Legal Scope	Consistency Evaluation
	circulation patterns within or into an estuarine system or a wetland forest; **Part 13**: discharges of pathogens or toxic substances into coastal waters; **Part 14**: adverse alteration or destruction of archaeological, historical, or other cultural resources;	hazardous materials/waste, biological resources/coastal resources, visual impacts, and infrastructure/utilities/natural resources and energy supply/transportation/public transportation would not be significant. The Navy would further minimize cumulative impacts to coastal zone uses and resources to the greatest extent practicable through adherence to land disturbance best management practices. **Part 11**: The Proposed Action does not involve dredging. **Part 12**: The Proposed Action does not include reductions or blockage of water flow or natural circulation patterns within or into an estuarine system. **Part 13**: The Proposed Action does not include discharges of pathogens or toxic substances. All land use controls for environmental restoration sites would be observed. **Part 14**: The Proposed Action would not affect archaeological, historical, or other cultural resources of the State of Louisiana. No known sites have been identified within any of the proposed construction footprints. Should any cultural resources be discovered during project activities, the activity would cease and the discovery would be immediately reported to the State Historic Preservation Officer. Consultation with the Louisiana State Historic Preservation Officer is ongoing.
Section 701 (G). Guidelines Applicable to All Uses (*continued*)	**Part 15**: fostering of detrimental secondary impacts in undisturbed or biologically highly productive wetland areas; **Part 16**: adverse alteration or destruction of unique or valuable habitats, critical habitat for endangered species, important wildlife or fishery breeding or nursery areas, designated wildlife management or sanctuary areas, or forestlands; **Part 17**: adverse alteration or destruction of public parks, shoreline access points, public works, designated recreation areas, scenic rivers, or other areas of public use and concern; **Part 18**: adverse disruptions of coastal wildlife and fishery migratory patterns; **Part 19**: land loss, erosion, and subsidence;	**Part 15**: The Proposed Action does not include detrimental secondary impacts in undisturbed or biologically highly productive wetland areas. **Part 16**: The Navy is submitting a Biological Assessment to USFWS for potential impacts to threatened and endangered species as a result of the Proposed Action. The Navy has concluded that the Proposed Action "may affect, but not likely to adversely affect" the Eastern Black Rail, Pallid Sturgeon, and West Indian Manatee, due to the noise associated with aircrafts. **Part 17**: The Proposed Action does not include adverse alteration of areas of public use and concern. **Part 18**: The Proposed Action does not include disruptions of coastal wildlife and fishery migratory patterns. **Part 19**: The Proposed Action does not include land loss, erosion, and subsidence. **Part 20**: The Proposed Action does not include increases in the potential for flood, hurricane, or other storm damage. Under the F-15EX alternative, a maximum increase of 85,300 SF (1.96 acres) of impervious surfaces would be added. Under the F-35A alternative, a maximum increase of 100,800 SF (2.31 acres) of impervious surfaces would be added. Under the F-15C/D

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Louisiana Administrative Code, Title 43 Part I	Legal Scope	Consistency Evaluation
	Part 20: increases in the potential for flood, hurricane, and other storm damage, or increases in the likelihood that damage will occur from such hazards. **Part 21**: reduction in the long term biological productivity of the coastal ecosystem.	legacy aircraft alternative, a maximum increase of 62,500 SF (1.43 acres) of impervious surfaces would be added. **Part 21**: The Proposed Action would not reduce the long-term biological productivity of the coastal ecosystem.
Section 703	Guidelines for Levees	The Proposed Action does not include construction of levees.
Section 705	Guidelines for Linear Facilities	The Proposed Action does not include development of linear facilities.
Section 707	Guidelines for Dredged Spoil Deposition	The Proposed Action does not include dredged spoil deposition.
Section 709	Guidelines for Shoreline Modification	The Proposed Action does not include shoreline modification.
Section 711	Guidelines for Surface Alterations	The Proposed Action does not include surface alterations in Louisiana's Coastal Zone (*all alterations are on federal property outside of the state's coastal zone boundaries*). The surface alterations proposed on the 159 FW installation property within NAS JRB New Orleans would not have an effect on land use, water use, or the natural resources of Louisiana's coastal zone. Any approved project will be designed and constructed using best practical techniques to minimize present and future property damage and adverse environmental impacts. Areas modified by surface alteration activities will be revegetated.
Section 713	Guidelines for Hydrologic and Sediment Transport Modifications	The Proposed Action would not result in hydrologic or sediment transport modifications through such means as controlled diversions, deposition systems, siphons, controlled conduits, water control structures, impoundments, or surface/groundwater withdrawals.
Section 715	Guidelines for Disposal of Wastes	The Proposed Action does not include the location or operation of waste storage, treatment and disposal facilities in the Louisiana coastal zone. Temporary minor use of hazardous materials and generation of hazardous wastes during project construction activities, and maintenance and operational use of hazardous materials and generation of hazardous waste would be managed under existing laws, ANG and Navy regulations, and management practices. Waste disposal will be at approved disposal sites.
Section 717	Guidelines for Uses that Result in the Alteration of Waters Draining into Coastal Waters	The Proposed Action does not include activities that would result in alteration of waters draining into coastal waters. No changes are expected to the quantity, quality, and rate of flow off the installation.
Section 719	Guidelines for Oil, Gas, and Other Mineral Activities	The Proposed Action does not include oil, gas, or other mineral activities.

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Enclosure

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND SOUTHEAST
JACKSONVILLE, FL 32212-0030

5090
Ser EV22/00961
November 9, 2023

Seth Bordelon
U.S. Fish and Wildlife Service, Southeast Region
Louisiana Ecological Services Office
200 Dulles Drive, Lafayette, LA 70506

SUBJECT: ENDANGERED SPECIES ACT SECTION 7 INFORMAL CONSULTATION

In accordance with Section 7 of the Endangered Species Act (ESA), the U.S. Navy (DON) is initiating an informal consultation for the beddown, operation and associated infrastructure construction of one squadron of F-15EX Eagle II aircraft at two of these fighter wings and one squadron of F-35A Lightning II aircraft at the 159th Fighter Wing at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans. ESA listed species under consideration in this document enclosed, are the Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*), Pallid Sturgeon (*Scaphirhynchus albus*) and West Indian Manatee (*Trichechus manatus*).

The DON determined that the proposed action may affect, but is not likely to adversely affect, the species listed above, and seeks U. S. Fish and Wildlife Service (US FWS) concurrence with this determination. The DON and the US FWS have a history of effective partnering and we look forward to continuing that relationship with this project that is vital to sustaining NAS JRB New Orleans' training and operations. The DON requests that this Section 7 consultation be completed no later than 30 November 2023.

Point of contact for this project is Mr. Matt Martin who may be reached at (305) 928-4027 or matthew.s.martin54.civ@us.navy.mil.

Sincerely,

M. B. OXENDINE, PE
Environmental Director
By direction of the
Commanding Officer

Enclosure

Copy to:
Daniel Riggs, NAS JRB New Orleans

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A2 Native American Correspondence

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The sample tribal scoping letter following was distributed to the list below:

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Chairwoman Cheryl Andrews-Mattais, Wampanoag Reservation, Wampanoag Tribal Council of Gay Head, 20 Black Brook Rd, Aquinnah, MA 02535
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Chief Brad KillsCrow, Delaware Tribe of Indians, 5200 Tuxedo Blvd, Bartlesville, OK 74006
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Chairman James Gessner, Jr., Mohegan Tribe of Indians of Connecticut, 13 Crow Hill Rd, Uncasville, CT 06382
Mr. James Quinn, THPO, Mohegan Tribe of Indians of Connecticut, 13 Crow Hill Rd, Uncasville, CT 06382
Chief Sachem Anthony Stanton, Narragansett Indian Tribe, PO Box 268, Charlestown, RI 02813
Mr. John Brown, THPO, Narragansett Indian Tribe, PO Box 268, Charlestown, RI 02813
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144th Fighter Wing, Fresno Air National Guard Base, CA

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Mr. Bob Pennell THPO, Table Mountain Rancheria, PO Box 410, Friant, CA 93626-0177
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Chairperson Fred Beihn, North Fork Rancheria of Mono Indians, 33143 Road 222, North Fork, CA 93643
Chairperson Blossom Hunter, Cold Springs Rancheria of Mono Indians, Tribal Environmental Office, PO Box 209, Tollhouse, CA 93667
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Chairwoman Meryl Picard, Bishop Paiute Tribe, 50 Tu Su Ln, Bishop, CA 93513
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144th Fighter Wing, Naval Air Station Lemoore, CA

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159th Fighter Wing, Naval Air Station Joint Reserve Base New Orleans, Belle Chasse, LA

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Ms. Kimberly S. Walden, THPO, Chitimacha Tribe of Louisiana, PO Box 661, Charenton, LA 70523
Chief Cheryl Smith, Jena Band of Choctaw Indians, PO Box 14, Jena, LA 71342
Ms. Johnna Flynn, THPO, Jena Band of Choctaw Indians, PO Box 14, Jena, LA 71342
Chairman Jonathan, Cernek, Coushatta Tribe of Louisiana, PO Box 10, Elton, LA 70532
Ms. Linda Langley, THPO, Coushatta Tribe of Louisiana, PO Box 10, Elton, LA 70532
Chairman Marshall Pierite, Tunica-Biloxi Tribe of Louisiana, 150 Melacon Rd, Marksville, LA 71351
Mr. Earl Barbry, Jr., THPO, Tunica-Biloxi Tribe of Louisiana, 150 Melacon Rd, Marksville, LA 71351
Chairperson Ricky Sylestine, Alabama-Coushatta Tribe of Texas, 571 State Park Road 56, Livingston, TX 77351
Ms. Celestine Bryant, Alabama-Coushatta Tribe of Texas, 571 State Park Road 56, Livingston, TX 77351
Mr. Ben Yahola, Alabama-Quassarte Tribal Town, PO Box 187, Wetumka, OK 74883
Chief Wilson Yargee, Alabama-Quassarte Tribal Town, PO Box 187, Wetumka, OK 74883
Chairman Durell Cooper, Apache Tribe of Oklahoma, PO Box 1330, Anadarko, OK 73005
Chairman Bobby Gonzalez, Caddo Nation of Oklahoma, PO Box 487, Binger, OK 73009
Mr. Jonathan Rohrer, Caddo Nation of Oklahoma, PO Box 487, Binger, OK 73009
Chief Gary Batton, The Choctaw Nation of Oklahoma, PO Box 1210, Durant, OK 74702
Mr. Ian Thompson, The Choctaw Nation of Oklahoma, PO Box 1210, Durant, OK 74702-1210
Chief Cyrus Ben, Mississippi Band of Choctaw Indians, PO Box 6010, Choctaw, MS 39350
Ms. Andrea A. Hunter, The Osage Nation, 627 Grandview Ave, Pawhuska, OK 74056
Principal Chief Geoffrey Standing Bear, The Osage Nation, PO Box 779, Pawhuska, OK 74056
Chairperson Joseph Byrd, Quapaw Tribe of Oklahoma, PO Box 765, Quapaw, OK 74363
Mr. Everett Bandy, Quapaw Tribe of Oklahoma, PO Box 765, Quapaw, OK 74363
Chairman Marcus Osceola, Jr., Seminole Tribe of Florida, 6300 Stirling Rd, Hollywood, FL 33024
Mr. Paul Backhouse, PhD, Seminole Tribe of Florida, 30290 Josie Billie Hwy, PMB 1004, Clewiston, FL 33440
President Russell Martin, Tonkawa Tribe of Indians of Oklahoma, 1 Rush Buffalo Rd, Tonkawa, OK 74653
Ms. Lauren Norman-Brown, Tonkawa Tribe of Indians of Oklahoma, 1 Rush Buffalo Rd, Tonkawa, OK 74653
Mr. Gary McAdams, Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma, PO Box 729, Anadarko, OK 73005
President Terri Parton, Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma, PO Box 729, Anadarko, OK 73005
Chief John Mark Davis, Adai Caddo Indians of Louisiana, 4460 Hwy 485, Robeline, LA 71469
Chairman Randy Verdun, Biloxi Chitimacha Confederation of Muskogee, PO Box 856, Zachery LA 70791
Chief Thomas Rivers, Choctaw-Apache Tribe of Ebarb, 35 Lonnie Rd, Zwolle, LA 71486
President Brian Neal,Clifton Choctaw Tribe of Louisiana, 1146 Clifton Rd, Clifton, LA 71447

Chief Len Wiggins, Four-Winds Cherokee Tribe, 306 W 1st St, Deridder, LA 70634
Chairperson Charles Verdin, Sr., Point au Chien Tribe, 3798 Highway 665, Montegut, LA 70377
Principal Chief Lora Chaisson, United Houma Nation, 400 Monarch Dr, Houma, LA 70364

Sample Tribal Letter

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 104TH FIGHTER WING (ANG)
BARNES AIR NATIONAL GUARD BASE, WESTFIELD MA

29 July 2022

Cheryl Andrews-Mattais
Wampanoag Reservation
Wampanoag Tribal Council of Gay Head
20 Black Brook Rd
Aquinnah MA 02535

Dear Chairwoman Andrews-Mattais

In accordance with Executive Order (EO) 13175, *Consultation and Coordination with Indian Tribal Governments*; EO 12372, *Intergovernmental Review of Federal Programs*; and Section 106 of the National Historic Preservation Act (36 Code of Federal Regulations [CFR] Parts 800.2, 800.3, and 800.4), the 104th Fighter Wing (104 FW) and the National Guard Bureau (NGB) would like to initiate government-to-government consultation on the proposed undertaking.

The NGB pursuant to the National Environmental Policy Act of 1969 (NEPA) (42 United States [U.S.] Code 4321 et seq.), is preparing an Environmental Impact Statement (EIS) for a proposed undertaking that will analyze potential effects to human health and the natural environment, including historic and traditional cultural properties. The undertaking includes aircraft changes, personnel increases, and construction activities in support of the beddown of one F-15EX Eagle II squadron at two of three alternative locations and one squadron of F-35A Lightning II aircraft at one of four alternative locations, including Barnes Air National Guard Base (ANGB), located at the Westfield-Barnes Regional Airport in Westfield, Massachusetts (Attachment 1). The other three locations include Fresno ANGB, located at Fresno Yosemite International Airport, California; Naval Air Station (NAS) Lemoore, California; and NAS Joint Reserve Base (JRB) New Orleans, Belle Chasse, Louisiana.

The F-15EX would replace existing F-15C/D aircraft at two installations analyzed. The F-35A would replace existing F-15C/D aircraft at one of the installations analyzed. This action would involve the beddown of two F-15EX Eagle II squadrons consisting of 21 aircraft at the selected installation location. The action would also involve the beddown of one F-35A squadron consisting of 21 aircraft at the selected installation location.

The purpose of the undertaking is to maintain combat capability and mission readiness efficiently and effectively in the full spectrum of Department of the Air Force (DAF) aircraft as the Air National Guard (ANG) faces deployments for conflicts abroad, while also providing for homeland defense. The proposed beddown and operation of the F-15EX and the F-35A would

represent a significant step toward meeting the DAF's goals. The beddown action and follow-on training would ensure availability of combat-ready pilots utilizing the most advanced fighter aircraft in the world. The action is needed to replace aging F-15C/D aircraft, which would be retired from service due to the age of the aircraft and the resulting maintenance costs.

The DAF and the NGB are the lead agencies for the Proposed Action. The Federal Aviation Administration (FAA) and Department of the Navy (Navy) are cooperating agencies because two of the alternative locations are on joint-use airfields where the FAA would have a federal action in approving changes to the Airport Layout Plan, and two of the alternative locations are on Navy installations where the Navy has special expertise and may have a connected federal action.

The undertaking also includes some construction projects that would enhance current and future missions of the 104 FW at Barnes ANGB. The project list is attached to this letter (Attachment 2). The NGB has reviewed the undertaking and defined the Area of Potential Effects (APE) as areas proposed to have ground disturbance (including locations of newly constructed buildings), facilities that would be renovated, air-to-ground ranges, and lands located beneath existing operations/training airspace to include Military Operations Areas and Air Traffic Control Assigned Airspace (Attachment 3).

As part of our consultation efforts, we respectfully request your assistance in identifying the following:

- traditional resources that may be located within the current APE;
- historic properties in the APE of which we may not be aware; and/or
- your Tribe's interest in participating in additional consultation.

If you request additional consultation, the NGB and 104 FW will work with your office to adopt procedures that will meet your Tribe's needs and requirements for continued consultation.

The NGB wants to make you aware that we will be holding both virtual and in-person public scoping meetings for each location. The NGB is providing an in-person session for agency staff at each location during the workday (2:00–4:00 p.m.), just prior to the public meeting (5:00–7:00 p.m.). The dates, times, and addresses for the public scoping meetings are:

Fresno ANGB	**NAS Lemoore**
In-person meeting	**In-person meeting**
August 9, 2022	August 10, 2022
2:00 to 4:00 p.m. and 5:00 to 7:00 p.m.	2:00 to 4:00 p.m. and 5:00 to 7:00 p.m.
Piccadilly Inn Airport	L.T.A. Portuguese Hall
5115 E McKinley Ave	470 Champion St
Fresno, CA 93727	Lemoore, CA 93245
Virtual meeting	**Virtual meeting**
August 25, 2022	August 25, 2022
5:30 to 6:30 p.m.	5:30 to 6:30 p.m.
www.ANGF15EX-F35A-EIS.com	www.ANGF15EX-F35A-EIS.com

NAS JRB New Orleans	Barnes ANGB
In-person meeting	**In-person meeting**
August 16, 2022	August 18, 2022
2:00 to 4:00 p.m. and 5:00 to 7:00 p.m.	2:00 to 4:00 p.m. and 5:00 to 7:00 p.m.
Belle Chasse Auditorium	Westfield Intermediate School
8398 LA-23	350 Southampton Rd
Belle Chasse, LA 70037	Westfield, MA 01085
Virtual meeting	**Virtual meeting**
August 23, 2022	August 24, 2022
5:30 to 6:30 p.m.	5:30 to 6:30 p.m.
www.ANGF15EX-F35A-EIS.com	www.ANGF15EX-F35A-EIS.com

In order for the NGB to address your concerns in a timely manner for both the Tribe and the proposed undertaking, please respond to this letter within 30 days of receipt. Please provide comments to Jennifer Harty, Cultural Resources Program Manager (A4), 3501 Fetchet Avenue, Joint Base Andrew, MD 20762-5157 or by email at jennifer.harty@us.af.mil with the subject titled as ATTN: F-15EX_F-35A EIS. Thank you for your assistance.

Sincerely

DAVID L. HALASI-KUN, Colonel, USAF
Commander

3 Attachments:
1. Location Map of the 104 FW at Barnes ANGB
2. Proposed Construction and Modification Tables
3. Area of Potential Effects Maps

TRIBAL HISTORIC PRESERVATION OFFICE

VIA ELECTRONIC MAIL

9 September 2022

jennifer.harty@us.af.mil

Colonel Christopher E Austin, ANG
Commander, 144th Fighter Wing
Department of the Air Force
5323 E McKinley Road
Fresno, CA 93727
Attn: Jennifer Harty

MORONGO BAND OF MISSION INDIANS
A SOVEREIGN NATION

Re: Government to Government
Beddown of F-15EX Eagle II

Dear Colonel Austin:

The Morongo Band of Mission Indians (Tribe/MBMI) Tribal Historic Preservation Office is in receipt of the Department of The Air Force 144th Fighter Wing letter regarding the above referenced project. The proposed Beddown of F-15EX Eagle at the Fresno Air National Guard Base Project is not located within the boundaries of the ancestral territory and traditional use area of the Cahuilla and Serrano people of the Morongo Band of Mission Indians.

Thank you for notifying the MBMI about this project. MBMI encourages your consultation with tribes more closely associated with the lands upon which the project is located.

Respectfully,

Bernadette Ann Brierty

Bernadette Ann Brierty

Tribal Historic Preservation Officer

Morongo Band of Mission Indians

CC: Morongo THPO

12700 Pumarra Road – Banning, CA 92220 – (951) 755-5259 – Fax (951) 572-6004 – THPO@morongo-nsn.gov

DEPARTMENT OF THE NAVY
COMMANDING OFFICER
NAVAL AIR STATION LEMOORE
700 AVENGER AVENUE
LEMOORE CA 93246-5001

IN REPLY REFER TO:
5090
Ser N00/ 9 3 0
27 OCT 2022

Santa Rosa Rancheria Tachi Yokut Tribe
16835 Alkali Drive
P.O. Box 8
Lemoore, CA 93245

Dear Mr. Robert Jeff II:

SUBJECT: NHPA SECTION 106 CONSULTATION REQUEST FOR THE F-15EX EAGLE II AND F-35A OPERATIONAL BEDDOWNS ENVIRONMENTAL IMPACT STATEMENT

This letter is in response to your correspondence addressed to Department of the Air Force (DAF) dated 30 August 2022 requesting to be a consulting party under the National Historic Preservation Act (NHPA) Section 106 for the subject EIS. This undertaking includes aircraft changes, personnel increases, and construction activities in support of the beddown of one F-15EX Eagle II squadron at two of three alternative locations and one squadron of F-35A Lighting II aircraft at one of four alternative locations. Naval Air Station (NASL) is proposed as one of the four alternatives for the beddown of the F-35A.

The DAF and National Guard Bureau (NGB) are the lead agencies for the proposed action. The navy is a cooperating agency for this EIS because the scope of the proposed action and alternatives involve activities that may occur on naval installations. If NASL is selected as a beddown location, then as the landowner, the navy will be the federal agency responsible for NHPA Section 106 consultations concerning activities that occur on the installation.

This letter acknowledges the navy has received the Santa Rosa Rancheria Tachi Yokut Tribe's request to be a consulting party under the Section 106 consultation process. We appreciate the Tribe's coordination on this project and for providing points of contact for this undertaking. We look forwarding to working with your office as the environmental analysis develops.

My point of contact for this matter is Richard Bark, who may be reached at COMM: (619) 705-5664 or e-mail: Richard.G.Bark.civ@us.navy.mil.

Sincerely,

DOUGLAS M. PETERSON
Captain, United States Navy
Commanding Officer

QUAPAW NATION

P.O. Box 765
Quapaw, OK 74363-0765

(918) 542-1853
FAX (918) 542-4694

February 17, 2023

ATTN: Jennifer Harty, Cultural Resources Program Manager
Air National Guard Readiness Center
3501 Fetchet Ave
Joint Base Andrew, MD 20762-5157

Re: 159 FW installation in Plaquemines Parish, LA.

Dear Jennifer Harty,

The Quapaw Nation Historic Preservation Program (QNHPP) has received and reviewed the information provided for the proposed 159 FW installation in Plaquemines Parish, LA.

After reviewing this project, we have determined that it is not located within our tribal area of interest; therefore, we decline comment on this project. We also request that we be removed from your agencies' list of tribes that wish to consult on undertakings for this particular county.

Thank you for updating your records and for contacting the Quapaw Nation. Should you have any questions or need any additional information, please feel free to contact me at the number listed below.

Sincerely,

Everett Bandy

-Everett Bandy
Preservation Officer/ QNHPP Director
Quapaw Nation
P.O. Box 765
Quapaw, OK 74363
(w) 918-238-3100
(f) 918-674-2456

-----Original Message-----
From: Ryan Nordness <Ryan.Nordness@sanmanuel-nsn.gov>
Sent: Wednesday, March 1, 2023 4:29 PM
To: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Subject: [Non-DoD Source] NHPA/NEPA Notice for the EO 12372, Fresno, CA

Dear Jennifer,

Thank you for contacting the Yuhaaviatam of San Manuel Nation (formerly known as the San Manuel Band of Mission Indians) regarding the above- referenced project. YSMN appreciates the opportunity to review the project documentation, which was received by the Cultural Resources Management Department on February 22nd 2023. The proposed project is located outside of Serrano ancestral territory and, as such, YSMN will not be requesting to receive consulting party status with the lead agency or to participate in the scoping, development, or review of documents created pursuant to legal and regulatory mandates.

Kind regards,

Ryan Nordness

Cultural Resource Analyst

Yuhaaviatam of San Manuel Nation

Ryan Nordness
Cultural Resource Analyst
Ryan.Nordness@sanmanuel-nsn.gov
O:(909) 864-8933 Ext 50-2022
M:(909) 838-4053
26569 Community Center Dr Highland, California 92346

<https://cdnep-uxm-prod-001.azureedge.net/logos/SMBMI_Logo.png>

Subject: Walker River Paiute Tribe reply ATTN: F-15EX_F-25A EIS

From: Stacy Hicks <shicks@wrpt.org>
Sent: Wednesday, March 15, 2023 2:00 PM
To: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Subject: [Non-DoD Source] Walker River Paiute Tribe

Good morning,

The Walker River Paiute Tribe has received the letter regarding the consultation and coordination with Indian Tribal Governments; EO 12372. We would like to be included in the consultation process and you can direct all mail to our new Tribal Chairman Olen McCloud, PO Box 220, Schurz, NV, 89427, and his email is omccloud@wrpt.org

Thank you,

Stacy Hicks
Vice Chairman/Tribal Administrator

-----Original Message-----
From: Jesse Bergevin <jbergevin@oneida-nation.org>
Sent: Wednesday, March 15, 2023 9:32 AM
To: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Subject: [URL Verdict: Neutral][Non-DoD Source] ATTN: F-15EX_F-35A EIS

Ms. Harty.

The Oneida Indian Nation has no comments regarding the proposed EIS described in your letter of February 13, 2023, and does not wish to be a Section 106 consulting party for the project.

Please let me know if there are any questions.

Best Regards,

Jesse Bergevin
Historical Resources Specialist

ONEIDA INDIAN NATION

P: 315.829.8463
2037 Dream Catcher Plaza
Oneida, NY 13421
<https://www.oneidaindiannation.com/>

SANTA ROSA RANCHERIA TACHI YOKUT TRIBE

16 March 2023

ATTN: Jennifer Harty
Cultural Resources Program Manager
Air National Guard Readiness Center
3501 Fetchet Avenue,
Joint Base Andrews MD 20762-5157

Re: NHPA Section 106 Formal Consultation Request for **the Proposed 21 F-15EX Eagle 2 and 21 F-35A Lightning 2 ANG Fighter Wings (F-15EX_F-35A EIS)**

Dear Ms. Jennifer Harty,

Santa Rosa Rancheria Tachi Yokut Tribe respectfully requests to be a consulting party under the National Historic Preservation Act (NHPA) Section 106 Formal Consultation Request for the **Proposed 21 F-15EX Eagle 2 and 21 F-35A Lightning 2 ANG Fighter Wings (F-15EX_F-35A EIS).** Federal law requires the United States Department of Agriculture to take into account the potential effects of a proposed undertaking on properties eligible for listing on the National Register of Historic Places or those identified by Indian Tribes as religiously and culturally significant. Specifically, Section 106 of the NHPA contemplates the participation of federally recognized tribes as "consulting parties" during the evaluation of proposed federal undertakings that could potentially affect properties with cultural, historic, or religious significance as identified by Indian Tribes.

As a "consulting party", an Indian Tribe may actively participate in the Section 106 process by identifying and articulating concerns and offering advice regarding potential effects of the Section 106 Formal Consultation Request for the **(F-15EX_F-35A EIS)** undertaking on tribally identified historic properties. In effect, Section 106 of the NHPA allows Indian Tribes, due to their special expertise, to assist lead agencies in identifying significant cultural and historic properties throughout the planning process.

The Tribe is aware of several cultural and religious significant sites and landscapes that may be adversely affected by this proposed undertaking.

The Tribe intends to participate through consultation at each stage of the review process of Section 106 Formal Consultation Request for the **(F-15EX_F-35A EIS)** to ensure that potential effects by the proposed undertaking on Tribal cultural resources are properly identified, addressed, and the effects are mitigated in a culturally respectful manner. The Tribe hereby identifies our Tribal contacts for this undertaking to be:

16835 Alkali Dr. | P.O. Box 8 | Lemoore, CA 93245 | 559.924.1278 | Fax 559.925.2931
Tax Exempt #94-2344086

1. Leo Sisco, Tribal Chairperson
   Office: (559) 924-1278

2. Shana Powers, Cultural Department Director:
   Office: (559) 924-1278 Ext: 4093
   Cell: (559) 423-3900
   Email: SPowers@tachi-yokut-nsn.gov

3. Samantha McCarty, Cultural Specialist II
   Office: (559) 924-1278 Ext: 4091
   Cell: (559) 633-6640
   Email: SMcCarty@tachi-yokut-nsn.gov

In addition, in the event of an Unanticipated Discovery, Unanticipated Adverse Effect or Unanticipated Damage with respect to archaeological sites or human remains, please also contact by phone and e-mail a copy of the notice to:

1. Shana Powers, Cultural Department Director:
   Office: (559) 924-1278 Ext: 4093
   Cell: (559) 423-3900
   Email: SPowers@tachi-yokut-nsn.gov

2. Samantha McCarty, Cultural Specialist II
   Office: (559) 924-1278 Ext: 4091
   Cell: (559) 633-6640
   Email: SMcCarty@tachi-yokut-nsn.gov

The Tribe looks forward to consulting with the National Guard Bureau on this important undertaking. If you have any questions on this request, please contact SRR Cultural Director Powers immediately.

Respectfully,

Leo Sisco

Leo Sisco, Tribal Chairman of the Santa Rosa Rancheria

CC: **ANY CC**

Subject: Choinumni Tribe reply ATTN: F-15EX_F-25A EIS

-----Original Message-----
From: Lorrie Beck <lorriebeck44@gmail.com>
Sent: Monday, March 20, 2023 5:37 PM
To: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Subject: [Non-DoD Source] ATTN: F-15EX_F-25A EIS

Dear Jennifer L. Harty,

I am in receipt of your certified mail regarding the above named project. I do not have any concerns regarding the project.

In the future, it is not necessary to send consultation letters with certified mail.

Thank you.

Lorrie Planas
Choinumni Tribe

From: Jonathan Rohrer <noreply@jotform.com>
Sent: Tuesday, March 21, 2023 2:09 PM
To: NGB A4/A4A NEPA COMMENTS Org <NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil>
Subject: [URL Verdict: Neutral][Non-DoD Source] Air National Guard F-15EX Eagle II & F-35A Lightning II Operational Beddowns Environmental Impact Statements -

Sheppard

Thank you for your request for consultation, received on 03-20-2023. The Caddo Nation appreciates your willingness to conduct proper consultation, pursuant to Section 106 of the National Historic Preservation Act.

Upon review of the project and location I have determined that it does not affect known cultural, traditional or sacred sites of interest to the Caddo Nation. As such, the Caddo Nation has no objection to the project at this time. However, in the event that an inadvertent discovery of potentially relevant cultural sites, funerary objects, or human remains occurs, we request that the project be immediately halted and the proper authorities be contacted. Additionally, The Caddo Nation would need to be notified of an inadvertent discovery with 24 hours.

Should you have any question or concerns regarding this response please feel free to contact our office.

Best regards,

Jonathan

Jonathan M. Rohrer
Tribal Historic Preservation Officer

Caddo Nation
P.O. Box 487
Binger, OK 73009
t: (405)656-0970 Ext. 2070
e: jrohrer@mycaddonation.com

www.mycaddonation.com

From: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN
To: omccloud@wrpt.org
Cc: Stacy Hicks; STRICKLAND, WILLIAM K CIV USAF ANGRC NGB/A4AM
Subject: re: F-15EX_F-25A EIS
Date: Thursday, March 23, 2023 2:44:02 PM

Good afternoon Chairman McCloud,

I received this notice that the Walker River Paiute request consultation on our proposed EIS. I believe your office has received all of our preliminary information. If you have specific concerns we can schedule a call to discuss them, or if you would just like to talk about the project we can do that as well. I am out of the office all next week but will be returning the following week.

Thank you for reaching out and we look forward to working with you on this project.

Respectfully,

V/R,

//SIGNED//
JENNIFER L. HARTY, M.A., RPA, GS-13, DAF
Cultural Resources Program Manager
Tribal Liaison
NGB/A4VN Environmental Quality
Air National Guard Readiness Center
3501 Fetchet Drive, Joint Base Andrews, MD 20762

NIPR: jennifer.harty@us.af.mil
:8
https://intelshare.intelink.gov/sites/vemo/SitePages/Program.aspx?Program=3

Comm: 240-612-8541| DSN: 612-8541 | TW Cell: 701-202-7066

From: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN
To: Samantha McCarty
Cc: Shana Powers; Nichole Escalon; STRICKLAND, WILLIAM K CIV USAF ANGRC NGB/A3/6/9
Subject: Re: ATTN: F-15EX_F-35A EIS
Date: Sunday, March 26, 2023 7:19:04 PM

Hi Samantha,

We received your request for consultation and will make sure your request gets to Navy points of contact at Lemoore. We will also follow up with them to make sure they received it.

Respectfully,

Jennifer

From: Samantha McCarty <SMcCarty@tachi-yokut-nsn.gov>
Sent: Friday, March 24, 2023 6:27 PM
To: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Cc: Shana Powers <SPowers@tachi-yokut-nsn.gov>; Nichole Escalon <nescalon@tachi-yokut-nsn.gov>
Subject: [JR_ Verdict: Neutral][Non-DoD Source] RE: ATTN: F-15EX_F-35A EIS

Hi Jennifer,

Thank you for getting back to me! Attached is the Formal Section 106 Consultation Letter. Please let me know if you have any questions, comments, and or concerns. Thank you.

Sincerely,
Samantha McCarty
Santa Rosa Rancheria Tachi-Yokut Tribe
Cultural Specialist II
SMcCarty@tachi-yokut-nsn.gov
Office: (559) 924-1278 x 4091
Cell: (559) 633-6640

*PLEASE KEEP ALL CULTURAL STAFF IN EMAILS UNLESS STATED OTHERWISE

-----Original Message-----
From: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Sent: Wednesday, March 22, 2023 11:02 AM
To: Samantha McCarty <SMcCarty@tachi-yokut-nsn.gov>
Cc: Shana Powers <SPowers@tachi-yokut-nsn.gov>; Nichole Escalon <nescalon@tachi-yokut-nsn.gov>
Subject: RE: ATTN: F-15EX_F-35A EIS

Hi Samantha,

I have to apologize; I had your email open to respond to and then got side- tracked and don't think I responded to you.

We don't have a specific way or format for you to comment or title to use, as long as you make it clear in your comments that they are for the one project at NAS Lemoore. We will also give Navy a heads up that you will have comments/request consultation on that alternative so they will know to expect it. Because we are a tenant at NAS Lemoore and it is Navy owned property, they will be the lead Federal agency for the undertaking there. I will forward any comments to the Navy contacts and when I have their Point of Contact I will forward that to you as well so we all have each other's information.

Thank you for letting us know that you have comments on the Lemoore alternative and we look forward to working with you.

V/R,

/S/CIVLD/
JENNIFER L. HARTY, M.A., RPA, GS-13, DAF Cultural Resources Program Manager Tribal Liaison NGB/A4VN Environmental Quality Air National Guard Readiness Center
3501 Fetchet Drive, Joint Base Andrews, MD 20762

NIPR: jennifer.harty@us.af.mil
:8
https://linkprotect.cudasvc.com/url?a=https%3a%2f%2fintelshare.intelink.gov%2fsites%2fveimo%2fSitePages%2fProgram.aspx%3fProgram%3d3&e=TL13C80JCusxbZ7p87vIvDNfjcR9ID17540CsNp3rYII8ehv_cXJKdihE2PvIbtA-8IkJR1uqLGXcvSRWkO8h8ih5d9RnIWmmEp3ZcSADh87vhDhOPsk&typo=1

Comm: 240-612-8541 DSN: 612-8541 | TW Cell: 701-202-7066

-----Original Message-----
From: Samantha McCarty <SMcCarty@tachi-yokut-nsn.gov>
Sent: Thursday, March 16, 2023 6:05 PM
To: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Cc: Shana Powers <SPowers@tachi-yokut-nsn.gov>; Nichole Escalon <nescalon@tachi-yokut-nsn.gov>
Subject: [Non-DoD Source] ATTN: F-15EX_F-35A EIS

Dear Jennifer,

Thank you for contacting the Santa Rosa Rancheria Tachi-Yokut Tribe
regarding: F-15EX_F-35A EIS. The Tribe will be sending a Formal Section 106 Consultation Request, that will only be for any work done at NAS Lemoore (if any is decided to be done there). Is there a specific way you would prefer we title it as it will only be in reference to one project as opposed to all of the ones included in the letter?

If you have any questions, comments, and or concerns please contact myself or the SRR Cultural Department. Thank you.

Sincerely,

Samantha McCarty

Santa Rosa Rancheria Tachi-Yokut Tribe

Cultural Specialist II

SMcCarty@tachi-yokut-nsn.gov <mailto:SMcCarty@tachi-yokut-nsn.gov>

Office: (559) 924-1278 x 4091

Cell: (559) 633-6640

-----Original Message-----
From: Lindsey Bilyeu <lbilyeu@choctawnation.com>
Sent: Tuesday, April 4, 2023 1:04 PM
To: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Subject: [Non-DoD Source] RE: NGB EIS in Support of Beddown of One Squadron of 21 F-15EX Eagle II Aircraft and One Squadron of 21 F-35A Lightning II Aircraft, BAF, FAT, and NAS JRB

Ms. Harty,

The Choctaw Nation of Oklahoma thanks the National Guard Bureau for the correspondence regarding the above referenced project. The Naval Air Station Joint Base New Orleans lies in our area of historic interest. There is a lot of ground disturbance proposed at the NAS JRB which has the potential to disturb cultural resources.

Has the base ever been surveyed for cultural resources and are there any known cultural resources located in the proposed APEs?

Also, in the future, please provide correspondence via email. This will help make the consultation process more efficient as the projects will come directly to me rather than having to be routed through the mail. You can email me directly at, lbilyeu@choctawnation.com <mailto:lbilyeu@choctawnation.com> .

If you have any questions, please contact me.

Thank you,

Lindsey D. Bilyeu, M.S.

Program Coordinator 2

Choctaw Nation of Oklahoma

Historic Preservation Department

P.O. Box 1210

Durant, OK 74702

Office: (580) 642-8377

Cell: (580) 740-9624

From: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN
To: Lindsey Bilyeu
Cc: Calabrese, John A CIV USN NAVFAC SE JAX FL (USA); Clayton, Adonna N CIV USN NAVFAC SE JAX FL (USA); STRICKLAND, WILLIAM K CIV USAF ANGRC NGB/A4AM; Rogers, William CIV USN CNIC WASHINGTON DC (USA); Kemp, Royce B CIV USN NAVFAC SE JAX FL (USA); Winter, Leonard E CIV USN NAVFAC SE JAX FL (USA)
Subject: RE: [Non-DoD Source] RE: NGB EIS in Support of Beddown of One Squadron of 21 F-15EX Eagle II Aircraft and One Squadron of 21 F-35A Lightning II Aircraft, BAF, FAT, and NAS JRB
Date: Monday, April 10, 2023 1:52:37 PM

Ms. Bilyeu,

Thank you for your response and interest in our undertaking at JRB NOLA. As of right now, there is no selected or preferred alternative for this project, but we did reach out to the Department of the Navy with your questions. Here is their response.

Undisturbed portions of the base were surveyed in 1999. No cultural resources were identified during that survey. Later, during smaller project-specific surveys, two historic scatters were recorded and one NRHP-eligible historic pumping site was recorded. To date, no precontact materials have been identified on the base.

If JRB NOLA becomes the preferred alternative or is selected for the project, please be aware that we would be a tenant on the base. Because we would be a tenant, the Navy would be the lead in any further consultation.

Thanks again for reaching out and assisting us with this undertaking.

V/R,

//SIGNED//
JENNIFER L. HARTY, M.A., RPA, GS-13, DAF
Cultural Resources Program Manager
Tribal Liaison
NGB/A4VN Environmental Quality
Air National Guard Readiness Center
3501 Fetchet Drive, Joint Base Andrews, MD 20762

NIPR: jennifer.harty@us.af.mil
:8
https://intelshare.intelink.gov/sites/vemo/SitePages/Program.aspx?Program=3

Comm: 240-612-8541| DSN: 612-8541 | TW Cell: 701-202-7066

From: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN
To: oddist lambrecht
Cc: STRICKLAND, WILLIAM K CIV USAF ANGRC NGB/A4AM
Subject: RE: [Non-DoD Source] ATTN: F-15EX F 35 A EIS
Date: Monday, April 17, 2023 2:06:40 PM

Good afternoon,

Thank you for taking the time to provide your updated contact information. We will update our records and keep you informed of future project-related changes. Please be aware that because our project in Louisiana is proposed for the Naval Reserve Base New Orleans, Navy will be the lead Federal agency for consultation.

Thanks again and have a great week!

V/R,

//SIGNED//
JENNIFER L. HARTY, M.A., RPA, GS-13, DAF
Cultural Resources Program Manager
Tribal Liaison
NGB/A4VN Environmental Quality
Air National Guard Readiness Center
3501 Fetchet Drive, Joint Base Andrews, MD 20762

NIPR: jennifer.harty@us.af.mil
:8 https://intelshare.intelink.gov/sites/vemo/SitePages/Program.aspx?Program=3

Comm: 240-612-8541| DSN: 612-8541 | TW Cell: 701-202-7066

-----Original Message-----
From: oddist lambrecht <otto71211@yahoo.com>
Sent: Saturday, April 15, 2023 7:44 PM
To: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Subject: [Non-DoD Source] ATTN: F-15EX F 35 A EIS

Dear Mrs. Harty, I am with the Four Winds Tribe Louisiana Cherokee our new address is P.O.Box 836 and 101 East 6th Ave Oakdale, La. 71463 and 318-215-8055. I looked at the material you sent we are not in the area of construction. We are in a area you show to be (Warrior 2 & 3 MOA). Our people are mostly in the S/W Louisiana area. However a very active environment Chief Shirel Parfait- Dardar of the {Grand Caillou / Dulac Band of Biloxi - Chitimacha Choctaw} is in that area and would probably appreciate a letter. Their address 5057 Bayouside Drive, Chauvin, Louisiana 70344. She was just on the front of the Alexandria Town Talk newspaper and was just honored as woman of the year for her work. Thank You for your input. Oddist Lambrecht - Pakana - Solicitor

-----Original Message-----
From: Lindsey Bilyeu <lbilyeu@choctawnation.com>
Sent: Friday, May 12, 2023 11:33 AM
To: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Subject: RE: [Non-DoD Source] RE: NGB EIS in Support of Beddown of One Squadron of 21 F-15EX Eagle II Aircraft and One Squadron of 21 F-35A Lightning II Aircraft, BAF, FAT, and NAS JRB

Ms. Harty,

Thank you for the additional information. Our office has reviewed the documents provided and we concur with the finding of "no historic properties affected". However, we ask that work be stopped, and our office contacted immediately, in the event that Native American artifacts or human remains are encountered.

If you have any questions, please contact me.

Thank you,

Lindsey D. Bilyeu, M.S.
Program Coordinator 2
Choctaw Nation of Oklahoma
Historic Preservation Department
P.O. Box 1210
Durant, OK 74702
Office: (580) 642-8377
Cell: (580) 740-9624

-----Original Message-----
From: HARTY, JENNIFER L CIV USAF ANG NGB/A4VN <jennifer.harty@us.af.mil>
Sent: Monday, April 10, 2023 2:53 PM
To: Lindsey Bilyeu <lbilyeu@choctawnation.com>
Cc: Calabrese, John A CIV USN NAVFAC SE JAX FL (USA) <john.a.calabrese4.civ@us.navy.mil>; Clayton, Adonna N CIV USN NAVFAC SE JAX FL (USA) <adonna.n.clayton.civ@us.navy.mil>; STRICKLAND, WILLIAM K CIV USAF ANGRC NGB/A4AM <william.strickland.7@us.af.mil>; Rogers, William CIV USN CNIC WASHINGTON DC (USA) <william.rogers5.civ@us.navy.mil>; Kemp, Royce B CIV USN NAVFAC SE JAX FL (USA) <royce.b.kemp2.civ@us.navy.mil>; Winter, Leonard E CIV USN NAVFAC SE JAX FL (USA) <leonard.e.winter2.civ@us.navy.mil>
Subject: RE: [Non-DoD Source] RE: NGB EIS in Support of Beddown of One Squadron of 21 F-15EX Eagle II Aircraft and One Squadron of 21 F-35A Lightning II Aircraft, BAF, FAT, and NAS JRB

Ms. Bilyeu,

Thank you for your response and interest in our undertaking at JRB NOLA. As of right now, there is no selected or preferred alternative for this project, but we did reach out to the Department of the Navy with your questions. Here is their response.

Undisturbed portions of the base were surveyed in 1999. No cultural resources were identified during that survey. Later, during smaller project-specific surveys, two historic scatters were recorded and one NRHP-eligible historic pumping site was recorded. To date, no precontact materials have been identified on the base.

If JRB NOLA becomes the preferred alternative or is selected for the project, please be aware that we would be a tenant on the base. Because we would be a tenant, the Navy would be the lead in any further consultation.

Thanks again for reaching out and assisting us with this undertaking.

V/R,

//SIGNED//
JENNIFER L. HARTY, M.A., RPA, GS-13, DAF Cultural Resources Program Manager
Tribal Liaison NGB/A4VN Environmental Quality Air National Guard Readiness Center
3501 Fetchet Drive, Joint Base Andrews, MD 20762

NIPR: jennifer.harty@us.af.mil
:8
https://intelshare.intelink.gov/sites/vemo/SitePages/Program.aspx?Program=3

☎ Comm: 240-612-8541| ☎ DSN: 612-8541 | ☎ TW Cell: 701-202-7066

QUAPAW NATION

P.O. Box 765
Quapaw, OK 74363-0765

(918) 542-1853
FAX (918) 542-4694

September 29, 2023

John A. Calabrese, PhD
Staff Archaeologist
Naval Facilities Engineering Command Southeast
Naval Air Station Jacksonville
Building 919
Jacksonville, FL 32212

Re: Naval Air Station Joint Reserve Base, Plaquemines Parish, New Orleans

Dear John A. Calabrese, PhD.,

The Quapaw Nation Historic Preservation Program (QNHPP) has received and reviewed the information provided for the proposed Naval Air Station Joint Reserve Base, Plaquemines Parish, New Orleans.

After reviewing this project, we have determined that it is not located within our tribal area of interest; therefore, we decline comment on this project. We also request that we be removed from your agencies' list of tribes that wish to consult on undertakings for this particular county.

Should you have any questions or need any additional information, please feel free to contact Cheyenne Greenup at Cheyenne.greenup@quapawnation.com, please copy section106@quapawnation.com to insure additional informational request are reviewed in a timely manner. Thank you for consulting with the Quapaw Nation on this matter.

Sincerely,

Cheyenne Greenup

On behalf of
-Everett Bandy
Preservation Officer/ QHPP Director
Quapaw Nation
P.O. Box 765
Quapaw, OK 74363
(w) 918-238-3100

From: Lindsey Bilyeu <lbilyeu@choctawnation.com>
Sent: Friday, October 13, 2023 7:30 PM
To: Calabrese, John A CIV USN NAVFAC SE JAX FL (USA) <john.a.calabrese4.civ@us.navy.mil>
Subject: [Non-DoD Source] RE: JRB NOLA EIS

Dr. Calabrese,

The Choctaw Nation of Oklahoma thanks you for the correspondence regarding the above referenced project. This project lies in our area of historic interest. The Choctaw Nation is unaware of any cultural or sacred sites in the immediate project area. Our office concurs with the finding of "no historic properties affected". However, we ask that work be stopped, and our office contacted immediately, in the event that Native American artifacts or human remains are encountered.

If you have any questions, please contact me.

Yakoke (thank you),

Lindsey D. Bilyeu
Program Coordinator II
NHPA Compliance Review
Historic Preservation
Choctaw Nation of Oklahoma
Desk Phone: 580-642-8377
Cell Phone: 580-740-9624

From: Calabrese, John A CIV USN NAVFAC SE JAX FL (USA) <john.a.calabrese4.civ@us.navy.mil>
Sent: Wednesday, September 13, 2023 4:03 PM
To: Lindsey Bilyeu <lbilyeu@choctawnation.com>
Cc: Clayton, Adonna N CIV USN NAVFAC SE JAX FL (USA) <adonna.n.clayton.civ@us.navy.mil>
Subject: JRB NOLA EIS

Ms. Bilyeu:

The Navy is proposing to support aircraft beddowns at Joint Reserve Base New Orleans. Attached is a letter inviting your tribe to consult on the Environmental impact statement for this action pursuant to the terms of Section 106 of the National Historic Preservation Act of 1966 and the National Environmental Policy Act.

Thank you for your time and attention to this matter.

Very Respectfully,

John Calabrese

John A. Calabrese, PhD
Staff Archaeologist
Naval Facilities Engineering Command Southeast

Naval Air Station Jacksonville
Building 919
Jacksonville, FL 32212

A3 State Historic Preservation Office (SHPO) Correspondence

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The sample scoping letter following was distributed to the list below:

104th Fighter Wing, Barnes Air National Guard Base, MA

Ms. Brona Simon, State Historical Preservation Officer, Secretary of the Commonwealth, Massachusetts Historical Commission, 220 Morrissey Blvd, Boston, MA 02125-3314

144th Fighter Wing, Fresno Air National Guard Base, CA

Ms. Julianne Polanco, California Office of Historic Preservation, State Historic Preservation Officer, 1725 23rd St, Ste 100, Sacramento, CA 95816

144th Fighter Wing, Naval Air Station Lemoore, CA

Ms. Julianne, Polanco, California Office of Historic Preservation, State Historic Preservation Officer, 1725 23rd St, Ste 100, Sacramento, CA 95816

159th Fighter Wing, Naval Air Station Joint Reserve Base New Orleans, Belle Chasse, LA

Ms. Kristin, Sanders, State Historic Preservation Officer, Office of Cultural Development, PO Box 44247, Baton Rouge, LA 70804

Sample SHPO Letter

NATIONAL GUARD BUREAU
3501 FETCHET AVENUE JOINT BASE ANDREWS 20762-5157

JUL 25 2022

Jennifer Harty
Cultural Resources Program Manager
Air National Guard Readiness Center
3501 Fetchet Avenue,
Joint Base Andrews MD 20762-5157

California Office of Historic Preservation
Ms. Julianne Polanco
State Historical Preservation Officer
1725 23rd St, Ste 100
Sacramento, CA 95816

Dear Ms. Polanco

The National Guard Bureau (NGB) would like to initiate consultation with your office under Section 106 of the National Historic Preservation Act of 1966 (NHPA), and its implementing regulations (36 CFR § 800).

Pursuant to the National Environmental Policy Act of 1969 (42 USC 4321 et seq.), the NGB is preparing an Environmental Impact Statement for a proposed undertaking that will analyze potential effects to human health and the natural environment, including historic and traditional cultural properties. The undertaking includes aircraft changes, personnel increases, and construction activities in support of the beddown of one F-15EX Eagle II squadron at two of three alternative locations and one squadron of F-35A Lightning II aircraft at one of four alternative locations, including Fresno Air National Guard Base (ANGB), located at the Fresno Yosemite International Airport, California (Attachment 1). The other three locations include Barnes ANGB, located at Westfield-Barnes Regional Airport in Westfield, Massachusetts; Naval Air Station (NAS) Lemoore, California; and NAS Joint Reserve Base (JRB) New Orleans, Belle Chasse, Louisiana.

The F-15EX would replace existing F-15C/D aircraft at two installations analyzed. The F-35A would replace existing F-15C/D aircraft at one of the installations analyzed. This action would involve the beddowns of two F-15EX squadrons consisting of 21 aircraft at the selected installation locations. The action would also involve the beddown of one F-35A squadron consisting of 21 aircraft at the selected installation location.

The purpose of the undertaking is to maintain combat capability and mission readiness in the full spectrum of Department of the Air Force (DAF) aircraft as the Air National Guard (ANG) faces deployments for conflicts abroad, while also providing for homeland defense. The proposed beddown and operation of the F-15EX and the F-35A would represent a significant step toward meeting the DAF's goals. The beddown action and follow-on training would ensure availability of combat-ready pilots utilizing the most advanced fighter aircraft in the world. The action is needed to replace aging F-15C/D aircraft, which would be retired from service due to the age of the aircraft and the resulting maintenance costs.

The DAF and the NGB are the lead agencies for the Proposed Action. The Federal Aviation Administration (FAA) and Department of the Navy (Navy) are cooperating agencies because two of the alternative locations are on joint-use airfields where the FAA would have a federal action in approving changes to the Airport Layout Plan, and two of the alternative locations are on Navy installations where the Navy has special expertise and may have a connected federal action.

The Area of Potential Effects (APE) for the proposed undertaking includes areas of proposed ground disturbance (including areas for newly constructed buildings), facilities that would be renovated, air-to-ground ranges, and lands located beneath existing operations/training airspace to include Military Operations Areas and Air Traffic Control Assigned Airspace (Attachment 2). Attachment 3 includes tables of the proposed construction and modifications at Fresno ANGB.

The NGB invites you to attend an agency meeting, held from 2:00 to 4:00 p.m., just prior to public scoping meetings being held from 5:00 to 7:00 p.m. We will be holding both virtual and in-person meetings for each location. The dates, times, and addresses for the scoping meetings are listed below:

Fresno ANGB	**NAS Lemoore**
In-person meeting	**In-person meeting**
August 9, 2022	August 10, 2022
2:00 to 4:00 p.m. and 5:00 to 7:00 p.m.	2:00 to 4:00 p.m. and 5:00 to 7:00 p.m.
Piccadilly Inn	L.T.A. Portuguese Hall
5115 E McKinley Ave	470 Champion St
Fresno, CA 93727	Lemoore, CA 93245
Virtual meeting	**Virtual meeting**
August 25, 2022	August 25, 2022
5:30 to 6:30 p.m.	5:30 to 6:30 p.m.
www.ANGF15EX-F35A-EIS.com	www.ANGF15EX-F35A-EIS.com

NAS JRB New Orleans	Barnes ANGB
In-person meeting	**In-person meeting**
August 16, 2022	August 18, 2022
2:00 to 4:00 p.m. and 5:00 to 7:00 p.m.	2:00 to 4:00 p.m. and 5:00 to 7:00 p.m.
Belle Chasse Auditorium	Westfield Intermediate School
8398 LA-23	350 Southampton Rd
Belle Chasse, LA 70037	Westfield, MA 01085
Virtual meeting	**Virtual meeting**
August 23, 2022	August 24, 2022
5:30 to 6:30 p.m.	5:30 to 6:30 p.m.
www.ANGF15EX-F35A-EIS.com	www.ANGF15EX-F35A-EIS.com

In accordance with 36 CFR § 800.4(a)1, we are providing your office with this opportunity to comment on our proposed APE for this undertaking. Please respond in writing to the NGB within the 30-day comment period. Thank you for your prompt attention to this matter.

Please provide any comments to me at 3501 Fetchet Avenue, Joint Base Andrews, MD 20762-5157 or by email at jennifer.harty@us.af.mil. Thank you for your assistance and we look forward to working with you on this undertaking.

Sincerely

Jennifer L. Harty, GS-13, DAF
Cultural Resources Program Manager

3 Attachments:
1. General Location of Fresno ANGB
2. Area of Potential Effects Maps
3. Proposed Construction Tables

DEPARTMENT OF T
NAVAL FACILITIES ENGINEERING SYSTEI
JACKSONVILLE, FL 32

No known historic properties will be affected by this undertaking. Therefore, our office has no objection to the implementation of this project. This effect determination could change should new information come to our attention.

Kristin P. Sanders

Kristin P. Sanders
State Historic Preservation Officer
Date 10/2/2023

Ms. Kristin Sanders
State Historic Preservation Officer
P. O. Box 44247
Baton Rouge, LA 70804

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT

The Department of the Air Force (DAF) and the National Guard Bureau (NGB) is preparing an Environmental Impact Statement (EIS) for a proposed undertaking for three fighter wings, including the 159th Fighter Wing (159 FW), located at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, Belle Chasse, Louisiana (LA). The other two fighter wings include the 144th Fighter Wing (144 FW), located at the Fresno Yosemite International Airport, California (CA); and the 104th Fighter Wing (104 FW), located at Westfield-Barnes Regional Airport in Westfield, Massachusetts (MA).

The DAF and the NGB are the lead agencies for the Proposed Action. The Federal Aviation Administration (FAA) and Department of the Navy (DON) are cooperating agencies because two of the Fighter Wings are on civilian airfields where the FAA would have a federal action in approving changes to the Airport Layout Plan and one of the Fighter Wings in on DON installation where the DON has special expertise and may have a connected federal action.

The environmental analysis for the Undertaking is being conducted by the DAF and the NGB in accordance with the Council on Environmental Quality guidelines pursuant to the National Environmental Policy Act of 1969. The Draft EIS is available at: https://www.angf15ex-f35a-eis.com/.

The purpose of this letter is to initiate consultation pursuant to the terms of Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations found at 36 Code of Federal Regulations § 800. This letter serves to define the Area of Potential Effects (APE) for the undertaking and gauge project effects located within the bounds of the proposed action.

Background

The 159 FW installation of the Louisiana Air National Guard is located within the boundaries of NAS JRB New Orleans. The 159 FW installation is 16 miles south of downtown New Orleans, LA in the northern part of Plaquemines Parish. The 159 FW installation comprises approximately 111 acres.

The 159 FW is tasked to carry out both federal and state missions. The federal mission is to maintain well-trained, well-equipped units available for prompt mobilization during war and provide assistance during national emergencies (e.g., natural disasters or civil disturbances). The state mission is to provide protection of life, property and preserve peace and order and public safety as directed by the Governor of Louisiana. The 159 FW currently flies and maintains 18 PAA F-15C/D fighter aircraft.

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The Proposed Action

The purpose of the Proposed Action is to maintain combat capability and mission readiness for the Air National Guard (ANG) 104 FW in Westfield-Barnes, MA; 144 FW in Fresno, CA; and 159 FW in New Orleans, LA. Beddown and operation of the F-15EX and F-35A to replace the aging F-15C/D fleet at the 104 FW, 144 FW and 159 FW would enable this goal. These beddown actions and associated training would ensure availability of combat-ready pilots in the most advanced fighter aircraft in the world.

The Proposed Action includes additional personnel needed to operate and maintain the F-15EX or F-35A and construction of new and/or modification of existing facilities on the installations supporting the beddowns. Pilots operating the aircraft would conduct training from the installation and in existing Special Use Airspace (SUA) associated with each proposed location. No new SUA or reconfiguration of existing SUA is proposed to support the ANG beddowns for any of these fighter wings; however, there would likely be an increase in operations within the SUA. Two existing SUAs, Warrior 1 Military Operations Area (MOA) and Warrior 2 MOA, overly both LA and Texas (TX).

If the 159 FW is selected to receive one squadron of F-15EX or F-35A aircraft, there are four components of this action at the 159 FW installation: (1) conversion from F-15C/Ds to F-15EX or F 35As, (2) operations conducted at the airfield and within the SUA by F-15EX or F-35A aircraft, (3) construction and modification projects to support beddown of the F-15EX or F-35A and (4) personnel changes to meet the requirements for either aircraft.

No Action Alternative

Under the No Action Alternative, no F-15EX or F-35A operational aircraft would be based, no personnel changes or construction (even construction for the F-15C/D legacy aircraft) would be performed, and no training activities by the F-15EX or F-35A operational aircraft would be conducted in the airspace. Under the No Action Alternative, the 159 FW would continue to conduct its current mission using existing, legacy aircraft with multiple configurations and existing infrastructure. No infrastructure or facility construction would occur in support of the mission under the No Action Alternative.

Area of Potential Effects

An APE is defined in 36 CFR Section 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist." The APE for the Proposed Action encompasses the areas where ground-disturbing activities, including new construction, building renovations and modifications and where building demolitions would occur. The APE is also defined as the areas affected by noise levels of 65 decibels (dB) day-night average sound level (DNL) and greater from the aircraft operations at the airfield. The areas affected by noise generated and release of chaff and flares underlying the SUAs also fall under the APE. Enclosure (1) includes maps of the APE.

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Installation Resources

Twelve archaeological surveys have been completed at NAS JRB New Orleans from 1975 to 2022, though the entirety of the installation's approximate 3,342 acres has not been surveyed. One resource, the mid-nineteenth century historic pumping station (Site 16PL164), located within the 159 FW installation boundary, was recommended as eligible for listing in the National Register of Historic Places (NRHP) (NAVFAC Southeast 2008a).

A comprehensive architectural inventory and evaluation of built resources at NAS JRB New Orleans was completed in 2008. No districts, buildings or structures were recommended as NRHP eligible for listing in the NRHP as a result of the architectural inventory (NAVFAC Southeast 2008b). There are no NRHP-eligible or listed architectural properties, historic districts or historic landscapes at NAS JRB New Orleans (NAVFAC Southeast 2008a).

To date, no traditional cultural resources or Native American sacred places have been identified at NAS JRB New Orleans (NAVFAC Southeast 2008a).

There are no NRHP-listed historic properties located within the proposed F-15EX/F-35A 65 dB DNL or greater noise contours surrounding the airfield (National Park Service 2022b).

Airspace Resources

Thirty-nine NRHP-listed sites underlay the airspace on lands beneath the SUA used by 159 FW in LA (National Park Service 2022a). These historic properties include historic houses, a plantation, churches, courthouse and associated jail, a bridge, a railroad depot, schools, a rustic country store, earthwork fortifications, a log cabin, a hospital building, a United Service Organizations building, a set of grave shelters and historic districts.

Table 1. NRHP-Listed Historic Properties Beneath SUA used by 159 FW in LA

SUA	*Number of NRHP Properties Under Airspace*
Snake MOA	1
Warrior 1 MOA	21
Warrior 2 MOA	14
Warrior 3 MOA	3

Legend: MOA = Military Operations Area; SUA = Special Use Airspace; NRHP = National Register of Historic Places
Source: National Park Service 2022b.

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A fragment of the El Camino Real de los Tejas National Historic Trail is located beneath the Warrior 1 MOA (National Park Service 2022e). The trail served as a political, economic and cultural link between Mexico City and Los Adaes. El Camino Real de los Tejas was the primary overland route for the Spanish colonization of Texas and northwestern Louisiana (National Park Service 2022f). No national monuments, national historic battlefields or National Historic Landmarks are located under the existing SUA (National Park Service 2022b, 2022c, 2022d).

To date, no traditional cultural resources or Native American sacred places have been identified within the SUA associated with the 159 FW installation.

Effects Analysis for Installation Resources

There are no known archaeological sites within any of the proposed construction footprints at the 159 FW installation. No ground disturbance would take place near the NRHP-eligible archaeological site located within the 159 FW. It is not expected that undiscovered archaeological resources would be found during implementation of the F-15EX beddown at NAS JRB New Orleans. However, in the event of an inadvertent discovery during ground-disturbing operations, the following specific actions would occur. The Project Manager would cease work immediately and the discovery would be reported to the NAS JRB New Orleans Cultural Resources Manager. The Cultural Resources Manager would secure the location and ensure that all cultural items are left in place and that no further disturbance is permitted to occur. The Cultural Resources Manager would then contact the NAVFAC Historic Preservation Officer and continue to follow Standard Operating Procedure No. 8, Inadvertent Discovery of Archaeological Resources, as outlined in the NAS JRB New Orleans Integrated Cultural Resources Management Plan (NAVFAC Southeast 2008a).

There are no NRHP-eligible or listed architectural properties, historic districts or historic landscapes at NAS JRB New Orleans (NAVFAC Southeast 2008b). There are no NRHP-listed historic properties located within the proposed F-15EX/F-35A 65 dB DNL or greater noise contours surrounding the airfield (National Park Service 2022b). No traditional cultural resources have been identified at the 159 FW installation. Government-to-government consultation with associated Tribal Nations is ongoing and will continue throughout the Environmental Impact Analysis Process.

The DON has therefore determined that implementation of the proposed action warrants a finding of NO HISTORIC PROPERTIES AFFECTED with respect to cultural resources located at the installation and within the 65 dB DNL and greater noise contours.

Effects Analysis for Airspace Resources

No additional ground disturbance would occur under the airspace as part of the Proposed Action. Use of ordnance and defensive countermeasures would occur in areas already used for these activities. Flares deployed from the aircraft would not pose a visual intrusion either, as flares are small in size and burn only for a few seconds and the high relative altitude of the flights would make them virtually undetectable to people on the ground. Overall, flares are unlikely to cause significant impacts to cultural resources or adverse effects to historic properties. Use of the SUA under the Proposed Action would increase but would be similar in

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and would not represent an increase sufficient to cause adverse effects to historic properties. Due to the high altitude of the overflights, small size of the aircraft and the high speeds, the aircraft would not be readily visible to observers on the ground.

Known historic properties are present within the APE under the airspace; however, the DON has determined that implementation of the proposed action warrants a finding of NO ADVERSE EFFECTS with respect to historic properties beneath the SUA.

Conclusions

Based on this discussion, we have determined that the implementation of the Proposed Action warrants a finding of NO HISTORIC PROPERTIES AFFECTED with respect to cultural resources located at the installation and within 65 dB DNL and greater at the airfield and a finding of NO ADVERSE EFFECTS with respect to historic properties beneath the SUA. We seek your concurrence with these determinations.

If you have any questions regarding this matter, point of contact is Dr. John Calabrese, Staff Archaeologist, who may be reached at (904) 542-6985 or john.a.calabrese4.civ@us.navy.mil.

Sincerely,

M. B. OXENDINE, PE
Environmental Director
By direction
of the Commanding Officer

Enclosure

5

Attachment 2 – References Cited

National Park Service. 2022a. National Register of Historic Places. Accessed on 28 September 2022 at: https://www.nps.gov/subjects/nationalregister/database-research.htm.

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National Park Service. 2022d. National Historic Landmarks. Accessed on 2 October 2022 at: https://www.nps.gov/subjects/nationalhistoriclandmarks/list-of-nhls-by-state.htm.

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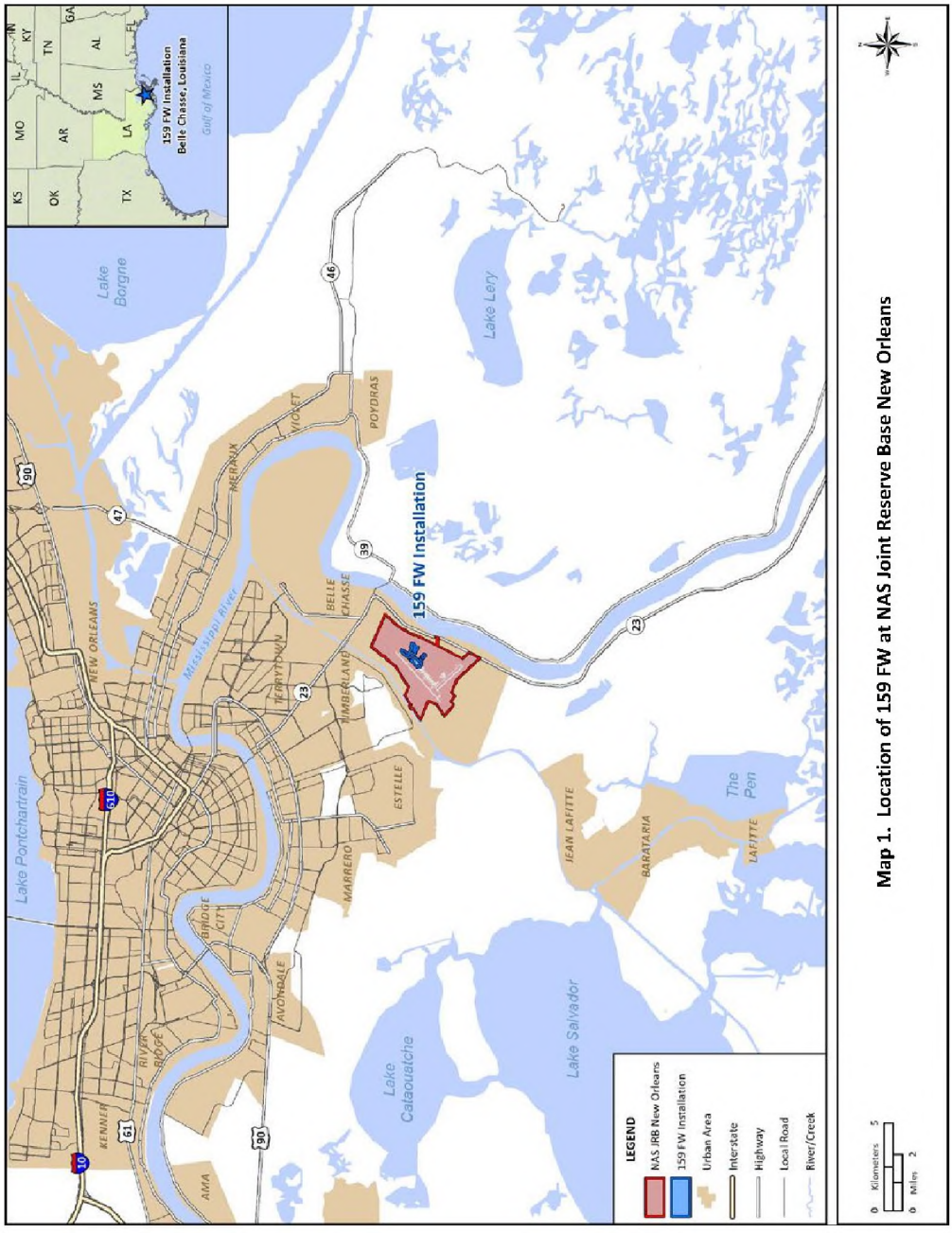
Naval Facilities Engineering Systems Command (NAVFAC) Southeast. 2008a. Integrated Cultural Resources Management Plan for Naval Air Station Joint Reserve Base New Orleans, Belle Chase, Plaquemines Parish, Louisiana. 3 September.

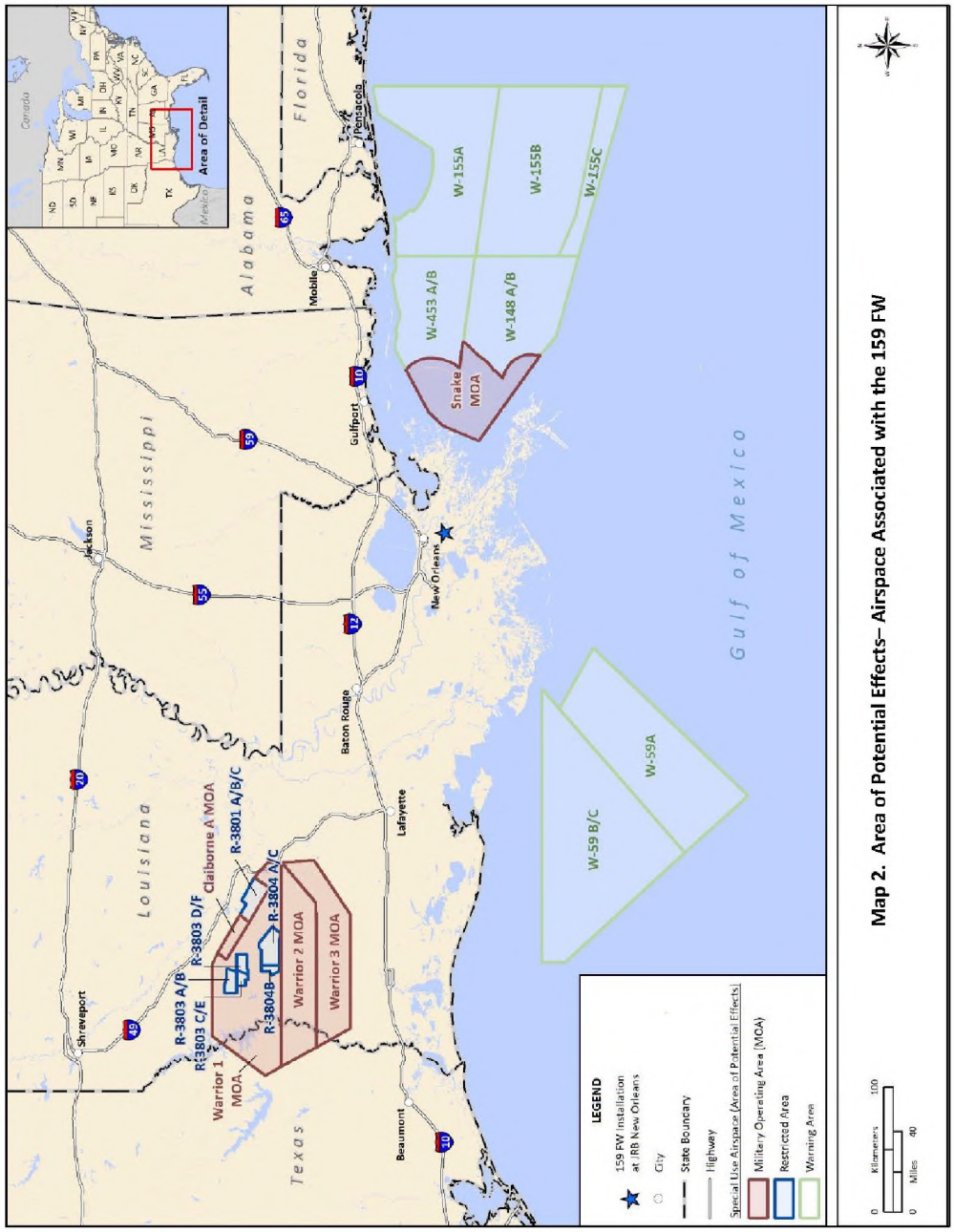
Naval Facilities Engineering Systems Command (NAVFAC) Southeast. 2008b. Architectural Inventory and Evaluation at Naval Air Station Joint Reserve Base New Orleans, Belle Chase, Plaquemines Paris, Louisiana. 3 September.

Attachment 1 - Maps



Map 1. Location of 159 FW at NAS Joint Reserve Base New Orleans

Attachment 1 - Maps



Attachment 1 - Maps

Map 3. Area of Potential Effects – Proposed Construction and Modification for the F-15EX Beddown at the 159 FW at NAS JRB New Orleans

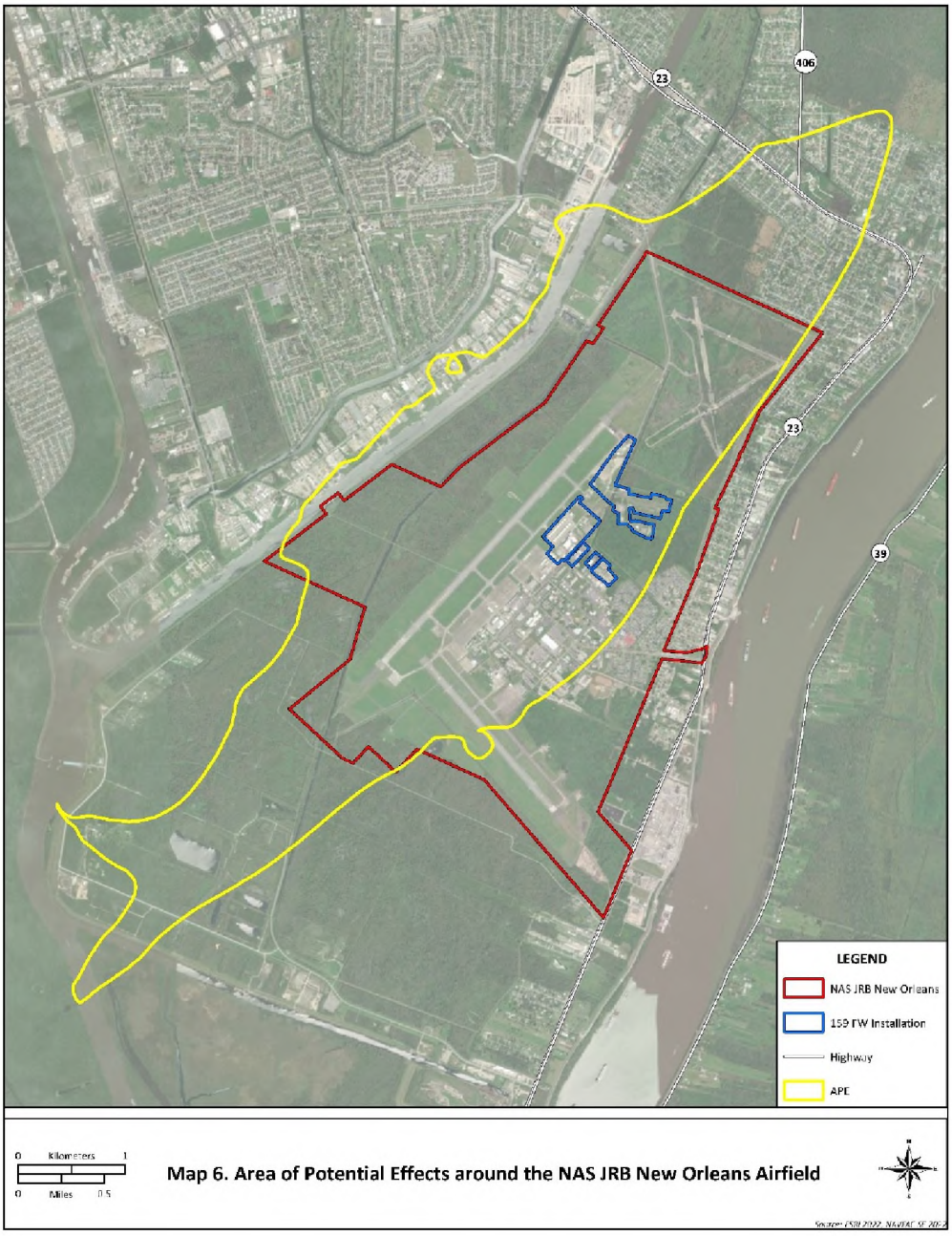
Attachment 1 - Maps

Map 4. Area of Potential Effects – Proposed Construction and Modification for the F-35 Beddown at the 159 FW at NAS JRB New Orleans

Attachment 1 - Maps

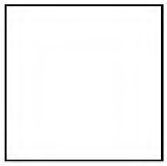
Map 5. Area of Potential Effects – Proposed Construction and Modification for Legacy Aircraft at the 159 FW at NAS JRB New Orleans

Attachment 1 - Maps



Map 6. Area of Potential Effects around the NAS JRB New Orleans Airfield

From: noreply@thc.state.tx.us <noreply@thc.state.tx.us>
Sent: Friday, October 6, 2023 12:09 PM
To: Calabrese, John A CIV USN NAVFAC SE JAX FL (USA) <john.a.calabrese4.civ@us.navy.mil>; reviews@thc.state.tx.us
Subject: [Non-DoD Source] F35 BEDDOWN



Re: Project Review under Section 106 of the National Historic Preservation Act
THC Tracking #202400076
Date: 10/06/2023
F35 BEDDOWN
WARRIOR 1 & 2 SUA
Newton,TX

Description: F35 BEDDOWN/WARRIOR 1 & 2 SPECIAL USE AIRSPACE EIS

Dear Dr. John Calabrese:
Thank you for your submittal regarding the above-referenced project. This response represents the comments of the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC), pursuant to review under Section 106 of the National Historic Preservation Act.

The review staff, led by Caitlin Brashear, Emily Dylla and Alexander Shane, has completed its review and has made the following determinations based on the information submitted for review:

Above-Ground Resources

- Property/properties are eligible for listing or already listed in the National Register of Historic Places.
- No adverse effects on historic properties.
- THC/SHPO concurs with information provided.

Archeology Comments

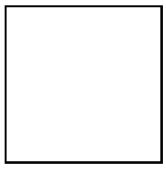
- No historic properties affected. However, if cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area; work can continue where no cultural materials are present. Please contact the THC's Archeology Division at 512-463-6096 to consult on further actions that may be necessary to protect the cultural remains.

We have the following comments: The Texas SHPO understands there will be no ground disturbances associated with the proposed action. Should this change, please re-initiate consultation with this agency.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If the project changes, or if new historic properties are found, please contact the review staff. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: caitlin.brashear@thc.texas.gov, emily.dylla@thc.texas.gov, Alexander.Shane@thc.texas.gov.

This response has been sent through the electronic THC review and compliance system (eTRAC). Submitting your project via eTRAC eliminates mailing delays and allows you to check the status of the review, receive an electronic response, and generate reports on your submissions. For more information, visit http://thc.texas.gov/etrac-system.

Sincerely,



for Mark Wolfe, State Historic Preservation Officer
Executive Director, Texas Historical Commission

Please do not respond to this email.

A4 Public Scoping Summary Report

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Air National Guard
F-15EX Eagle II & F-35A Lightning II
Operational Beddowns
Environmental Impact Statement

Final Scoping Summary Report

November 2022

ACRONYMS AND ABBREVIATIONS

104 FW	104th Fighter Wing
144 FW	144th Fighter Wing
159 FW	159th Fighter Wing
ANG	Air National Guard
ANGB	Air National Guard Base
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DAF	Department of the Air Force
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
JRB	Joint Reserve Base
NAS	Naval Air Station
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NGB/A4AM	National Guard Bureau, Asset Management Division, Plans and Requirements Branch
NOI	Notice of Intent
Q&A	question and answer
SUA	special use airspace

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1.0 INTRODUCTION

The National Guard Bureau (NGB) and Department of the Air Force (DAF) propose to locate F-15EX or F-35A aircraft at alternative locations and is preparing an Environmental Impact Statement (EIS) to analyze the potential impacts of these beddown actions. The NGB is conducting a public involvement process as required by the Environmental Impact Analysis Process (EIAP).

The NGB proposes to beddown one squadron of 21 F-15EX aircraft at two of three alternative locations and one squadron of 21 F-35A aircraft at one of four alternative locations. These beddown actions would replace the F-15C/D aircraft at the alternative locations where they are currently based. Those existing aircraft would be retired from the inventory due to their age and resulting maintenance costs. The Proposed Action also includes personnel needed to operate and maintain the F-15EX and F-35A, and construction of new and/or modification of existing facilities on the installations supporting the beddowns. Additional details are as follows.

- Approximately 100 additional personnel would be needed for the F-15EX beddown and approximately 80 personnel would be needed for the F-35A beddown.
- Necessary construction projects would be implemented to successfully beddown the aircraft at the selected installations.
- There would be no changes required to the geographic boundaries or altitude structure of the special use airspace used for training.

The alternative locations for the Air National Guard (ANG) F-15EX and F-35A beddowns include:

- Barnes ANG Base at Westfield-Barnes Regional Airport, Westfield, Massachusetts, home of the 104th Fighter Wing (104 FW)
- Fresno ANG Base at Fresno Yosemite International Airport, Fresno, California, home of the 144th Fighter Wing (144 FW)
- Naval Air Station (NAS) Lemoore, Lemoore, California (the 144 FW would relocate from Fresno to NAS Lemoore)
- NAS Joint Reserve Base (JRB) New Orleans, Belle Chasse, Louisiana, home of the 159th Fighter Wing (159 FW)

Each of these locations is a candidate for either the F-15EX or the F-35A aircraft, with the exception of NAS Lemoore, which is a candidate for the F-35A aircraft only because it does not have F-15C/D aircraft to replace. Additionally, should the beddown of either of these aircraft at one or more of these locations not occur, it is feasible that any of these locations could continue operating with their existing legacy F-15C/D model aircraft for a limited time, in which case, construction associated with operating those legacy aircraft into the future is also being analyzed.

In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR 989 *et seq.*, *Environmental Impact Analysis Process*, the NGB is preparing an EIS to evaluate the potential consequences to the human and natural environment that may result from implementation of this beddown and its associated components. As part of preparation of the EIS, the NGB must include public involvement in the EIAP. Public involvement is an integral part of developing a representative EIS. NEPA requirements for public involvement, set forth in 32 CFR 989 *et seq.*, specifically require a process called "scoping" to involve the public early in the EIAP.

Scoping is defined in 32 CFR 989 *et seq.* as "an iterative, pro-active process of communicating with individual citizens, neighborhood, community, and local leaders, public interest groups, congressional delegations, state, Tribal, and local governments, and federal agencies. The scoping process must start prior to official public scoping meetings and continue through to preparation of the draft EIS." Furthermore, "the purpose of this process is to de-emphasize insignificant issues and focus the scope of the environmental analysis on significant issues (40 CFR 1500.4(g)). Additionally, scoping allows early and more meaningful participation by the public. The result of scoping is that the proponent and Environmental Planning Function determine the range of actions, alternatives, and impacts to be considered in the EIS (40 CFR 1508.25)."

This document presents a summary and overview of the scoping process conducted by the NGB for this EIS. Chapter 2.0 describes notification methods utilized by the NGB to inform the public of opportunities for involvement. It also provides an overview of the scoping meetings and provides a synopsis of the opportunities for public comment. Chapter 3.0 provides a summary of comments received during the scoping meetings and throughout the scoping period, which began on July 19, 2022 and ended on September 2, 2022. While this report identifies issues, the document does not make decisions nor does it set forth policies.

2.0 THE SCOPING PROCESS

Scoping for this EIS took place from July 19, 2022 to September 2, 2022. The initiation of the scoping process began with the publication of the Notice of Intent (NOI) to prepare an EIS in the *Federal Register* on July 19, 2022 (Appendix A) notifying the public and government agencies and other interested parties about the proposal, the scoping period, and associated scoping meetings. As required under NEPA, the scoping period extended at least 30 days, and in fact lasted 46 days, from publication of the NOI in the *Federal Register*.

2.1 SCOPING PUBLIC NOTIFICATION PROCESS

The NGB utilized several methods to notify the public of opportunities for involvement and methods to comment on the Proposed Action. These methods included:

- The NOI announcement in the *Federal Register.*
- A mailing of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) letters (along with a project fact sheet.).
- Distribution of flyers at nearby community centers and businesses.
- Distribution of a press release to local media outlets.
- Placement of newspaper display advertisements in local newspapers at each of the alternative locations.
- Postings to social media via each alternative location's social media channels.
- A website dedicated to the EIS project.

Details of these notification methods are outlined below.

2.1.1 FEDERAL REGISTER NOTICE OF INTENT

As required by NEPA, an NOI to prepare an EIS was published in the *Federal Register* on July 19, 2022 and is included in Appendix A. This notice provided an overview of the proposal and the NGB's intent to prepare an EIS that will evaluate the potential environmental impacts of the proposal. The NOI also announced the public scoping meeting times and locations. The NOI officially convened the scoping period, during which time the NGB accepted public comments on the EIS through several means described below. While comments can be submitted throughout the EIAP, in order for public comments to be considered in the preparation of the Draft EIS, it is important that they were received by September 2, 2022.

2.1.2 Interagency and Intergovernmental Coordination for Environmental Planning

The NGB initiated direct contact with potentially interested and affected Native American tribes, non-tribal government agencies, and government representatives near the installations through IICEP letters distributed in mid-July and August 2022. The NGB sent government agencies and Native American tribes the letters soliciting agency input on the Proposed Action and requesting submittal of any relevant studies or data that might be useful in the analysis of potential impacts. Similar to the NOI, the IICEP letters also provided an overview of the proposal and the NGB's intent to prepare an EIS. In addition, the letters announced the public scoping meetings, as well as separate agency meetings for any agency staff to attend during normal workday hours. Each scoping letter included information about the scoping meetings, along with a fact sheet describing the proposal. Appendices A1–A3 of the EIS contain examples of the IICEP scoping announcement letters and the distribution list.

Letter	*Mail Out Date*
Agency letters	July 22, 2022
Barnes ANG Tribal letters	August 2, 2022
Fresno ANG Tribal letters	August 2, 2022
NAS Lemoore Tribal letters	August 2, 2022
NAS JRB New Orleans Tribal letters	August 12, 2022

Legend: ANG = Air National Guard; JRB = Joint Reserve Base; NAS = Naval Air Station.

2.1.3 Flyers

Flyers were placed at various community centers and businesses near the installations, which helped inform the local community of the public scoping meetings and encouraged their participation. The flyers were distributed approximately 1 week prior to the public meetings

2.1.4 Press Release and Newspaper Display Ads

The NGB published newspaper advertisements in newspapers near the installations starting approximately 2 weeks in advance of the scoping meetings.

- Barnes ANGB at Westfield-Barnes Regional Airport
  - *The Republican* – Sunday, August 7 and Sunday, August 14
- NAS JRB New Orleans
  - *The Times-Picayune* – Sunday, August 7 and Sunday, August 14
  - *The Plaquemines Gazette* – Tuesday, August 2 and Tuesday, August 9
- Fresno ANGB at Fresno Yosemite International Airport
  - *The Fresno Bee* – Sunday, July 31 and Sunday, August 7
- NAS Lemoore
  - *Hanford Sentinel* – Tuesday, August 2 and Saturday, August 6

Further, a press release was prepared for each installation and distributed to local media approximately 1 week prior to the scoping meetings.

2.1.5 SOCIAL MEDIA

Installations were encouraged to publicize the scoping period and public meetings on their social media channels, such as Facebook, Twitter, and Instagram.

- Fresno ANG 144 FW social media channels: Facebook, posted August 25, 2022; Instagram, posted August 1, 2022
  Facebook – 8 reactions, 1 comment, 0 shares
  Instagram – 156 likes
- NAS Lemoore social media channels: Facebook and Instagram, posted July 25, 2022
  Facebook – 17 reactions, 24 comments, 23 shares
  Instagram – 33 likes
- NAS JRB New Orleans/159 FW – no social media postings
- Barnes ANG 104 FW social media channels: Facebook, posted August 9, 2022 and August 16, 2022; flyer posted to 104 FW website on August 5, 2022
  Facebook – 80 reactions, 2 comments, 16 shares

2.1.6 WEBSITE

The NGB published a website to enable the public to easily obtain information about the proposal and associated EIAP. The website, http://www.angf15ex-f35a-eis.com, provides links to the following webpages:

- A *Home* page providing a Welcome, information on how to submit scoping comments and attend public meetings, and links to other pages.
- A *Proposed Action* page describing the Proposed Action and alternatives, information about the F-15EX and F-35A aircraft, and information about proposed construction and modifications at each of the installations.
- A *Get Involved* page describing public involvement opportunities, how to submit scoping comments and attend public meetings, and a link to the *NEPA Process and EIS Schedule* page. Recordings of the virtual public scoping meetings are also posted on this page (as well as made available on the *Home* page).
- A *Frequently Asked Questions (FAQs)* page providing responses to common questions.
- A *Documents* page providing links to the NOI, project fact sheet, and posters from the public scoping meetings. This page will also include the Draft EIS when available.
- There are also four forms on the website:
  - *Mailing List form*, to request to be added to the project mailing list for future notifications.

- *Comment form*, to submit an official scoping comment.
- *Contact form*, to submit an inquiry or otherwise contact the project team.
- *Virtual meeting question form*, to submit a question in advance of the virtual public scoping meeting.

The website went online July 19, 2022, concurrently with the NOI, and is being updated regularly throughout the duration of the EIAP.

2.2 SCOPING MEETINGS

The NGB held four in-person and three virtual public scoping meetings over the course of three weeks as follows.

- Barnes ANG Base at Westfield-Barnes Regional Airport
  - In-person – Thursday, August 18 at Westfield Intermediate School
  - Virtual – Wednesday, August 24 via Zoom Webinar
- NAS JRB New Orleans
  - In-person – Tuesday, August 16 at Belle Chasse Auditorium
  - Virtual – Tuesday, August 23 via Zoom Webinar
- Fresno ANG Base at Fresno Yosemite International Airport
  - In-person – Tuesday, August 9 at the Piccadilly Inn-Airport
  - Virtual – Thursday, August 25 via Zoom Webinar (combined meeting with Lemoore)
- NAS Lemoore
  - In-person – Wednesday, August 10 at L.T.A. Portuguese Hall
  - Virtual – Thursday, August 25 via Zoom Webinar (combined meeting with Fresno)

2.2.1 IN-PERSON MEETINGS

At each of the four in-person locations, there were two meetings each day. The first meeting was for local, state, and federal agencies to attend during their normal work hours from 2 p.m. to 4 p.m. The second meeting at each location was for the general public (or agency personnel) from 5 p.m. to 7 p.m. These meeting locations, compliant with the Americans with Disabilities Act, were near the areas potentially impacted by the proposal to the extent possible. Table 1 shows the meeting times and locations, as well as the number of attendees. Table 2 lists the personnel that hosted the scoping meetings.

The public scoping meetings were open to the general public, as well as government officials and agencies, and were conducted in an informal open house format where NGB representatives and the contractor team were on hand to provide information and answer questions.

During the meeting, the NGB provided a fact sheet, comment forms, and a series of seven stations presenting 14 to 17 poster displays, depending on the location. Throughout the open house, the NGB and its representatives encouraged meeting attendees to comment by submitting

a written comment form. Formal comment forms were available to all attendees at comment tables or to take home and mail at their convenience. Use of the website to submit comments was also encouraged.

Table 1 Public Scoping Meetings – In-person and Virtual

Date/Time	*Meeting Attendees*	*Location*
Agency Meeting August 9, 2022 2–4 p.m.	1	(Fresno ANG Base at Fresno Yosemite International Airport) Piccadilly Inn Airport 5115 E. McKinley Ave. Fresno, CA 93727
Public Meeting August 9, 2022 5–7 p.m.	31	(Fresno ANG Base at Fresno Yosemite International Airport) Piccadilly Inn Airport 5115 E. McKinley Ave. Fresno, CA 93727
Agency Meeting August 10, 2022 2–4 p.m.	1	(NAS Lemoore) L.T.A. Portuguese Hall 470 Champion St. Lemoore, CA 93245
Public Meeting August 10, 2022 5–7 p.m.	13	(NAS Lemoore) L.T.A. Portuguese Hall 470 Champion St. Lemoore, CA 93245
Virtual Meeting August 25, 2022 5:30–6:30 p.m. PDT	9	Focused on Fresno ANG Base and NAS Lemoore Zoom Webinar
Agency Meeting August 16, 2022 2–4 p.m.	0	(NAS JRB New Orleans) Belle Chasse Auditorium 8398 LA-23 Belle Chasse, LA 70037
Public Meeting August 16, 2022 5–7 p.m.	5	(NAS JRB New Orleans) Belle Chasse Auditorium 8398 LA-23 Belle Chasse, LA 70037
Virtual Meeting August 23, 2022 5:30–6:30 p.m. CDT	1	Focused on NAS JRB New Orleans Zoom Webinar
Agency Meeting August 18, 2022 2–4 p.m.	0	(Barnes ANG Base at Westfield-Barnes Regional Airport) Westfield Intermediate School 350 Southampton Rd Westfield, MA 01085
Public Meeting August 18, 2022 5–7 p.m.	60	(Barnes ANG Base at Westfield-Barnes Regional Airport) Westfield Intermediate School 350 Southampton Rd Westfield, MA 01085
Virtual Meeting August 24, 2022 5:30–6:30 p.m. EDT	18	Focused on Barnes ANG Base Zoom Webinar

Legend: ANG = Air National Guard; CDT = Central Daylight Time; EDT = Eastern Daylight Time; JRB = Joint Reserve Base; NAS = Naval Air Station; PDT = Pacific Daylight Time.

Table 2 Meeting Hosts

Date/Time	*Location*	*Meeting Hosts*
Agency and Public Meeting August 9, 2022 2–4 p.m. 5–7 p.m.	(Fresno ANG Base at Fresno Yosemite International Airport) Piccadilly Inn Airport 5115 E. McKinley Ave. Fresno, CA 93727	Will Strickland, NGB Col John Lundholm, 144 FW Lt Col Luke Campagne, 144 FW Maj Harold Peralta, 144 FW Lt Micaelah Tweedy, 144 FW SMSgt Timothy Bellini, 144 FW Capt Jason Sanchez, 144 FW MSgt Charles Vaughn, 144 FW John Macedo, 144 FW Kate Bartz, Stantec Geoff Olander, Stantec Christine Davis, Stantec Tania Fragomeno, Stantec
Agency and Public Meeting August 10, 2022 2–4 p.m. 5–7 p.m.	(NAS Lemoore) L.T.A. Portuguese Hall 470 Champion St. Lemoore, CA 93245	Will Strickland, NGB Col John Lundholm, 144 FW Lt Col Luke Campagne, 144 FW Maj Harold Peralta, 144 FW Lt Micaelah Tweedy, 144 FW SMSgt Timothy Bellini, 144 FW Capt Jason Sanchez, 144 FW MSgt Charles Vaughn, 144 FW John Macedo, 144 FW Cynthia Echavarria-Baruch, Navy John S. Crawmer, Navy Jessica Nilsson, Navy Dallas Belcher, Navy CDR Greg Woods, Navy ENS Jarrett Stengel, Navy Amanda Peyton, Navy Kate Bartz, Stantec Geoff Olander, Stantec Christine Davis, Stantec Tania Fragomeno, Stantec
Agency and Public Meeting August 16, 2022 2–4 p.m. 5–7 p.m.	(NAS JRB New Orleans) Belle Chasse Auditorium 8398 LA-23 Belle Chasse, LA 70037	Will Strickland, NGB Major Jason Askins, NGB 159 FW (To be Inserted) Kate Bartz, Stantec Geoff Olander, Stantec Christine Davis, Stantec Tania Fragomeno, Stantec
Agency and Public Meeting August 18, 2022 2–4 p.m. 5–7 p.m.	(Barnes ANG Base at Westfield-Barnes Regional Airport) Westfield Intermediate School 350 Southampton Rd Westfield, MA 01085	Will Strickland, NGB Major Jason Askins, NGB 104 FW (To be Inserted) Kate Bartz, Stantec Geoff Olander, Stantec Christine Davis, Stantec Tania Fragomeno, Stantec

Table 2 Meeting Hosts

Date/Time	*Location*	*Meeting Hosts*
Virtual Meeting August 23, 2022 5:30–6:30 p.m. CDT	Focused on NAS JRB New Orleans Zoom Webinar	Will Strickland, NGB Major Jason Askins, NGB Col Jonathan Mumme, 159 FW Lt Col Jon Comeaux, 159 FW Lt Col Cody Clark, 159 FW Lt Col Jeffrey Andrieu, NGB Adonna Clayton, Navy Bruce Keller, Navy Kate Bartz, Stantec Tania Fragomeno, Stantec Caitlin Jafolla, Stantec Vanessa Williford, Stantec Lisa Woeber, Stantec Derek Stadther, Stantec Torrey Webb, Stantec Leah McCormick, Stantec
Virtual Meeting August 24, 2022 5:30–6:30 p.m. EDT	Focused on Barnes ANG Base at Westfield-Barnes Regional Airport Zoom Webinar	Will Strickland, NGB Major Jason Askins, NGB John Richardson, 104 FW Lt Col Andrew St. Jean, 104 FW Lt Col Jeremy Dugan, 104 FW Michael Lamprecht, FAA Lisa Woeber, Stantec Vanessa Williford, Stantec Torrey Webb, Stantec Derek Stadther, Stantec Christine Davis, Stantec Leah McCormick, Stantec Caitlin Jafolla, Stantec Kate Bartz, Stantec Tania Fragomeno, Stantec
Virtual Meeting August 25, 2022 5:30–6:30 p.m. PDT	Focused on Fresno ANG Base at Fresno Yosemite International Airport and NAS Lemoore Zoom Webinar	Will Strickland, NGB Major Jason Askins, NGB Capt Jason Sanchez, 144 FW 1st Lt Micaelah Tweedy, 144 FW Sgt Tim Bellini, 144 FW Steve Crawmer, Navy Amanda Peyton, Navy Vicky Anh Ngo, Navy Jessica Nilsson, Navy Cynthia Echavarria-Baruch, Navy Dallas Belcher, Navy CDR Greg Woods, Navy ENS Jarrett Stengel, Navy Michael Lamprecht, FAA Susan Staehle, FAA Kate Bartz, Stantec Tania Fragomeno, Stantec Christine Davis, Stantec Vanessa Williford, Stantec Derek Stadther, Stantec

Table 2 Meeting Hosts

Date/Time	*Location*	*Meeting Hosts*
		Lisa Woeber, Stantec Torrey Webb, Stantec Caitlin Jafolla, Stantec Leah McCormick, Stantec

Legend: 104 FW = 104th Fighter Wing; 144 FW = 144th Fighter Wing; 159 FW = 159th Fighter Wing; ANG = Air National Guard; CDT = Central Daylight Time; EDT = Eastern Daylight Time; FAA = Federal Aviation Administration; JRB = Joint Reserve Base; NAS = Naval Air Station; NGB = National Guard Bureau; PDT = Pacific Daylight Time.

2.2.2 VIRTUAL MEETINGS

To help maximize participation and increase attendance for individuals unable to or uncomfortable with attending in-person meetings, the NGB held three virtual public scoping meetings using Zoom Webinar. Each meeting began with opening remarks followed by a pre-recorded narrated PowerPoint featuring posters shown at the in-person public meetings (approximately 20-minute video) and closed with a question and answer (Q&A) session with the audience. The Q&A session began with questions received via the project website in advance of the meeting, followed by live Q&A. To fill time when no questions were being asked by the public, the project team read from prepared FAQs, specifically FAQs posted to the project website. No attendees asked a question verbally; all questions were asked via the written Q&A box function on Zoom Webinar. The contractor moderated the virtual meeting, and the NGB project manager served as the lead presenter and question responder. NGB, Wing, installation, and contractor staff were online to support question response.

2.2.3 DISPLAYS

Seven display stations guided meeting participants visually through the EIAP and the Proposed Action and alternatives. The posters were uploaded to the website for further review by the public. The seven display stations included the following:

Display Stations
• Station 1   ○ Welcome/Sign in

• Station 2
  ○ NEPA displays (two)
  ○ EIS Timeline poster
  ○ Cooperating Agency poster

• Station 3   ○ Mission poster (unique for each FW)

• Station 4
  ○ Proposed Action poster
  ○ Alternatives poster
  ○ Construction poster
  ▪ Construction and modifications for new aircraft (Fresno had an additional two posters to show all the COAs)
  ▪ Construction and modifications for legacy aircraft

Display Stations
• Station 5 o F-15EX Program poster o F-35A Program poster o F-15EX vs F-35A poster
• Station 6 o Noise modeling display
• Station 7 – Comment Station o How to Comment poster

Legend: COA = Course of Action; EIS = Environmental Impact Statement; FW = Fighter Wing; NEPA = National Environmental Policy Act

2.2.4 FACT SHEET/NEWSLETTER

During the public scoping meeting, the NGB provided a fact sheet handout to the public. The NGB developed a two-page fact sheet providing the following information:

- A description of the Proposed Action and why it is needed.
- An overview of NEPA, opportunities for public involvement, the EIS timeline, and the public scoping meetings.
- How to submit scoping comments.

The fact sheet is also available on the project website. There will be six fact sheets developed during the EIAP to assist the public with understanding the project status.

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3.0 SYNOPSIS OF PUBLIC COMMENTS

3.1 OPPORTUNITIES TO COMMENT

The NGB provided the public with various opportunities to comment on the Proposed Action and any other related issues. The following is a comprehensive list of methods made available for commenting during the scoping process.

- By mail or email – The NGB invited interested parties to submit comments by mail or email in the NOI, IICEP letters, fact sheet, project website, flyers, press release, newspaper display advertisements, and comment forms.
- Via the project website – The NGB included the project website URL on notifications, the comment form, and the fact sheet. The website included an online submission form and a printable comment form for download.
- Submission at public scoping meetings – The NGB provided printed comment forms at the in-person public scoping meetings, which could be completed and submitted during the meeting or mailed afterwards via United States (U.S.) mail. The virtual meeting did not allow for submission of official comments during the meeting.

3.2 SUMMARY OF PUBLIC AND AGENCY COMMENTS

The following section provides a summary of the public and agency comments provided to the NGB during the public scoping period. The NGB received nine comment submissions from government agencies, listed below.

- City of Fresno (Fresno)
- City of Hanford (Lemoore)
- Federal Emergency Management Agency
- Kings County Board of Supervisors (Lemoore)
- Kings County Economic Development Corporation (Lemoore)
- Louisiana Department of Transportation & Development (New Orleans)
- Massachusetts Division of Fisheries & Wildlife (Barnes)
- U.S. Department of Agriculture-National Resources Conservation Service (New Orleans)
- U.S. Environmental Protection Agency

The NGB received a total of 79 comments from the public and agencies during the official public comment submittal period (July 19 to September 2, 2022) and 1 comment was received after the scoping period closed. The method of submission is shown in Table 3.

Table 3 Summary of Type of Scoping Comments Received

Type/Location	*Fresno*	*Lemoore*	*Barnes*	*New Orleans*	*Unknown*	*TOTAL*
Website	17	0	17	1	0	35
Scoping Meeting	6	3	5	2	0	16
Email	4	0	7	3	1	15
Mail	6	2	4	1	0	13
Total	**29**	**5**	**33**	**7**	**1**	**79**

A summary of scoping comment topics can be found in Table 4 and comments by category can be found in Figures 1–5. A table of written comments (scoping meeting, mail, online form) submitted to the NGB during the scoping period is contained in Appendix B. The NGB will review all public comments received during the scoping period to ensure that all relevant concerns are addressed in the Draft EIS.

Table 4 Summary of Scoping Comment Topics

Location	*General Support*	*General Opposition*	*Aircraft Preference*	*Location Preference*	*Noise*	*Vibration*	*Socioeconomics*	*Air Quality*	*Wildlife*	*Water*	*Airspace*	*Flight Operations*	*Environmental Justice*	*Transportation*	*Domestic Animals*	*Multiple Environmental*	*Other*	*Cumulative*
Fresno	9	2	7	1	15	2	4	2	0	0	0	1	1	1	1	1	1	0
Lemoore	3	0	1	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Barnes	8	2	2	0	13	2	0	2	1	2	0	0	0	1	0	2	2	1
New Orleans	1	1	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0
Total*	21	5	10	6	29	4	6	4	1	2	1	2	1	2	1	4	3	1

Note: Many comments addressed multiple topics.

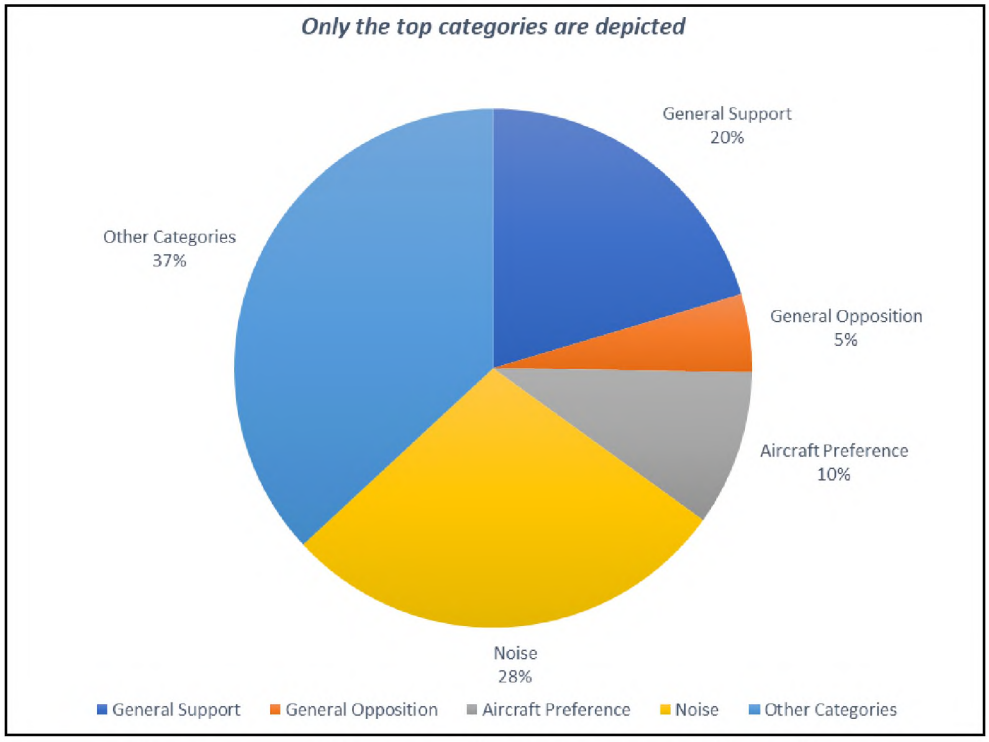

Figure 1 Comments by Category – All Locations

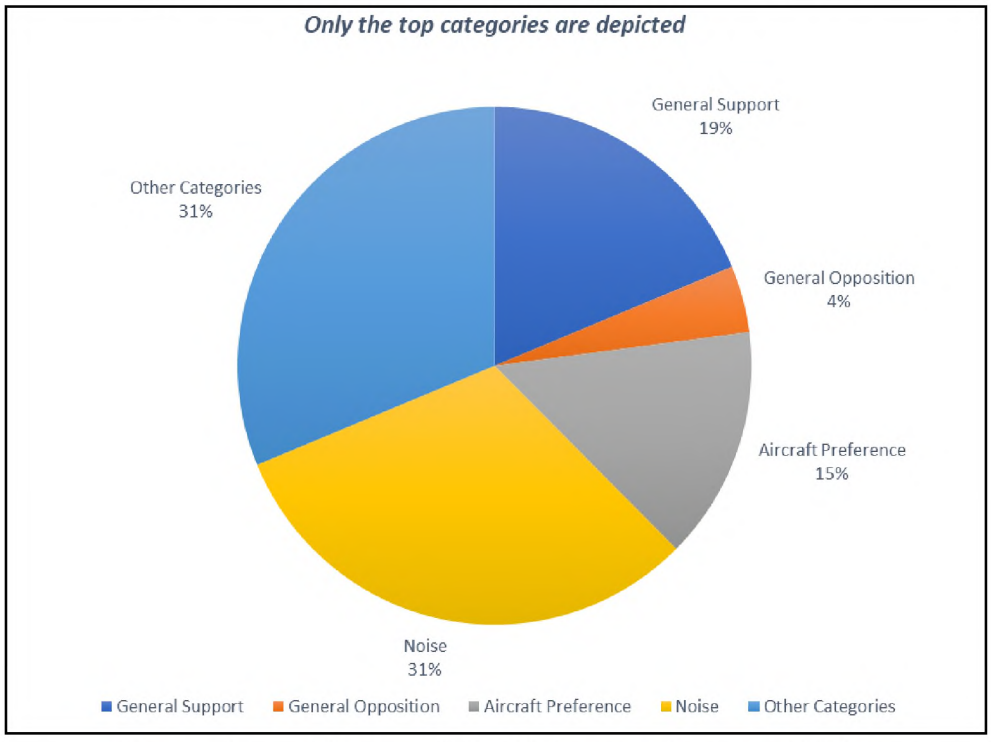

Figure 2 Comments by Category – Fresno ANGB

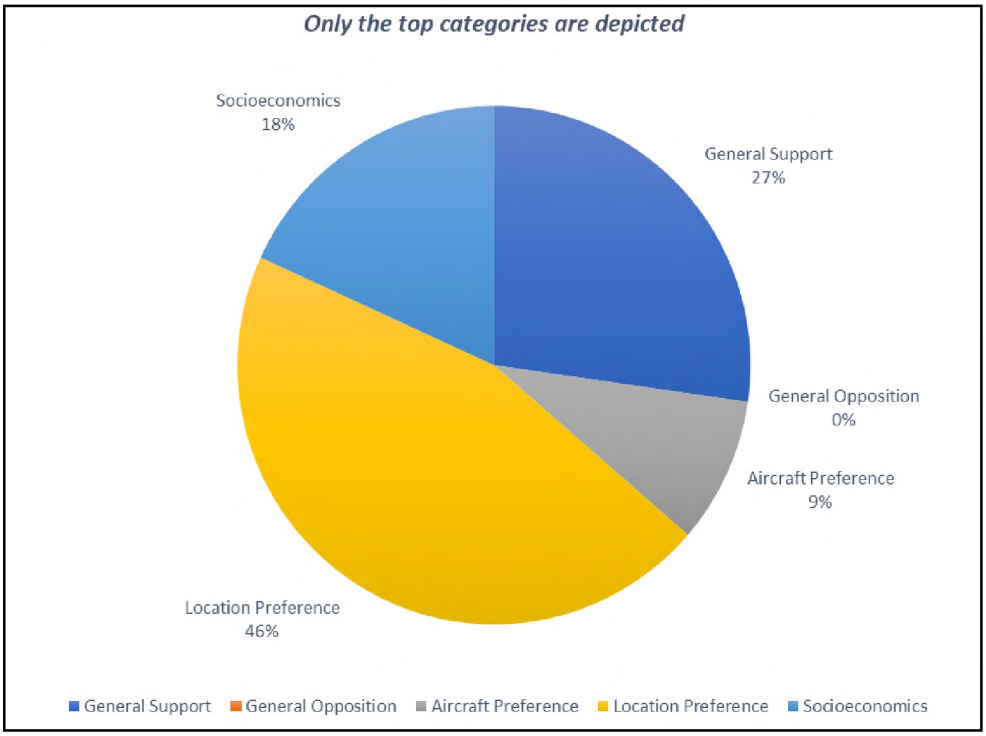

Figure 3 Comments by Category – Lemoore

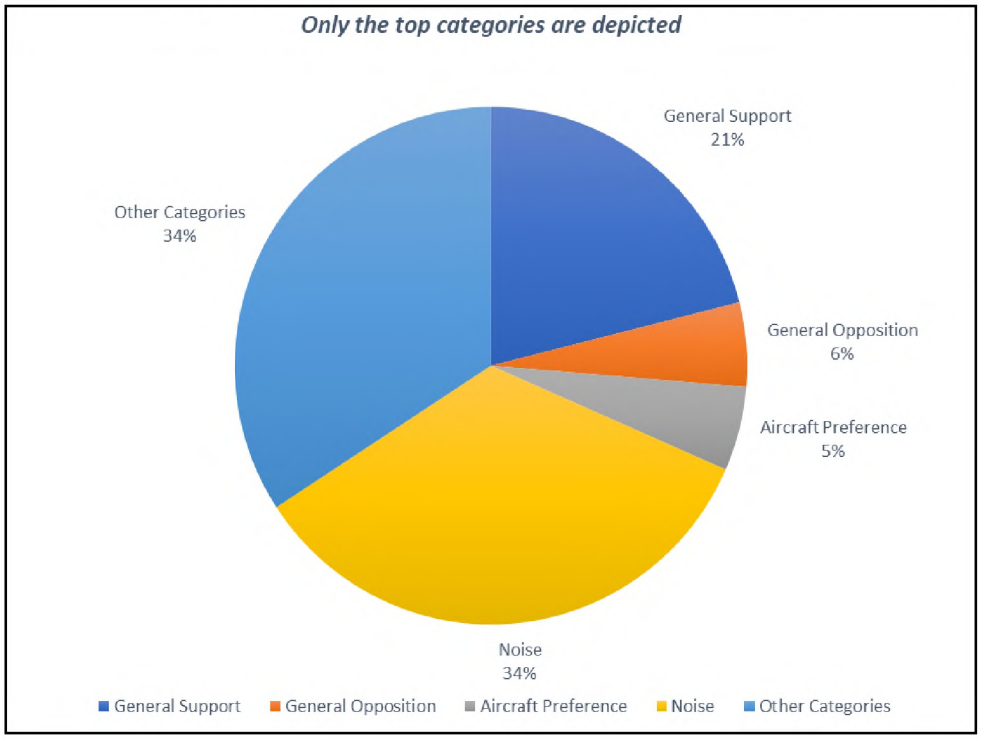

Figure 4 Comments by Category – Barnes ANGB

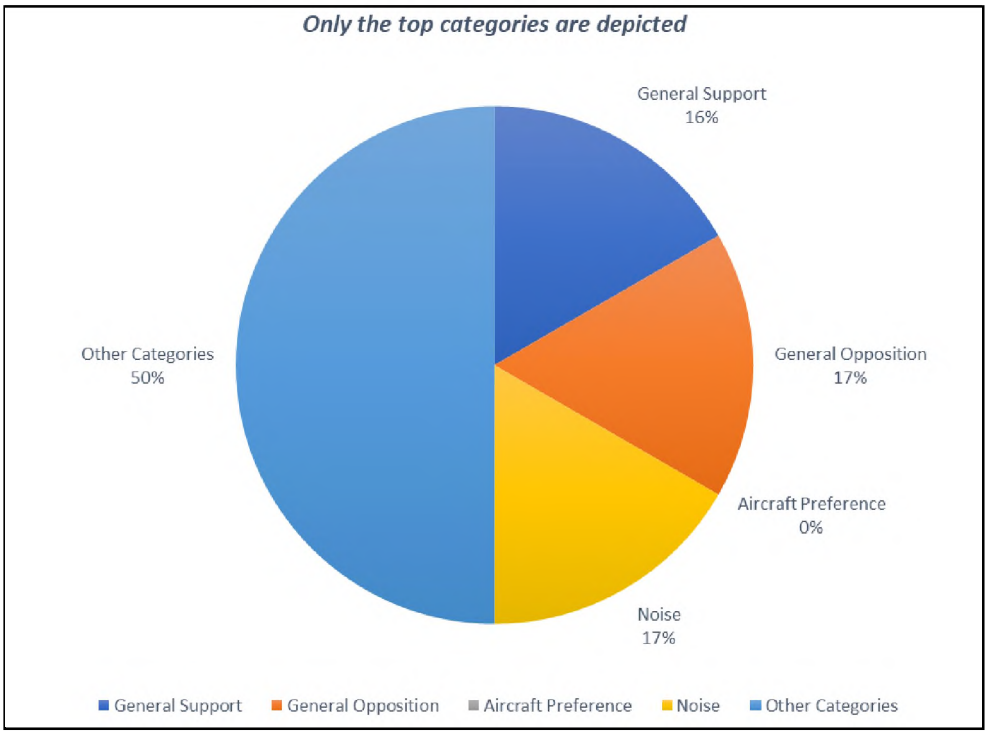

Figure 5 Comments by Category – NAS JRB New Orleans

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4.0 SUMMARY

The NGB received a total of 79 public scoping comments during the official comment submittal period (July 19 to September 2, 2022). Thirty-five comments were submitted via the project website, 16 comments were received at the public scoping meetings, 15 comments were received via email, and 13 comments were received via U.S. mail. The Draft EIS will address substantive comments and concerns and is expected to be available for public review in summer 2023. When the Draft EIS is available for public review, the NGB will hold a series of public hearings. The public will have an opportunity to review results of the environmental analysis and see how the NGB addressed their concerns. The public will also be able to ask questions, make statements for the public record, and voice additional concerns, if they desire to do so.

A summary of the in-person and virtual public scoping meetings follows.

Fresno ANG Base at Fresno Yosemite International Airport, 144 FW, California

In-Person Meeting

Date: August 9, 2022

Time: 2 p.m. to 4 p.m. (Agency) and 5 p.m. to 7 p.m. (Public) PDT

Location: Piccadilly Inn Airport, 5115 E. McKinley Ave., Fresno, CA 93727

Attendees: 1 person attended the Agency meeting and 31 people attended the Public meeting

Meeting Format: Open house

Written comments submitted during the meeting: 6

Summary:

Fresno was the first of the in-person scoping meetings. Questions and concerns mostly pertained to noise, particularly for residents and businesses near the airfield. The City of Fresno, Airport, and Senator Dianne Feinstein's office were key stakeholders in attendance. ABC 30 News attended and aired a segment, including an interview with Vice Wing Commander Col. J.D. Lundholm.

Virtual Meeting

Date: August 25, 2022

Time: 5:30 p.m. to 6:30 p.m. PDT

Location: Zoom Webinar

Attendees: Est. 9

Meeting Format: Welcome, pre-recorded presentation, live Q&A

Number of questions submitted during the meeting: 16

Summary:

There were 16 questions received via the written Q&A function; no questions were received via the verbal queue. All questions were responded to verbally. The following are the questions received:

1. Is there a precedent for co-locating ANG aircraft on a Naval Facility?
2. What are the legalities for moving an ANG base to a naval base?
3. Does congress or the DoD have to make approvals and how long would that take?
4. Was there a statement in the presentation that mentioned the 144th Fighter Wing could possibly relocate to Lemoore Naval Air Station? If so, under what circumstances would this occur in relation to this proposed action?
5. Since the purpose of acquiring a squadron of 21 F-15EX aircraft is to replace the F-15C/D jets, how many F-15C/D jets does the 144th Fighter Wing have at Fresno airport and what will happen to the existing 18 F16-C Fighter Falcon jets stationed there now??
6. I hate to hog up time, but are there any F-35 ANG units in the western United States?
7. Does the CA ANG have a stated preference between these two aircraft, when it comes to the performance of their current mission?
8. Is it possible for the Air Force to change the quantities of purchase of either aircraft that could change any of the current beddown locations before the final locations are determined?
9. If NAS Lemoore were selected, approximately how many people would move to the local Lemoore/Hanford area?
10. Do any of either proposed beddown locations already have advantages over the other locations that could influence the final decision to locate one type of aircraft over the other type of aircraft?
11. Could moving the 144th hinder any expansion of squadrons NAS Lemoore may want to make in the future?
12. *NOT A QUESTION* Just wanted to say thank you for your time. Good luck on your process!

13. According to the 144th Fighter Wing website there are 18 F-16C Fighter Falcons and 1 F16-D Fighter Falcon in service at the Fresno location please clarify the number and type of jets at the Fresno location.
14. Please clarify are there any F-15C/D in operation at the 144th Fresno Fighter Wing?
15. Is the EIS for the F-16 study for Fresno still available?
16. Would the 144th FW detachment at March ARB also receive the same aircraft?
17. Since the presentation mentioned the possibility of the relocation of the 144th to Lemoore...should this be included on the website or mentioned in the proposed action materials?

NAS Lemoore, California

In-Person Meeting

Date: August 10, 2022

Time: 2 p.m. to 4 p.m. (Agency) and 5 p.m. to 7 p.m. (Public) PDT

Location: L.T.A. Portuguese Hall, 470 Champion St., Lemoore, CA 93245

Attendees: 1 person attended the Agency meeting and 13 people attended the Public meeting

Meeting Format: Open house

Written comments submitted during the meeting: 3

Summary:

Notable stakeholders in attendance included Lemoore City Council members, Kings County Association of Governments, Kings County Board of Supervisors, Office of Congressman David G. Valadao, Office of Senator Dianne Feinstein, City of Hanford, and City of Lemoore. Media in attendance included Visalia-Hanford-Lemoore Future.

Virtual Meeting

The NAS Lemoore virtual meeting was combined with the Fresno virtual meeting. Please see summary under Fresno above.

Barnes ANG Base at Westfield-Barnes Regional Airport, 104 FW, Massachusetts

In-Person Meeting

Date: August 18, 2022

Time: 2 p.m. to 4 p.m. (Agency) and 5 p.m. to 7 p.m. (Public) EDT

Location: Westfield Intermediate School, 350 Southampton Rd, Westfield, MA 01085

Attendees: 0 persons attended the Agency meeting and 60 people attended the Public meeting

Meeting Format: Open house

Written comments submitted during the meeting: 5

Summary:

The Barnes ANGB meeting was the most highly attended of the four public scoping meetings. Notable stakeholders in attendance included Westfield Residents Advocating for Themselves (WRAFT), State Senator John Velis, State Representative Kelly W. Pease, City of Westfield, Airport staff and Airport Commissioners, City of Westfield Mayor Michael A. McCabe, and a school committee representative. Media in attendance included Western Mass News and The Republican.

Virtual Meeting

Date: August 24, 2022

Time: 5:30 p.m. to 6:30 p.m. EDT

Location: Zoom Webinar

Attendees: Est. 18

Meeting Format: Welcome, pre-recorded presentation, live Q&A

Number of questions submitted during the meeting: 5

Summary:

There were six questions received via the written Q&A function; no questions were received via the verbal queue. All questions were responded to verbally. The following are the questions received:

1. Are there any alterations or changes that could be made to flights / take off to reduce the disturbance to the residents?
2. Can we see who is answering?
3. Will the EIS include AICUZ and/or FAA Part 150 Study contours for both aircraft?
4. Will published approaches, departures, ATC vectors, and/or VFR patterns change due to the proposed changes of aircraft?"
5. Where will the transcript for this Zoom meeting be accessed?
6. Prior to acceptance of any new aircrafts, are both aircrafts going to be (F-15EX and F35) be flown at Barnes ANG Westfield during the drafts for explicit data at this location instead of another location?

NAS JRB New Orleans, 159 FW, Louisiana

In-Person Meeting

Date: August 16, 2022

Time: 2 p.m. to 4 p.m. (Agency) and 5 p.m. to 7 p.m. (Public) CDT

Location: Belle Chasse Auditorium, 8398 LA-23, Belle Chasse, LA 70037

Attendees: 0 persons attended the Agency meeting and 5 people attended the Public meeting

Meeting Format: Open house

Written comments submitted during the meeting: 2

Summary:

The New Orleans meeting was sparsely attended. Attendees included members of the public, mostly retired service members. There was no media in attendance.

Virtual Meeting

Date: August 23, 2022

Time: 5:30 p.m. to 6:30 p.m. CDT

Location: Zoom Webinar

Attendees: Est. 1

Meeting Format: Welcome, pre-recorded presentation, live Q&A

Number of questions submitted during the meeting: 5

Summary:

There were five questions received via the written Q&A function; no questions were received via the verbal queue. All questions were responded to verbally. The following are the questions received:

1. The project website says you will evaluate training in the existing SUA. Will the action include changes to the current training or will changes to training occur in future NEPA analyses?
2. What is the general decibel level difference from the original planes and the replacement planes?
3. Which SUAs, if any, have low-elevation flights such as 100 ft or 500 ft above ground? Will there be new sonic booms where there weren't before due to louder planes?

4. Thank you for your answer. When you said no SUAs currently have low flight floors - does that pertain to the New Orleans location? For the CA locations? For the MA location?

5. Approx how low is the flight floors in these locations?

Appendix A

Notice of Intent

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including the validity of the methodology and assumptions;

- Propose ways to enhance the quality, utility, and clarity of the information to be collected; and
- Propose ways to minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

A 60-day Notice requesting public comment was published in the **Federal Register** on March 14, 2022 at 87 FR 14255. This comment period ended May 13, 2022, and AmeriCorps received 56 comments by the comment deadline identifying a number of issues.

Many comments directly addressed the time burden required by this information collection. Everyone who commented on the agency's estimated time burden stated that the estimated 5 minutes per individual was significantly lower than the time actually required to fulfill a National Service Criminal History Check (NSCHC) for an individual in order to obtain the required records under this information collection. Recommended new estimates ranged from 30 minutes per individual to 4 hours per individual. Several commenters noted that a missing element of the estimate is the travel time it takes to take individuals to get fingerprinted, given that the closest fingerprinting facilities in rural or remote areas may be located up to a four hours' drive away. A few commenters also noted that the burden of completing the NSCHC training course and staying updated on requirements had not been factored into the time estimate. Based on this input, AmeriCorps has adjusted its estimates of time burden to reflect that it takes, on average, an estimated 135 minutes (2 hours and 15 minutes) per covered individual. AmeriCorps has streamlined and clarified requirements on its website at *americorps.gov/grantees-sponsors/history-check* over the past year, and will continue to review to determine whether any additional clarifications could be made to reduce burden given that respondents are responsible for reading and understanding the requirements for compliance with the law.

Commenters also raised issues related to difficulties with the AmeriCorps-approved vendors. AmeriCorps underwent the required Federal procurement process to select Fieldprint and Truescreen as contractors to serve as the approved vendors. AmeriCorps will forward these comments to the vendors for any appropriate remedial action and will consider the issues presented in soliciting future proposals for approved vendor contracts. Comments also raised issues that are beyond the scope of this information collection; however, AmeriCorps is maintaining a comprehensive record of all these comments and the issues raised in the comments for consideration as it continues implementation of the statutory requirements for NSCHCs.

Finally, the other issues raised in the comments in response to the 60-day notice were already raised and addressed in the rulemaking process that culminated in 2021 in the current regulation, such as who must undergo an NSCHC, what the NSCHC consists of, and when the NSCHC must be completed. *See* 86 FR 1141 (February 24, 2021).

Title of Collection: National Service Criminal History Check Recordkeeping Requirement.

OMB Control Number: 3045–0150.

Type of Review: Renewal.

Respondents/Affected Public: Businesses and organizations (AmeriCorps grantees and subgrantees).

Total Estimated Number of Annual Responses: 337,071.

Total Estimated Number of Annual Burden Hours: 758,410.

Abstract: Section 189D of the National and Community Service Act of 1990, as amended, requires AmeriCorps grantees and subgrantees to conduct a National Service Criminal History Check on individuals in covered positions. Documenting compliance with the requirement is critical to that responsibility. The Check includes a nationwide check of the National Sex Offender Public website, a check of the State criminal history record repository or agency-designated alternative for the individual's State of residence and State of service, and a fingerprint-based check of the FBI criminal history record database through the State criminal history record repository or agency-approved vendor. One way for grant recipients or subrecipients to obtain and document the required components is through the use of agency-approved vendors, but use of vendors is not required. The currently approved information collection is due to expire on July 31, 2022. This notice announces AmeriCorps' intention to seek renewal of the information collection approval without revisions, but with an adjustment of burden hours.

Dated: July 13, 2022.

Fernando Laguarda,

General Counsel.

[FR Doc. 2022–15309 Filed 7–18–22; 8:45 am]

BILLING CODE 6050–28–P

DEPARTMENT OF DEFENSE

Department of the Air Force

Notice of Intent To Prepare an Environmental Impact Statement for Air National Guard F–15EX Eagle II and F–35A Lightning II Beddowns

AGENCY: National Guard Bureau, Department of the Air Force, Department of Defense.

ACTION: Notice of intent.

SUMMARY: The Department of the Air Force (DAF) is issuing this Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) to assess the potential social, economic, and environmental impacts associated with beddown of F–15EX and F–35A aircraft that would replace the legacy F–15C/D aircraft. The DAF is the lead agency on the preparation of the EIS and the Department of the Navy and the Federal Aviation Administration are participating as cooperating agencies.

DATES: A public scoping period of 45 days will take place starting from the date of this Notice of Intent (NOI) publication in the **Federal Register**. Identification of potential alternatives, information, and analyses relevant to the proposed action are requested and will be accepted at any time during the EIS process. To ensure DAF has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments should be submitted in writing to the website or the address listed below within the 45-day scoping period. In-person scoping meetings are scheduled at Fresno, CA on August 9th, Lemoore, CA on August 10th, New Orleans, LA on August 16th, and Westfield, MA on August 18th. Virtual scoping meetings are scheduled at New Orleans, LA on August 23rd, Westfield, MA on August 24th, Fresno and Lemoore on August 25th.

ADDRESSES: The project website (*www.ANGF15EX-F35A-EIS.com*) provides information on the EIS and the scoping process and can be used to submit scoping comments online. Scoping comments may also be submitted by email to *NGB.A4.A4A.NEPA.COMMENTS.org@us.af.mil*, including F–15EX_F–35A Beddown EIS in the subject line, or by mail to Mr. Will Strickland, National Guard Bureau, NGB/A4AM, Shepperd

Hall, 3501 Fetchet Avenue, Joint Base Andrews, MD 20762–5157; (240) 612–7042. EIS inquiries and requests for digital or print copies of scoping materials are available upon request to Mr. Strickland at the email or mailing address provided. For printed material requests, the standard U.S. Postal Service shipping timeline will apply. Members of the public who want to receive future mailings informing them on the availability of the Draft and Final EIS, or to receive periodic Fact Sheets, are encouraged to submit a comment that includes their name and email or postal mailing address.

SUPPLEMENTARY INFORMATION: The purpose of the Proposed Action is to replace aging F–15C/D aircraft currently utilized by the Air National Guard with the state-of-the-art fighter aircraft to better address future mission requirements, offer expanded capability, and provide life-cycle cost savings in comparison to continued operation of existing F–15C/D aircraft. The Proposed Action is needed because the F–15C/D aircraft are reaching the end of their service life. It is not economically feasible to retain the F–15C/D aircraft beyond fiscal year 2026 and DAF has already begun to retire aircraft that have reached the end of their serviceability. The proposed basing alternatives include the 104th Fighter Wing at Barnes Air National Guard Base (ANGB), Westfield-Barnes Regional Airport, Westfield, Massachusetts; the 144th Fighter Wing at Fresno Yosemite International Airport, Fresno, California; the 144th Fighter Wing at Naval Air Station Lemoore, Lemoore, California; and the 159th Fighter Wing at Naval Air Station Joint Reserve Base New Orleans, Belle Chasse, Louisiana. These aircraft would replace the legacy F–15C/D aircraft at the selected installations, with the exception of NAS Lemoore, which does not currently have F–15C/D aircraft to replace.

The EIS will assess the potential environmental consequences of each alternative in support of these operational beddowns. Each of the two F–15EX beddowns would include one squadron of 21 Primary Aircraft Authorized, 2 Backup Aircraft Inventory, and 1 Aircraft Reserve; the F–35A beddown would include one squadron of 21 Primary Aircraft Authorized and 2 Backup Aircraft Inventory. These aircraft are being acquired in support of the Air National Guard mission.

Resource areas being analyzed for impacts under the Proposed Action include noise, biological resources, cultural resources, socioeconomics, soils and geology, water resources, infrastructure and transportation, land use, hazardous materials and wastes, health and safety, air quality, and environmental justice and other sensitive receptors. Potential significant impacts as a result of the Proposed Action include those related to aircraft noise, air quality, and land use. Should any permits be required for the Proposed Action, the DAF will identify and obtain all appropriate permits. The DAF will also consult with appropriate resource agencies and Native American tribes to determine the potential for significant impacts. Consultation will be incorporated into the preparation of the EIS and will include, but not be limited to, consultation under Section 7 of the Endangered Species Act and consultation under Section 106 of the National Historic Preservation Act.

The Draft EIS is anticipated in summer 2023 and the Final EIS is anticipated in Winter/Spring 2024. The Record of Decision would be approved and signed no earlier than 30 days after the Final EIS.

Scoping and Agency Coordination: To effectively define the full range of issues to be evaluated in the EIS, DAF will determine the scope of the analysis by soliciting comments from interested local, state, and federal elected officials and agencies, Tribes, members of the public, and others. Consistent with Executive Order (E.O.) 11988 and E.O. 11990, this Notice of Intent initiates early public review of the Proposed Action and alternatives and invites public comments and identification of potential alternatives. Comments will be accepted throughout the process, but in order to have comments incorporated into the Draft EIS, comments should be received within 45 days of the publication of this notice in the **Federal Register**. The scheduled dates, times, locations, and addresses for the scoping meetings are concurrently being published in local media and on the website. Public scoping will be accomplished both remotely and in-person during the scoping period. The project website provides posters, a presentation, an informational fact sheet, downloadable comment forms to fill out and return by mail, and the capability for the public to submit scoping comments online.

Adriane Paris,

Air Force Federal Register Liaison Officer.

[FR Doc. 2022–15328 Filed 7–18–22; 8:45 am]

BILLING CODE 5001–10–P

DEPARTMENT OF DEFENSE

Defense Acquisition Regulations System

[Docket No. DARS–2022–0010; OMB 0704–0574]

Information Collection Requirement; Defense Federal Acquisition Regulation Supplement; DFARS Part 215, Only One Offer and Related Clauses in DFARS 252; Submission for OMB Review; Comment Request

AGENCY: Defense Acquisition Regulation System, Department of Defense (DoD).

ACTION: Notice.

SUMMARY: The Defense Acquisition Regulations System has submitted to OMB for clearance the following proposal for collection of information under the provisions of the Paperwork Reduction Act.

DATES: Consideration will be given to all comments received by August 18, 2022.

Title, Associated Forms, and OMB Number: Defense Federal Acquisition Regulation Supplement (DFARS) Part 215; Only One Offer and Related Clauses at 252.215; OMB Control Number 0704–0574.

Type of Request: Extension of a currently approved collection.

Number of Respondents: 2,691.

Responses per Respondent: 1.33, approximately.

Annual Responses: 3,593.

Average Burden per Response: 37.7 hours, approximately.

Annual Burden Hours: 135,330.

Affected Public: Businesses or other for-profit and not-for-profit institutions.

Frequency: On occasion.

Respondent's Obligation: Required to obtain or maintain benefits.

Needs and Uses: This information collection pertains to information that an offeror must submit to DoD if only one offer was received in response to a competitive solicitation, and the contracting officer must request certified cost or pricing data because of the revised standard for adequate price competition that is applicable to DoD. The Government requires this information in order to determine whether an offered price is fair and reasonable and to meet the statutory requirement for certified cost or pricing data. The contracting officer obtains this information through use of DFARS solicitation provisions 252.215–7008, Only One Offer; and DFARS 252.215–7010, Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data. These provisions implement 10 U.S.C. 2306a.

Comments and recommendations on the proposed information collection

Appendix B

Scoping Comments

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Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
1	Barnes	TREVOR	ECKHART		Westfield	MA	I would like to see the noise levels considered inside schools which reside in the proposed F35 training areas. According to research - kids in nearby schools to F35 are affected by "speech interference" due to the loud noise and schools not being sufficiently sound-proofed. Communities like Westfield, MA which include many schools and colleges are already suffering from jet noise. Increased distractions from noise inside schools has the potential to become a major issue for our children. https://www.popularmechanics.com/military/aviation/a28625774/f-35-too-loud/	Noise
2	Fresno	Kevin	Damm		Fresno	CA	As a former member of the 144th Fighter Wing this news brings me much excitement! And as a resident within 2 miles, concern. While I currently love seeing and listening to the 15s fly directly over my house while on approach, the bed-down of F-35s would be quite bothersome. The F-35, according to https://www.safeskiescleanwaterwi.org/noise-level-comparisons-f-35-and-other-aircraft/ , generates significantly more decibels than any other fighter airframe in the U.S. Air Force. This increase in noise level in the vicinity of Fresno Airport would be too much. I own and operate a outdoor swim school in my back yard for young children and as I mentioned earlier am directly under the current approach pattern. seeing the F15s over head on a daily is amazing and makes me miss working there but knowing how loud F35s are concerns me for the ears of my clients, and my own children. Best, (Former) SSgt. Kevin Damm	Noise
3	Fresno	Shezam	Jahromi		Fresno	CA	Hi, I am writing my comments with a strong support for continuing our mission to protect the West Coast. Fresno is a perfect location as it is centrally located. The 144 was the reason I moved to Fresno. In addition I am also personally supporting F-15EX as I am a flight surgeon and F-35 will definitely kill my career and force me to retire/leave! It makes sense to go from F-15 to F-15EX rather than a new airframe which is more costly.	General Support Socioeconomics Aircraft Preference
4	Fresno	Ava	Jahromi		Fresno	CA	I am in support of F-15EX	General Support Aircraft Preference
5	Fresno	Aimee	Jahromi		Fresno	CA	I think Fresno would be an amazing home to the f15EX!!	General Support Aircraft Preference
6	Fresno	Khwaja	Shams		Fresno	CA	Thank you for this opportunity. Every time we see jets flying over our home myself and my family feel proud and secure. We are happy that men and women who work at the base are part of our community and contribute to its well being.	General Support
7	Fresno	bob	albertson		clovis	CA	let them come fresno central to west coast	General Support
8	Fresno	Jeremy	Brownstein	LCSW	Fresno	CA	As a mental health provider whose office is located near the airport I cannot express enough concern regarding the impact of these flights on my clients. In many instances I've had clients who suffer from PTSD and other severe mental illnesses experience	Noise

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							increased panic and anxiety in session during fly overs. Additionally, many of my clients live in the vicinity of the airport and report increased concerns about their mental health due to the intense sounds from these flyovers.	
9	Fresno	Michael	Kohl		Fresno	CA	Living in Fresno is difficult. The heat is so bad, the air quality is just about the worst in the entire state. I live in a neighborhood just west of FSU. I am right under the flight path from the airport. The current noise pollution from overhead jets is quite bad. Adding bigger jets will just make this worse. Fresno is the fourth most populous city in California. Please spare us from making it an even more difficult place to live.	Noise
10	Fresno	Tuck	Burnis		Fresno	CA	I now live directly under the Fresno flight zone & I find it tolerable but this new plan for fighter jets is just too much! I live in a continuing care retirement facility with over 400 quite elderly & infirm folks who do not need this extra noise. The Terraces at San Joaquin Gardens where I live (I'm 83+ & handcapped) was started over 60 years ago when Fresno & the airport were much smaller & quieter; now everything is bigger & noiser. Please don't sacrifice us to this expansion. Choose a less urban site, please. Thank you.	Noise
11	Fresno	Emily	Kuizenga		Fresno	CA	The noise from these jets is incredibly disruptive to our calm neighborhoods. Sometimes I am playing in the backyard with my kids and the noise decibel level registers at an unhealthy range. Please do not relocate to Fresno!	Noise
12	Fresno	Michael	Caliendo		Roseville	CA	Put the planes in Lemore, CA. We need to modernize our fleet and it would be good for the economy while keeping us safe	General Support Socioeconomics Location Preference
13	Barnes	Tyler	Cullen	MA ANG		MA	As a current member employed at Barnes ANG base working the the maintenance group, I feel the F-15EX better fits our current mission, especially our alert mission. On the maintenance end I believe the turn over to the new F-15EX will be smooth and efficient as we are well versed in the current F-15 models and learning the upgrades on the new version will be a more fluid and efficient than learning a completely new aircraft. On a logistics end having two air bases in the north east with the F-35A seems redundant. On the environmental end I don't believe the excess noise from the F-35A will be very welcomed by the local community.	Aircraft Preference
14	Fresno	Elizabeth	Thomas		Fresno	CA	I live south and east of Shaw and Willow, between Hwy 168 and the airport. I hear your jets nearly every day and I hate them. I feel like I'm in a war-torn country, not America. I have seriously put off having children because I can't move to a quieter place yet.	Noise
15	Fresno	Janet	Smith		Fresno	CA	ANG F-15EX & F-35A Beddown EIS I am concerned about the noise and vibrations in the house when the jets fly over. Since we moved here in 1968, the flight patterns have changed as well as the frequency, the speed of take off and landing, and time of the day. The practice time went from around 2:00 P.M and around 6:00 P.M. Now, I can't even plan a garden brunch, luncheon, or dinner-not knowing when the jets will go out. The flight pattern was never over the house. Now, they fly directly over, fast, and low. (And by the way, I never signed off my air space, when the surrounding houses were fitted with noise reduction windows, because I'm in the yard.)	Noise Vibration

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							Also, the the take off and landing speed was slow and rarely, did I hear the throttling down noise. Now, the planes "hot rod" straight up in the sky, take off with such speed one doesn't have to look up, and when I do, often times I can't see them because they are so far west and so high the light has to catch them just right to see them. There are more of them at one time (from 3 to 6), and more frequent. Then there are the days of practice landing and take off, making the landing turn directly over my house or next door neighbors. Loud, loud, loud. The vibrations are strong enough to make pictures on the walls crooked, car alarms go off, the cat run under the bushes, plaster crack, and everyone talking pause until the planes (all 6) fly over. I've have been meaning to call the National Guard for a long time. Now with the new jets, they will probably be louder, yet, and be more of them. I know jets can be flown quieter. I'm asking to be respectful, change the noice decibels, which in turns changes the vibrations. I know it can be done.	
16	Fresno	John	O'Rorke		Fresno	CA	The noise pollution over the cities of Fresno and Clovis, caused already by the low flying fighter aircraft, i at times, is deafening. If newer, more powerful aircraft, are to come to Fresno, then please consider changing the takeoff and landing patterns, to exit asap, instead of over our populated areas	Noise
17	Fresno	Karen & Tom	Kovac		Fresno	CA	We attended the Aug 9, 2022 public scoping meeting in Fresno Ca regarding proposed Draft EIS. We are very upset regarding the current noise levels of existing operations of the Air National Guard at the Fresno airport utilizing F-15 fighter jets. The current noise levels from take-offs is so egregious we cannot have personal or phone discussions inside our closed off house, or be able to hear the TV/radio during those take-offs. If we're outside the take-off noise is actually hurtful to our ears. In discussing the situation with the person at the public meeting assigned to noise issues I was informed that noise tests were yet to be conducted at a military base in another state. I find it very disconcerting that absolutely no noise dosimeter readings are proposed in our Fresno neighborhoods for the current jets to be compared with the noise studies proposed for the new aircraft planned for the Fresno airport. How can the EIS responsibly address any positive or negative impacts of the newer aircraft that will replace the existing older jets. It would not take an extensive effort to collect some current spontaneous noise data from neighborhoods underlying the take-off flight path in order for the EIS to appropriately address the noise comparison between old and new Air Guard jets. Industrial Hygienists routinely perform noise tests and are readily available. They may be a more appropriate person to address the noise issues at future public meetings. Failure to do so will impugn the integrity of the EIS. Thank you.	Noise
18	MA	Robert & Darnell	Greenleaf & Giroux		Westfield	MA	What will be done to curb the sound & fuel pollution of the neighboring homes especially since not all the homes have the sound proofing that was only offered to portions of the neighbors?	Noise Air Quality
19	MA	Daniel	Dodge		Florence	MA	I would like to add my objection to the plan to bring on more aircraft. I live in nearby Florence, and the noise from the current jets in their flight path over our home is already too loud. The area around Westfield is not appropriate, for there are too many residential areas.	General Opposition Noise

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
20	MA	Robert	Stefano		Westfield	MA	As a past member of the ANG at barnes, noise is not a problem . I enjoy the aircraft	General Support
21	MA	Jan	Emerson		Southampton	MA	awakened at 3:30 a.m. and two other late a.m.s by loud military planes in Southampton!Jan	Noise
22	MA	John	Tassinari			MA	Hello, I attended the other night for the presentation in Westfield Middle School. Had the opportunity to review the slides you had. I'm not opposed to the upgrade, the base is important to this area and has a very good history. I live on the approach (Munger Hlll Area) and think the current F-15C sound levels are acceptable. F-15EX seems like the logical choice, but I would welcome the F-35A as it is available now and will have a longer deployment life. Thanks, John	General Support
23	MA	James	Haley		Westfield	MA	I am located on the north end of runway 02-20, directly in the flight line of all aircraft coming and going into Barnes Airport. I have seen and heard all of the aircraft the 104th MANG has been issued since 1949. The F-35A is one of the loudest aircraft in the Air Force inventory. This F-35A is a preposterous aircraft to even be considered for BAF. We are already deluged by harmful aircraft noise. I am asking you to NOT ASSIGN THE F-35A to Westfield. I am requesting you send an F-35A aircraft to Westfield for a well-publicized flight demonstration so we can all see and hear this aircraft Thank You	Noise
24	MA	William	Onyski		Westfield	MA	Please accept this email as support of the F-15EX or F-35A aircraft for the 104th Fighter Wing at Barnes Airport. The 104th has always been an important part of the Westfield Community. Their service is appreciated. As you are aware, the 104th has received many accoldes for the base from the Air Force. The men and women of the base are professional and well respected in the community. Please provide full consideration of the new aircraft at the 104th. Thank you, Bill	General Support
25	MA	denise	heintze		Easthampton	MA	As many others have also expressed, my main worry about Barnes, and all such facilities, is pollution, viz, noise, water, air, soil, and its long-term effects on area residents and on wildlife. Even in Easthampton, the noise from the ANG planes is considerable; I can't even imagine what it must be right next door to Barnes. I hope this is a real EIS and not just a superficial glance at the base and environs. Please deploy any and all mitigating actions regarding these issues, no matter which base is chosen. Thank you.	Air Quality Noise Water Multiple Environmental
26	MA	Michael	Ripa		Westfield	MA	VIBRATION In my neighborhood our homes are aging. Over time the vibrations from Barnes aircraft have caused foundation and structures to move with expansion beyond constructed tolerances. Doors and windows don't work like they used to and foundations are starting to shift	Vibration Noise

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							and relocate. Subtle cracks have become larger and causing structural damage and concern. I realize the need to protect our country with the most up to date equipment available, but with the addition of the F15EX eagle and F35A aircraft the increase in decibel levels and V[BRATION, in an already high decibel area would quickly accelerate this process, destroying and distorting our homes even more, resulting in a drop in our property values, and increasing maintenance cost. WHAT ARE YOU DOING TO SOLVE THIS PROBLEM??? NOISE According to Wyle FINAL NEM update for Wrstfield-Barnes 2019-2024 the noise level contour line do not EXPAND (CHANGE) . With the advent of "known" increase in Db levels. Explain to me, HOW the Db levels contour lines profile remain the same, as well as the Db levels (in the first two (2) outer contour lines??? Mitigation cannot fix this problem. When the F15s first arrived our homes were "sound proofed" with new windows, doors, insulation, etc. None of which have solved these problems. Only land acquisition will remedy this situation and is the only plausible solution.	
27	MA	John	Petta		Holyoke	MA	I live right next to Ashley reservoir and if I had a choice F35 all the way I love the sound the feel the sight of freedom	Aircraft Preference
28	MA	Christine	Hagan		Southampton	MA	We'd like to see these young men flying in new planes. The current 40 yr old planes need to be retired. We support the new planes, personnel & construction. Most of us who haved lived in the area are used to the "noise" of the planes & always stop & look up. The "sound" of freedom is welcomed here.	General Support
29	MA	Kristen	DeGray		Westfield	MA	Hold tours to include flight simulators!!	Other
30	MA	Victor	Bartolussi		Westfield	MA	Planes when take offs are not sticking to the flight paths and are going over my house with full afterburners.	General Opposition
31	MA	Dennis	Biagetti		Westfield	MA	We live on Springdale Rd. so the F-15 & other military aircraft come right over our house! Being a retired military W.O. I can tell you I love hearing the "boys" fly over our house. They have an important mission & keep us all safe & secure. Whatever their future we want to wish all, not only the pilots but all the support staff that work at Barnes AFB. "God Bless Them All"	General Support
32	MA	Vicki	Alfano		Westfield	MA	We live on the southern flight path. We're so used to the planes taking off and returning. Sometime the windows rattle but its not overwhelming and we've gotten used to the sounds and do not have any problems with it. As long as there is not too uch extrave pavement to influence water run off and the extra runoff is mitigated we don't see any problems. We appreciate keeping locals informed as to what is going on. Hope you get the new planes. Good luck. Thanks to the entire crew for your service.	General Support
33	Fresno	Ralph	Aguilera	144th Fighter Wing	Fresno	CA	Comparing the publicly available information on both airframs I believe the F-15EX is the go to airframe. With the Alert mission of aerospace defense the F-15EX and it's longer range, heavier combat loadout capability and ease of maintenance make it the obvious choice, on the back side I will list a handful more statistics to supplement my arguement.	Aircraft Preference

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							F-15EX Unit Cost: 87.7 million~ Cost per flight hour: $29,000~ Airframe lifespan: 20,000 hours Lifetime Cost: $580,000,000~ Weapons: 22 missiles Range: 1100 miles Sound: 115 dB~ Reduced Unit Conversion Training F-35A Unit Cost: 77.9 million~ Cost per flight house: $44,000~ Airframe lifespan: 8,000 hours Lifetime cost: $352,000,000~ Weapons: 10 missiles Range: 670 miles Sound: 122 dB Extended Unit Conversion Training Per 100 aircraft and 2,000,000 flight hours the F-15EX program is $43 billion~ cheaper.	
34	Fresno	Rob	Rhodes		Fresno	CA	I desire maximum deployment of either aircraft to Fresno. Not concerned about noise or environmental impacts.	General Support
35	Fresno	A	Rhodes		Fresno	CA	It's about time newer aircraft are being brought here. Let's not just propose it. Do it!!	General Support
36	Fresno	Thomas W.	Kovac		Fresno	CA	The current aircraft used by the National Guard are extremely loud. Some have a high pitched "screech" that precludes any telephone conversion inside the house with doors & windows closed. I am located about 1/4 mile north of the flight path and the aircraft are approximately 1000 ft above the ground as they fly by on takeoff. Usually the planes go out in sets of four prolonging the noise level several minutes. I would estimate the noise levels are 100+ decibels, sometimes enough to hurt the ears if outside. What are the mitigation measures proposed to address this fundamentl issue??	Noise
37	Fresno	Jeffery	Sundstrom		Fresno	CA	15EX seems to be a seemless transition from 15C. Less noise and less impact on public. Agin F-35 is a all eggs in one basket if it is to replace F-16 - 15 - A10. Didn't we learn from the F-4 that this policy does not work. History repeats.	Aircraft Preference
38	Fresno	Joshua E.	Lloyd	144 FW MXS/MXMP	Fresno	CA	From the perspective of an airman part of the 144th FW Maintenance Squadron, I see significantly more benefit adopting the F-15ES. From a mission standpoint, the new F-15EX offers a more air superior weapons layout, longer range for overseas operations, and an overall wider variety of capability to defend the West Coast. From a maintenance standpoint, general component swaps, such as engine pulls, are significantly faster by days in the F-15EX, while the F-35 can take weeks to perform maintenance. The F-15EX is also more cost efficient coming from a flight hous eperspective. Overall, the F-15 has been unmatched throughout its generation. The new technological advances the new F-15EX brings to the table is a mixture of everything needed for air superiority.	Aircraft Preference
39	Lemoore	Chad	Draxler		Hanford	CA	I believe the Fresno National Guard should get F-15EX. I don't think LNAS is in any	Aircraft Preference

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							need of F-35A. The expansion would be too much. The air quality I Kings County is already horrible. More jets are bad.	Location Preference
40	Lemoore	Gregory	Woods	U.S. Navy	Hanford	CA	Although more expensive, there are significant synergies with bringing F-35A to Lemoore, as well as reduced noise pollution at other locations. Lemoore is the best choice from an operators perspective.	Location Preference
41	Lemoore	Kalish	Morrow	Mayor of Hanford	Hanford	CA	I wanted to state that the potential expansion of NAS Lemoore comes with the support of the City of Hanford. Lemoore has a lot of fanfare from the local communities & is uniquely situated with little to no encroachment from residential zoning. When I was running for Hanford City Council I often stated that I was intent on creating a more vibrant town that military personnel & their families would be excited to move to. I'm proud to say that Hanford continues to improve with quality housing, parks, retail, and entertainment. We would be pleased to welcome you to our community.	Location Preference General Support
42	NOLA	Bruce	Keller, CPLO	NAS/JRB New Orleans	Belle Chasse	LA	If LAANG were to get the F-35 here, I understand that they would need to add air-to-ground training as part of their training flights, which would have some of their flights heading toward the air to ground facilities both west and east of NAS JRB New Orleans. This leads to the suggestion of including a map of the ranges that we currently use versus the ones we would likely use if changes are made in based-aircraft (which might affect the use of existing and new flight tracks)? Note: Just a suggest not sure if changes will have much if any impact on flight patterns.	Airspace
43	NOLA	Bruce	Keller, CPLO	NAS/JRB New Orleans	Belle Chasse	LA	Some things to include/identify if possible in the study: - How many new flight operations will be added (if any) to the total flight operations we do here after implementation (ex: total today is aprox 20K) Expect it might increase to 24K. - How the mixture of LAANG flight operations will change compared to their current portion of the total pie of flight ops. (Ex: LAANG currently flies about 25% of total flight ops today; expect that it would increase to 30%)	Flight Operations
44	Mail	Joe	Neves	County of Kings Board of Supervisors	Hanford	CA	RE: Support for the F-35A Lightning II Operational Beddown at Naval Air Station Lemoore To Whom It May Concern: On behalf of the Kings County Board of Supervisors, we are writing to express our support for the F-35A Lightning II Operational Beddown at Naval Air Station (NAS) Lemoore. We are extremely pleased that the Department of the Air Force and the National Guard Bureau are considering Lemoore as one of the preferred locations for beddowns of these aircraft. Kings County has enjoyed a mutually beneficial relationship with NAS Lemoore since 1961 when the naval air station was first commissioned, and we fully support its continuing operation. The Board of Supervisors wishes to formally communicate the views of its constituents, the residents of Kings County, as favoring the Department of the Air Force and National Guard Bureau's decision to consider NAS Lemoore as the location of the F-35A Lightning II. NAS Lemoore is highly respected and considered a vital community in our county. We recognize the importance of the military in our great nation and applaud the families that commit their lives to defending our freedom. Many military families, based at NAS Lemoore, call Kings County home, and are integral to this county.	General Support Location Preference Socioeconomics

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							NAS Lemoore is a major economic driver for our local economy. According to the 2020 Economic Impact Assessment, NAS Lemoore contributed more than $947 million to local economies in Kings and Fresno counties. With an excess of 11,800 jobs attributed to the base, and a payroll exceeding $4 75 million, NAS Lemoore represents the single largest employer in Kings County. The continued success of NAS Lemoore is critical to our local economy. We stand firm in our commitment to the support ofNAS Lemoore -the nation's premier Naval master jet base. Please know that the County of Kings and the Kings County Board of Supervisors highly support the Department of the Air Force and National Guard Bureau's decision to consider locating the F-35A Lightning II at NAS Lemoore. Sincerely, Joe Neves Chairman, Kings County Board of Supervisors cc: Rear Admiral Bradley N. Rosen, Commander, Navy Region Southwest Captain Douglas Petersen, Commanding Officer, NAS Lemoore Senator Diane Feinstein Senator Alex Padilla Representative David G. Valadao Lance Lippincott, Kings County EDC	
45	Mail	Lance	Lippincott	Kings County Economic Development Corporation	Hanford	CA	RE: Support for the F-35A Lightning II Operational Beddown at Naval Air Station Lemoore To Whom It May Concern: On behalf of the Kings County Economic Development Corporation (Kings EDC) Board of Directors, I write to express our support for the F-35A Lightning II Operational Beddown at Naval Air Station (NAS) Lemoore. We are extremely pleased that the Department of the Air Force and the National Guard Bureau are considering Lemoore as one of the preferred locations for beddowns of these aircraft. Kings County has enjoyed a mutually beneficial relationship with NAS Lemoore since 1961 when the naval air station was first commissioned. As Kings County's economic development agency, Kings EDC has benefitted from the experience and insights provided by the air station's ex-officio board member for the past 24 plus years. Having gone to battle alongside NAS Lemoore during multiple BRAC's, the MOA campaign, aircraft homebasing competitions, and coordinating the Friends ofNAS Lemoore Committee, we feel Kings EDC is uniquely positioned to enthusiastically offer our support for NAS Lemoore's continued operation and the expansion of its mission. On behalf of Kings EDC and its partner, the Job Training Office (JTO), I would like to offer our continued assistance to the air station, its personnel, and families. Kings EDC's mission is to enhance Kings County's economy through economic assistance to businesses and communities. It's partner, the Job Training Office, is Kings County's workforce development agency responsible for matching potential workers with available jobs and assisting workers in gaining the skills needed to succeed in today's workplace. We feel strongly that NAS Lemoore is a Kings County community, and those that work and live at the facility are important Kings County residents. NAS Lemoore is a major economic driver for our local economy. According to the 2020 Economic Impact Assessment, NAS Lemoore contributed more than $947	General Support Location Preference Socioeconomics

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							million to local economies in Kings and Fresno counties. With an excess of 11 ,800 jobs attributed to the base, and a payroll exceeding $475 million, NAS Lemoore represents the single largest employer in Kings County. The continued success of NAS Lemoore is critical to our local economy. As agencies in pro-armed services Kings County, we recognize the importance of the military in our great nation and applaud the families that commit their lives to defending our freedom. Therefore, it is my pleasure to convey the Kings EDC Board of Directors wishes to formally communicate its unqualified support for the Department of the Air Force and National Guard Bureau's decision to consider NAS Lemoore as the logical location of the F-35A Lightning II. Sincerely, Lance Lippincott Economic and Workforce Development Director cc: Rear Admiral Bradley N. Rosen, Commander, Navy Region Southwest Captain Douglas Petersen, Commanding Officer, NAS Lemoore Senator Diane Feinstein Senator Alex Padilla Representative David G. Valadao State Senator Melissa Hurtado Assemblymember Rudy Salas	
46	Barnes	William	Giles		Westfield	MA	I live not far from the end of the runway. Sometimes the noise bothers me but then a say to my self I would rather have them flying that someone else. Therefore I support the Barnes AFB 100%. I served in the AF back in the 50's and was part of the 12th SFW that flew missions in northern Japan to protect us from Korea. I think from that experience I know a little what those guys do. That's why I support them 100%.	General Support
47	Fresno	Terry	Busch		Fresno	CA	Dear EIS project manager, My letter is the complait of these jets. They are such a nerve recking annoyance all day. When I bought my house 3 yr ago I keep in mind of being somewhat close to National Guard & airport before buying. We sat around the area of this house to see the loudness in morning & eve. before making a bid o this home. We are now suffering. I know get more headaches migraines having to take doctor medication. Also my partner sleeps in day works at night at Heart Hospital. She is having problems stying asleep. The other big big problem is my pet. My ten yr old dog now has issuse shaking - and hidding under bed. Now having to give her calming meds which really not working. These jets sound like thunder to her. This is why we did not move to South Dakota. Thunder is really bad there. Please please please stop these jets from being housed in Fresno CA. We want back our dog and normal day. Please house jets in Lemoore CA, not Fresno. This effect our health peace & wellness. It has een so bad just hating life at home anymore. Thank you Terry Busch	Noise General Opposition Domestic Animals
48	Fresno	Janet	Smith		Fresno	CA	Janet Smith August 12, 2022 EIS Project Manager National Guard Bureau, NGB/A4AM	Noise Vibration

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							Shepperd Hall 3501 FetchetAve. Joint Base Andrews MD 20762-5157 ANG F-15EX & F-35A Beddown EIS I am concerned about the noise and vibrations in the house when the jets fly over. Since we moved here in 1968, the flight patterns have changed as well as the frequency, the speed of take off and landing, and time of the day. The practice time went from around 2:00 P.M and around 6:00 P.M. Now, I can't even plan a garden brunch, luncheon, or dinner-not knowing when the jets will go out. The flight pattern was never over the house. Now, they fly directly over, fast, and low. (And by the way, I never signed off my air space, when the surrounding houses were fitted with noise reduction windows, because I'm in the yard.) Also, the take-off and landing speeds were slow and rarely, did I hear the throttling down landing noise. Now, the planes "hot rod" straight up in the sky or take off with such speed one doesn't have to look up, but when I do, I can't see them because they are so far west (ahead of the sound) and so high the light has to catch them just right to see them. There are more of them at one time (from group of 3 to 6), and more frequent. Then there are the days of practice landing and take off, making the landing tum directly over my house or neighbors next door. Loud, loud, loud. The vibrations are strong enough to make pictures on the walls crooked, car alarms go off, the cat run under the bushes, house plaster cracks,, and everyone visiting need to stop talking until the planes (all 6 +) fly over. I've have been wanting to call the National Guard for a long time. Now with the new jets, they will probably be louder, yet, and more of them. I know jets can be flown quieter. I'm asking to be respectful. Change the way the jets fly in and out of the airport; that will change the noise decibels and in tum change the vibrations. I know it can be done. If there is another person I should address this letter to, please let me know. Sincerely, Janet Smith	
49	NOLA	Samuel	LaValla		Belle Chasse	LA	To whom it may concern, my name is Samuel LaValla. I am against havieing any new jets at our air navy base in Belle Chasse. We have a lot of problems with noise and pollution in our area. House and car alarms going off when they fly over. Our house roofs are black and when pressure washed you can smell the fuel oil. This is bad fore anyone breatheing this and for pets also. Our vehicles are black with unburned fuel and fumes. I have tried to get a noise study done in my back yard and they said they would do it. I called and they said they did it, but no one did, I was going to get the results in the mail, I still waiting. This was years ago. I have talked to and meet with captains and commander's but with no help. I have had a captain hang up the phone on me for asking a question. I am tired of the noise and flyovers. There is more I can tell you but	General Opposition Noise Multiple Environmental

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							this will do for now. No new planes in Belle Chasse please. Go to the desert in California. Thanks, please call or write me anytime.	
50	Barnes	Amy	Hoenig	Mass Wildlife, NHESP	Westborough	MA	See letter following table	Wildlife
51	Barnes	Robert	Riggs		Southampton	MA	I am a concerned resident of Southampton regarding the potential noise increase of the new aircraft under review. I think the review board should provide clear data on the noise implications of these 2 aircraft compared to the current F-15's in use today. Lately there has been increased traffic which only adds to my future concerns. Also the noise mapping that Barnes Airport currently uses doesn't provide a clear picture of how widespread the sound travels, this is a highly residential area around the airport for many miles. Based on various reports I have read it appears the F-35A is a very loud aircraft and would be better suited to a more remote area. I don't know much about the newly proposed F-15EX. In general I support the base but feel that it also needs to be a good neighbor, ie; minimal night flying, and a conscious effort on the pilots keeping noise to a minimum both during takeoff and approach. I hope that each local comment is valued, and will be given consideration. Respectfully, Robert Riggs	Noise
52	Barnes	Denise M.	Riggs		Southampton	MA	I live in Southampton, the fighter jets routinely fly directly over my home. I'm obviously concerned about the potential noise increase of the new aircraft under review. I would appreciate the review board providing clear information about the noise implications of the jets under consideration. Over the past few months there has been a noticeable increase in early morning jet traffic which only adds to my concerns. If the new jets are louder I believe they might be better suited for a less residential area. I've heard that pilots can minimize the engine noise during takeoff and approach...why don't they??? I support the base and think that respect should be reciprocal on the part of the base.	Noise
53	Barnes	Nancy	Boersig		Westfield	MA	My Husband and I have been residents of Westfield Ma for 35 years and have only great things to say about having ANGB as part of our community. The effects that either of these aircrafts will have on our area outweight the benefits we receive. We are hopeful we receive the F35 and would be proud to have this 5th generation aircraft	General Support
54	Fresno	Tony	Lopez		Fresno	CA	To whom it may concern, Please reconsider housing the 2 squadrons of fighter jets at the Fresno Air Terminal. Being a longtime resident of the, I feel it will bring a lot more unwanted noise to our somewhat peaceful neighborhood. I feel one of the other potential locations would be more suitable for these jets, such as Lemoore. I appreciate the need for these jets and they should be housed at a less populated (and residential) area. Thank you.	General Opposition Noise
55	Fresno	Michael	Carrillo		Fresno	CA	See letter following table	Transportation Air Quality Socioeconomics Aircraft Preference
56	Barnes	Kristen	Mello	WRAFT	Westfield	MA	Thank you for providing the opportunity to submit comments. Westfield residents have several concerns regarding this choice. I have collated them here for you, in no particular order.	Multiple Environmental Other Cumulative

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							---------- Please consider the geological nature of the base and surrounding area (it's a bowl with bedrock sidewalls), and air and noise pollution. What operational adjustments could be made - within the current framework - to mitigate both, especially for those North side residents living near Hampton ponds, an along East Mountain and Southampton Roads (like Heritage Mobile Home park and the high-density apartments)? What could be done in the immediate future to address these concerns? (as opposed to waiting for studies or after the EIR is published) There is a general mis-understanding here that the F35s were sent away from VT after citizen complaints. If that is not the case, could you please share with us what the relationship with the VT residents is like, what noise mitigation strategies have been tried and work there, and how VT residents' concerns get addressed as a matter of practice? Please let the Westfield public know how the F15/F35 question relates, if at all, to the City's proposed runway expansion work. How do the environmental, air, water, noise pollution factors change when this work is combined with the work and tree removal the City has proposed? What are the cumulative impacts expected to be? Will you be physically testing the noise and emissions from these aircraft here, in Westfield, in order to get real-world data? Will that process be open to the public for education and engagement? If not, please justify this choice. What types of weapons do these planes carry, and what is the general nature/size/scope of each in the event of a disaster? How dangerous are these plane options to the community below and how dangerous are the weapons they carry? What kind of statistics are there for such mishaps? Is it a relatively low occurrence? Will there be hot re-fueling? What are the accident incidence rates associated with that? Do hot refueling accidents require the use of PFAS laden AFFF? What has the ANG / DoD done to ensure future AFFF discharges on the Base do not result in additional soil, surface water, and groundwater PFAS contamination? What precautions will be taken to prevent any future releases the will affect nearby municipal drinking water wells? We have been told that deliberately having the planes take off heading North reduces noise pollution for the residents South of the airport. What has already been done to mitigate the residences North/Northeast of the airport in order to accommodate this traffic shift? How can this noise affected residents experience be addressed in a more timely fashion? How does the proposal of a Target Distribution Facility directly North of the Base affect this project, if at all? Thank you for addressing these resident concerns.	Noise

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							Sincerely, Kristen Mello	
57	Fresno	Jerry	Dyer	Mayor, City of Fresno	Fresno	CA	As the City of Fresno's Mayor, I am writing in support of continuing our longstanding relationship with the California Air National Guard's 144th Fighter Wing (144th Fighter Wing). The 144th Fighter Wing continues to be a valued part of Fresno's future, where we seek an inclusive, prosperous, beautiful city where people take pride in their community. I am incredibly proud of the important role the 144th Fighter Wing plays in protecting California and the entire United States. Generations of City leadership, residents and employees have embraced the 144th Fighter Wing as a point of civic pride, an economic driver, and now, a standout site for the next generation of aircraft squadrons. Fresno Yosemite International Airport's military history dates to its original opening as Hammer Field during World War II, and the 144th Fighter Wing itself dates back to 1954. As the U.S. Air Force continues to evolve and meet the needs of 21st Century national defense, there are several compelling factors make our airport the ideal site to locate squadrons of either F-15EX or F-35A aircraft. The 144th Fighter Wing's current bed down squadron of fourteen F-15C/D aircraft already generates approximately 2,400 annual flight operations. As a joint commercial/military use airport with an active F15C/D squadron, our airport is equipped and ready to receive the next generation squadron of F-15EX or F-35A aircraft. Our Air Traffic Control Tower provides 24-hour ground and airspace communication, which assist with military aircraft alert missions. The airport is equipped with a Category III landing system. This advanced technology allows for continued military aircraft operations during low visibility conditions. Additionally, in cooperation with California Air National Guard, the airport expands Aircraft Rescue Firefighting resources for emergency support of military and civilian aircraft. As California's fifth-largest city, Fresno has created an environment that provides thriving career opportunities and economic mobility for residents and businesses. The 144th Fighter Wing continues to invest in our community with an economic impact of nearly $160 million, including $94.1 million in military and civilian wages. This benefits our readily available workforce, with high-paying career opportunities and helps sustain the regional economy. With 1,106 military and civilian personnel, the 144th Fighter Wing remains one of Fresno's most valued employers. On behalf of the City of Fresno, I commit to making Fresno the ideal location for the most-advanced fleet of aircraft in the world. We will continue our work to meet future needs and will constantly strive to improve and modernize the airport to benefit both civilian and military uses. Be it improving the runway, making capital improvements, or possibly moving the 144th Fighter Wing to a better location within the Fresno Yosemite International Airport, I will do all I can to ensure success.	General Support Socioeconomics
58	Fresno/ Lemoore	Karen	Vitulano	U.S. Environmental Protection Agency	San Francisco	CA	See letter following table	Noise Environmental Justice

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
								Air Quality Multiple Environmental
59	Barnes	Michael	Ripa		Westfield	MA	Referencing F-15EX Eagle II $ F-35A Lightning II Operational Beddowns Air National Guard Environmental Impact Statement Comment Form LOCATION: Westfield MA VIBRATION In my neighborhood our homes are aging. Over time the vibrations from Barnes aircraft have caused foundation and structures to move with expansion beyond constructed tolerances. Doors and windows don't work like they used to and foundations are starting to shift and relocate. Subtle cracks have become larger and causing structural damage and concer. I realize the need to protect our country with the most up to date equipment available, but with the addition of the F15EX eagle and F35A aircraft the increase in decibel levels and V[BRATION, in an already high decibel area would quickly accelerate this process, destroying and distorting our homes even more, resulting in a drop in our property values, and increasing maintenance cost. WHAT ARE YOU DOING TO SOLVE THIS PROBLEM??? NOISE According to Wyle FINAL NEM update for Wrstfield-Barnes 2019-2024 the noise level contour line do not EXPAND (CHANGE). With the advent of "known" increase in Db levels. Explain to me, HOW the Db levels contour lines profile remain the same, as well as the Db levels (in the first two (2) outer contour lines??? Mitigation cannot fix this problem. When the F15s first arrived our homes were "sound proofed" with new windows, doors, insulation, etc. None of which have solve these problems. Only land acquisition will remedy this situation and is the only plausible solution. Respectfully submitted, Michael P. Ripa	Vibration Noise
61	Barnes	Donna	Vrith				Our quality of life has already suffered with the F15s at Barnes. You cannot hold a conversation while the planes are taking off or landing. My neighborhood is in the middle of the flight path. They take of just west of us and when landing they fly upwind to the west of us, cross wind just south of us, cross wing just north of us and downwind east of us. When on base and final they end up just north and west of us. Conversations are limited while this happens. We are obviously in the middle of the flight path but are not considered in the noise zone. I worked at a company that had a housing construction program. if you could not have a conversation with someone face to face because of background noise you needed hearing protection. I was tested yearly to monitor my hearing. I have been retired for 6 years and now need hearing aids when the planes do their vertical takeoffs they are almost directly over us. Everything in the house rattles and all conversations stop - phone calls are impossible. When the F15's first came I requested noise monitoring. I was told it would happen - never did. One of my neighbors has had to replace their windows twice now because of seal failures they believe were caused by the vibrations. Traffic is another concern. Currently you can wait up to 15 minutes to take a left turn out of our neighborhood at certain times of the day. raffic backs up from E Mountain Rd past the entrance to our street making it impossible to take a right turn. You have to try and schedule appointment around the traffic so you don't have to add an additional	Noise Water

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							15-20 minutes to your trip. The additional noise and car and truck exhaust is affecting us too. Besides these concerns we have been affected with our poisoned drinking water from the base. My last 3 pets have died of cancer - neighbors have also lost pet too to cancer. No matter how careful you are spills will happen witch will continue seeping into our water supply. We already have an unusual amount of cancer deaths in our area. While the upgrade of aircraft will happen, something needs to be done to help mitigate our deteriorating lifestyles thanks to these changes.	
62	Fresno	Jimmy	Gaede		Fresno	CA	I would like to offer the following comments: In 2012 we were informed that the 144th was going to upgrade their aircraft from the F16 to the F15C. At that time at an in-person meeting in Fresno, with airport and National Guard representative and through notices in our local newspaper, we were told that the F15C would be slightly louder, and that they were going to fly fewer missions. As it turned out the first statement (noise) of the F15C was considerably louder than the F16. As to the second statement of the number of take-offs, they have increased dramatically in the past several years. We are experiencing shaking of our house windows, inability to hear tv, or converse on the telephone. Outside conversation is nearly impossible during flight take-offs. We were also promised that there would be serious consideration into the take-off pattern to help mitigate the loud noise. To date, no improvements have taken place. Has anyone seriously considered changing the take-off pattern from the current Westerly direction over the most populated area of the city to an Easterly direction over vacant fields and low-density housing? When I mentioned this idea to the airport representatives at the in-person meeting, I was informed that the jets had to take off into the wind. Who are they kidding? I realize and truly appreciate that the National Guard is our nation's security. However, the disruptions to the residents in the flight pattern should weigh heavily into the Environmental Impact report. Thank you for taking my comments into consideration.	Noise
63	Fresno	Bernadette Ann	Brierty	Morongo Band of Mission Indians	Banning	CA	Dear Colonel Austin: The Morongo Band of Mission Indians (Tribe/MBMI) Tribal Historic Preservation Office is in receipt of the Department of The Air Force 144th Fighter Wing letter regarding the above referenced project. The proposed Beddown of F-15EX Eagle at the Fresno Air National Guard Base Project is not located within the boundaries of the ancestral territory and traditional use are of the Cahuilla and Serrano people of the Morongo Band of Mission Indians. Thank you for notifying the MBMI about this project. MBMI encourages your consultation with tribes more closely associated with the lands upon which the project is located.	General
64	NOLA	Michael	Rachal		Gretna	LA	We live around 60 yards from the aviation canal in Gretna, LA. and are close to the Naval Air Station Joint Reserve Base New Orleans. My wife and I are very much in favor of bringing the F-15EX and F-35A Operational Beddowns what we refer to as Calendar Field. The hours of operation are consistently during the day and early evening hours, and it is comforting to know our pilots are practicing their craft to keep us safe. I apologize for this late comment, but we just heard about it.	
65	Barnes	Bill	Giles				I just wanted to say I am in favor of anything that needs to be done at the Airport. Its a great asset to the city and our Country. I live not far from the end of the runway and	

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							sometimes they go right over my house or take off in the middle of the night. I get mad but then I say they are just doing their job. I am a Air Force vet from the 50's having served in SAC so I know alittle bit about what goes on. Plus I have 2 friends that are stationed up there. So whatever needs to be done, do it.	
66	NOLA	Mitchell	Mouton	USDA-NRCS	Alexandria	LA	See letter following table	
67		Michael	Saremi				Are there already existing MOAs, MTR, or other special use airspaces for these two aircraft to train at associated with which of the beddown location options? OR would the beddown be expected to lead to new airspace to be acquired?	
68	Fresno	Susan	Rutkowski				Hello. I became aware recently that there may be a plan to house additional jets at the Guard base here in Fresno California. I currently live in the flight zone and we experienced yet's flying overhead daily and the air pollution and the sound causes a lot of disruptions along with health issues, stress and especially with our dogs. My neighbors dog is terrified of loud sounds and the thought of additional jets is causing a lot of anxiety in our neighborhood. I am hoping you will reconsider placement of additional jets at a different location.	
69	NOLA	Rhonda	Braud	Louisiana Department of Transportation & Development	Baton Route	LA	Dear Will Strickland, I have received notfication in the mail regarding the project noted above. (Team #3915 for my reference) If the beddown is located in Louisiana, the applicant may be responsible for the following: 1) Obtaining a levee (408) permit/or letter of no objection from the United States Army Corps of Engineers, the Coastal Protection & Restoration Authority, and the local Louisiana Levee District 2) Obtaining a permit from the Louisiana Department of Transportation and Development if the project occurs within Louisiana DOTD right-of-way (eg crosses the road or discharges into a state-owned ditch) 3) Coordinating with the State Historic Preservation Office 4) Coordinating with the Parish Floodplain Coordinator 5) Obtaining a wetlands (404) permit from United States Army Corps of Engineers 6) Coordinating with the United States Fisheries and Wildlife Service, the National Oceanic and Atmospheric Administration, and/or the Louisiana Department of Wildlife and Fisheries regarding Endangered/Threatened Species/Habitat affected 7) Obtaining a permit from the Louisiana Department of Natural Resources if the project is within the Coastal Zone The applicant is responsible for any additional local, state, or federal permits. Please contact the District Permit Specialist Ennis Johnson at (504) 437-3103 for more information. Sincerely,	
70	NOLA	Loukisha	Williams	Federal Emergency Management Agency			Mr. Strickland, Thank you for contacting FEMA for information in reference to your questions pertaining to Request for comments for the beddown of one of your squadron of 21F-15EX aircraft construction project request for information. Please review our attached response.	

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							FEDERAL EMERGENCY MANAGEMENT AGENCY REGION 6 MITIGATION DIVISION **RE: Request for information: Attn: F-15EX, F-35A EIS** **NOTICE REVIEW/ENVIRONMENTAL CONSULTATION**	
							☐ We have no comments to offer. ☒ We offer the following comments: **WE WOULD REQUEST THAT THE COMMUNITY FLOODPLAIN ADMINISTRATOR BE CONTACTED FOR THE REVIEW AND POSSIBLE PERMIT REQUIREMENTS FOR THIS PROJECT. IF FEDERALLY FUNDED, WE WOULD REQUEST PROJECT TO BE IN COMPLIANCE WITH EO11988 & EO 11990.** **New Orleans, LA** Jerome Landry Floodplain Manager Dept. of Safety and Permits 1300 Perdido Street, 7th FL New Orleans, LA 70112 jlandry@nola.gov (504) 658 – 7127	
71	Fresno	Jimmy	Gaede				Since the purpose of acquiring a squadron of 21 F15EX aircraft is to replace the F15 C/D jets, how many F15 C/D Jets does the 144th fighter wing have at the Fresno Airport, and what will happen to the existing 18 F16C fighter falcon jets stationed there now? Thank you for your answer.	
72	Barnes	Molly	Goodwin		Easthampton	MA	To whom it may concern, I am writing to express my wish to NOT have more aircraft at Barnes. I live in the flight path in Easthampton and the noise pollution has been significant since the aircraft, that I believe arrived several years ago from Otis, began to fly over my neighborhood. It is difficult to talk on the phone when the aircraft go over my house. If I am outside on my deck or in my yard, I have to block my ears due to the pain the sound causes and any conversations of any kind are impossible. It is often a daily occurrence. I don't know if the paths can ever be changed so that not just one area is affected all the time. I don't begin to understand all of the issues involved with the military and I do appreciate any efforts necessarily made to protect our country. However, this noise does not represent the sound of freedom to me. It is a reminder of the inability of humans to cooperate and to work out their issues in non-violent ways. And it is just loud and disruptive to my daily life. Thank you for your consideration,	

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
73	Barnes	Mary Lakoma					To Whom This Concerns: I've lived on for 42 years. It was once a quiet, pleasant place to live until the F15's came to town. The noise was tolerated but lately over the last few years it's been so much more "annoyingly noisy". As soon as we hear the rumbling as those jets get ready to take off my husband and I are running to shut all the windows and doors, although that doesn't do much. Not only do we deal with the loud noise from these jets we also deal with the house shaking, windows rattling and I'm sure this has affected our foundation. Has anyone ever gone to people's homes in this area to see for themselves how much disruption this causes??? I'm sure that was never a priority... If I'm outside doing yardwork the noise is ridiculous. If I'm in the house on a phone call I have to stop talking until jthe jets have flown by. It's like living in a war zone. When I first retired in 2020, I was home one morning and had a mother bear and her 3 cubs playing in my back yard. They were just out there causing no harm and then a bunch of F15's flew over. The mother and cubs all starting running into the woods and one of the babies ran 20 feet up a tree and would not come down. The mother was standing at the bottom of the tree trying to get the baby to come down. After almost an hour the cub finally came down. This is just an example of how this has affected not only people, but animals in the area. I also feel sorry for anyone who has a baby who has to deal with this noisy disruption day in and day out!! These jets belong where there are open areas with no homes or wildlife. It's amazing how "money" means so much more than people being able to enjoy their homes. I'm sure there's a lot of people in Westfield who think this is great ... but I bet most of them don't live in this area so it doesn't affect them everyday!! I know this email won't matter to any of you, but regardless of whether or not it has any impact on your decision, I felt I needed to voice my opinion. From what I've been reading, it appears this is a done deal. So much for people having any say in this decision. One other thing - nothing like having your windows open for some fresh air but waking up to those jets revving their engines at 5:30 this morning!! Sincerely,	
74	Barnes	Mark & Karen	Rogers		Westfield	MA	We would like to make a comment with respect to the prospect of the F35's, or any other jets for that matter, coming to Barnes Airport in Westfield, MA. Quite simply, we are in opposition of it. We have lived here on for 35 years, we are in our sixties, retired, and moving is not an option, we shouldn't "have" to. Yes, we moved next to an airport, A10's were there at the time. Unfortunately, then came the F15's. There is no peace up here, it's constant noise between jets (and trucks), house shaking, windows and wall hangings vibrate. And now this, where does it end? My father was a Navy veteran WW2, served 21 years, retired as a Chief Petty Officer, my brother in Vietnam. We get it, the military is greatly needed, and more importantly appreciated. Quality of life for the residence that live on this side of town is, to us, more important. The A-10's were tolerable, the F-15's and beyond do not belong in a residential area. You can provide homes with all the windows you want, but it won't stop the outside noise (people would like to open their windows), vibrations and shaking.	

Entry ID	Location	First Name	Last Name	Organization/ Affiliation (if any)	City	State	Comment	Comment Category
							Thank you	
75	Barnes	Mary Ann	Babinski		Westfield	MA	See email following table	
76	Barnes	Robin	Nargi				To Whom it may concern I would like to know why parts of Southwick were not included in this meeting. My home in on Depot Street in Southwick. The F-15's coming over our house have taken my hearing out numerous times if next to a wall. The 1st time this happened it brought me to my knees. My hearing still isn't completely "healed". I do have to ask this question: Just common sense. Why in a city, why in a crowd residential area. Do you want everyone wearing hearing aides before they are 30?? My husband already does. And for your information YOU do not get used to the noise from them	
77	Barnes	David	Zajdel				My name is David ZAJDEL I have lived on since 1972.I know the world has changed greatly since than however the jets that fly @the airport @Barnes know do create a lot of noise throughout the day.I was in the Army Reserve for 8years &know the need for the military is very important.The jets F15 at Barnes &the Helicopters that also train there do fly over our home morning thru night & create a lot of noise. In the past the military has added sound insulation to those homes affected.If the newer jets F35A fighters sound like they would even be louder &our disruption would be more.The bigger issue is safety from what I have read the F35A don't have a great track record. Those are our concerns just wanted to get them to you.	
78	Barnes	Claude	Borowsky				We live by Hampton Ponds The jets fly low directly over our house on Beccari Ln as they loop towards their landing approach. We get buzzed by the F15's all the time. Shakes the house and sometimes drops hydraulic oil on our deck. Vertical/emergency takeoffs are really loud too. Sincerely,	
79	Fresno	Meng	Heu	California State Clearinghouse			Hello, Has this document already been filed with SCH? If not, this can be done at https://ceqasubmit.opr.ca.gov/ Thank you.	
80	Fresno	Meng	Heu	California State Clearinghouse			Good Morning, I am following up on my last email. Has this document already been filed with SCH? If not, this can be done at https://ceqasubmit.opr.ca.gov/	

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

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MASS.GOV/MASSWILDLIFE

August 30, 2022

Mr. Will Strickland
ATTN: F-15EX, F35A EIS
3501 Fetchet Avenue
Joint Base Andrews, MD 02762-5157

Project Name:	*Westfield-Barnes Regional Airport, Air National Guard (ANG) 104th Fighter Wing Candidate Location for Aircraft Replacement and/or Facility Modifications*
Proponent:	*National Guard Bureau (NGB) and Department of the Air Force (DAF)*
Location:	*Barnes ANG Base & Westfield-Barnes Regional Airport, Westfield MA*
Project Description:	*Beddown of one squadron of 21 F-15EX or F-35A aircraft with construction improvements (or retain existing F-15C/D aircraft with facility modifications)*
NHESP Tracking No.:	*10-28624*
Document Reviewed:	*NGB coordination letter noticing the preparation of an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA)*

Dear Mr. Srickland:

The Massachusetts Division of Fisheries and Wildlife's (MassWildlife) Natural Heritage & Endangered Species Program received a letter prepared by the NGB providing notice of the preparation of an EIS for the proposed beddown of one squadron of 21 F-15EX or 21 F-35A aircraft with construction improvements (or retain existing F-15C/D aircraft with facility modifications) at Barnes ANGB and Westfield-Barnes Regional Airport, Westfield, MA.

MassWildlife is the agency responsible for the protection and management of the inland fish and wildlife resources of the Commonwealth. The mission of MassWildlife also includes conserving and protecting endangered, threatened and species of special concern pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00) through the Natural Heritage & Endangered Species Program.

The purpose of MESA is to conserve and protect state-listed rare species and their habitats. The MESA prohibits the unauthorized Take of any state-listed species, which is defined "in reference to animals, to harass, harm, pursue, hunt, shoot, hound, kill, trap, capture, collect, process, disrupt the nesting, breeding, feeding or migratory activity or attempt to engage in any such conduct, or to assist such conduct, and in reference to plants, to collect, pick, kill, transplant, cut or process or attempt to engage or to assist in any such conduct" (M.G.L. c. 131A § 1). The MESA regulations further provide that "the disruption of nesting, feeding or migratory activity may result from, but is not limited to, the modification, degradation or destruction of habitat" (321 CMR 10.02).

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Barnes ANGB and Westfield-Barnes Regional Airport are mapped as Priority Habitat for state-listed species as delineated in the Massachusetts Natural Heritage Atlas. The following species have been documented at the site.

Scientific Name	Common Name	Taxonomic Group	MESA Status
Ammodramus savannarum	Grasshopper Sparrow	Vertebrate Animal	Threatened
Pooecetes gramineus	Vesper Sparrow	Vertebrate Animal	Threatened
Bartramia longicauda	Upland Sandpiper	Vertebrate Animal	Endangered
Sturnella magna	Eastern Meadowlark	Vertebrate Animal	Special Concern
Speranza exonerata	Pine Barrens Speranza	Invertebrate Animal	Special Concern
Zanclognatha martha	Pine Barrens Zanclognatha	Invertebrate Animal	Special Concern
Callophrys irus	Frosted Elfin	Invertebrate Animal	Special Concern
Apodrepanulatrix liberaria	New Jersey Tea Inchworm	Invertebrate Animal	Endangered
Ambystoma opacum	Marbled Salamander	Vertebrate Animal	Threatened
Terrapene carolina	Eastern Box Turtle	Vertebrate Animal	Special Concern
Liatris scariosa var. novae-angliae	New England Blazing Star	Vascular Plant	Special Concern

Based on the preliminary information available, there are several potential projects that may result in the loss of habitat for state-listed species. MassWildlife requests that the EIS provide detailed information on the natural community classifications for areas that may be impacted by anticipated construction projects as well as a calculation of the anticipated temporary and permanent impacts to the natural communities. MassWildlife recommends using Swain, 2016 (Classification of the Natural Communities of Massachusetts. Version 2.0. NHESP. (https://www.mass.gov/service-details/classification-of-natural-communities) as the classification scheme for the habitat and natural community assessment.

In addition to conceptual site plans or figures for the construction projects, MassWildlife recommends that the EIS include an assessment of potential project alternatives or a strategy for avoiding, minimizing, or mitigating potential impacts to state-listed species and their habitats, to the extent practicable.

We appreciate the opportunity to provide preliminary comments. MassWildlife looks forward to receipt of the EIS containing information to evaluate projects and any feasible alternatives or components that facilitate preservation of the state-listed species and their habitats. MassWildlife is available to the EIS project team to provide feedback relative to state-listed species, their habitats, and natural community classifications.

If you have any questions about this letter, please contact Amy Hoenig, Endangered Species Review Biologist, at (508) 389-6364 or Amy.Hoenig@mass.gov.

Sincerely,

Everose Schlüter

Everose Schlüter, Ph.D.
Assistant Director

MASS**WILDLIFE**

Comments for the F-15EX and the F-35AA Beddowns EIS

These comments should be understood to be coming from a non-military, non-engineering civilian.

I live in Fresno, California. Being a resident here I am biased in maintaining the Air National Guard base in my city. The base has continually been a part of this community since the mid-1950s. The Fresno Yosemite International Airport (FAT) and its forerunner, Hammer Field, has been an important part of the U.S. and California militaries for 80 years. Fresno, being located nearly geographically in the center of the state is an important tactical location for the California Air National Guard (CA ANG) in carrying out part of its defense mission of the Western United States.

Currently, the CA ANG has a squadron of F-15C/D aircraft based in Fresno. The National Guard Bureau is proposing to beddown either the F-15EX or the F-35A fighter jets at the Fresno base. I have three thoughts about bedding-down either aircraft here.

Noise

While listening to the virtual meeting held for Fresno and Lemoore, I heard one comment from someone complaining about the noise. Noise can be a problem, especially if one lives directly in the take-off path of the F-15s. They tend to take-off in a northwest direction from the airport. From there they usually tend to bank either to the north or south and then turn in a southeasterly direction. These areas are highly populated sections of the city. However, the jets are so fast, and they gain altitude so quickly, that, from my perspective, the amount of time they are heard is minimal. (I do not live under the take-off path. I live in Northeast Fresno under the path from where they are heading in the southeasterly direction mentioned above. I can definitely hear them and the sound gets my attention, but at that point they are high in the sky and quickly moving away.)

The number of take-offs is also not continuous; there are no take-offs after take-offs. There are far more commercial aircraft take-offs daily than there are ANG flights. I have found that many of the ANG flights are late-morning or early-afternoon. It is rare to hear them at night, and almost never in the middle of the night. So, I feel that the amount of noise is acceptable. It is a small price to pay for our security.

One question I do have regarding noise is, will noise increase if the F-15EX or F-35A are based in Fresno? I understand that the F-15EX will have a different engine than the current F-15C/D jets. I also know that the F-35A has an entirely different engine than what is proposed for the F-15EX.

Air Pollution

This is not a concern about the aircraft polluting the air, this is regarding the scenario where the Fresno ANG base is closed and moved to Lemoore NAS should Lemoore gain the F-35A.

The San Joaquin Valley, where both Fresno and Lemoore are located, suffers from some of the highest levels of air pollution from various sources in the entire nation. From the virtual meeting, I understood that a move to Lemoore would affect 1200 personnel. I don't know the numbers, but I imagine that the majority of base personnel and employees of the Fresno ANG base live in the Fresno-Clovis area.

The distance from Fresno to NAS Lemoore is over forty miles and takes approximately one hour one way to reach it. If most people do not carpool, that's 1200 additional cars on the road driving daily between Fresno and Lemoore.

The main artery between Fresno and NAS Lemoore is State Highway 41. There have been many fatalities on a stretch of it between Fresno and Kings counties. In order to mitigate that until the road can be widened, which will take several years, a portion of Highway 41 is currently one lane in each direction. This causes slow, backed-up driving conditions which is made worse during the current rush hours for people who already travel between Fresno and Hanford-Lemoore. Highway 41 is also a busy highway for travel to the Central Coast.

I believe that closing the Fresno base would exacerbate the air pollution problem we already have here in the San Joaquin Valley.

The Economic Impact

I'm not sure how much revenue Fresno would lose if the Fresno base were to close and relocate to Lemoore. As I mentioned above, I believe many Guard personnel and civilian employees live in the Fresno-Clovis area, so much of their earnings will still be spent in this area. But money that comes in because of the base's infrastructure would be lost which would be a blow to the city of Fresno. Remember, the ANG has been a part of Fresno's revenue source for nearly 70 years. To take that away would be a major economic hit to this area.

Additional Comments

I do not know if these following comments are pertinent to the environmental impact of deciding whether to beddown either aircraft here in Fresno, but I have no other place to express them.

The Air Force and the Air National Guard Missions

The mission of the United States Air Force is "to fly, fight, and win---airpower anytime, anywhere."

"The Air National Guard has total responsibility for the air defense of the entire United States."

Which Fighter is Best for Fresno and the California ANG?

As I understand it, the F-35A can take the fight to the enemy using sophisticated stealth technology. Once that is achieved the other fighters in the Air Force's arsenal take over and finish the job. As "cool" as it would be to have the F-35A in Fresno, it seems more of an offensive aircraft better suited for attacking the enemy on their turf. Whereas, in keeping with the mission of the ANG, the F-15EX seems more in line with defending the continental United

States. The F-15 for years has been the Air Force's primary fighter and it has proved itself in combat. Hence, I think the F-15EX would be a better "fit" for Fresno than the F-35A.

The F-15EX appears almost to be a brand-new airplane with all the upgrades it is getting. It is not an old plane getting new equipment just to keep it upgraded. It looks to be the same airframe but newly built and equipped with the newest technologies. It is estimated to have twenty more years of service.

With the rising threats of China in the Pacific and Russian provocations in Alaska, the west coast needs fighter jets whose role it is to be defenders. I feel that the F-15EX would fill that role nicely.

The Oregon ANG is already slated to get the F-15EX. It makes sense to have compatible airplanes along the entire west coast of the continental United States. With California and Oregon equipped with the F-15EX, they would be a formidable force to reckon with.

Why Not Let California Have Both the F-15EX and the F-35A?

As I mentioned earlier, the F-35A is great as an offensive fighter and the F-15 is a great defending aircraft. However, the F-35A has a longer range and if need be, can be sent out towards the Pacific should enemy aircraft get past the Navy and is approaching the West Coast.

Why can't there be a squadron of F-35As based at NAS Lemoore as a detachment of the Fresno ANG base much like there is a detachment of planes at March Air Reserve Base in Riverside, CA? It would make sense to have an F-35A detachment at NAS Lemoore since it is an F-35A centric base already and is tactically located, like Fresno.

There are no F-35A ANG units on the West Coast. It would make sense to have one based at Lemoore.

Having a detachment in Lemoore would not require the closing for the Fresno base. It would reduce the number of commuters from Fresno. It may even perhaps incentive people to relocate to the Hanford-Lemoore area and reduce air pollution concerns.

Conclusion

I think that Fresno would be an excellent location for the F-15EX since it is an established ANG base that already has the F-15C/D.

If the newer jets are much louder than the current F-15C/D, there may be some push back from the Fresno community, especially those who live under the flight path. But overall, most people support the ANG and its mission.

Losing the Fresno ANG base to NAS Lemoore could exacerbate the air pollution problem in the San Joaquin Valley due to commuting from Fresno to Lemoore.

The Fresno ANG base and the city of Fresno have had a long and healthy relationship for 70 years. Losing it to NAS Lemoore would have a negative economic impact upon Fresno.

I believe that the F-15EX is a better fit for the mission of the California ANG because of the defensive nature of the ANG Basing a squadron of F-15EX jets would be a good fit for Fresno

I feel that the National Guard Bureau should consider basing both aircraft in California Fresno could base the F-15EX and NAS Lemoore could have a detachment of F-35A's since there are no ANG F-35A squadrons on the West Coast

Thank you for the opportunity in letting me express my concerns I hope they help in the environmental impact study

Michael Carrillo

[redacted]

9/1/22

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

September 2, 2022

Will Strickland
National Guard Bureau
NGB/A4AM
Shepperd Hall
3501 Fetchet Avenue
Joint Base Andrews, MD 20762-5157

Subject: Scoping Comments for the Air National Guard F-15EX Eagle II and F-35A Lightning II Beddowns, Barnes Air National Guard Base, Westfield-Barnes Regional Airport, Westfield, Massachusetts; Fresno Yosemite International Airport, Fresno, California; Naval Air Station Lemoore, Lemoore, California; and Naval Air Station Joint Reserve Base New Orleans, Belle Chasse, Louisiana

Dear Mr. Strickland:

The Environmental Protection Agency has reviewed the Notice of Intent (NOI) published on July 19, 2022 regarding the Department of the Air Force, National Guard Bureau's (NGB) decision to prepare an Environmental Impact Statement for the subject project. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and our NEPA review authority under Section 309 of the Clean Air Act.

The NGB, in cooperation with the Navy and Federal Aviation Administration, proposes to replace the legacy F-15C/D aircraft, which are reaching the end of their service life, with F-15EX and F-35A aircraft. The NGB proposes to beddown one squadron of F-15EX aircraft at two of three alternative locations and one squadron of F-35A aircraft at one of four alternative locations. The proposed basing alternatives include the 104th Fighter Wing at Barnes Air National Guard Base, Westfield-Barnes Regional Airport, Westfield, Massachusetts; the 144th Fighter Wing at Fresno Yosemite International Airport, Fresno, California; the 144th Fighter Wing at Naval Air Station Lemoore, Lemoore, California; and the 159th Fighter Wing at Naval Air Station Joint Reserve Base New Orleans, Belle Chasse, Louisiana. The proposed action also includes personnel needed to operate and maintain the F-15EX and F-35A (100 and 80 personnel respectively), and construction of new and/or modification of existing facilities on the installations supporting the beddowns.

We have the following suggestions for your consideration when preparing the Draft Environmental Impact Statement (DEIS):

Noise Impacts
The NGB acknowledges in the NOI the potential for significant impacts from noise. During the virtual public scoping meeting on August 23, 2022, the NGB stated that they did not yet have the noise characteristics for the F-15EX and are committed to doing the studies to obtain that information this year, but expects that noise levels from the F-15EX to be slightly higher than the F-15s they would

replace. The NGB stated that F-35s are "quite a bit louder" than F-15s although the specific flight procedures regarding takeoff and landing could affect noise exposures. According to the NGB, this information would be documented in the DEIS.

Noise is an important impact area that is of interest to the public; therefore, the noise impact assessment should be comprehensive. We recommend the following noise issue areas be addressed in the DEIS:

Impact Assessment Methodology – Significance Thresholds
The Federal agencies participating in the Federal Interagency Committee on Urban Noise (FICUN), which included the EPA, Department of Defense, and the U.S. Department of Transportation, including the Federal Aviation Administration, agreed to the use of the A-weighted 65 decibel (dB) Day-Night Average Sound Level (DNL) significance criterion as a metric for noise impact assessments along with the consolidated Federal agency land use compatibility guidelines which indicate that noise levels below 65 dB DNL were generally compatible with residential and public/recreational land use. EPA agrees with the use of this metric and the 65 dB significance criterion as a predictor of annoyance - the primary effect of noise on residential populations; however, it should not be the sole indicator, since, as an averaging metric, it is not always meaningful for the public.[1] This is primarily because a cumulative, 24-hour time-weighted average level is an abstract concept that cannot be directly experienced. Therefore, we recommend the change in noise level over the existing condition also be clearly disclosed in the DEIS for the replacement aircraft. Interpret this change in level for the reader, such as indicating that a 3 dB increase in noise is characterized as "a large change" in the level of noise exposure when the existing condition is below 65 dB, and that this increase can be perceived by people as a degradation of their noise environment. Also disclose that because decibels are on a logarithmic scale, an increase of 10 dBs is experienced as a subjective doubling of loudness.[2] Incorporate recent information regarding annoyance levels obtained from FAA's Neighborhood Environmental Survey. If the noise impact assessment predicts levels at 80 DNL or above, assess the potential for hearing loss, consistent with DoD policy.

If flying procedures to reduce noise are incorporated into noise modeling, clearly disclose this and indicate how much noise reduction in the output is a result of these adjustments. When supplying updated noise contours that would occur under the project, include the number of individuals that would experience each noise contour area, and not just the acreage that would experience the change.

Special Use Airspace/Impacts from Training
The project website indicates that the ANG would use the same special use airspace (SUA) that it currently uses for the F-15C/D models, and that noise impacts will be evaluated at the airfield and in the training airspace. For changes in noise in SUAs such as military operation areas and military training routes, the DNL metric is less appropriate since this flight activity is highly sporadic and typically different from that associated with airfield operations for which the 65 DNL significance threshold was intended. As opposed to patterned or continuous noise environments associated with airfields, overflights within these areas can be highly variable in occurrence and location. We recommend the DEIS indicate the change in noise level that would occur for a given area or landmark, and identify the maximum noise levels from training overflights (Lmax) and/or the Sound Exposure Level (SEL) which would capture all the acoustic energy of an individual noise event. Even small noise increases could

[1] The Government Accountability Office found that providing information on potential noise impacts grounded in DNL was not clear enough for communities to understand planned changes. https://www.gao.gov/assets/gao-22-105844.pdf
[2] Federal Interagency Committee on Noise (FICON), August 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues*. p. 3-5. Available: https://fican1.files.wordpress.com/2015/10/reports_noise_analysis.pdf

cause a moderate impact on small communities and isolated homes under SUA where training occurs. Low human population density does not itself equate with low noise sensitivity.

The NGB indicated, in the first virtual public scoping meeting, that none of the SUA associated with the project locations include low flight floors such as 100 or 500-feet above ground level. The DEIS should identify the floor elevations in use in the airspace affected by the project, and indicate whether the Air Force is contemplating lowering the floors or otherwise changing the airspace in the future. We are aware that designated SUA becomes antiquated when aircraft are upgraded and frequently needs to be modified after such upgrades. We have seen aircraft replacement projects and changes in training occurring in separate environmental impact assessments for the same base. We recommend the ANG disclose in the DEIS whether the particular airspace for each of the alternative locations would require future modifications to accommodate the F-35s or F-15EXs. In an attempt to avoid segmenting impacts, efforts should be made to include impacts from any changes to training that the aircraft upgrades would induce.

Need for Use of Supplemental Metrics, especially Sleep Interference
Communicating noise impacts using supplemental noise metrics such as speech interference and sleep disturbance improves public understanding of noise exposure and decision makers' ability to make better informed decisions (DoD Technical Bulletin *Using Supplemental Noise Metrics and Analysis Tools,* 2009). Noise-induced sleep disturbance is considered the most deleterious non-auditory effect of environmental noise exposure.[3] We recommend the DEIS include these supplemental metrics.

Noise Impacts on Communities with Environmental Justice Concerns
Consistent with Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 16, 1994), Executive Order 13985 - *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government* (January 20, 2021) and others, the DEIS should identify minority and low-income census block groups among the population that would experience increased noise impacts and indicate whether these would disproportionately affect low income or minority populations. See the general comment below for more of our recommendations regarding the environmental justice analysis in the DEIS.

Noise Impacts to Children's Learning
The DEIS should acknowledge Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* and disclose that children are vulnerable populations that may suffer more disproportionately from environmental health and safety risks than adults. Short-term exposure of elevated environmental noise can interfere with classroom learning due to increased difficulty in speech intelligibility, and long-term exposure has been correlated to decreased reading comprehension and reduced learning motivation. According to the National Academy of Sciences and the Transportation Research Board, reading, motivation, language and speech, and memory are affected by elevated noise.[4] These represent acoustical barriers to learning, especially for young children since they are more susceptible than adults to the effects of background noise on spoken communication.

Noise impacts may pose a disproportionate health and safety risk to children. The DEIS should identify all schools and daycare centers that could be impacted by noise increases and identify the noise levels from the proposed action and alternatives predicted to classroom interiors, which considers the most

[3] Aviation Noise Impacts: State of the Science. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5437751/?report=printable
[4] http://onlinepubs.trb.org/onlinepubs/acrp/acrp_webdoc_034EducatorsHandbook.pdf

common building construction materials for sound level attenuation, and modeled to estimate interior noise levels with windows open and closed. Discuss these predicted noise levels in the context of the American National Standards Institute (ANSI) standard (ANSI S12.60-2002, *Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools*). The guidelines are keyed to the acoustical qualities needed to achieve a high degree of speech intelligibility in learning spaces. The standard recommends that core learning spaces having enclosed volumes not greater than 20,000 cubic feet not be exposed to greater than 40 dB of A-weighted unsteady background noise from transportation noise sources for more than 10% of the noisiest hour; for core learning spaces having enclosed volumes greater than 20,000 cubic feet, this level of exposure should not exceed 45 dB for more than 10% of the noisiest hour.

Discuss potential mitigation for schools and daycare centers, including no fly zones over schools. All reasonable mitigation measures should be identified, including a discussion of retrofitting impacted schools with appropriate measures such as adding insulation, adding a second windowpane or replacing windows with better sound attenuation, sealing gaps or leaks in windows and doors, installing baffles in vents and improving the exterior roofing, consistent with radon safety. Identify possible funding sources for this mitigation, even if DoD cannot fund such projects on non-DoD land. Identify the locations that are eligible to receive Airport Improvement Program funding from the FAA and discuss how the ANG can assist in helping schools access these funds as a mitigation measure.

Non-auditory Health Impacts from Noise, Including to Children
While there is uncertainty in studies on non-auditory health impacts from noise, there is increasing evidence for a link between exposure to high levels of environmental noise and ill-health, especially regarding cardio-vascular and endocrine health, immune function, sleep loss, and mental health. A 2017 literature review by the International Civil Aviation Organization titled *Aviation Noise: State of the Science* concluded that there is a "good biological plausibility by which noise may affect health in terms of impacts on the autonomic system, annoyance and sleep disturbance," and that "studies are suggestive of impacts on cardiovascular health especially hypertension."

For children, Goines and Hagler, in their 2007 review article[5] that summarized several studies from the National Library of Medicine database on the adverse health effects of noise, concluded that children are particularly vulnerable to the effects from noise interference with spoken communication. The inability to comprehend normal speech may lead to a number of personal disabilities, handicaps, and behavioral changes. Children who live in noisy environments have been found to have heightened sympathetic arousal indicated by increased levels of stress-related hormones and elevated resting blood pressure. Noise is assumed to accelerate and intensify the development of latent mental disorders and children may be particularly vulnerable to these effects because they may lack adequate coping mechanisms. The review article concludes that because children are particularly vulnerable to noise-induced abnormalities, they need special protection. We recommend the DEIS identify the health vulnerabilities from noise that are particular to children, and how the ANG would ensure children are protected to the maximum extent under the proposed action.

Supersonic Noise Impacts
The ANG indicated in the August 23, 2022 virtual scoping meeting that there would be no supersonic noise impacts. If it is determined otherwise, such as when discussing impacts from training in SUA,

[5] Goines, Lisa RN and Hagler, Louis MD. 2007. "Noise Pollution: A Modern Plague", *Southern Medical Journal*: Volume 100 - Issue 3 - pp 287-294. Available: https://pubmed.ncbi.nlm.nih.gov/17396733/

identify predicted sonic boom overpressures under the proposed action and alternatives and their associated impacts to structures and historic resources.

Environmental Justice Analysis
In addition to noise impacts, assess impacts to all relevant resource areas on communities with environmental justice concerns. Identify the specific outreach that was conducted for these populations, including efforts to address non-English speaking residents and efforts to accommodate the public and address barriers to participation.

EJScreen
The ANG may want to utilize the information in the EPA tool EJ Screen. EJScreen is EPA's nationally consistent environmental justice screening and mapping tool that offers a variety of powerful data and mapping capabilities that enable users to understand details about the population of an area and its environmental conditions. The tool provides information on environmental and socioeconomic indicators as well as pollution sources, health disparities, critical service gaps, and climate change data. The data is displayed in color-coded maps and standard data reports which feature how a selected location compares to the rest of the nation and state.

Accessing EJScreen information is a useful first step in understanding or highlighting locations that may be candidates for further review and outreach. For purposes of NEPA review, a project is considered to be in an area of potential EJ concern when an EJScreen analysis for the impacted area shows one or more of the twelve EJ Indexes at or above the 80th percentile in the nation and/or state. An area may also warrant additional review if other information suggests the potential for EJ concerns. An EJScreen analysis which does not reveal the potential for EJ concerns should not be interpreted to mean that there are definitively no EJ concerns present.

At a minimum, it is recommended to consider EJScreen information for the block groups which contain the proposed action and a one-mile radius around that area. However, it is important to consider all areas which may be impacted by the proposed action. Areas of impact can be very focused and contained within a single block group or be broader, spanning across several block groups and communities. When assessing large geographic areas, it is recommended to consider the individual block groups within the project area in addition to an area wide assessment. This can help identify individual areas within the overall project area that may warrant further consideration, analysis or outreach. EJScreen also provides information on linguistic isolation and languages spoken, which can help inform community outreach and engagement. EPA is available to provide a training to ANG staff on the use of EJScreen.

Promising Practices for EJ Methodologies in NEPA Reviews
Additionally, we recommend consulting the guidance document Promising Practices for EJ Methodologies in NEPA Reviews by the Environmental Justice Interagency Working Group. This document provides ways to both consider environmental justice concerns during environmental analyses and encourage effective participation by communities with environmental justice concerns. The Promising Practices Report is a compilation of methodologies gleaned from current agency practices concerning the interface of environmental justice considerations through NEPA processes. For example, the Promising Practices Report suggests initiating meaningful engagement with communities early and often; providing potentially affected communities with an agency-designated point of contact; and convening project-specific community advisory committees, as appropriate. The outreach the NGB

conducts for these communities should be documented in the DEIS. Identify the concerns raised by these populations and how the ANG could address them.

Outreach and Stakeholder Involvement
A critical part of achieving environmental justice is ensuring appropriate, timely and meaningful stakeholder involvement into decisions affecting communities with environmental justice concerns. We encourage the ANG to use the tools identified above to fully analyze environmental justice issues and develop focused outreach efforts to ensure that affected communities are informed and provided opportunities to meaningfully engage in decision making regarding the project. This would include community outreach materials written in plain language and translation and interpretive services for any linguistically isolated populations. We recommend the DEIS include an inventory of outreach efforts to date and develop a forward-looking outreach plan.

Air Quality
The DEIS should include a detailed discussion of ambient air conditions (i.e., baseline or existing conditions), the area's attainment or nonattainment status for all National Ambient Air Quality Standards (NAAQS), and potential air quality impacts (including cumulative and indirect impacts) from the construction and operation of the project for each alternative location.

Describe and estimate air emissions from potential construction and operations for the new facilities at the basing locations, as well as the changes in emissions from replacing the legacy aircraft.

General Conformity
The DEIS should discuss whether conformity requirements of the Clean Air Act Section 176(c) would be applicable to the project locations. General conformity regulations can be found in 40 CFR Part 93.150-165. The general conformity rule applies to Federal actions in areas designated as nonattainment or maintenance for NAAQS. Federal agencies need to ensure that their actions, including construction emissions subject to state jurisdiction, conform to an approved implementation plan. Mitigation may be available to reduce the project's air emissions.

Westfield-Barnes Municipal Airport is located in the Springfield (W. Mass) area, which is classified as "Moderate" nonattainment for the 1997 ozone NAAQS. Naval Air Station Lemoore, Lemoore, California, and Fresno Yosemite International Airport are both located in areas designated as nonattainment for ozone and particulate matter less than 2.5 microns ($PM_{2.5}$) and in a maintenance area for PM_{10}. Fresno Yosemite International Airport is also in a maintenance area for Carbon Monoxide (CO), therefore while this area is no longer in nonattainment for CO and PM_{10}, general conformity still applies because of its maintenance designation. Because of these air basins' nonattainment status for several NAAQS, it is important to reduce emissions of ozone precursors and particulate matter from this project as much as possible if these locations are selected. Emissions authorized by a CAA permit issued by the State or the local air pollution control district would not be assessed under general conformity but through the permitting process.

Construction Emissions Mitigation
The DEIS should include an analysis of impacts from the construction of the proposed project alternatives, including emission estimates for criteria pollutants. EPA also recommends that the DEIS disclose the available information about the health risks associated with vehicle emissions and mobile source air toxics (see https://www.epa.gov/mobile-source-pollution/how-mobile-source-pollution-affects-your-health). Mitigation measures should be considered to reduce impacts associated with

emissions of ozone precursors, particulate matter and other toxics from construction-related activities, especially for the alternatives in California. We recommend:

- Locating diesel engines, motors, and equipment staging areas as far as possible from residential areas and sensitive receptors (schools, daycare centers, and hospitals). It is well documented that children are more susceptible to many environmental factors, including exposure to mobile source air pollution, particulate matter from construction and diesel emissions, and lead and other heavy metals present in construction and demolition debris.
- Reducing construction-related trips of workers and equipment, including trucks. Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Leasing or buying newer, cleaner equipment using a minimum of 75 percent of the equipment's total horsepower.
- Using lower-emitting engines and fuels, including electric, liquified gas, hydrogen fuel cells, and/or alternative diesel formulations.
- Implementing Fugitive Dust Controls

Greenhouse Gases / Climate Change

The DEIS should include estimates of GHG emissions for the proposed action and alternatives and provide a context to help decision makers and the public understand these emissions and climate change effects. This can include monetization of GHGs, and/or a discussion of how the net GHG emissions would help meet or detract from relevant climate action goals and commitments. The Council on Environmental Quality (CEQ) is currently updating its guidance on the consideration of GHGs in NEPA reviews but has stated that in the interim, agencies should consider all available tools and resources in assessing GHG emissions and climate change effects of their proposed actions, including, as appropriate and relevant, CEQ's 2016 GHG Guidance. We note the 2016 GHG Guidance discourages statements in NEPA documents that the emissions from a particular proposed action represent only a small fraction of local, national, or international emissions, as not helpful to the decision-maker or public.

While aviation, in general, represents a small percentage of fossil fuel use, it is important to discuss the unique impacts aviation emissions contribute due to their release at altitude. Most aircraft emissions occur high in the atmosphere and the impact of burning fossil fuels at altitude is approximately double that of burning the same fuels at ground level.[6] In addition to Carbon Dioxide (CO_2) emissions, other factors[7] increase the climate change impacts of aviation, and the Intergovernmental Panel on Climate Change estimated aviation's total climate change impact could be from two to four times that of its CO_2 emissions alone.[8]

Mitigation of GHGs during construction projects should be discussed and implemented, as such measures are likely to have the co-benefits of also reducing criteria pollutants.

[6] Military Aviation and the Environment: Historical Trends and Comparison to Civil Aviation. Available: http://web.mit.edu/aeroastro/sites/waitz/publications/Mil.paper.pdf
[7] https://research.noaa.gov/article/ArtMID/587/ArticleID/2667/Aviation-is-responsible-for-35-percent-of-climate-change-study-finds
[8] Congressional Research Service, 2020. *Aviation and Climate Change.* Available: https://crsreports.congress.gov/product/pdf/IF/IF11696/2

7

Water Resources

Clean Water Act Section 404

The DEIS should identify whether the project would involve the discharge of dredged or fill material into jurisdictional wetlands and waterways, which would require a Clean Water Act Section 404 permit. There are a number of water features at Naval Air Station Joint Reserve Base New Orleans, and according to the National Wetlands Inventory, the location identified for new construction of facilities on the project fact sheet appears to contain Freshwater Forested/Shrub Wetland. We recommend maximum avoidance of these features and that the DEIS identify practicable alternatives for any discharges of dredged or fill material. If avoidance is not practicable, we recommend consulting early with the U.S. Army Corps of Engineers. If a 404 permit is required, EPA will review the project for compliance with Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA ("404(b)(1) Guidelines"). Pursuant to 40 CFR 230, any permitted discharge into waters of the U.S. must be the least environmentally damaging practicable alternative (LEDPA) available to achieve the project purpose. The DEIS should include, and craft NEPA alternatives consistent with, evaluating project alternatives in this context, in order to demonstrate the project's compliance with the 404(b)(1) Guidelines.

Clean Water Act Section 303(d)

The DEIS should identify any impaired waterways or bodies that would receive new discharges from the proposed action. For the Naval Air Station Joint Reserve Base New Orleans, the Intracoastal Waterway-From Bayou Villars to Mississippi River (Estuarine) does not meet water quality standards and is on the CWA Section 303(d) list for turbidity. Indicate what actions the ANG would take to ensure it does not contribute to this impairment.

Water Supply

The DEIS should estimate the quantity of water the project will require, identify the source of the water, and discuss potential effects of this water use on other water users and natural resources in the project's area of influence. The Fresno Yosemite International Airport alternative is located over the Fresno County Sole Source Aquifer (SSA), designated by EPA under section 1424(e) of the Safe Drinking Water Act of 1974. SSA's supply at least 50 percent of the drinking water consumed in the area overlying the aquifer. Fresno has supplemented its drinking water supply with surface water sources in recent years; however, the area is in exceptional drought, the highest drought designation. Naval Air Station Lemoore, Lemoore, California is also in exceptional drought and is experiencing land subsidence. For these alternatives, ensure water- conserving fixtures, such as those certified with the EPA's WaterSense label are included in facility designs. Identify other water conservation measures for these locations.

Hazardous Substances

The DEIS should identify hazardous contaminants that are associated with the development areas on each base and indicate if and how the proposed construction could interface with any cleanup actions. The DEIS should indicate whether the physical development of the proposed action could expose construction and maintenance workers, visitors, occupants, or ecological systems to potential hazards associated with contaminants.

Discuss existing contamination by Polyfluoroalkyl substances (PFAS), the continued use of firefighting foams and other products containing PFAS, and how discharges or waste would be managed to protect surface and groundwater resources.

8

For new facilities that would be constructed, briefly identify solid and hazardous waste generation and handling/disposal from construction and operation of the proposed project, and the applicability of state and federal hazardous waste requirements.

Tribal Consultation

The DEIS should identify any affected Tribes near the basing alternatives or SUA that could be impacted by the proposed actions and consult, pursuant to Executive Order 13175 regarding government-to-government consultation, as appropriate.

EPA appreciates the opportunity to comment on preparation of the DEIS. Once the DEIS is released for public review, please send one electronic copy to me at vitulano.karen@epa.gov. If you have any questions, please contact me by email or at 415-947-4178.

Sincerely -

KAREN VITULANO

Digitally signed by KAREN VITULANO
Date: 2022.09.02 11:33:47 -07'00'

Karen Vitulano
Environmental Review Branch

9

USDA
United States Department of Agriculture

August 10, 2022

Will Strickland, NGB/A4AM, Environmental Planning Lead
Attn: F-15EX, F-35A EIS
3501 Fetchet Avenue
Joint Base Andrews, MD

RE: F-15EX, F-35A EIS
NAS JRB New Orleans, Belle Chasse, Louisiana

Dear Will:

I have reviewed the above referenced project for potential requirements of the Farmland Protection Policy Act (FPPA) and potential impact to Natural Resources Conservation Service projects in the immediate vicinity.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

The project map and narrative submitted with your request indicates that the proposed construction areas for either the F-15EX or F-35A at NAS JRB New Orleans, Belle Chasse, Louisiana will not impact prime farmland and therefore is exempt from the rules and regulations of the Farmland Protection Policy Act (FPPA)—Subtitle I of Title XV, Section 1539-1549. Furthermore, we do not predict impacts to NRCS work in the vicinity.

For specific information about the soils found in the project area, please visit our Web Soil Survey at the following location: http://websoilsurvey.nrcs.usda.gov/

Please direct all future correspondence to me at the address shown below.

Respectfully,

Mitchell J. Mouton
State Soil Scientist

Attachment

Natural Resources Conservation Service
State Office
3737 Government Street
Alexandria, Louisiana 71302
Voice: (318) 473-7751 Fax: (844) 325-6947

Helping People Help the Land

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 7/22/22
Name Of Project F-15EX, F-35A EIS - NAS JRB New Orleans	Federal Agency Involved DAF/NGB
Proposed Land Use Aircraft Beddown Locations	County And State Plaquemines Parish, LA
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 7/26/22

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).* Yes ☐ No ☑		Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined in FPPA Acres: %	
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS **8/10/22**	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	0.0	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*		0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100		0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	0	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)
This form was electronically produced by National Production Services Staff

Clear Form

Form AD-1006 (10-83)

Thursday, September 1, 2022

SUBMITTING WRITTEN SCOPING COMMENTS BY Email:
Air National Guard
F-15EX Eagle II & F-35A Lighting II
Operational Beddowns EIS

National Guard Bureau, NGB/A4AM
Shepperd Hall, 3501 Fetchet Ave.
Joint Base Andrews MD 20762-5157
Attn: EIS Project Manager

Dear EIS Project Manager,

After attending the August 18, 2022, public meeting, viewing the August 24, 2022, virtual meeting, and reviewing some materials on the NGB website, I submit the following comments and questions related to the proposed ***Air National Guard F-15EX Eagle II & F-35A Lighting II Operational Beddowns EIS***.

Residents on the north side of Westfield have spent many years working to protect this area from being overburdened by cumulative sources of air, water, and noise pollution that impacts natural resources as well as the health and safety of those who live, work, play, and learn in the area. It is therefore very important to us that the potential environmental impacts of this EIS proposal prioritizes the protection of public health, public safety, and natural resources for those who reside in close proximity to Westfield Barnes Airport and the ANG base. We are already dealing with the contamination of our public and private wells that was years in the making from past activities practiced at the airport. We don't need or deserve another future revelation that current proposed activities did contaminate our air and water once again.

The following concerns and questions relate to air pollution, water pollution, noise pollution, hazardous materials and public safety.

Air Quality
Studies have shown that airport emissions can contaminate an area greater than 20 miles away from even a small airport.

- Will the EIS consider the health impacts associated with living, working, or attending school near an airport that is home to the F-35 or F-15EX jet planes?
- Will the EIS quantify the VOC's, Carbon Monoxide, Nitrous Oxide, Sulfur Dioxide, large particulates, small particulates (PM2.5) and carbon Dioxide emitted from these planes?
- Will or has anything been done to decrease the emissions from these new planes?
- Some residents believe these planes dump fuel. Do they?

Aquifer/Water Protection
Our aquifer has already been contaminated by past airport activity. It has been noted that there would be additional construction at the airport to accommodate the new planes. Increasing impervious surfaces could negatively impact our water resources. Much of the new construction designated on the fact sheets appears to be over the medium and high yield aquifers.

- How much new impervious surface will be added to the area by the new construction? (E.g., Storage yard, vehicle parking sheds, Juliet taxiway, Wing HQ, Mac Pad, Shelters and Sheds.)
- Will there be any chemicals stored that could be detrimental to the aquifer?
- What is the Wash Rack?

Noise Mitigation
Those who live, work, play, and learn in close proximity to the Westfield Barnes Airport and the ANG base are already exposed to loud noise levels and public safety issues. Additional noise and air pollution from the F-35's will be more bothersome to many and will impact young children, who are more susceptible to the pollutants and the noise. We have two schools and adult residences in close proximity to the airport. Previous noise mitigation hearings for the F15's had contour lines that changed, some homes were demolished, there were promises made and not kept. We need to know the truth about potential new noise mitigation before not after the planes are chosen to come here. The impact the noise levels will have on the current noise mitigation contour lines should be considered first. We should not have to wait until the planes get here for a noise mitigation study.

- Which plane is louder the F-15EX or the F-35A? I have read that typical data from Air Force Environmental Impact Statements reported that the F-35 is much louder than all other fighters. Is that true?
- By how much do these planes exceed the 65 dB for the day night lower level which is the limit for residential land compatibility?
- Can potential noise levels be determined now before any decisions are made?
- Can it be determined earlier how many homes are going to be impacted by the new plans?
- Can it be determined earlier how many will have to be demolished as was required in the previous noise mitigation programs?

Safety & Hazardous Materials
Public safety on the ground is a concern. At the virtual meeting the questioner asked if these planes carry nuclear weapons. The answer was no.

- Will these plans be caring any type of weapons that could pose a danger to people on the ground?
- What type of weapons do these planes carry?
- Are weapons on board during practice runs? On missions?
- What is the safety record of the F35's?
- Are any previous cases of damage or accidents associated with these planes documented?
- The F-35 is designated as part of the US strategic nuclear bomber force. Some of them can carry nuclear weapons. Could the ones at Barnes ever carry nuclear weapons?

Environmental Justice Outreach
As an advocate for Environmental Justice, I am concerned about the impact this mission will have on the EJ populations in the immediate area of the airport. I hope there is extra effort taken to reach out to those communities. They deserve to be included in meaningful discussions going forward. They are:

- Heritage Park Mobil Home Community, 868 Southampton Road, Westfield, MA.
- The Arbor Mobile Home Park, Klondike Avenue , Westfield, MA.
- Colonial Pine Acres , 50 Southampton Road, Westfield, MA.

Traffic
This area is already over-burdened with vehicle traffic. The traffic congestion and associated emissions are a growing concern. The EIS fact sheets mentioned an increase in personnel who will be working at the airport, if the new planes arrive. Comments have been made locally about how these new planes could generate interest for auxiliary kinds of businesses in the area. We know that the Barnes Regional Airport aside from the ANG is also trying to increase development at the airport which would bring more traffic to the area.

Why here?
The F-35 planes are now in Burlington, VT. Burlington is about 200 miles from Westfield.

- How long will it take an F-35 to travel the 150 or 200 miles to Westfield?
- How long will it take an F-35 to travel 500 miles from Burlington to DC?
- Why do we need F-35s here in Westfield?

Do the risks to public health, public safety and the environment outweigh the benefits of siting the F35's at Barnes ANG? Perhaps people will lose their homes and they will be torn down. Perhaps there will be people who will move because of the noise or the safety risk. We need the mission to place a higher priority on protecting the health, safety and welfare of the public. I hope we do not lose sight of what should be the top priority.

In regards to the potential environmental impacts of this proposal, I expect that this process of community involvement and input will be taken seriously as it is stated on the *ANG Operational Beddowns Environmental Impact Analysis Process* fact sheet: the National Environmental Policy Act (NEPA) requirement is to make "informed decisions based on potential environmental consequences." by taking "a good-faith, hard look at potential environmental consequences of a proposal before making a decision."

Thank you for the opportunity to comment and to ask questions.

Respectfully submitted,

Mary Ann Babinski
[redacted]

Former Director, Westfield Concerned Citizens
Former City Councilor, Ward 1

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B Noise Modeling, Methodology, and Effects

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ACRONYMS AND ABBREVIATIONS

%	Percent
%HA	Percent Highly Annoyed
AFOSH	Air Force Occupational Safety and Health
AGL	Above Ground Level
ANG	Air National Guard
ANSI	American National Standards Institute
CDNL	C-Weighted Day-Night Average Sound Level
CFR	Code of Federal Regulations
CHABA	Committee on Hearing, Bioacoustics, and Biomechanics
CNEL	Community Noise Equivalent Level
CSEL	C-Weighted Sound Exposure Level
dB	Decibel
dB(A)	A-Weighted Decibels
dBA	A-Weighted Decibels
dBC	C-Weighted Decibel
DLR	German Aerospace Center (*Deutsches Zentrum für Luft und Raumfahrt e.V.*)
DNL	Day-Night Average Sound Level
DoD	Department of Defense
FAA	Federal Aviation Administration
FICAN	Federal Interagency Committee on Aviation Noise
FICON	Federal Interagency Committee on Noise
HA	Highly Annoyed
HYENA	Hypertension and Exposure to Noise near Airports
Hz	Hertz
ISO	International Organization for Standardization
L	Sound Level
L_{dn}	Day-Night Average Sound Level
L_{dnmr}	Onset-Rate Adjusted Monthly Day-Night Average Sound Level
L_{eq}	Equivalent Sound Level
$L_{eq(16)}$	Equivalent Sound Level over 16 hours
$L_{eq(24)}$	Equivalent Sound Level over 24 hours
$L_{eq(30min)}$	Equivalent Sound Level over 30 minutes
$L_{eq(8)}$	Equivalent Sound Level over 8 hours
$L_{eq(h)}$	Hourly Equivalent Sound Level
L_{max}	Maximum Sound Level
L_{pk}	Peak Sound Level
mmHg	millimeters of mercury
MTR	Military Training Route
NA	Number of Events At or Above a Selected Threshold
NAL	Number of Events Above combined with the Threshold Level
NATO	North Atlantic Treaty Organization
NDI	Noise Depreciation Index
NIOSH	National Institute for Occupational Safety and Health
NIPTS	Noise-induced Permanent Threshold Shift
OR	Odds Ratio
OSHA	Occupational Safety and Health Administration
POI	Point of Interest
psf	Pound per Square Foot
PTS	Permanent Threshold Shift
PTSD	Post-traumatic Stress Disorder
RANCH	Road Traffic and Aircraft Noise Exposure and Children's Cognition and Health

SEL	Sound Exposure Level
SIL	Speech Interference Level
SUA	Special Use Airspace
TA	Time Above
TAL	Time Above combined with the Threshold Level
TTS	Temporary Threshold Shift
U.S.	United States
UKDfES	United Kingdom Department for Education and Skills
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WHO	World Health Organization

B NOISE MODELING, METHODOLOGY, AND EFFECTS

Section B.1 of this appendix discusses sound and noise and their potential effects on the human and natural environment. The largest section, Section B.2, reviews the potential effects of noise, focusing on effects on humans but also addressing effects on property values, terrain, structures, and animals. Section B.3 contains the list of references cited.

B.1 NOISE AND SONIC BOOM

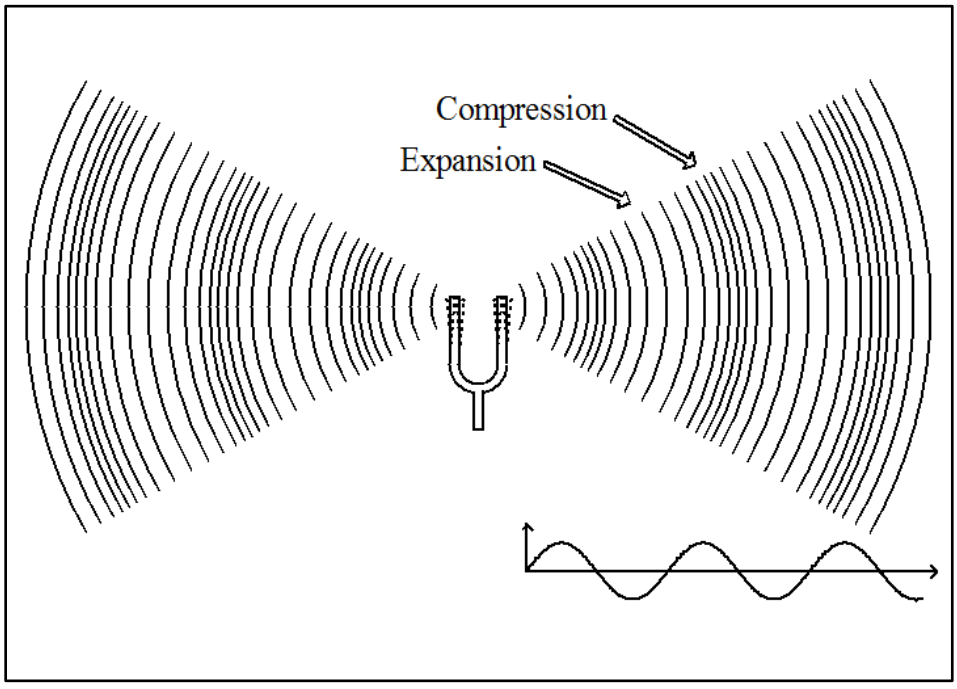
Section B.1.1 provides an overview of the basics of sound and noise. Section B.1.2 defines and describes the different metrics used to describe noise.

B.1.1 Basics of Sound

The following four subsections describe sound waves, sound levels and types of sounds, sonic boom and workplace noise.

B.1.1.1 Sound Waves and Decibels

Sound consists of minute vibrations in the air that travel through the air and are sensed by the human ear. Figure B-1 is a sketch of sound waves from a tuning fork. The waves move outward as a series of crests where the air is compressed and troughs where the air is expanded. The height of the crests and the depth of the troughs are the amplitude or sound pressure of the wave. The pressure determines its energy or intensity. The number of crests or troughs that pass a given point each second is called the frequency of the sound wave.



Source: Wyle Laboratories.

Figure B-1. Sound Waves from a Vibrating Tuning Fork

The measurement and human perception of sound involves three basic physical characteristics: intensity, frequency, and duration.

- *Intensity* is a measure of the acoustic energy of the sound and is related to sound pressure. The greater the sound pressure, the more energy carried by the sound and the louder the perception of that sound.
- *Frequency* determines how the pitch of the sound is perceived. Low frequency sounds are characterized as rumbles or roars, while high frequency sounds are typified by sirens or screeches.
- *Duration* or the length of time the sound can be detected.

As shown in Figure B-1, the sound from a tuning fork spreads out uniformly as it travels from the source. The spreading causes the sound's intensity to decrease with increasing distance from the source. For a source such as an aircraft in flight, the sound level will decrease by about 6 decibels (dB) for every doubling of the distance. For a busy highway, the sound level will decrease by 3 to 4.5 dB for every doubling of distance.

As sound travels from the source, it also gets absorbed by the air. The amount of absorption depends on the frequency composition of the sound, the temperature, and the humidity conditions. Sound with high frequency content gets absorbed by the air more than sound with low frequency content. More sound is absorbed in colder and drier conditions than in hot and wet conditions. Sound is also affected by wind and temperature gradients, terrain (elevation and ground cover), and structures.

The loudest sounds that can be comfortably heard by the human ear have intensities a trillion times higher than those of sounds barely heard. Because of this vast range, it is unwieldy to use a linear scale to represent the intensity of sound. As a result, a logarithmic unit known as the decibel (abbreviated dB) is used to represent the intensity of a sound. Such a representation is called a sound level. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 and 140 dB are felt as pain (Berglund and Lindvall 1995).

Because of the logarithmic nature of the decibel unit, sound levels cannot simply be added or subtracted and are somewhat cumbersome to handle mathematically. However, some simple rules are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example:

60 dB + 60 dB = 63 dB, and

80 dB + 80 dB = 83 dB.

Second, the total sound level produced by two sounds of different levels is usually only slightly more than the higher of the two. For example:

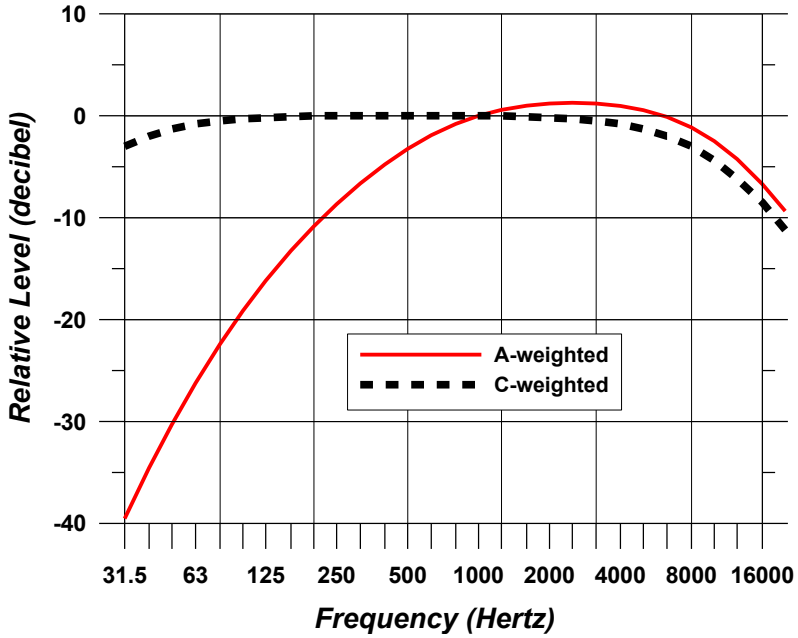
60.0 dB + 70.0 dB = 70.4 dB.

Because the addition of sound levels is different than that of ordinary numbers, this process is often referred to as "decibel addition."

The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. On average, a person perceives a change in sound level of about 10 dB as a doubling (or halving) of the sound's loudness. This relation holds true for loud and quiet sounds. A decrease in sound level of 10 dB actually represents a 90 percent (%) decrease in sound intensity but only a 50% decrease in perceived loudness because the human ear does not respond linearly.

Sound frequency is measured in terms of cycles per second or hertz (Hz). The normal ear of a young person can detect sounds that range in frequency from about 20 Hz to 20,000 Hz. As we get older, we lose the ability to hear high frequency sounds. Not all sounds in this wide range of frequencies are heard equally. Human hearing is most sensitive to frequencies in the 1,000 to 4,000 Hz range. The notes on a piano range from just over 27 Hz to 4,186 Hz, with middle C equal to 261.6 Hz. Most sounds (including a single note on a piano) are not simple pure tones like the tuning fork in Figure B-1, but contain a mix, or spectrum, of many frequencies.

Sounds with different spectra are perceived differently even if the sound levels are the same. Weighting curves have been developed to correspond to the sensitivity and perception of different types of sound. A-weighting and C-weighting are the two most common weightings. These two curves, shown in Figure B-2, are adequate to quantify most environmental noises. A-weighting puts emphasis on the 1,000 to 4,000 Hz range.



Source: ANSI S1.4A -1985 "Specification of Sound Level Meters."

Figure B-2. Frequency Characteristics of A- and C-Weighting

Very loud or impulsive sounds, such as explosions or sonic booms, can sometimes be felt, and can cause secondary effects, such as shaking of a structure or rattling of windows. These types of sounds can add to annoyance, and are best measured by C-weighted sound levels, denoted dBC. C-weighting is nearly flat throughout the audible frequency range, and includes low frequencies that may not be heard but cause shaking or rattling. C-weighting approximates the human ear's sensitivity to higher intensity sounds.

B.1.1.2 Sound Levels and Types of Sounds

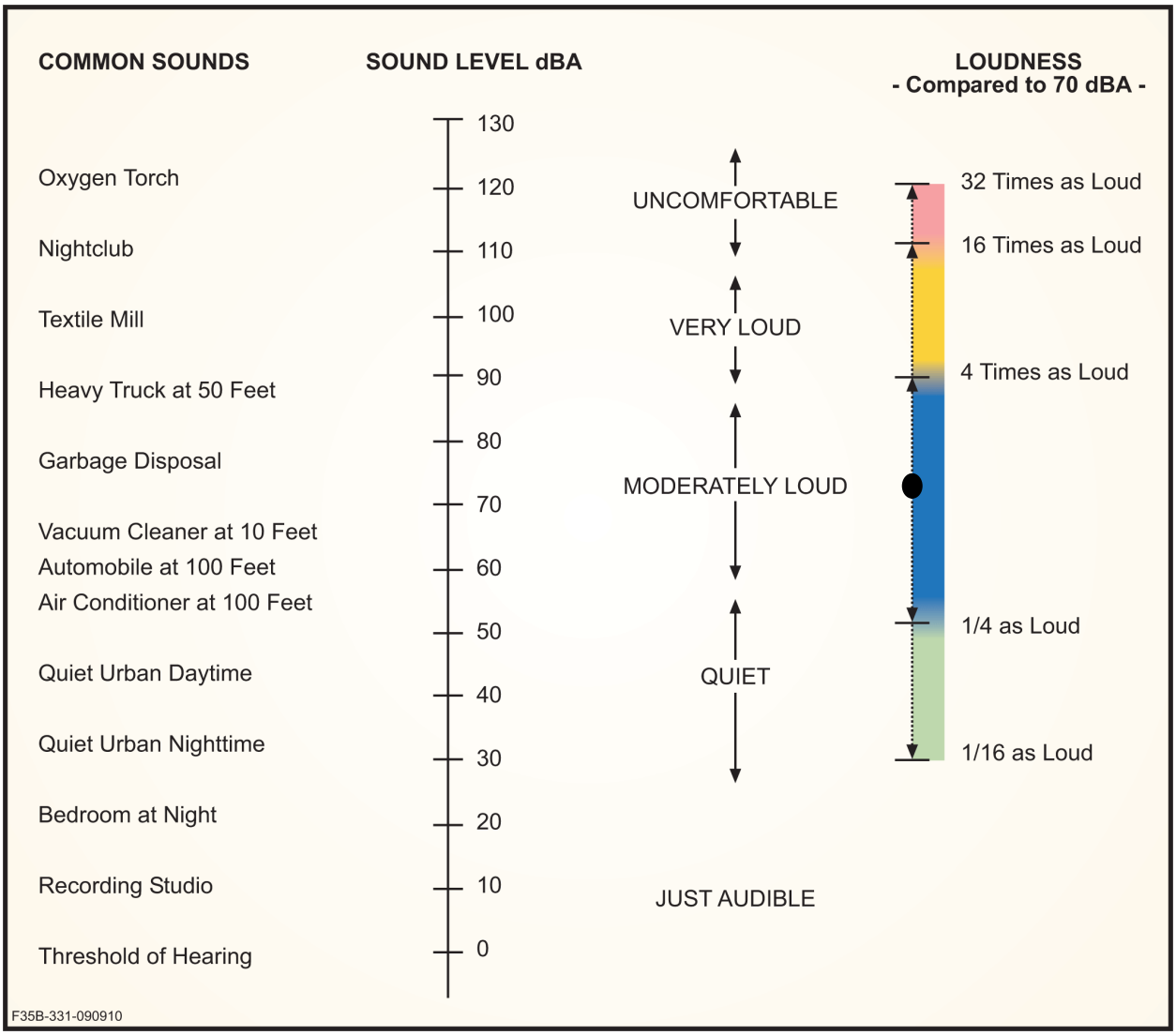
Most environmental sounds are measured using A-weighting. They are called A-weighted sound levels, and sometimes use the unit dBA or dB(A) rather than dB. When the use of A-weighting is understood, the term "A-weighted" is often omitted and the unit dB is used. Unless otherwise stated, dB units refer to A-weighted sound levels.

Sound becomes noise when it is unwelcome and interferes with normal activities, such as sleep or conversation. Noise is unwanted sound. Noise can become an issue when its level exceeds the ambient or background sound level. Ambient noise in urban areas typically varies from 60 to 70 dB, but can be as high as 80 dB in the center of a large city. Quiet suburban neighborhoods experience ambient noise levels around 45-50 dB (U.S. Environmental Protection Agency [USEPA] 1978).

Figure B-3 is a chart of A-weighted sound levels from common sources. Some sources, like the air conditioner and vacuum cleaner, are continuous sounds whose levels are constant for some time. Some sources, like the automobile and heavy truck, are the maximum sound during an intermittent event like a vehicle pass-by. Some sources like "urban daytime" and "urban nighttime" are averages over extended periods. A variety of noise metrics have been developed to describe noise over different time periods. These are discussed in detail in Section B.2.

Aircraft noise consists of two major types of sound events: flight (including takeoffs, landings, and flyovers), and stationary, such as engine maintenance run-ups. The former are intermittent and the latter primarily continuous. Noise from aircraft overflights typically occurs beneath main approach and departure paths, in local air traffic patterns around the airfield, and in areas near aircraft parking ramps and staging areas. As aircraft climb, the noise received on the ground drops to lower levels, eventually fading into the background or ambient levels.

Impulsive noises are generally short, loud events. Their single-event duration is usually less than 1 second. Examples of impulsive noises are small-arms gunfire, hammering, pile driving, metal impacts during rail-yard shunting operations, and riveting. Examples of high-energy impulsive sounds are quarry/mining explosions, sonic booms, demolition, and industrial processes that use high explosives, military ordnance (e.g., armor, artillery and mortar fire, and bombs), explosive ignition of rockets and missiles, and any other explosive source where the equivalent mass of dynamite exceeds 25 grams (American National Standards Institute [ANSI] 1996).



Sources: Harris 1979; Federal Interagency Committee on Aviation Noise (FICAN) 1997.

Figure B-3. Typical A-weighted Sound Levels of Common Sounds

B.1.1.3 Sonic Booms

When an aircraft moves through the air, it pushes the air out of its way. At subsonic speeds, the displaced air forms a pressure wave that disperses rapidly. At supersonic speeds, the aircraft is moving too quickly for the wave to disperse, so it remains as a coherent wave. This wave is a sonic boom. When heard at the ground, a sonic boom consists of two shock waves (one associated with the forward part of the aircraft, the other with the rear part) of approximately equal strength and (for fighter aircraft) separated by 100 to 200 milliseconds. When plotted, this pair of shock waves and the expanding flow between them has the appearance of a capital letter "N," so a sonic boom pressure wave is usually called an "N-wave." An N-wave has a characteristic "bang-bang" sound that can be startling. Figure B-4 shows the generation and evolution of a sonic boom N-wave under the aircraft. Figure B-5 shows the sonic boom pattern for an aircraft in steady supersonic flight. The boom forms a cone that is said to sweep out a "carpet" under the flight track.

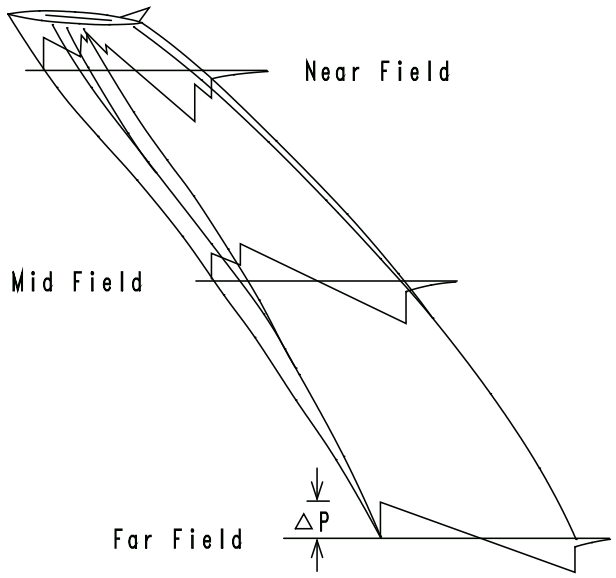


Figure B-4. Sonic Boom Generation and Evolution to N-Wave

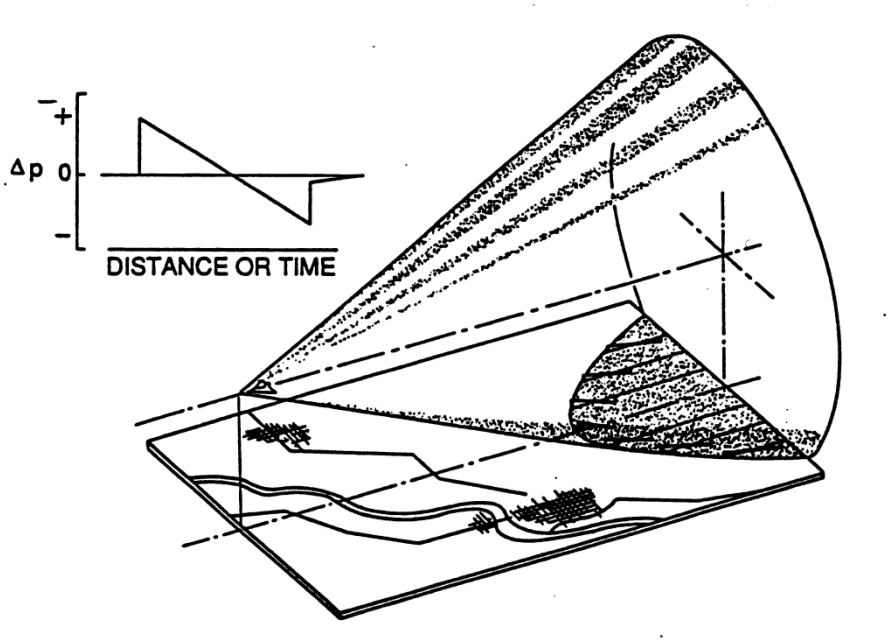


Figure B-5. Sonic Boom Carpet in Steady Flight

The complete ground pattern of a sonic boom depends on the size, shape, speed, and trajectory of the aircraft. Even for a nominally steady mission, the aircraft must accelerate to supersonic speed at the start, decelerate back to subsonic speed at the end, and usually change altitude. Figure B-6 illustrates the complexity of a nominal full mission.

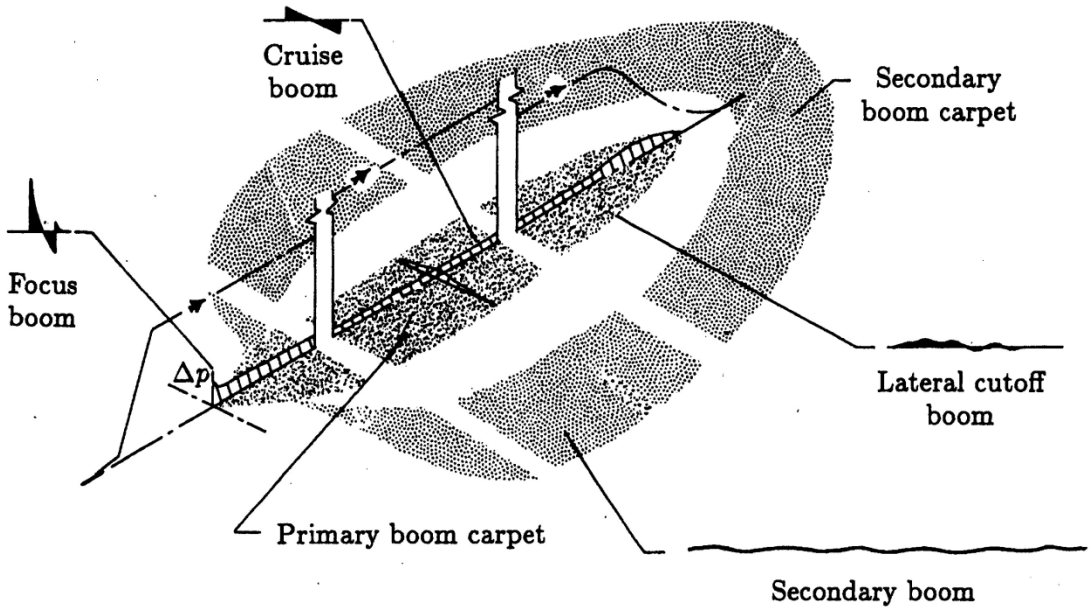


Figure B-6. Complex Sonic Boom Pattern for Full Mission

B.1.1.4 Workplace Noise

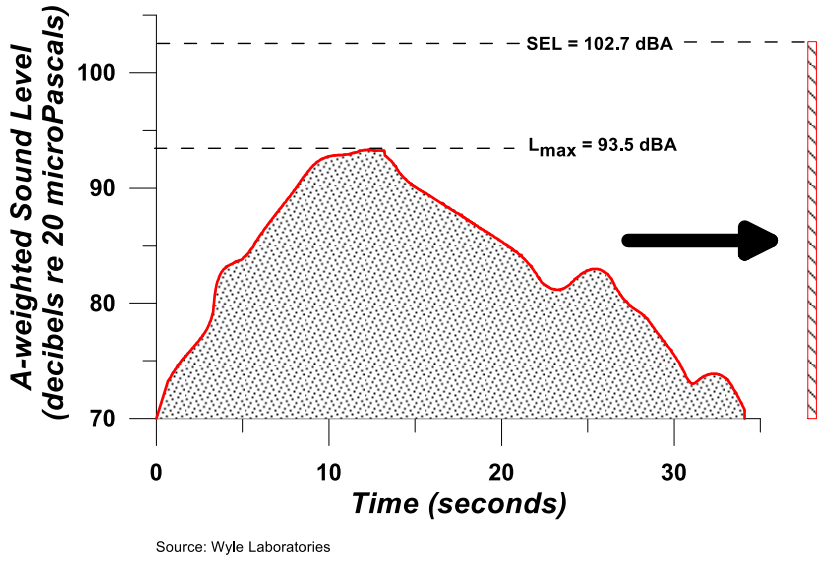
In 1972, the National Institute for Occupational Safety and Health (NIOSH) published a criteria document with a recommended exposure limit of 85 dB as an 8-hour time-weighted average. This exposure limit was reevaluated in 1998 when NIOSH made recommendations that went beyond conserving hearing by focusing on the prevention of occupational hearing loss (NIOSH 1998). Following the reevaluation using a new risk assessment technique, NIOSH published another criteria document in 1998 which reaffirmed the 85 dB recommended exposure limit (NIOSH 1998). Active-duty and reserve components of the United States (U.S.) Air Force (including the Air National Guard [ANG]), as well as civilian employees and contracted personnel working on Air Force bases and Air Guard stations must comply with Occupational Safety and Health Administration (OSHA) regulations (29 Code of Federal Regulations [CFR] § 1910.95 Occupational Noise Exposure), Department of Defense (DoD) Instruction 6055.12, Hearing Conservation Program; Air Force Occupational Safety and Health (AFOSH) Standard 48-20 (June 2006), and Occupational Noise and Hearing Conservation Program (including material derived from the International Organization for Standardization [ISO] 1999.2 Acoustics-Determination of Occupational Noise Exposure and Estimation of Noise Induced Impairment). Per AFOSH Standard 48-20, the Hearing Conservation Program is designed to protect workers from the harmful effects of hazardous noise by identifying all areas where workers are exposed to hazardous noise. The following are main components of the program:

1. Identify noise hazardous areas or sources and ensure these areas are clearly marked.

2. Use engineering controls as the primary means of eliminating personnel exposure to potentially hazardous noise. All practical design approaches to reduce noise levels to below hazardous levels by engineering principles shall be explored. Priorities for noise control resources shall be assigned based on the applicable risk assessment code. Where engineering controls are undertaken, the design objective shall be to reduce steady-state levels to below 85 dBA, regardless of personnel exposure time, and to reduce impulse noise levels to below 140 dB peak sound pressure level.
3. Ensure workers with an occupational exposure to hazardous noise complete an initial/reference audiogram within 30 days from the date of the workers' initial exposure to hazardous noise.
4. Ensure new equipment being considered for purchase has the lowest sound emission levels that are technologically and economically possible and compatible with performance and environmental requirements. 42 United States Code (USC) § 4914, *Public Health and Welfare, Noise Control, Development of Low-Noise Emission Products*, applies.
5. Education and training regarding potentially noise hazardous areas and sources, use and care of hearing protective devices, the effects of noise on hearing, and the Hearing Conservation Program.

B.1.2 Noise Metrics

Noise metrics quantify sounds so they can be compared with each other, and with their effects, in a standard way. The simplest metric is the A-weighted level, which is appropriate by itself for constant noise such as an air conditioner. Aircraft noise varies with time. During an aircraft overflight, noise starts at the background level, rises to a maximum level as the aircraft flies close to the observer, then returns to the background as the aircraft recedes into the distance. This is sketched in Figure B-7, which also indicates two metrics (Maximum Sound Level [L_{max}] and Sound Exposure Level [SEL]) that are described in Sections C.2.1 and C.2.3 below. Over time there can be a number of events, not all the same.



Source: Wyle Laboratories

Figure B-7. Example Time History of Aircraft Noise Flyover

There are a number of metrics that can be used to describe a range of situations, from a particular individual event to the cumulative effect of all noise events over a long time. This section describes the metrics relevant to environmental noise analysis.

B.1.2.1 Single Events

Maximum Sound Level (L_{max})

The highest A-weighted sound level measured during a single event in which the sound changes with time is called the maximum A-weighted sound level or Maximum Sound Level and is abbreviated L_{max}. The L_{max} is depicted for a sample event in Figure B-7.

L_{max} is the maximum level that occurs over a fraction of a second. For aircraft noise, the "fraction of a second" is one-eighth of a second, denoted as "fast" response on a sound level measuring meter (ANSI 1988). Slowly varying or steady sounds are generally measured over 1 second, denoted "slow" response. L_{max} is important in judging if a noise event will interfere with conversation, TV or radio listening, or other common activities. Although it provides some measure of the event, it does not fully describe the noise, because it does not account for how long the sound is heard.

Table B-1 reflects L_{max} values for typical military aircraft operating within military airspace associated with this assessment shown with typical flight conditions associated with departure and arrival operations for comparison purposes. On takeoff when reaching 1,000 feet AGL, the F-15C generates an L_{max} of 104 dB and during arrival an L_{max} of 97 dB at the same altitude.

Table B-1. Representative Instantaneous Maximum Sound Levels (L_{max})[1]

Aircraft (engine type)	*Power Setting*	*Power Unit[2]*	*L_{max} (in dBA) At Varying Altitudes (500 feet)*	*L_{max} (in dBA) At Varying Altitudes (1,000 feet)*	*L_{max} (in dBA) At Varying Altitudes (2,000 feet)*	*L_{max} (in dBA) At Varying Altitudes (5,000 feet)*	*L_{max} (in dBA) At Varying Altitudes (10,000 feet)*
Takeoff/Departure Operations							
F-15C (PW220)	90%	NC	111	104	97	85	75
F-16 (PW229)	93%	NC	114	106	98	86	76
F-22	100%	ETR	120	112	105	93	83
F-35A[4]	100%	ETR	119	111	103	91	81
Landing/Arrival Operations[5]							
F-15C (PW220)	75%	NC	104	97	89	77	66
F-16 (PW229)	83.5%	NC	93	86	78	66	56
F-22	43%	ETR	111	104	96	84	73
F-35A[4]	40%	ETR	100	93	85	73	62

Source: NOISEMAP OPX file using standard weather conditions of 59 degrees Fahrenheit and 70% relative humidity. F-15EX data not available at this time.

1. Power settings indicated may not be comparable across aircraft, that all numbers are rounded, and power settings are typical but not constant for departure/arrival operations.
2. RPM—Revolutions Per Minute; ETR—Engine Thrust Request; NC—Engine Core RPM; and NF—Engine Fan RPM.
3. B-1 Takeoff/Departure modeled with Afterburner; all other departure aircraft modeled without afterburner (if available).
4. Based on 2013 Edwards measurements.
5. All Landing/Arrival aircraft modeled with "parallel-interpolation" power setting for gear down configuration (except if noted).

Sound Exposure Level (SEL)

SEL combines both the intensity of a sound and its duration. For an aircraft flyover, SEL includes the maximum and all lower noise levels produced as part of the overflight, together with how long each part

lasts. It represents the total sound energy in the event. Figure B-7 indicates the SEL for an example event, representing it as if all the sound energy were contained within 1 second. Because aircraft noise events last more than a few seconds, the SEL value is larger than L_{max}. It does not directly represent the sound level heard at any given time, but rather the entire event. SEL provides a much better measure of aircraft flyover noise exposure than L_{max} alone.

Table B-2 shows SEL values corresponding to the aircraft and power settings reflected in Table B-1. At 1,000 feet above ground level (AGL), the F-15C generates an SEL of 115 dB on takeoff and an SEL of 94 dB on arrival.

Table B-2. Representative Sound Exposure Levels (SEL)[1]

Aircraft (engine type)	*Power Setting*	*Power Unit[2]*	*SEL (in dBA) At Varying Altitudes (500 feet)*	*SEL (in dBA) At Varying Altitudes (1,000 feet)*	*SEL (in dBA) At Varying Altitudes (2,000 feet)*	*SEL (in dBA) At Varying Altitudes (5,000 feet)*	*SEL (in dBA) At Varying Altitudes (10,000 feet)*
Takeoff/Departure Operations[3]							
F-15C (PW220)	90%	NC	120	115	109	100	91
F-16 (PW229)	93%	NC	119	114	107	98	89
F-22	100%	ETR	127	121	115	106	98
F-35A	100%	ETR	125	119	113	103	95
Landing/Arrival Operation[5]							
F-15C (PW220)	75%	NC	99	94	88	79	71
F-16 (PW229)	83.5%	NC	97	92	86	77	68
F-22	43%	ETR	115	109	103	94	85
F-35A[6]	40%	ETR	107	102	95	86	76

Source: NOISEMAP OPX file using standard weather conditions of 59 degrees Fahrenheit and 70% relative humidity. F-15EX data not available at this time.

1. Power settings indicated may not be comparable across aircraft, that all numbers are rounded, and power settings are typical but not constant for departure/arrival operations.
2. ETR—Engine Thrust Request; NC—Engine Core RPM; and NF—Engine Fan RPM.
3. Takeoff/Departure modeled at 160 knots airspeed for SEL purposes.
4. Departure aircraft modeled without afterburner (if available).
5. All Landing/Arrival aircraft modeled at 160 knots airspeed for SEL purposes.
6. Based on 2013 Edwards measurements.

C-weighted SEL can be computed for impulsive sounds, and the results denoted CSEL or LCE. SEL for A-weighted sound is sometimes denoted ASEL. Within this study, SEL is used for A-weighted sounds and CSEL for C-weighted.

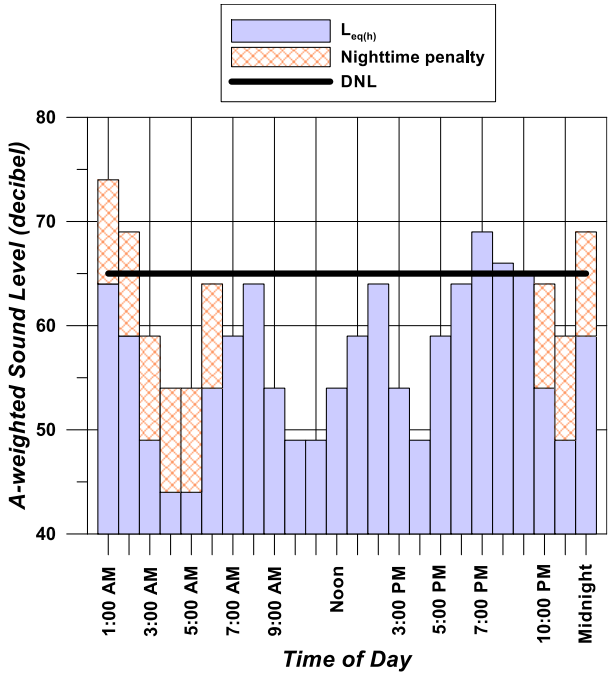
B.1.2.2 Cumulative Events

Equivalent Sound Level (L_{eq})

L_{eq} is a "cumulative" metric that combines a series of noise events over a period of time. L_{eq} is the sound level that represents the decibel average SEL of all sounds in the time period. Just as SEL has proven to be a good measure of a single event, L_{eq} has proven to be a good measure of series of events during a given time period.

The time period of an L_{eq} measurement is usually related to some activity, and is given along with the value. The time period is often shown in parenthesis (e.g., $L_{eq(24)}$ for 24 hours). The $L_{eq(8hr)}$ from 7 a.m. to 3 p.m. provides the noise exposure of a school day for this analysis.

Figure B-8 gives an example of $L_{eq(24)}$ using notional hourly average noise levels ($L_{eq(h)}$) for each hour of the day as an example. The $L_{eq(24)}$ for this example is 61 dB.



Source: Wyle Laboratories.

Figure B-8. Example of $L_{eq}(24)$, DNL Computed from Hourly Equivalent Sound Levels

Day-Night Average Sound Level (DNL or L_{dn})

DNL is a cumulative metric that accounts for all noise events in a 24-hour period. However, unlike $L_{eq(24)}$, DNL contains a nighttime noise penalty. To account for our increased sensitivity to noise at night, DNL applies a 10 dB penalty to events during the nighttime period, defined as 10:00 p.m. to 7:00 a.m. The notations DNL and L_{dn} are both used for Day-Night Average Sound Level and are equivalent.

For airports and military airfields outside of California, DNL represents the average sound level for annual average daily aircraft events. Figure B-8 gives an example of DNL using notional hourly average noise levels ($L_{eq(h)}$) for each hour of the day as an example. Note the $L_{eq(h)}$ for the hours between 10 p.m. and 7 a.m. have a 10 dB penalty assigned. The DNL for this example is 65 dB. Figure B-9 shows the ranges of DNL that occur in various types of communities. Under a flight path at a major airport the DNL may exceed 80 dB, while rural areas may experience DNL less than 45 dB.

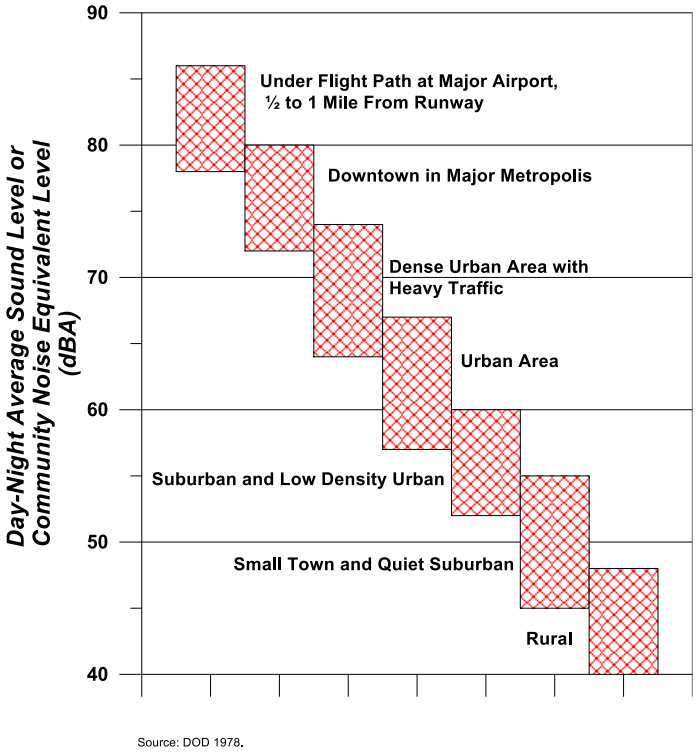


Figure B-9. Typical DNL Ranges in Various Types of Communities

The decibel summation nature of these metrics causes the noise levels of the loudest events to dominate the 24-hour average. As a simple example, consider a case in which only one aircraft overflight occurs during the daytime over a 24-hour period, creating a sound level of 100 dB for 30 seconds. During the remaining 23 hours, 59 minutes, and 30 seconds of the day, the ambient sound level is 50 dB. The DNL for this 24-hour period is 65.9 dB. Assume, as a second example that 10 such 30-second overflights occur during daytime hours during the next 24-hour period, with the same ambient sound level of 50 dB during the remaining 23 hours and 55 minutes of the day. The DNL for this 24-hour period is 75.5 dB. Clearly, the averaging of noise over a 24-hour period does not ignore the louder single events and tends to emphasize both the sound levels and number of those events.

A feature of the DNL metric is that a given DNL value could result from a very few noisy events or a large number of quieter events. For example, 1 overflight at 90 dB creates the same DNL as 10 overflights at 80 dB.

DNL does not represent a level heard at any given time, but represent long-term exposure. Scientific studies have found good correlation between the percentages of groups of people highly annoyed and the level of average noise exposure measured in DNL (Schultz 1978; USEPA 1978).

Onset-Rate Adjusted Monthly Day-Night Average Sound Level (L_{dnmr})

Military aircraft utilizing Special Use Airspace (SUA) such as Military Training Routes (MTRs), Military Operations Areas, and Restricted Areas/Ranges generate a noise environment that is somewhat different from that around airfields. Rather than regularly occurring operations like at airfields, activity in SUAs is highly sporadic. It is often seasonal, ranging from 10 per hour to less than 1 per week. Individual

military overflight events also differ from typical community noise events in that noise from a low-altitude, high-airspeed flyover can have a rather sudden onset, with rates of up to 150 dB per second.

The cumulative daily noise metric devised to account for the "surprise" effect of the sudden onset of aircraft noise events on humans and the sporadic nature of SUA activity is the Onset-Rate Adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). Onset rates between 15 and 150 dB per second require an adjustment of 0 to 11 dB to the event's SEL, while onset rates below 15 dB per second require no adjustment to the event's SEL (Stusnick et al. 1992). The term 'monthly' in L_{dnmr} refers to the noise assessment being conducted for the month with the most operations or sorties—the so-called busiest month.

B.1.2.3 Supplemental Metrics

Number of Events Above (NA) a Threshold Level (L)

The Number of Events Above (NA) metric gives the total number of events that exceed a noise level threshold (L) during a specified period of time. Combined with the selected threshold, the metric is denoted NAL. The threshold can be either SEL or L_{max}, and it is important that this selection is shown in the nomenclature. When labeling a contour line or point of interest (POI), NAL is followed by the number of events in parentheses. For example, where 10 events exceed an SEL of 90 dB over a given period of time, the nomenclature would be NA90SEL(10). Similarly, for L_{max} it would be NA90L_{max}(10). The period of time can be an average 24-hour day, daytime, nighttime, school day, or any other time period appropriate to the nature and application of the analysis.

NA is a supplemental metric. Although NA is relatively new when compared to the longer history of DNL research, it does provide valuable information to help to describe noise to the community in an easy-to-understand manner. A threshold level and metric are selected that best meet the need for each situation. An L_{max} threshold is normally selected to analyze speech interference, while an SEL threshold is normally selected for analysis of sleep disturbance. Consistent with DNWG guidance an interior threshold of 50 dB L_{max} (interior NA50 dB) provides the threshold used in this analysis for speech interference events in classrooms and residences. Because the noise modeling software does not calculate interior L_{max} directly, the analysis instead computes the equivalent exterior NA65 and NA75 dB that coincide windows open condition (typically 15 dB sound attenuation) and windows open condition (typically 25 dB sound attenuation) to determine the aircraft flight operations estimated to exceed the NA50 interior threshold of interest (DNWG 2013).

The NA metric is the only supplemental metric that combines single-event noise levels with the number of aircraft operations. In essence, it answers the question of how many aircraft (or range of aircraft) fly over a given location or area at or above a selected threshold noise level.

Time Above (TA) a Specified Level (L)

The Time Above (TA) metric is the total time, in minutes, that the A-weighted noise level is at or above a threshold. Combined with the threshold level (L), it is denoted TAL. TA can be calculated over a full 24-hour annual average day, the 15-hour daytime and 9-hour nighttime periods, a school day, or any other time period of interest, provided there is operational data for that time. TA is a supplemental metric, used to help understand noise exposure. TA can be shown as contours on a map similar to the way DNL contours are drawn. TA helps describe the noise exposure of an individual event or many events

occurring over a given time period. When computed for a full day, the TA can be compared alongside the DNL in order to determine the sound levels and total duration of events that contribute to the DNL. TA analysis is usually conducted along with NA analysis so the results show not only how many events occur, but also the total duration of those events above the threshold. It is useful for describing the noise environment in schools, particularly when assessing classroom or other noise sensitive areas for various scenarios.

This analysis computes interior TA50 dB inside of classrooms to represent the duration of time during a typical school that interior noise levels would exceed 50 dB, the threshold at which speech interfering events occurs. Consistent with the NA methodology, the software computes the exterior TA65 that is converted to interior TA50 assuming a 15 dB reduction for a classroom with windows open (DNWG 2013).

B.2 NOISE AND SONIC BOOM EFFECTS

Noise is of concern because of potential adverse effects. The following subsections describe how noise can affect communities and the environment, and how those effects are quantified. The specific topics discussed are:

- Annoyance,
- Land Use Compatibility,
- Speech interference,
- Sleep disturbance,
- Noise-induced hearing impairment,
- Non-auditory health effects,
- Performance effects,
- Noise effects on children,
- Property values,
- Noise-induced vibration effects on structures and humans,
- Noise effects on terrain,
- Noise effects on historical and archaeological sites,
- Effects on domestic animals and wildlife, and
- Sonic Boom.

B.2.1 Annoyance

With the introduction of jet aircraft in the 1950s, it became clear that aircraft noise annoyed people and was a significant problem around airports. Early studies, such as those of Rosenblith et al. (1953) and Stevens et al. (1953) showed that effects depended on the quality of the sound, its level, and the number of flights. Over the next 20 years considerable research was performed refining this understanding and setting guidelines for noise exposure. In the early 1970s, the USEPA published its "Levels Document" (USEPA 1974) that reviewed the factors that affected communities. DNL (still known as L_{dn} at the time) was identified as an appropriate noise metric, and threshold criteria were recommended.

Threshold criteria for annoyance were identified from social surveys, where people exposed to noise were asked how noise affects them. Surveys provide direct real-world data on how noise affects actual residents.

Surveys in the early years had a range of designs and formats, and needed some interpretation to find common ground. In 1978, Schultz showed that the common ground was the number of people "highly annoyed," defined as the upper 28% range of whatever response scale a survey used (Schultz 1978). With that definition, he was able to show a remarkable consistency among the majority of the surveys for which data were available. Figure B-10 shows the result of his study relating DNL to individual annoyance measured by percent highly annoyed (%HA).

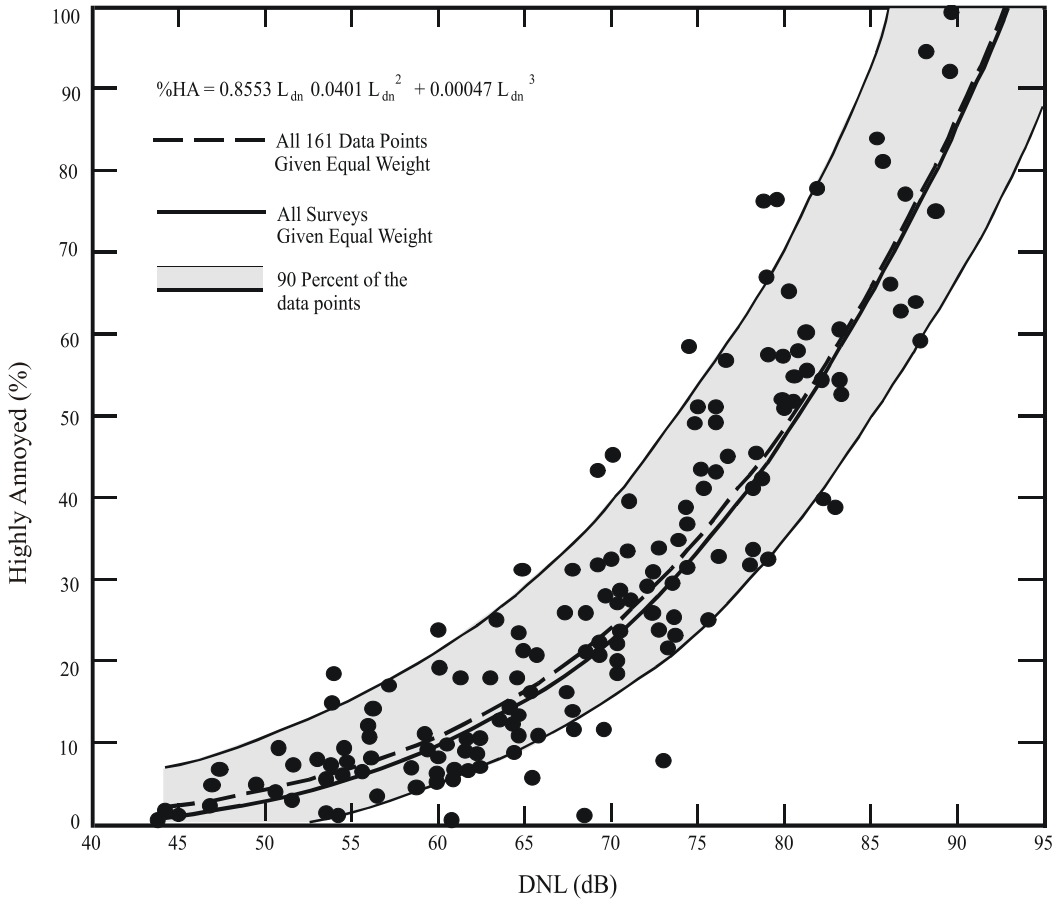


Figure B-10. Schultz Curve Relating Noise Annoyance to DNL (Schultz 1978)

Schultz's original synthesis included 161 data points. Figure B-11 compares revised fits of the Schultz data set with an expanded set of 400 data points collected through 1989 (Finegold et al. 1994). The new form is the preferred form in the U.S., endorsed by the Federal Interagency Committee on Aviation Noise (FICAN) (1997). Other forms have been proposed, such as that of Fidell and Silvati (2004), but have not gained widespread acceptance.

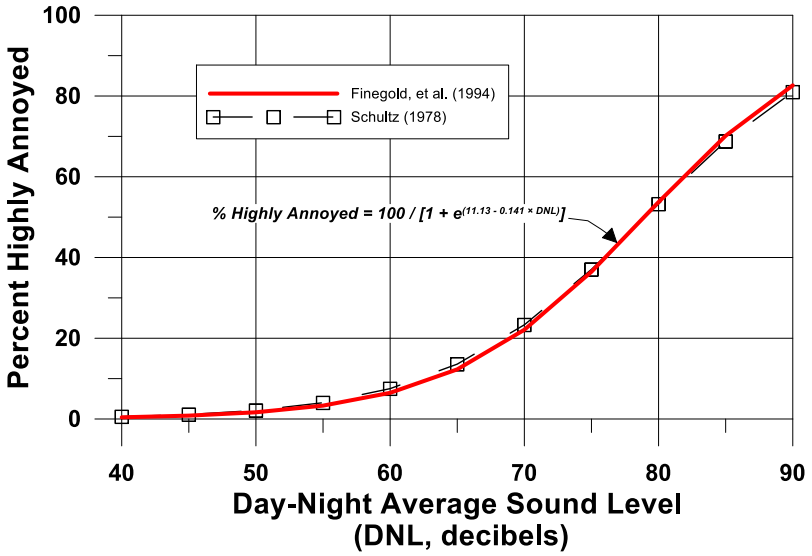


Figure B-11. Response of Communities to Noise; Comparison of Original Schultz (1978) with Finegold et al. (1994)

When the goodness of fit of the Schultz curve is examined, the correlation between groups of people is high, in the range of 85-90%. The correlation between individuals is lower, 50% or less. This is not surprising, given the personal differences between individuals. The surveys underlying the Schultz curve include results that show that annoyance to noise is also affected by non-acoustical factors. Newman and Beattie (1985) divided the non-acoustic factors into the emotional and physical variables shown in Table B-3.

Table B-3. Non-Acoustic Variables Influencing Aircraft Noise Annoyance

Emotional Variables	*Physical Variables*
Feeling about the necessity or preventability of the noise;	Type of neighborhood;
Judgement of the importance and value of the activity that is producing the noise;	Time of day;
Activity at the time an individual hears the noise;	Season;
Attitude about the environment;	Predictability of the noise;
General sensitivity to noise;	Control over the noise source; and
Belief about the effect of noise on health; and	Length of time individual is exposed to a noise.
Feeling of fear associated with the noise.	

Schreckenberg and Schuemer (2010) recently examined the importance of some of these factors on short-term annoyance. Attitudinal factors were identified as having an effect on annoyance. In formal regression analysis, however, sound level (L_{eq}) was found to be more important than attitude.

A recent study by Plotkin et al. (2011) examined updating DNL to account for these factors. It was concluded that the data requirements for a general analysis were much greater than most existing studies. It was noted that the most significant issue with DNL is that it is not readily understood by the public, and that supplemental metrics such as TA and NA were valuable in addressing attitude when communicating noise analysis to communities (DoD 2009a).

A factor that is partially non-acoustical is the source of the noise. Miedema and Vos (1998) presented synthesis curves for the relationship between DNL and percentage "Annoyed" and percentage "Highly

Annoyed" for three transportation noise sources. Different curves were found for aircraft, road traffic, and railway noise. Table B-4 summarizes their results. Comparing the updated Schultz curve suggests that the percentage of people highly annoyed by aircraft noise may be higher than previously thought.

Table B-4. Percent Highly Annoyed for Different Transportation Noise Sources

DNL (dB)	*Percent Highly Annoyed (%HA) Miedema and Vos Air*	*Percent Highly Annoyed (%HA) Miedema and Vos Road*	*Percent Highly Annoyed (%HA) Miedema and Vos Rail*	*Percent Highly Annoyed (%HA) Schultz Combined*
55	12	7	4	3
60	19	12	7	6
65	28	18	11	12
70	37	29	16	22
75	48	40	22	36

Source: Miedema and Vos 1998.

As noted by the World Health Organization (WHO), however, even though aircraft noise seems to produce a stronger annoyance response than road traffic, caution should be exercised when interpreting synthesized data from different studies (WHO 1999).

Consistent with WHO's recommendations, the Federal Interagency Committee on Noise (FICON) (1992) considered the Schultz curve to be the best source of dose information to predict community response to noise, but recommended further research to investigate the differences in perception of noise from different sources.

Sonic boom exposure is assessed cumulatively with C-weighted DNL, denoted CDNL. Correlation between CDNL and annoyance has been established, based on community reaction to impulsive sounds (Committee on Hearing, Bioacoustics and Biomechanics [CHABA] 1981). Values of the C-weighted equivalent to the Schultz curve are different than that of the Schultz curve itself. Table B-5 shows the relation between annoyance, DNL, and CDNL.

Table B-5. Relation Between Annoyance, DNL and CDNL

DNL	*% Highly Annoyed*	*CDNL*
45	0.83	42
50	1.66	46
55	3.31	51
60	6.48	56
65	12.29	60
70	22.10	65

Interpretation of CDNL from impulsive noise is accomplished by using the CDNL versus annoyance values in Table B-3. CDNL can be interpreted in terms of an "equivalent annoyance" DNL. For example, CDNL of 52, 61, and 69 dB are equivalent to DNL of 55, 65, and 75 dB, respectively. If both continuous and impulsive noise occurs in the same area, impacts are assessed separately for each.

B.2.2 Land Use Compatibility

As noted above, the inherent variability between individuals makes it impossible to predict accurately how any individual will react to a given noise event. Nevertheless, when a community is considered as a whole, its overall reaction to noise can be represented with a high degree of confidence. As described above, the best noise exposure metric for this correlation is the DNL or L_{dnmr} for military overflights.

Impulsive noise can be assessed by relating CDNL to an "equivalent annoyance" DNL, as outlined in Section B.2.1.

In June 1980, an ad hoc Federal Interagency Committee on Urban Noise published guidelines (Federal Interagency Committee on Urban Noise 1980) relating DNL to compatible land uses. This committee was composed of representatives from DoD, Transportation, Housing and Urban Development, USEPA, and the Veterans Administration. Since the issuance of these guidelines, federal agencies have generally adopted these guidelines for their noise analyses.

Following the lead of the committee, the DoD adopted the concept of land use compatibility as the accepted measure of aircraft noise effect. Air Force guidelines are presented in Table B-6, along with the explanatory notes included in the regulation. These guidelines are not mandatory (note the footnote "*" in the table), rather they are recommendations to provide the best means for determining noise impact for communities adjacent to bases. Again, these are recommendations only; it is up to the city/county zoning and planning entities to determine what land uses are compatible and how they will deal with incompatibilities (e.g., what type of development is allowed, instituting residential buyouts, or whether noise attenuation efforts will be done in residential units). In general, residential land uses normally are not compatible with outdoor DNL values above 65 dB, and the extent of land areas and populations exposed to DNL of 65 dB and higher provides the best means for assessing the noise impacts of alternative aircraft actions. In some cases, a change in noise level, rather than an absolute threshold, may be a more appropriate measure of impact.

Table B-6. Air Force Land Use Compatibility Recommendations

Land Uses SLUCM NO.	*Land Uses Category*	*Suggested Land Use Compatibility DNL 65-69*	*Suggested Land Use Compatibility DNL 70-74*	*Suggested Land Use Compatibility DNL 75-79*	*Suggested Land Use Compatibility DNL 80-84*	*Suggested Land Use Compatibility DNL >85*
10	**Residential**					
11	Household units	N[1]	N[1]	N	N	N
11.11	Single units: detached	N[1]	N[1]	N	N	N
11.12	Single units: semidetached	N[1]	N[1]	N	N	N
11.13	Single units: attached row	N[1]	N[1]	N	N	N
11.21	Two units: side-by-side	N[1]	N[1]	N	N	N
11.22	Two units: one above the other	N[1]	N[1]	N	N	N
11.31	Apartments: walk-up	N[1]	N[1]	N	N	N
11.32	Apartment: elevator	N[1]	N[1]	N	N	N
12	Group quarters	N[1]	N[1]	N	N	N
13	Residential hotels	N[1]	N[1]	N	N	N
14	Mobile home parks or courts	N	N	N	N	N
15	Transient lodgings	N[1]	N[1]	N[1]	N	N
16	Other residential	N[1]	N[1]	N	N	N
20	**Manufacturing**					
21	Food and kindred products; manufacturing	Y	Y[2]	Y[3]	Y[4]	N
22	Textile mill products; manufacturing	Y	Y[2]	Y[3]	Y[4]	N
23	Apparel and other finished products; products made from fabrics, leather, and similar materials; manufacturing	Y	Y[2]	Y[3]	Y[4]	N

Land Uses SLUCM NO.	*Land Uses Category*	*Suggested Land Use Compatibility DNL 65-69*	*Suggested Land Use Compatibility DNL 70-74*	*Suggested Land Use Compatibility DNL 75-79*	*Suggested Land Use Compatibility DNL 80-84*	*Suggested Land Use Compatibility DNL >85*
24	Lumber and wood products (except furniture); manufacturing	Y	Y[2]	Y[3]	Y[4]	N
25	Furniture and fixtures; manufacturing	Y	Y[2]	Y[3]	Y[4]	N
26	Paper and allied products; manufacturing	Y	Y[2]	Y[3]	Y[4]	N
27	Printing, publishing, and allied industries	Y	Y[2]	Y[3]	Y[4]	N
28	Chemicals and allied products; manufacturing	Y	Y[2]	Y[3]	Y[4]	N
29	Petroleum refining and related industries	Y	Y[2]	Y[3]	Y[4]	N
30	**Manufacturing**					
31	Rubber and misc. plastic products; manufacturing	Y	Y[2]	Y[3]	Y[4]	N
32	Stone, clay and glass products; manufacturing	Y	Y[2]	Y[3]	Y[4]	N
33	Primary metal products; manufacturing	Y	Y[2]	Y[3]	Y[4]	N
34	Fabricated metal products; manufacturing	Y	Y[2]	Y[3]	Y[4]	N
35	Professional scientific, and controlling instruments; photographic and optical goods; watches and clocks	Y	25	30	N	N
39	Miscellaneous manufacturing	Y	Y[2]	Y[3]	Y[4]	N
40	**Transportation, Communication and Utilities**					
41	Railroad, rapid rail transit, and street railway transportation	Y	Y[2]	Y[3]	Y[4]	N
42	Motor vehicle transportation	Y	Y[2]	Y [3]	Y[4]	N
43	Aircraft transportation	Y	Y[2]	Y[3]	Y[4]	N
44	Marine craft transportation	Y	Y[2]	Y[3]	Y[4]	N
45	Highway and street right-of-way	Y	Y	Y	Y	N
46	Automobile parking	Y	Y	Y	Y	N
47	Communication	Y	25[5]	30[5]	N	N
48	Utilities	Y	Y[2]	Y[3]	Y[4]	N
49	Other transportation, communication and utilities	Y	25[5]	30[5]	N	N
50	**Trade**					
51	Wholesale trade	Y	Y[2]	Y[3]	Y[4]	N
52	Retail trade – building materials, hardware and farm equipment	Y	25	30	Y[4]	N
53	Retail trade – including shopping centers, discount clubs, home improvement stores, electronics superstores, etc.	Y	25	30	N	N
54	Retail trade – food	Y	25	30	N	N
55	Retail trade – automotive, marine craft, aircraft and accessories	Y	25	30	N	N

Land Uses SLUCM NO.	*Land Uses Category*	*Suggested Land Use Compatibility DNL 65-69*	*Suggested Land Use Compatibility DNL 70-74*	*Suggested Land Use Compatibility DNL 75-79*	*Suggested Land Use Compatibility DNL 80-84*	*Suggested Land Use Compatibility DNL >85*
56	Retail trade – apparel and accessories	Y	25	30	N	N
57	Retail trade – furniture, home, furnishings and equipment	Y	25	30	N	N
58	Retail trade – eating and drinking establishments	Y	25	30	N	N
59	Other retail trade	Y	25	30	N	N
60	**Services**					
61	Finance, insurance and real estate services	Y	25	30	N	N
62	Personal services	Y	25	30	N	N
62.4	Cemeteries	Y	Y[2]	Y[3]	Y[4,11]	Y[6,11]
63	Business services	Y	25	30	N	N
63.7	Warehousing and storage	Y	Y[2]	Y[3]	Y[4]	N
64	Repair services	Y	Y[2]	Y[3]	Y[4]	N
65	Professional services	Y	25	30	N	N
65.1	Hospitals, other medical facilities	25	30	N	N	N
65.16	Nursing homes	N[1]	N[1]	N	N	N
66	Contract construction services	Y	25	30	N	N
67	Government services	Y[1]	25	30	N	N
68	Educational services	25	30	N	N	N
68.1	Child care services, child development centers, and nurseries	25	30	N	N	N
69	Miscellaneous Services	Y	25	30	N	N
69.1	Religious activities (including places of worship)	Y	25	30	N	N
70	**Cultural, Entertainment and Recreational**					
71	Cultural activities	25	30	N	N	N
71.2	Nature exhibits	Y[1]	N	N	N	N
72	Public assembly	Y	N	N	N	N
72.1	Auditoriums, concert halls	25	30	N	N	N
72.11	Outdoor music shells, amphitheaters	N	N	N	N	N
72.2	Outdoor sports arenas, spectator sports	Y[7]	Y[7]	N	N	N
73	Amusements	Y	Y	N	N	N
74	Recreational activities (including golf courses, riding stables, water recreation)	Y	25	30	N	N
75	Resorts and group camps	Y	25	N	N	N
76	Parks	Y	25	N	N	N
79	Other cultural, entertainment and recreation	Y	25	N	N	N
80	**Resource Production and Extraction**					
81	Agriculture (except live- stock)	Y[8]	Y[9]	Y[10]	Y[10,11]	Y[10,11]
81.5-81.7	Agriculture-Livestock farming including grazing and feedlots	Y[8]	Y[9]	N	N	N
82	Agriculture related activities	Y[8]	Y[9]	Y[10]	Y[10,11]	Y[10,11]
83	Forestry activities	Y[8]	Y[9]	Y[10]	Y[10,11]	Y[10,11]
84	Fishing activities	Y	Y	Y	Y	Y

Land Uses SLUCM NO.	*Land Uses Category*	*Suggested Land Use Compatibility DNL 65-69*	*Suggested Land Use Compatibility DNL 70-74*	*Suggested Land Use Compatibility DNL 75-79*	*Suggested Land Use Compatibility DNL 80-84*	*Suggested Land Use Compatibility DNL >85*
85	Mining activities	Y	Y	Y	Y	Y
89	Other resource production or extraction	Y	Y	Y	Y	Y

Legend:
SLUCM – Standard Land Use Coding Manual, U.S. Department of Transportation
Y (Yes) – Land use and related structures compatible without restrictions.
N (No) – Land use and related structures are not compatible and should be prohibited.
Y^x – Yes with restrictions. The land use and related structures generally are compatible. However, see note(s) indicated by the superscript.
N^x – No with exceptions. The land use and related structures are generally incompatible. However, see note(s) indicated by the superscript.
25, 30, or 35 – The numbers refer to noise level reduction (NLR) levels. NLR (outdoor to indoor) is achieved through the incorporation of noise attenuation into the design and construction of a structure. Land use and related structures are generally compatible; however, measures to achieve NLR of 25, 30, or 35 must be incorporated into design and construction of structures. However, measures to achieve an overall noise reduction do not necessarily solve noise difficulties outside the structure and additional evaluation is warranted. Also, see notes indicated by superscripts where they appear with one of these numbers.
DNL – Day-Night Average Sound Level.
CNEL – Community Noise Equivalent Level (normally within a very small decibel difference of DNL)
Ldn – Mathematical symbol for DNL.
Notes:
1. General
a. Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-69 and strongly discouraged in DNL 70-74. The absence of viable alternative development options should be determined and an evaluation should be conducted locally prior to local approvals indicating that a demonstrated community need for the residential use would not be met if development were prohibited in these zones. Existing residential development is considered as pre-existing, non-conforming land uses.
b. Where the community determines that these uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 decibels (dB) in DNL 65-69 and 30 dB in DNL 70-74 should be incorporated into building codes and be considered in individual approvals; for transient housing, an NLR of at least 35 dB should be incorporated in DNL 75-79.
c. Normal permanent construction can be expected to provide an NLR of 20 dB, thus the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation, upgraded sound transmission class ratings in windows and doors, and closed windows year-round. Additional consideration should be given to modifying NLR levels based on peak noise levels or vibrations.
d. NLR criteria will not eliminate outdoor noise problems. However, building location, site planning, design, and use of berms and barriers can help mitigate outdoor noise exposure particularly from ground level sources. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.
2. Measures to achieve NLR of 25 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
3. Measures to achieve NLR of 30 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
4. Measures to achieve NLR of 35 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
5. If project or proposed development is noise sensitive, use indicated NLR; if not, land use is compatible without NLR.
6. Buildings are not permitted.
7. Land use is compatible provided special sound reinforcement systems are installed.
8. Residential buildings require an NLR of 25
9. Residential buildings require an NLR of 30.
10. Residential buildings are not permitted.
11. Land use that involves outdoor activities is not recommended, but if the community allows such activities, hearing protection devices should be worn when noise sources are present. Long-term exposure (multiple hours per day over many years) to high noise levels can cause hearing loss in some unprotected individuals.

B.2.3 Speech Interference

Speech interference from noise is a primary cause of annoyance for communities. Disruption of routine activities such as radio or television listening, telephone use, or conversation leads to frustration and annoyance. The quality of speech communication is important in classrooms and offices. In the workplace, speech interference from noise can cause fatigue and vocal strain in those who attempt to talk over the noise. In schools it can impair learning.

There are two measures of speech comprehension:

1. *Word Intelligibility* – the percent of words spoken and understood. This might be important for students in the lower grades who are learning the English language, and particularly for students who have English as a Second Language.
2. *Sentence Intelligibility* – the percent of sentences spoken and understood. This might be important for high school students and adults who are familiar with the language, and who do not necessarily have to understand each word in order to understand sentences.

U.S. Federal Criteria for Interior Noise

In 1974, the USEPA identified a goal of an indoor $L_{eq(24)}$ of 45 dB to minimize speech interference based on sentence intelligibility and the presence of steady noise (USEPA 1974). Figure B-12 shows the effect of steady indoor background sound levels on sentence intelligibility. For an average adult with normal hearing and fluency in the language, steady background indoor sound levels of less than 45 dB L_{eq} are expected to allow 100% sentence intelligibility.

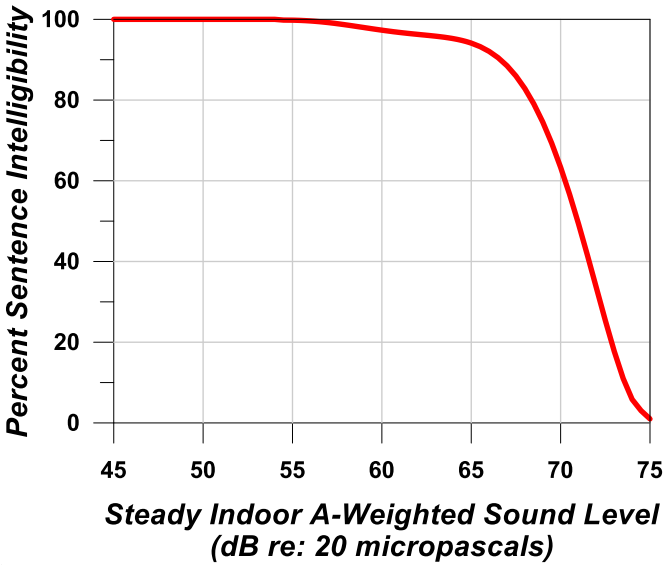


Figure B-12. Speech Intelligibility Curve (digitized from USEPA 1974)

The curve in Figure B-12 shows 99% intelligibility at L_{eq} below 54 dB, and less than 10% above 73 dB. Recalling that L_{eq} is dominated by louder noise events, the USEPA $L_{eq(24)}$ goal of 45 dB generally ensures that sentence intelligibility will be high most of the time.

Classroom Criteria

For teachers to be understood, their regular voice must be clear and uninterrupted. Background noise has to be below the teacher's voice level. Intermittent noise events that momentarily drown out the teacher's voice need to be kept to a minimum. It is therefore important to evaluate the steady background level, the level of voice communication, and the single-event level due to aircraft overflights that might interfere with speech.

Lazarus (1990) found that for listeners with normal hearing and fluency in the language, complete sentence intelligibility can be achieved when the signal-to-noise ratio (i.e., a comparison of the level of the sound to the level of background noise) is in the range of 15 to 18 dB. The initial ANSI classroom noise standard (ANSI 2002) and American Speech-Language-Hearing Association (1995) guidelines concur, recommending at least a 15 dB signal-to-noise ratio in classrooms. If the teacher's voice level is at least 50 dB, the background noise level must not exceed an average of 35 dB. The National Research Council of Canada (Bradley 1993) and WHO (1999) agree with this criterion for background noise.

For eligibility for noise insulation funding, the Federal Aviation Administration (FAA) guidelines state that the design objective for a classroom environment is 45 dB L_{eq} during normal school hours (FAA 1985).

Most aircraft noise is not continuous. It consists of individual events like the one sketched in Figure B-7. Since speech interference in the presence of aircraft noise is caused by individual aircraft flyover events, a time-averaged metric alone, such as L_{eq}, is not necessarily appropriate. In addition to the background level criteria described above, single-event criteria that account for those noisy events are also needed.

A 1984 study by Wyle for the Port Authority of New York and New Jersey recommended using Speech Interference Level (SIL) for classroom noise criteria (Sharp and Plotkin 1984). SIL is based on the maximum sound levels in the frequency range that most affects speech communication (500-2,000 Hz). The study identified an SIL of 45 dB as the goal. This would provide 90% word intelligibility for the short time periods during aircraft overflights. While SIL is technically the best metric for speech interference, it can be approximated by an L_{max} value. A SIL of 45 dB is equivalent to an A-weighted L_{max} of 50 dB for aircraft noise (Wesler 1986).

Lind et al. (1998) also concluded that an L_{max} criterion of 50 dB would result in 90% word intelligibility. Bradley (1985) recommends SEL as a better indicator. His work indicates that 95% word intelligibility would be achieved when indoor SEL did not exceed 60 dB. For typical flyover noise this corresponds to an L_{max} of 50 dB. While WHO (1999) only specifies a background L_{max} criterion, they also note the SIL frequencies and that interference can begin at around 50 dB.

The United Kingdom Department for Education and Skills (UKDfES) established in its classroom acoustics guide a 30-minute time-averaged metric of $L_{eq(30min)}$ for background levels and the metric of $L_{A1,30min}$ for intermittent noises, at thresholds of 30-35 dB and 55 dB, respectively. $L_{A1,30min}$ represents the A-weighted sound level that is exceeded 1% of the time (in this case, during a 30-minute teaching session) and is generally equivalent to the L_{max} metric (UKDfES 2003).

Table B-7 summarizes the criteria discussed. Other than the FAA (1985) 45 dB L_{max} criterion, they are consistent with a limit on indoor background noise of 35-40 dB L_{eq} and a single event limit of 50 dB L_{max}.

It should be noted that these limits were set based on students with normal hearing and no special needs. At-risk students may be adversely affected at lower sound levels.

Table B-7. Indoor Noise Level Criteria Based on Speech Intelligibility

Source	*Metric/Level (dB)*	*Effects and Notes*
U.S. FAA (1985)	$L_{eq(during\ school\ hours)}$ = 45 dB	Federal assistance criteria for school sound insulation; supplemental single-event criteria may be used.
Lind et al. (1998), Sharp and Plotkin (1984), Wesler (1986)	L_{max} = 50 dB / SIL 45	Single event level permissible in the classroom.
WHO (1999)	L_{eq} = 35 dB L_{max} = 50 dB	Assumes average speech level of 50 dB and recommends signal-to-noise ratio of 15 dB.
U.S. ANSI (2010)	L_{eq} = 35 dB, based on Room Volume (e.g., cubic feet)	Acceptable background level for continuous and intermittent noise.
U.K. DFES (2003)	$L_{eq(30min)}$ = 30-35 dB L_{max} = 55 dB	Minimum acceptable in classroom and most other learning environs.

B.2.4 Sleep Disturbance

Sleep disturbance is a major concern for communities exposed to aircraft noise at night. A number of studies have attempted to quantify the effects of noise on sleep. This section provides an overview of the major noise-induced sleep disturbance studies. Emphasis is on studies that have influenced U.S. federal noise policy. The studies have been separated into two groups:

1. Initial studies performed in the 1960s and 1970s, where the research was focused on sleep observations performed under laboratory conditions.
2. Later studies performed in the 1990s up to the present, where the research was focused on field observations.

Initial Studies

The relation between noise and sleep disturbance is complex and not fully understood. The disturbance depends not only on the depth of sleep and the noise level, but also on the non-acoustic factors cited for annoyance. The easiest effect to measure is the number of arousals or awakenings from noise events. Much of the literature has therefore focused on predicting the percentage of the population that will be awakened at various noise levels.

FICON's 1992 review of airport noise issues (FICON 1992) included an overview of relevant research conducted through the 1970s. Literature reviews and analyses were conducted from 1978 through 1989 using existing data (Griefahn 1978; Lukas 1978; Pearsons et al. 1989). Because of large variability in the data, FICON did not endorse the reliability of those results.

FICON did recommend, however, an interim dose-response curve, awaiting future research. That curve predicted the percent of the population expected to be awakened as a function of the exposure to SEL. This curve was based on research conducted for the U.S. Air Force (Finegold 1994). The data included most of the research performed up to that point, and predicted a 10% probability of awakening when exposed to an interior SEL of 58 dB. The data used to derive this curve were primarily from controlled laboratory studies.

Recent Sleep Disturbance Research – Field and Laboratory Studies

It was noted that early sleep laboratory studies did not account for some important factors. These included habituation to the laboratory, previous exposure to noise, and awakenings from noise other than aircraft. In the early 1990s, field studies in people's homes were conducted to validate the earlier laboratory work conducted in the 1960s and 1970s. The field studies of the 1990s found that 80-90% of sleep disturbances were not related to outdoor noise events, but rather to indoor noises and non-noise factors. The results showed that, in real life conditions, there was less of an effect of noise on sleep than had been previously reported from laboratory studies. Laboratory sleep studies tend to show more sleep disturbance than field studies because people who sleep in their own homes are used to their environment and, therefore, do not wake up as easily (FICAN 1997).

Federal Interagency Committee on Aviation Noise

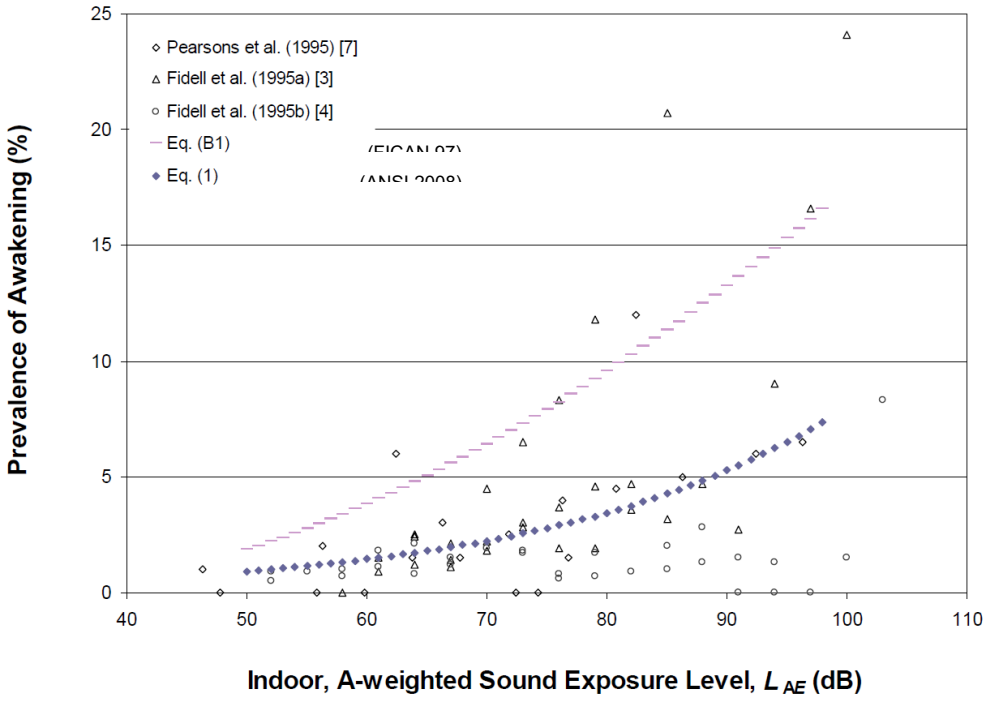
Based on this new information, in 1997 FICAN recommended a dose-response curve to use instead of the earlier 1992 FICON curve (FICAN 1997). Figure B-13 shows FICAN's curve, the red dashed line, which is based on the results of three field studies shown in the figure (Ollerhead et al. 1992; Fidell et al. 1994; Fidell et al. 1995a, 1995b), along with the data from six previous field studies.

The 1997 FICAN curve represents the upper envelope of the latest field data. It predicts the maximum percent awakened for a given residential population. According to this curve, a maximum of 3% of people would be awakened at an indoor SEL of 58 dB. An indoor SEL of 58 dB is equivalent to an outdoor SEL of 83 dB, with the windows closed (73 dB with windows open).

Number of Events and Awakenings

It is reasonable to expect that sleep disturbance is affected by the number of events. The German Aerospace Center (DLR Laboratory) conducted an extensive study focused on the effects of nighttime aircraft noise on sleep and related factors (Basner et al. 2004). The DLR study was one of the largest studies to examine the link between aircraft noise and sleep disturbance. It involved both laboratory and in-home field research phases. The DLR investigators developed a dose-response curve that predicts the number of aircraft events at various values of L_{max} expected to produce one additional awakening over the course of a night. The dose-effect curve was based on the relationships found in the field studies.

An ANSI standards committee (ANSI 2008) took a different approach. The committee used the average of the data shown in Figure B-13 (i.e., the blue dashed line) rather than the upper envelope, to predict average awakening from one event. Probability theory is then used to project the awakening from multiple noise events.



Source: DoD 2009b.

Figure B-13. Sleep Disturbance Dose-Response Relationship

Currently, there are no established criteria for evaluating sleep disturbance from aircraft noise, although recent studies have suggested a benchmark of an outdoor SEL of 90 dB as an appropriate tentative criterion when comparing the effects of different operational alternatives. The corresponding indoor SEL would be approximately 25 dB lower (at 65 dB) with doors and windows closed, and approximately 15 dB lower (at 75 dB) with doors or windows open. According to the ANSI (2008) standard, the probability of awakening from a single aircraft event at this level is between 1 and 2% for people habituated to the noise sleeping in bedrooms with windows closed, and 2-3% with windows open. The probability of the exposed population awakening at least once from multiple aircraft events at noise levels of 90 dB SEL is shown in Table B-8.

Table B-8. Probability of Awakening from NA90SEL

Number of Aircraft Events at 90 dB SEL for Average 9-Hour Night	*Minimum Probability of Awakening at Least Once Windows Closed*	*Minimum Probability of Awakening at Least Once Windows Open*
1	1%	2%
3	4%	6%
5	7%	10%
9 (1 per hour)	12%	18%
18 (2 per hour	22%	33%
27 (3 per hour)	32%	45%

Source: DoD 2009b.

In December 2008, FICAN recommended the use of this new standard. FICAN also recognized that more research is underway by various organizations, and that work may result in changes to FICAN's position. Until that time, FICAN recommends the use of the ANSI (2008) standard (FICAN 2008).

Update

As of July 2018, the ANSI and ASA have withdrawn the 2008 standard, which formed the basis of much of the DNWG 2009 guidance:

> *The decision of Working Group S12/WG 15 to withdraw ANSI/ASA S12.9-2008/Part 6 implies that the method for calculating "at least one behavioral awakening per night" contained in the former Standard should no longer be relied upon for environmental impact assessment purposes. The Working Group believes that continued reliance on the 2008 Standard would lead to unreliable and difficult-to-interpret predictions of transportation-noise-induced sleep disturbance. (ANSI/ASA 2018)*

The 2008 standard relied on the assumption that the calculation for PA from a single event is independent of the subsequent events so multiple events in the same night can simply be combined using the same formula. Additionally, the studies that supported the 2008 standard assumed varying sensitivity to awakening of individual study participants and employed "sensitivity coefficients" to improve the prediction correlation. However, the sensitivity coefficients for residents of airport neighborhoods were not generalizable from one airport to another making accurate prediction at airfields without such studies and sensitivity coefficients difficult and less reliable.

The explanations given by ANSI and ASA for the withdrawal of the 2008 standard include the following criticism:

- When applied to large populations, a fractional increase in noise level produces an unrealistic increase in number of awakenings,
- Lacks advice concerning situational limits of its applicability allowing misapplication in very large study areas resulting in implausibly large total numbers of awakenings, even at imperceptibly low sound levels,
- Lacks guidance about the reliability of its predictions, which encourages practitioners to apply the predictive equations with the assumption of unlimited accuracy,
- Due to the awakening studies' setup, predictions of sleep awakening in settings with greater than 20 nighttime events are dubious.

Additionally, ANSI/ASA 2018 described the relatively small number of field observations of behavioral awakenings attributable to transportation sleep disruption, which lack sufficient representation of the reactions of diverse populations necessary for the typical application of the 2008 standard.

The discussion in ANSI/ASA 2018 included consideration of SEL's value in computing PA and concluded that reliance solely on SEL may not be reliable because awakenings depend only slightly on SEL, particularly at lower levels. A study by Fidell et al. (2013) re-analyzed the same database published in the 2008 ANSI but concluded that PA more closely related to relative SEL rather than absolute, *"Minor differences in prediction of small awakening rates should not interpreted as evidence of meaningfully different environmental impacts of one project alternative with respect to another."*

Summary and Methodology Used in this Analysis

Without a reliable and standardized method to compute PA, or updated guidance from DNWG, this study presents the sleep impact analysis utilizing the previous standard (ANSI/ASA 2008 and DNWG 2009) for

environmental impact disclosure purposes. The reader is cautioned that the PA metric provides only a crude estimate because it cannot truly account for all variables that could affect a person's sleep. A comparison of the Current Scenario and Proposed Action awakening percentages showing large changes to PA could provide some insight on whether a particular action would be likely to increase or decrease sleep impacts. However, any additional conclusions may not be supportable.

B.2.5 Noise-Induced Hearing Impairment

Residents in surrounding communities express concerns regarding the effects of aircraft noise on hearing. This section provides a brief overview of hearing loss caused by noise exposure. The goal is to provide a sense of perspective as to how aircraft noise (as experienced on the ground) compares to other activities that are often linked with hearing loss.

Hearing Threshold Shifts

Hearing loss is generally interpreted as a decrease in the ear's sensitivity or acuity to perceive sound (i.e., a shift in the hearing threshold to a higher level). This change can either be a Temporary Threshold Shift (TTS) or a Permanent Threshold Shift (PTS) (Berger et al. 1995).

TTS can result from exposure to loud noise over a given amount of time. An example of TTS might be a person attending a loud music concert. After the concert is over, there can be a threshold shift that may last several hours. While experiencing TTS, the person becomes less sensitive to low-level sounds, particularly at certain frequencies in the speech range (typically near 4,000 Hz). Normal hearing eventually returns, as long as the person has enough time to recover within a relatively quiet environment.

PTS usually results from repeated exposure to high noise levels, where the ears are not given adequate time to recover. A common example of PTS is the result of regularly working in a loud factory. A TTS can eventually become a PTS over time with repeated exposure to high noise levels. Even if the ear is given time to recover from TTS, repeated occurrence of TTS may eventually lead to permanent hearing loss. The point at which a TTS results in a PTS is difficult to identify and varies with a person's sensitivity.

Criteria for Permanent Hearing Loss

It has been well established that continuous exposure to high noise levels will damage human hearing (USEPA 1978). A large amount of data on hearing loss have been collected, largely for workers in manufacturing industries, and analyzed by the scientific/medical community. The OSHA regulation of 1971 places the limit on workplace noise exposure at an average level of 90 dB over an 8-hour work period or 85 dB over a 16-hour period (U.S. Department of Labor 1971). Some hearing loss is still expected at those levels. The most protective criterion, with no measurable hearing loss after 40 years of exposure, is an average sound level of 70 dB over a 24-hour period.

The USEPA established 75 dB $L_{eq(8)}$ and 70 dB $L_{eq(24)}$ as the average noise level standard needed to protect 96% of the population from greater than a 5 dB PTS (USEPA 1978). The National Academy of Sciences CHABA identified 75 dB as the lowest level at which hearing loss may occur (CHABA 1977). WHO concluded that environmental and leisure-time noise below an $L_{eq(24)}$ value of 70 dB "will not cause hearing loss in the large majority of the population, even after a lifetime of exposure" (WHO 1999).

Hearing Loss and Aircraft Noise

The 1982 USEPA Guidelines report (USEPA 1982) addresses noise-induced hearing loss in terms of the "Noise-Induced Permanent Threshold Shift" (NIPTS). This defines the permanent change in hearing caused by exposure to noise. Numerically, the NIPTS is the change in threshold that can be expected from daily exposure to noise over a normal working lifetime of 40 years. A grand average of the NIPTS over time and hearing sensitivity is termed the Average NIPTS, or Ave. NIPTS for short. The Ave. NIPTS that can be expected for noise measured by the $L_{eq(24)}$ metric is given in Table B-9 and assumes exposure to the full outdoor noise throughout the 24 hours. When inside a building, the exposure will be less (Eldred and von Gierke 1993).

Table B-9. Average NIPTS and 10th Percentile NIPTS as a Function of DNL

DNL	*Ave. NIPTS dB**	*10th Percentile NIPTS dB**
75-76	1.0	4.0
76-77	1.0	4.5
77-78	1.6	5.0
78-79	2.0	5.5
79-80	2.5	6.0
80-81	3.0	7.0
81-82	3.5	8.0
82-83	4.0	9.0
83-84	4.5	10.0
84-85	5.5	11.0
85-86	6.0	12.0
86-87	7.0	13.5
87-88	7.5	15.0
88-89	8.5	16.5
89-90	9.5	18.0

Note: *Rounded to the nearest 0.5 dB.
Source: DoD 2012.

The average NIPTS is estimated as an average over all people exposed to the noise. The actual value of NIPTS for any given person will depend on their physical sensitivity to noise – some will experience more hearing loss than others. The USEPA Guidelines provide information on this variation in sensitivity in the form of the NIPTS exceeded by 10% of the population, which is included in the Table B-9 in the "10th Percentile NIPTS" column (USEPA 1982). For individuals exposed to $L_{eq(24)}$ of 80 dB, the most sensitive of the population would be expected to show degradation to their hearing of 7 dB over time.

To put these numbers in perspective, changes in hearing level of less than 5 dB are generally not considered noticeable or significant. Furthermore, there is no known evidence that a NIPTS of 5 dB is perceptible or has any practical significance for the individual. Lastly, the variability in audiometric testing is generally assumed to be ±5 dB (USEPA 1974).

The scientific community has concluded that noise exposure from civil airports has little chance of causing permanent hearing loss (Newman and Beattie 1985). For military airbases, DoD policy requires that hearing risk loss be estimated for population exposed to $L_{eq(24)}$ of 80 dB or higher (DoD 2012), including residents of on-base housing. Exposure of workers inside the base boundary is assessed using DoD regulations for occupational noise exposure.

Noise in low-altitude military airspace, especially along MTRs where L_{max} can exceed 115 dB, is of concern. That is the upper limit used for occupational noise exposure (e.g., U.S. Department of Labor 1971). One laboratory study (Ising et al. 1999) concluded that events with L_{max} above 114 dB have the potential to cause hearing loss. Another laboratory study of participants exposed to levels between 115 and 130 dB (Nixon et al. 1993), however, showed conflicting results. For an exposure to four events across that range, half the subjects showed no change in hearing, a quarter showed a temporary 5 dB decrease in sensitivity, and a quarter showed a temporary 5 dB increase in sensitivity. For exposure to eight events of 130 dB, subjects showed an increase in sensitivity of up to 10 dB (Nixon et al. 1993).

Summary

Aviation noise levels are not comparable to the occupational noise levels associated with hearing loss of workers in manufacturing industries. There is little chance of hearing loss at levels less than 75 dB DNL. Noise levels equal to or greater than 75 dB DNL can occur near military airbases, and DoD policy specifies that NIPTS be evaluated when exposure exceeds 80 dB $L_{eq(24)}$ (DoD 2009c). There is some concern about L_{max} exceeding 115 dB in low-altitude military airspace, but no research results to date have definitely related permanent hearing impairment to aviation noise.

B.2.6 Non-Auditory Health Effects

Studies have been performed to see whether noise can cause health effects other than hearing loss. The premise is that annoyance causes stress. Prolonged stress is known to be a contributor to a number of health disorders. Cantrell (1974) confirmed that noise can provoke stress, but noted that results on cardiovascular health have been contradictory. Some studies have found a connection between aircraft noise and blood pressure (e.g., Michalak et al. 1990; Rosenlund et al. 2001), while others have not (e.g., Pulles et al. 1990).

Kryter and Poza (1980) noted, "It is more likely that noise related general ill-health effects are due to the psychological annoyance from the noise interfering with normal everyday behavior, than it is from the noise eliciting, because of its intensity, reflexive response in the autonomic or other physiological systems of the body."

The connection from annoyance to stress to health issues requires careful experimental design. Some highly publicized reports on health effects have, in fact, been rooted in poorly done science. Meecham and Shaw (1979) apparently found a relation between noise levels and mortality rates in neighborhoods under the approach path to Los Angeles International Airport. When the same data were analyzed by others (Frerichs et al. 1980) no relationship was found. Jones and Tauscher (1978) found a high rate of birth defects for the same neighborhood. But when the Centers for Disease Control performed a more thorough study near Atlanta's Hartsfield International Airport, no relationships were found for levels above 65 dB (Edmonds et al. 1979).

A carefully designed study, Hypertension and Exposure to Noise near Airports (HYENA), was conducted around six European airports from 2002 through 2006 (Jarup et al. 2005, 2008). There were 4,861 subjects, aged between 45 and 70. Blood pressure was measured, and questionnaires administered for health, socioeconomic and lifestyle factors, including diet and physical exercise. Hypertension was defined by WHO blood pressure thresholds (WHO 2003). Noise from aircraft and highways was predicted from models.

The HYENA results were presented as an odds ratio (OR). An OR of 1 means there is no added risk, while an OR of 2 would mean risk doubles. An OR of 1.14 was found for nighttime aircraft noise, measured by L_{night}, the L_{eq} for nighttime hours. For daytime aircraft noise, measured by $L_{eq(16)}$, the OR was 0.93. For road traffic noise, measured by the full day $L_{eq(24)}$, the OR was 1.1.

Note that OR is a statistical measure of change, not the actual risk. Risk itself and the measured effects were small, and not necessarily distinct from other events. Haralabidis et al. (2008) reported an increase in systolic blood pressure of 6.2 millimeters of mercury (mmHg) for aircraft noise, and an increase of 7.4 mmHg for other indoor noises such as snoring.

It is interesting that aircraft noise was a factor only at night, while traffic noise is a factor for the full day. Aircraft noise results varied among the six countries so that result is pooled across all data. Traffic noise results were consistent across the six countries.

One interesting conclusion from a 2013 study of the HYENA data (Babisch et al. 2013) states there is some indication that noise level is a stronger predictor of hypertension than annoyance. That is not consistent with the idea that annoyance is a link in the connection between noise and stress. Babisch et al. (2012) present interesting insights on the relationship of the results to various modifiers.

Two recent studies examined the correlation of aircraft noise with hospital admissions for cardiovascular disease. Hansell et al. (2013) examined neighborhoods around London's Heathrow airport. Correia et al. (2013) examined neighborhoods around 89 airports in the U.S. Both studies included areas of various noise levels. They found associations that were consistent with the HYENA results. The authors of these studies noted that further research is needed to refine the associations and the causal interpretation with noise or possible alternative explanations.

> "Impacts from environmental noise on vulnerable groups (such as those who suffer from post-traumatic stress disorder [PTSD] and autism) have been understudied and are generally underrepresented in study populations, and evidence of differential effects is still highly anecdotal. As a consequence, clear effects are few and this is partly due to the lack of targeted and well-designed studies making clear comparisons between the general population and the potentially susceptible groups and quantifying these differences in terms of noise levels. Setting specific limit values to protect susceptible groups is not yet possible based on the available evidence, although some suggestions have been made in the literature. To further this field, it is necessary in future studies to present and compare subgroup-specific exposure effect relations. Generic use of the term 'vulnerable groups' should be avoided as the mechanisms are quite different and maybe more important, they vary in time, place, and across contexts. Groups at risk or susceptible groups, periods or places would, in most cases, be more appropriate terms to use and are less stigmatizing than the term vulnerability" (van Kamp and Davies 2013).

Summary

The current state of scientific knowledge cannot yet support inference of a causal or consistent relationship between aircraft noise exposure and non-auditory health consequences for exposed residents. The large-scale HYENA study, and the recent studies by Hansell et al. (2013) and Correia et al. (2013) offer indications, but it is not yet possible to establish a quantitative cause and effect based on the currently available scientific evidence.

B.2.7 Performance Effects

The effect of noise on the performance of activities or tasks has been the subject of many studies. Some of these studies have found links between continuous high noise levels and performance loss. Noise-induced performance losses are most frequently reported in studies where noise levels are above 85 dB. Little change has been found in low-noise cases. Moderate noise levels appear to act as a stressor for more sensitive individuals performing a difficult psychomotor task.

While the results of research on the general effect of periodic aircraft noise on performance have yet to yield definitive criteria, several general trends have been noted including:

- A periodic intermittent noise is more likely to disrupt performance than a steady-state continuous noise of the same level. Flyover noise, due to its intermittent nature, might be more likely to disrupt performance than a steady-state noise of equal level.
- Noise is more inclined to affect the quality than the quantity of work.
- Noise is more likely to impair the performance of tasks that place extreme demands on workers.

B.2.8 Noise Effects on Children

Recent studies on school children indicate a potential link between aircraft noise and both reading comprehension and learning motivation. The effects may be small but may be of particular concern for children who are already scholastically challenged.

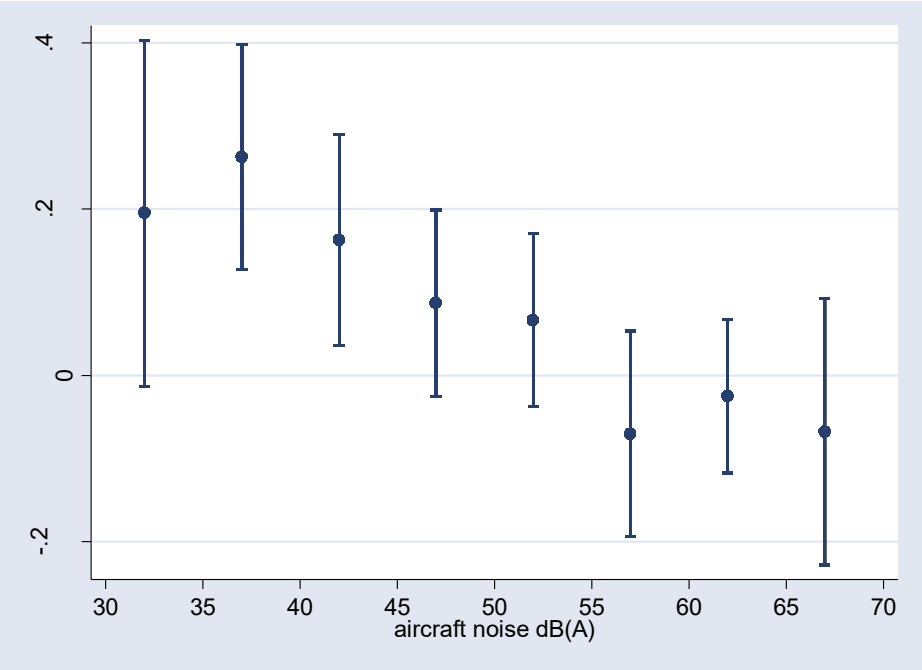
C.2.8.1 Effects on Learning and Cognitive Abilities

Early studies in several countries (Cohen et al. 1973, 1980, 1981; Bronzaft and McCarthy 1975; Green et al. 1982; Evans et al. 1998; Haines et al. 2002; Lercher et al. 2003) showed lower reading scores for children living or attending school in noisy areas than for children away from those areas. In some studies noise exposed children were less likely to solve difficult puzzles or more likely to give up.

More recently, the Road Traffic and Aircraft Noise Exposure and Children's Cognition and Health (RANCH) study (Stansfeld et al. 2005; Clark et al. 2005) compared the effect of aircraft and road traffic noise on over 2.000 children in three countries. This was the first study to derive exposure effect associations for a range of cognitive and health effects, and was the first to compare effects across countries.

The study found a linear relation between chronic aircraft noise exposure and impaired reading comprehension and recognition memory. No associations were found between chronic road traffic noise exposure and cognition. Conceptual recall and information recall surprisingly showed better performance in high road traffic noise areas. Neither aircraft noise nor road traffic noise affected attention or working memory (Stansfeld et al. 2005; Clark et al. 2005).

Figure B-14 shows RANCH's result relating noise to reading comprehension. It shows that reading falls below average (a z-score of 0) at L_{eq} greater than 55 dB. Because the relationship is linear, reducing exposure at any level should lead to improvements in reading comprehension.



Sources: Stansfeld et al. 2005; Clark et al. 2005.

Figure B-14. RANCH Study Reading Scores Varying with L_{eq}

An observation of the RANCH study was that children may be exposed to aircraft noise for many of their childhood years and the consequences of long-term noise exposure were unknown. A follow-up study of the children in the RANCH project is being analyzed to examine the long-term effects on children's reading comprehension (Clark et al. 2009). Preliminary analysis indicated a trend for reading comprehension to be poorer at 15-16 years of age for children who attended noise exposed primary schools. There was also a trend for reading comprehension to be poorer in aircraft noise exposed secondary schools. Further analysis adjusting for confounding factors is ongoing, and is needed to confirm these initial conclusions.

FICAN funded a pilot study to assess the relationship between aircraft noise reduction and standardized test scores (Eagan et al. 2004; FICAN 2007). The study evaluated whether abrupt aircraft noise reduction within classrooms, from either airport closure or sound insulation, was associated with improvements in test scores. Data were collected in 35 public schools near three airports in Illinois and Texas. The study used several noise metrics. These were, however, all computed indoor levels, which makes it hard to compare with the outdoor levels used in most other studies.

The FICAN study found a significant association between noise reduction and a decrease in failure rates for high school students, but not middle or elementary school students. There were some weaker associations between noise reduction and an increase in failure rates for middle and elementary schools. Overall the study found that the associations observed were similar for children with or without learning difficulties, and between verbal and math/science tests. As a pilot study, it was not expected to obtain final answers, but provided useful indications (FICAN 2007).

While there are many factors that can contribute to learning deficits in school-aged children, there is increasing awareness that chronic exposure to high aircraft noise levels may impair learning. This awareness has led WHO and a North Atlantic Treaty Organization (NATO) working group to conclude

that daycare centers and schools should not be located near major sources of noise, such as highways, airports, and industrial sites (NATO 2000; WHO 1999). The awareness has also led to the classroom noise standard discussed earlier (ANSI 2002).

B.2.8.2 Health Effects

A number of studies, including some of the cognitive studies discussed above, have examined the potential for effects on children's health. Health effects include annoyance, psychological health, coronary risk, stress hormones, sleep disturbance and hearing loss.

Annoyance. Chronic noise exposure causes annoyance in children (Bronzaft and McCarthy 1975; Evans et al. 1995). Annoyance among children tends to be higher than for adults, and there is little habituation (Haines et al. 2001a). The RANCH study found annoyance may play a role in how noise affects reading comprehension (Clark et al. 2005).

Psychological Health. Lercher et al. (2002) found an association between noise and teacher ratings of psychological health, but only for children with biological risk defined by low birth weight and/or premature birth. Haines et al. (2001b) found that children exposed to aircraft noise had higher levels of psychological distress and hyperactivity. Stansfeld et al. (2009) replicated the hyperactivity result, but not distress.

As with studies of adults, the evidence suggests that chronic noise exposure is probably not associated with serious psychological illness, but there may be effects on well-being and quality of life. Further research is needed, particularly on whether hyperactive children are more susceptible to stressors such as aircraft noise.

Coronary Risk. The HYENA study discussed earlier indicated a possible relation between noise and hypertension in older adults. Cohen et al. (1980, 1981) found some increase in blood pressure among school children, but within the normal range and not indicating hypertension. Hygge et al. (2002) found mixed effects. The RANCH study found some effect for children at home and at night, but not at school. Overall the evidence for noise effects on children's blood pressure is mixed, and less certain than for older adults.

Stress Hormones. Some studies investigated hormonal levels between groups of children exposed to aircraft noise compared to those in a control group. Two studies analyzed cortisol and urinary catecholamine levels in school children as measurements of stress response to aircraft noise (Haines et al. 2001a, 2001b). In both instances, there were no differences between the aircraft noise exposed children and the control groups.

Sleep Disturbance. A sub-study of RANCH in a Swedish sample used sleep logs and the monitoring of rest/activity cycles to compare the effect of road traffic noise on child and parent sleep (Öhrström et al. 2006). An exposure-response relationship was found for sleep quality and daytime sleepiness for children. While this suggests effects of noise on children's sleep disturbance, it is difficult to generalize from one study.

Hearing loss. A few studies have examined hearing loss from exposure to aircraft noise. Noise-induced hearing loss for children who attended a school located under a flight path near a Taiwan airport was greater than for children at another school far away (Chen et al. 1997). Another study reported that hearing ability was reduced significantly in individuals who lived near an airport and were frequently

exposed to aircraft noise (Chen and Chen 1993). In that study, noise exposure near the airport was greater than 75 dB DNL and L_{max} were about 87 dB during overflights. Conversely, several other studies reported no difference in hearing ability between children exposed to high levels of airport noise and children located in quieter areas (Andrus et al. 1975; Fisch 1977; Wu et al. 1995). It is not clear from those results whether children are at higher risk than adults, but the levels involved are higher than those desirable for learning and quality of life.

Ludlow and Sixsmith (1999) conducted a cross-sectional pilot study to examine the hypothesis that military jet noise exposure early in life is associated with raised hearing thresholds. The authors concluded that there were no significant differences in audiometric test results between military personnel who as children had lived in or near stations where fast jet operations were based, and a similar group who had no such exposure as children.

B.2.9 Property Values

Noise can affect the value of homes. Economic studies of property values based on selling prices and noise have been conducted to find a direct relation.

The value-noise relation is usually presented as the Noise Depreciation Index (NDI) or Noise Sensitivity Depreciation Index, the percent loss of value per dB (measured by the DNL metric). An early study by Nelson (1978) at three airports found an NDI of 1.8-2.3% per dB. Nelson also noted a decline in NDI over time which he theorized could be due to either a change in population or the increase in commercial value of the property near airports. Crowley (1978) reached a similar conclusion. A larger study by Nelson (1980) looking at 18 airports found an NDI from 0.5 to 0.6% per dB.

In a review of property value studies, Newman and Beattie (1985) found a range of NDI from 0.2 to 2% per dB. They noted that many factors other than noise affected values.

Fidell et al. (1996) studied the influence of aircraft noise on actual sale prices of residential properties in the vicinity of a military base in Virginia and one in Arizona. They found no meaningful effect on home values. Their results may have been due to non-noise factors, especially the wide differences in homes between the two study areas.

Recent studies of noise effects on property values have recognized the need to account for non-noise factors. Nelson (2004) analyzed data from 33 airports, and discussed the need to account for those factors and the need for careful statistics. His analysis showed NDI from 0.3 to 1.5% per dB, with an average of about 0.65% per dB. Nelson (2007) and Andersson et al. (2013) discuss statistical modeling in more detail.

Another recent literature review was conducted by Aliyu et al. (2016) and found similar ranges of impacts. The most common approach used in assessing impacts is the hedonic pricing method where the value of the property is modeled to reflect the contribution of many individual variables (e.g., scenic views, house appearance, and neighborhood demand) which, when taken together, form the total price. The hedonic pricing method requires detailed information on local housing markets and sales prices.

He et al. (2014) used a meta-analysis of more than 60 hedonic price property value studies to model the relationship between city level income and population data and the overall willingness to pay for noise abatement. This approach enables an estimate of noise impacts in locations where detailed housing data is not available. The mean NDI of the hedonic price studies used was 0.75 percent and the median was

0.67 percent. Results of the model are comparable with hedonic price models and the previous studies discussed. Wolfe et al. (2014) use the approach described by He et al. (2014) to compare the impacts related to noise with impacts related to climate and air quality. They show the spatial relationship of noise impacts in areas in the immediate vicinity of the airport and also caution that some hedonic pricing models that are measuring impacts from noise may be capturing impacts associated with air quality as well if this variable is not accounted for.

Similar price impacts were found by Jud and Winkler (2006) and Mense and Kholodilin (2012); however, these studies also showed that the impacts occurred as a result of the announcement of an airport expansion. The anticipation of the noise level rise impacts property values before the noise increases.

Enough data are available to conclude that aircraft noise has a real effect on property values. This effect falls in the range of 0.2 to 2.0% per dB, with the average on the order of 0.5% per dB. The actual value varies from location to location, and is very often small compared to non-noise factors.

B.2.10 Noise-Induced Vibration Effects on Structures and Humans

High noise levels can cause buildings to vibrate. If high enough, building components can be damaged. The most sensitive components of a building are the windows, followed by plaster walls and ceilings. Possibility of damage depends on the peak sound pressures and the resonances of the building. In general, damage is possible only for sounds lasting more than one second above an unweighted sound level of 130 dB (CHABA 1977). That is higher than expected from normal aircraft operations. Even low-altitude flyovers of heavy aircraft do not reach the potential for damage (Sutherland 1990a).

Noise-induced structural vibration may cause annoyance to dwelling occupants because of induced secondary vibrations, or "rattle," of objects within the dwelling – hanging pictures, dishes, plaques, and bric-a-brac. Loose window panes may also vibrate noticeably when exposed to high levels of airborne noise, causing homeowners to fear breakage. In general, rattling occurs at peak unweighted sound levels that last for several seconds at levels above 110 dB, which is well above that considered normally compatible with residential land use. Thus, assessments of noise exposure levels for compatible land use will also be protective of noise-induced rattle.

The sound from an aircraft overflight travels from the exterior to the interior of the house in one of two ways: through the solid structural elements and directly through the air. Figure B-15 illustrates the sound transmission through a wall constructed with a brick exterior, stud framing, interior finish wall, and absorbent material in the cavity. The sound transmission starts with noise impinging on the wall exterior. Some of this sound energy will be reflected away and some will make the wall vibrate. The vibrating wall radiates sound into the airspace, which in turn sets the interior finish surface vibrating, with some energy lost in the airspace. This surface then radiates sound into the dwelling interior. As the figure shows, vibrational energy also bypasses the air cavity by traveling through the studs and edge connections.

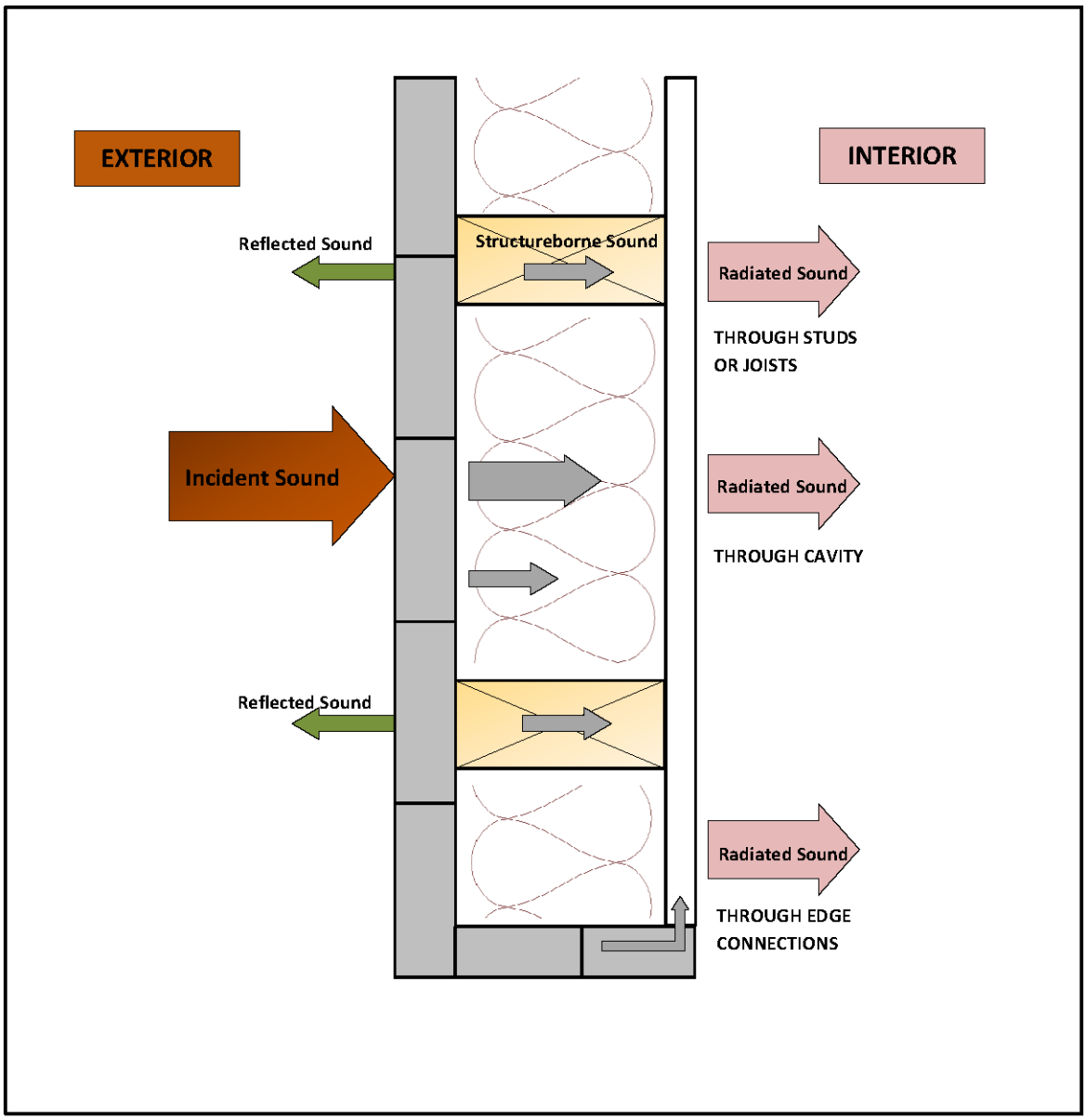


Figure B-15. Depiction of Sound Transmission through Built Construction

Normally, the most sensitive components of a structure to airborne noise are the windows, followed by plastered walls and ceilings. An evaluation of the peak sound pressures impinging on the structure is normally sufficient to determine the possibility of damage. In general, at unweighted sound levels above 130 dB, there is the possibility of structural damage. While certain frequencies (such as 30 Hertz for window breakage) may be of more concern than other frequencies, conservatively, only sounds lasting more than one second above an unweighted sound level of 130 dB are potentially damaging to structural components (von Gierke and Ward 1991).

In the assessment of vibration on humans, the following factors determine if a person will perceive and possibly react to building vibrations:

1. Type of excitation: steady-state, intermittent, or impulsive vibration.
2. Frequency of the excitation. International Organization for Standardization (ISO) standard 2631-2 (ISO 1989) recommends a frequency range of 1 to 80 Hz for the assessment of vibration on humans.
3. Orientation of the body with respect to the vibration.
4. The use of the occupied space (i.e., residential, workshop, hospital).
5. Time of day.

Table B-10 lists the whole-body vibration criteria from ISO 2631-2 for one-third octave frequency bands from 1 to 80 Hz.

Table B-10. Vibration Criteria for the Evaluation of Human Exposure to Whole-Body Vibration

Frequency (Hz)	*RMS Acceleration (m/s/s) Combined Criteria Base Curve*	*RMS Acceleration (m/s/s) Residential Night*	*RMS Acceleration (m/s/s) Residential Day*
1.00	0.0036	0.0050	0.0072
1.25	0.0036	0.0050	0.0072
1.60	0.0036	0.0050	0.0072
2.0	0.0036	0.0050	0.0072
2.50	0.0037	0.0052	0.0074
3.15	0.0039	0.0054	0.0077
4.00	0.0041	0.0057	0.0081
5.00	0.0043	0.0060	0.0086
6.30	0.0046	0.0064	0.0092
8.00	0.0050	0.0070	0.0100
10.00	0.0063	0.0088	0.0126
12.50	0.0078	0.0109	0.0156
16.00	0.0100	0.0140	0.0200
20.00	0.0125	0.0175	0.0250
25.00	0.0156	0.0218	0.0312
31.50	0.0197	0.0276	0.0394
40.00	0.0250	0.0350	0.0500
50.00	0.0313	0.0438	0.0626
63.00	0.0394	0.0552	0.0788
80.00	0.0500	0.0700	0.1000

Source: ISO 1989.

B.2.11 Sonic Booms

Sonic booms are commonly associated with structural damage. Most damage claims are for brittle objects, such as glass and plaster. Table B-11 summarizes the threshold of damage that might be expected at various overpressures. There is a large degree of variability in damage experience, and much damage depends on the pre-existing condition of a structure. Breakage data for glass, for example, spans a range of two to three orders of magnitude at a given overpressure. At 1 psf, the probability of a window breaking ranges from one in a billion (Sutherland 1990b) to one in a million (Hershey and Higgins 1976). These damage rates are associated with a combination of boom load and glass condition. At 10 psf, the probability of breakage is between one in a hundred and one in a thousand. Laboratory tests of glass (White 1972) have shown that properly installed window glass will not break at overpressures below 10 psf, even when subjected to repeated booms, but in the real-world glass is not in pristine condition.

Table B-11. Possible Damage to Structures From Sonic Booms

Sonic Boom Overpressure Nominal (psf)	*Type of Damage*	*Item Affected*
0.5–2	Plaster	Fine cracks; extension of existing cracks; more in ceilings; over door frames; between some plaster boards.
0.5–2	Glass	Rarely shattered; either partial or extension of existing.
0.5–2	Roof	Slippage of existing loose tiles/slates; sometimes new cracking of old slates at nail hole.
0.5–2	Damage to outside walls	Existing cracks in stucco extended.
0.5–2	Bric-a-brac	Those carefully balanced or on edges can fall; fine glass, such as large goblets, can fall and break.
0.5–2	Other	Dust falls in chimneys.
2–4	Glass, plaster, roofs, ceilings	Failures show that would have been difficult to forecast in terms of their existing localized condition. Nominally in good condition.
4–10	Glass	Regular failures within a population of well-installed glass; industrial as well as domestic greenhouses.
4–10	Plaster	Partial ceiling collapse of good plaster; complete collapse of very new, incompletely cured, or very old plaster.
4–10	Roofs	High probability rate of failure in nominally good state, slurry-wash; some chance of failures in tiles on modern roofs; light roofs (bungalow) or large area can move bodily.
4–10	Walls (out)	Old, free standing, in fairly good condition can collapse.
4–10	Walls (in)	Inside (“party”) walls known to move at 10 psf.
Greater than 10	Glass	Some good glass will fail regularly to sonic booms from the same direction. Glass with existing faults could shatter and fly. Large window frames move.
Greater than 10	Plaster	Most plaster affected.
Greater than 10	Ceilings	Plaster boards displaced by nail popping.
Greater than 10	Roofs	Most slate/slurry roofs affected, some badly; large roofs having good tile can be affected; some roofs bodily displaced causing gale-end and will-plate cracks; domestic chimneys dislodged if not in good condition.
Greater than 10	Walls	Internal party walls can move even if carrying fittings such as hand basins or taps; secondary damage due to water leakage.
Greater than 10	Bric-a-brac	Some nominally secure items can fall; e.g., large pictures, especially if fixed to party walls.

Source: Haber and Nakaki 1989.

Damage to plaster occurs at similar ranges to glass damage. Plaster has a compounding issue in that it will often crack due to shrinkage while curing, or from stresses as a structure settles, even in the absence of outside loads. Sonic boom damage to plaster often occurs when internal stresses are high from these factors.

Some degree of damage to glass and plaster should thus be expected whenever there are sonic booms, but usually at the low rates noted above. In general, structural damage from sonic booms should be expected only for overpressures above 10 psf.

B.2.12 Noise and Sonic Boom Effects on Terrain

It has been suggested that noise levels associated with low-flying aircraft may affect the terrain under the flight path by disturbing fragile soil or snow, especially in mountainous areas, causing landslides or avalanches. There are no known instances of such events. It is improbable that such effects would result from routine subsonic aircraft operations.

In contrast to subsonic noise, sonic booms are considered to be a potential trigger for snow avalanches. Avalanches are highly dependent on the physical status of the snow, and do occur spontaneously. They can be triggered by minor disturbances, and there are documented accounts of sonic booms triggering avalanches. Switzerland routinely restricts supersonic flight during avalanche season. Landslides are not an issue for sonic booms. There was one anecdotal report of a minor landslide from a sonic boom generated by the Space Shuttle during landing, but there is no credible mechanism or consistent pattern of reports.

B.2.13 Noise Effects on Historical and Archaeological Sites

Historical buildings and sites can have elements that are more fragile than conventional structures. Aircraft noise may affect such sites more severely than newer, modern structures. In older structures, seemingly insignificant surface cracks caused by vibrations from aircraft noise may lead to greater damage from natural forces (Hanson et al. 1991). There are few scientific studies of such effects to provide guidance for their assessment.

For example, one study involved measurements of noise and vibration in a restored plantation house, originally built in 1795. It is located 1,500 feet from the centerline at the departure end of Runway 19L at Washington Dulles International Airport. The aircraft measured was the Concorde. There was special concern for the building's windows, since roughly half of the 324 panes were original. No instances of structural damage were found. Interestingly, despite the high levels of noise during Concorde takeoffs, the induced structural vibration levels were actually less than those induced by touring groups and vacuum cleaning (Wesler 1977).

As for conventional structures, noise exposure levels for normally compatible land uses should also be protective of historic and archaeological sites. Unique sites should, of course, be analyzed for specific exposure.

B.2.14 Effects on Domestic Animals and Wildlife

Domestic animals and wildlife have different hearing thresholds, frequency response, and tolerance characteristics than do humans. There is a large difference in response even among different animal species. Evaluation of noise impacts on wildlife using metrics primarily intended for human impact

should be done with caution and makes evaluation of impacts on wildlife even more difficult. As such, evaluations in this appendix have been based primarily on historical response to sounds rather than to absolute sound levels.

Hearing is critical to an animal's ability to react, compete, reproduce, hunt, forage, and survive in its environment. While the existing literature does include studies on possible effects of jet aircraft noise and sonic booms on wildlife, there appears to have been little concerted effort in developing quantitative comparisons of aircraft noise effects on normal auditory characteristics. Behavioral effects have been relatively well described, but the larger ecological context issues, and the potential for drawing conclusions regarding effects on populations, has not been well developed.

The relationships between potential auditory/physiological effects and species interactions with their environments are not well understood. Manci et al. (1988), assert that the consequences that physiological effects may have on behavioral patterns are vital to understanding the long-term effects of noise on wildlife. Questions regarding the effects (if any) on predator-prey interactions, reproductive success, and intra-inter specific behavior patterns remain.

The following discussion provides an overview of the existing literature on noise effects (particularly jet aircraft noise) on animal species. The literature reviewed here involves those studies that have focused on the observations of the behavioral effects that jet aircraft and sonic booms have on animals.

A great deal of research was conducted in the 1960s and 1970s on the effects of aircraft noise on the public and the potential for adverse ecological impacts. These studies were largely completed in response to the increase in air travel and as a result of the introduction of supersonic jet aircraft. According to Manci et al. (1988), the foundation of information created from that focus does not necessarily correlate or provide information specific to the impacts to wildlife in areas overflown by aircraft at supersonic speed or at low altitudes.

The abilities to hear sounds and noise and to communicate assist wildlife in maintaining group cohesiveness and survivorship. Social species communicate by transmitting calls of warning, introduction, and other types that are subsequently related to an individual's or group's responsiveness.

Animal species differ greatly in their responses to noise. Noise effects on domestic animals and wildlife are classified as primary, secondary, and tertiary. Primary effects are direct, physiological changes to the auditory system, and most likely include the masking of auditory signals. Masking is defined as the inability of an individual to hear important environmental signals that may arise from mates, predators, or prey. There is some potential that noise could disrupt a species' ability to communicate or could interfere with behavioral patterns (Manci et al. 1988). Although the effects are likely temporal, aircraft noise may cause masking of auditory signals within exposed faunal communities. Animals rely on hearing to avoid predators, obtain food, and communicate with, and attract, other members of their species. Aircraft noise may mask or interfere with these functions. Other primary effects, such as ear drum rupture or temporary and permanent hearing threshold shifts, are not as likely given the subsonic noise levels produced by aircraft overflights.

Secondary effects may include non-auditory effects such as stress and hypertension; behavioral modifications; interference with mating or reproduction; and impaired ability to obtain adequate food, cover, or water. Tertiary effects are the direct result of primary and secondary effects, and include

population decline and habitat loss. Most of the effects of noise are mild enough that they may never be detectable as variables of change in population size or population growth against the background of normal variation (Bowles 1995). Other environmental variables (e.g., predators, weather, changing prey base, ground-based disturbance) also influence secondary and tertiary effects, and confound the ability to identify the ultimate factor in limiting productivity of a certain nest, area, or region (Smith et al. 1988). Overall, the literature suggests that species differ in their response to various types, durations, and sources of noise (Manci et al. 1988).

Many scientific studies have investigated the effects of aircraft noise on wildlife, and some have focused on wildlife "flight" due to noise. Animal responses to aircraft are influenced by many variables, including size, speed, proximity (both height above the ground and lateral distance), engine noise, color, flight profile, and radiated noise. The type of aircraft (e.g., fixed wing versus rotor-wing [helicopter]) and type of flight mission may also produce different levels of disturbance, with varying animal responses (Smith et al. 1988). Consequently, it is difficult to generalize animal responses to noise disturbances across species.

One result of the Manci et al. (1988) literature review was the conclusion that, while behavioral observation studies were relatively limited, a general behavioral reaction in animals from exposure to aircraft noise is the startle response. The intensity and duration of the startle response appears to be dependent on which species is exposed, whether there is a group or an individual, and whether there have been some previous exposures. Responses range from flight, trampling, stampeding, jumping, or running, to movement of the head in the apparent direction of the noise source. Manci et al. (1988) reported that the literature indicated that avian species may be more sensitive to aircraft noise than mammals.

B.2.14.1 Domestic Animals

Although some studies report that the effects of aircraft noise on domestic animals is inconclusive, a majority of the literature reviewed indicates that domestic animals exhibit some behavioral responses to military overflights but generally seem to habituate to the disturbances over a period of time. Mammals in particular appear to react to noise at sound levels higher than 90 dB, with responses including the startle response, freezing (i.e., becoming temporarily stationary), and fleeing from the sound source. Many studies on domestic animals suggest that some species appear to acclimate to some forms of sound disturbance (Manci et al. 1988). Some studies have reported such primary and secondary effects as reduced milk production and rate of milk release, increased glucose concentrations, decreased levels of hemoglobin, increased heart rate, and a reduction in thyroid activity. These latter effects appear to represent a small percentage of the findings occurring in the existing literature.

Some reviewers have indicated that earlier studies, and claims by farmers linking adverse effects of aircraft noise on livestock, did not necessarily provide clear-cut evidence of cause and effect (Cottereau 1978). In contrast, many studies conclude that there is no evidence that aircraft overflights affect feed intake, growth, or production rates in domestic animals.

Cattle

In response to concerns about overflight effects on pregnant cattle, milk production, and cattle safety, the U.S. Air Force prepared a handbook for environmental protection that summarized the literature on the impacts of low-altitude flights on livestock (and poultry) and includes specific case studies conducted in

numerous airspaces across the country. Adverse effects have been found in a few studies but have not been reproduced in other similar studies. One such study, conducted in 1983, suggested that 2 of 10 cows in late pregnancy aborted after showing rising estrogen and falling progesterone levels. These increased hormonal levels were reported as being linked to 59 aircraft overflights. The remaining eight cows showed no changes in their blood concentrations and calved normally. A similar study reported abortions occurred in three out of five pregnant cattle after exposing them to flyovers by six different aircraft. Another study suggested that feedlot cattle could stampede and injure themselves when exposed to low-level overflights (U.S. Air Force 1994a).

A majority of the studies reviewed suggests that there is little or no effect of aircraft noise on cattle. Studies presenting adverse effects to domestic animals have been limited. A number of studies (Parker and Bayley 1960; Casady and Lehmann 1967; Kovalcik and Sottnik 1971) investigated the effects of jet aircraft noise and sonic booms on the milk production of dairy cows. Through the compilation and examination of milk production data from areas exposed to jet aircraft noise and sonic boom events, it was determined that milk yields were not affected. This was particularly evident in those cows that had been previously exposed to jet aircraft noise.

A study examined the causes of 1,763 abortions in Wisconsin dairy cattle over a 1-year time period and none were associated with aircraft disturbances (U.S. Air Force 1993). In 1987, researchers contacted seven livestock operators for production data, and no effects of low-altitude and supersonic flights were noted. Of the 43 cattle previously exposed to low-altitude flights, 3 showed a startle response to an F/A-18 aircraft flying overhead at 500 feet AGL and 400 knots by running less than 10 meters. They resumed normal activity within 1 minute (U.S. Air Force 1994a). Beyer (1983) found that helicopters caused more reaction than other low-aircraft overflights, and that the helicopters at 30-60 feet overhead did not affect milk production and pregnancies of 44 cows in a 1964 study (U.S. Air Force 1994a).

Additionally, Beyer (1983) reported that five pregnant dairy cows in a pasture did not exhibit fright-flight tendencies or disturb their pregnancies after being overflown by 79 low-altitude helicopter flights and 4 low-altitude, subsonic jet aircraft flights. A 1956 study found that the reactions of dairy and beef cattle to noise from low-altitude, subsonic aircraft were similar to those caused by paper blowing about, strange persons, or other moving objects (U.S. Air Force 1994a).

In a report to Congress, the U.S. Forest Service concluded that "evidence both from field studies of wild ungulates and laboratory studies of domestic stock indicate that the risks of damage are small (from aircraft approaches of 50-100 meters), as animals take care not to damage themselves (U.S. Forest Service 1992). If animals are overflown by aircraft at altitudes of 50-100 meters, there is no evidence that mothers and young are separated, that animals collide with obstructions (unless confined) or that they traverse dangerous ground at too high a rate." These varied study results suggest that, although the confining of cattle could magnify animal response to aircraft overflight, there is no proven cause and effect link between startling cattle from aircraft overflights and abortion rates or lower milk production.

Horses

Horses have also been observed to react to overflights of jet aircraft. Several of the studies reviewed reported a varied response of horses to low-altitude aircraft overflights. Observations made in 1966 and 1968 noted that horses galloped in response to jet flyovers (U.S. Air Force 1993). Bowles (1995) cites Kruger and Erath as observing horses exhibiting intensive flight reactions, random movements, and

biting/kicking behavior. However, no injuries or abortions occurred, and there was evidence that the mares adapted somewhat to the flyovers over the course of a month (U.S. Air Force 1994a). Although horses were observed noticing the overflights, it did not appear to affect either survivability or reproductive success. There was also some indication that habituation to these types of disturbances was occurring.

LeBlanc et al. (1991), studied the effects of F-14 jet aircraft noise on pregnant mares. They specifically focused on any changes in pregnancy success, behavior, cardiac function, hormonal production, and rate of habituation. Their findings reported observations of "flight-fright" reactions, which caused increases in heart rates and serum cortisol concentrations. The mares, however, did habituate to the noise. Levels of anxiety and mass body movements were the highest after initial exposure, with intensities of responses decreasing thereafter. There were no differences in pregnancy success when compared to a control group.

Swine

Generally, the literature findings for swine appear to be similar to those reported for cows and horses. While there are some effects from aircraft noise reported in the literature, these effects are minor. Studies of continuous noise exposure (i.e., 6 hours, 72 hours of constant exposure) reported influences on short-term hormonal production and release. Additional constant exposure studies indicated the observation of stress reactions, hypertension, and electrolyte imbalances (Dufour 1980). A study by Bond et al. (1963), demonstrated no adverse effects on the feeding efficiency, weight gain, ear physiology, or thyroid and adrenal gland condition of pigs subjected to observed aircraft noise. Observations of heart rate increase were recorded; noting that cessation of the noise resulted in the return to normal heart rates. Conception rates and offspring survivorship did not appear to be influenced by exposure to aircraft noise.

Similarly, simulated aircraft noise at levels of 100-135 dB had only minor effects on the rate of feed utilization, weight gain, food intake, or reproduction rates of boars and sows exposed, and there were no injuries or inner ear changes observed (Gladwin et al. 1988; Manci et al. 1988).

Domestic Fowl

According to a 1994 position paper by the U.S. Air Force on effects of low-altitude overflights (below 1,000 feet) on domestic fowl, overflight activity has negligible effects (U.S. Air Force 1994b). The paper did recognize that given certain circumstances, adverse effects can be serious. Some of the effects can be panic reactions, reduced productivity, and effects on marketability (e.g., bruising of the meat caused during "pile-up" situations).

The typical reaction of domestic fowl after exposure to sudden, intense noise is a short-term startle response. The reaction ceases as soon as the stimulus is ended, and within a few minutes all activity returns to normal. More severe responses are possible depending on the number of birds, the frequency of exposure, and environmental conditions. Large crowds of birds, and birds not previously exposed, are more likely to pile up in response to a noise stimulus (U.S. Air Force 1994b). According to studies and interviews with growers, it is typically the previously unexposed birds that incite panic crowding, and the tendency to do so is markedly reduced within five exposures to the stimulus (U.S. Air Force 1994b). This suggests that the birds habituate relatively quickly. Egg productivity was not adversely affected by infrequent noise bursts, even at exposure levels as high as 120-130 dB.

Between 1956 and 1988, there were 100 recorded claims against the Navy for alleged damage to domestic fowl. The number of claims averaged three per year, with peak numbers of claims following publications of studies on the topic in the early 1960s. Many of the claims were disproved or did not have sufficient supporting evidence. The claims were filed for the following alleged damages: 55% for panic reactions, 31% for decreased production, 6% for reduced hatchability, 6% for weight loss, and less than 1% for reduced fertility (U.S. Air Force 1994b).

B2.14.2 Wildlife

Studies on the effects of overflights and sonic booms on wildlife have been focused mostly on avian species and ungulates such as caribou and bighorn sheep. Few studies have been conducted on marine mammals, small terrestrial mammals, reptiles, amphibians, and carnivorous mammals. Generally, species that live entirely below the surface of the water have also been ignored due to the fact they do not experience the same level of sound as terrestrial species (National Park Service 1994). Wild ungulates appear to be much more sensitive to noise disturbance than domestic livestock. This may be due to previous exposure to disturbances. One common factor appears to be that low-altitude flyovers seem to be more disruptive in terrain where there is little cover (Manci et al. 1988).

Mammals

TERRESTRIAL MAMMALS

Studies of terrestrial mammals have shown that noise levels of 120 dB can damage mammals' ears, and levels at 95 dB can cause temporary loss of hearing acuity. Noise from aircraft has affected other large carnivores by causing changes in home ranges, foraging patterns, and breeding behavior. One study recommended that aircraft not be allowed to fly at altitudes below 2,000 feet AGL over important grizzly and polar bear habitat. Wolves have been frightened by low-altitude flights that were 25-1,000 feet AGL. However, wolves have been found to adapt to aircraft overflights and noise as long as they were not being hunted from aircraft (Dufour 1980).

Wild ungulates (American bison, caribou, bighorn sheep) appear to be much more sensitive to noise disturbance than domestic livestock (Weisenberger et al. 1996). Behavioral reactions may be related to the past history of disturbances by such things as humans and aircraft. Common reactions of reindeer kept in an enclosure exposed to aircraft noise disturbance were a slight startle response, rising of the head, pricking ears, and scenting of the air. Panic reactions and extensive changes in behavior of individual animals were not observed. Observations of caribou in Alaska exposed to fixed-wing aircraft and helicopters showed running and panic reactions occurred when overflights were at an altitude of 200 feet or less. The reactions decreased with increased altitude of overflights, and, with more than 500 feet in altitude, the panic reactions stopped. Also, smaller groups reacted less strongly than larger groups. One negative effect of the running and avoidance behavior is increased expenditure of energy. For a 90-kilogram animal, the calculated expenditure due to aircraft harassment is 64 kilocalories per minute when running and 20 kilocalories per minute when walking. When conditions are favorable, this expenditure can be counteracted with increased feeding; however, during harsh winter conditions, this may not be possible. Incidental observations of wolves and bears exposed to fixed-wing aircraft and helicopters in the northern regions suggested that wolves are less disturbed than wild ungulates, while grizzly bears showed the greatest response of any animal species observed (Weisenberger et al. 1996).

It has been proven that low-altitude overflights do induce stress in animals. Increased heart rates, an indicator of excitement or stress, have been found in pronghorn antelope, elk, and bighorn sheep. As such reactions occur naturally as a response to predation, infrequent overflights may not, in and of themselves, be detrimental. However, flights at high frequencies over a long period of time may cause harmful effects. The consequences of this disturbance, while cumulative, are not additive. It may be that aircraft disturbance may not cause obvious and serious health effects, but coupled with a harsh winter, it may have an adverse impact. Research has shown that stress induced by other types of disturbances produces long-term decreases in metabolism and hormone balances in wild ungulates.

Behavioral responses can range from mild to severe. Mild responses include head raising, body shifting, or turning to orient toward the aircraft. Moderate disturbance may be nervous behaviors, such as trotting a short distance. Escape is the typical severe response.

BIRDS

Auditory research conducted on birds indicates that they fall between the reptiles and the mammals relative to hearing sensitivity. According to Dooling (1978), within the range of 1,000 to 5,000 Hz, birds show a level of hearing sensitivity similar to that of the more sensitive mammals. In contrast to mammals, bird sensitivity falls off at a greater rate to increasing and decreasing frequencies. Passive observations and studies examining aircraft bird strikes indicate that birds nest and forage near airports. Aircraft noise in the vicinity of commercial airports apparently does not inhibit bird presence and use.

High noise events (like a low-altitude aircraft overflight) may cause birds to engage in escape or avoidance behaviors, such as flushing from perches or nests (Ellis et al. 1991). These activities impose an energy cost on the birds that, over the long term, may affect survival or growth. In addition, the birds may spend less time engaged in necessary activities like feeding, preening, or caring for their young because they spend time in noise-avoidance activity. However, the long-term significance of noise-related impacts is less clear. Several studies on nesting raptors have indicated that birds become habituated to aircraft overflights and that long-term reproductive success is not affected (Ellis et al. 1991; Grubb and King 1991). Threshold noise levels for significant responses range from 62 dB for Pacific black brant to 85 dB for crested tern (Brown 1990; Ward and Stehn 1990).

Songbirds were observed to become silent prior to the onset of a sonic boom event (F-111 jets), followed by "raucous discordant cries." There was a return to normal singing within 10 seconds after the boom (Higgins 1974 in Manci et al. 1988). Ravens responded by emitting protestation calls, flapping their wings, and soaring.

Manci et al. (1988), reported a reduction in reproductive success in some small territorial passerines (i.e., perching birds or songbirds) after exposure to low-altitude overflights. However, it has been observed that passerines are not driven any great distance from a favored food source by a nonspecific disturbance, such as aircraft overflights (U.S. Forest Service 1992). Further study may be warranted.

A cooperative study between the DoD and the U.S. Fish and Wildlife Service (USFWS), assessed the response of the red-cockaded woodpecker to a range of military training noise events, including artillery, small arms, helicopter, and maneuver noise (Pater et al. 1999). The project findings show that the red-cockaded woodpecker successfully acclimates to military noise events. Depending on the noise level that ranged from innocuous to very loud, the birds responded by flushing from their nest cavities. When the

noise source was closer and the noise level was higher, the number of flushes increased proportionately. In all cases, however, the birds returned to their nests within a relatively short period of time (usually within 12 minutes). Additionally, the noise exposure did not result in any mortality or statistically detectable changes in reproductive success (Pater et al. 1999). Red-cockaded woodpeckers did not flush when artillery simulators were more than 122 meters away and SELs were 70 dB.

Lynch and Speake (1978) studied the effects of both real and simulated sonic booms on the nesting and brooding eastern wild turkey in Alabama. Hens at four nest sites were subjected to between 8 and 11 combined real and simulated sonic booms. All tests elicited similar responses, including quick lifting of the head and apparent alertness for 10-20 seconds. No apparent nest failure occurred as a result of the sonic booms. Twenty-one brood groups were also subjected to simulated sonic booms. Reactions varied slightly between groups, but the largest percentage of groups reacted by standing motionless after the initial blast. Upon the sound of the boom, the hens and poults fled until reaching the edge of the woods (approximately 4-8 meters). Afterward, the poults resumed feeding activities while the hens remained alert for a short period of time (approximately 15-20 seconds). In no instances were poults abandoned, nor did they scatter and become lost. Every observation group returned to normal activities within a maximum of 30 seconds after a blast.

RAPTORS

In a literature review of raptor responses to aircraft noise, Manci et al. (1988) found that most raptors did not show a negative response to overflights. When negative responses were observed they were predominantly associated with rotor-winged aircraft or jet aircraft that were repeatedly passing within 0.5 mile of a nest.

Ellis et al. (1991), performed a study to estimate the effects of low-level military jet aircraft and mid- to high-altitude sonic booms (both actual and simulated) on nesting peregrine falcons and seven other raptors (common black-hawk, Harris' hawk, zone-tailed hawk, red-tailed hawk, golden eagle, prairie falcon, bald eagle). They observed responses to test stimuli, determined nest success for the year of the testing, and evaluated site occupancy the following year. Both long- and short-term effects were noted in the study. The results reported the successful fledging of young in 34 of 38 nest sites (all eight species) subjected to low-level flight and/or simulated sonic booms. Twenty-two of the test sites were revisited in the following year, and observations of pairs or lone birds were made at all but one nest. Nesting attempts were underway at 19 of 20 sites that were observed long enough to be certain of breeding activity. Reoccupancy and productivity rates were within or above expected values for self-sustaining populations.

Short-term behavior responses were also noted. Overflights at a distance of 150 meters or less produced few significant responses and no severe responses. Typical responses consisted of crouching or, very rarely, flushing from the perch site. Significant responses were most evident before egg laying and after young were "well grown." Incubating or brooding adults never burst from the nest, thus preventing egg breaking or knocking chicks out of the nest. Jet passes and sonic booms often caused noticeable alarm; however, significant negative responses were rare and did not appear to limit productivity or reoccupancy. Due to the locations of some of the nests, some birds may have been habituated to aircraft noise. There were some test sites located at distances far from zones of frequent military aircraft usage, and the test

stimuli were often closer, louder, and more frequent than would be likely for a normal training situation (Ellis et al. 1991).

Manci et al. (1988), noted that a female northern harrier was observed hunting on a bombing range in Mississippi during bombing exercises. The harrier was apparently unfazed by the exercises, even when a bomb exploded within 200 feet. In a similar case of habituation/non-disturbance, a study on the Florida snail-kite stated the greatest reaction to overflights (approximately 98 dB) was "watching the aircraft fly by." No detrimental impacts to distribution, breeding success, or behavior were noted.

Bald Eagle. A study by Grubb and King (1991) on the reactions of the bald eagle to human disturbances showed that terrestrial disturbances elicited the greatest response, followed by aquatic (i.e., boats) and aerial disturbances. The disturbance regime of the area where the study occurred was predominantly characterized by aircraft noise. The study found that pedestrians consistently caused responses that were greater in both frequency and duration. Helicopters elicited the highest level of aircraft-related responses. Aircraft disturbances, although the most common form of disturbance, resulted in the lowest levels of response. This low response level may have been due to habituation; however, flights less than 170 meters away caused reactions similar to other disturbance types. Ellis et al. (1991) showed that eagles typically respond to the proximity of a disturbance, such as a pedestrian or aircraft within 100 meters, rather than the noise level. Fleischner and Weisberg (1986) stated that reactions of bald eagles to commercial jet flights, although minor (e.g., looking), were twice as likely to occur when the jets passed at a distance of 0.5 mile or less. They also noted that helicopters were four times more likely to cause a reaction than a commercial jet and 20 times more likely to cause a reaction than a propeller plane.

The USFWS advised Cannon Air Force Base that flights at or below 2,000 feet AGL from October 1 through March 1 could result in adverse impacts to wintering bald eagles (USFWS 1998). However, Fraser et al. (1985), suggested that raptors habituate to overflights rapidly, sometimes tolerating aircraft approaches of 65 feet or less.

Golden Eagle. In their guidelines for aerial surveys, USFWS (Pagel et al. 2010) summarized past studies by stating that most golden eagles respond to survey aircraft (fixed- and rotary-wing) by remaining on their nests, and continuing to incubate or roost. Surveys take place generally as close as 10 to 20 meters from cliffs (including hovering less than 30 seconds, if necessary, to count eggs) and no farther than 200 meters from cliffs depending on safety (Pagel et al. 2010).

Grubb et al. (2007) experimented with multiple exposure to two helicopter types and concluded that flights with a variety of approach distances (800, 400, 200, and 100 meters) had no effect on golden eagle nesting success or productivity rates within the same year or on rates of renewed nesting activity the following year when compared to the corresponding figures for the larger population of non-manipulated nest sites (Grubb et al. 2007). They found no significant, detrimental, or disruptive responses in 303 helicopter passes near eagles. In 227 AH-64 Apache helicopter experimental passes (considered twice as loud as a civilian helicopter also tested) at test distances of 0–800 meters from nesting golden eagles, 96% resulted in no more response than watching the helicopter pass. No greater reactions occurred until after hatching when individual golden eagles exhibited five flatten and three fly behaviors at three nest sites. The flight responses occurred at approach distances of 200 meters or less. No evidence was found of an effect on subsequent nesting activity or success, despite many of the helicopter flights occurring during early courtship and nest repair. None of these responding pairs failed to successfully fledge young,

except for one nest that fell later in the season. Excited, startled, avoidance reactions were never observed. Non-attending eagles or those perched away from the nests were more likely to fly than attending eagles, but also with less potential consequence to nesting success (Grubb et al. 2007). Golden eagles appeared to become less responsive with successive exposures. Much of helicopter sound energy may be at a lower frequency than golden eagles can hear, thus reducing expected impacts. Grubb et al. (2007) found no relationship between helicopter sound levels and corresponding eagle ambient behaviors or limited responses, which occurred throughout recorded test levels (76.7–108.8 dB, unweighted). The authors thought that the lower-than-expected behavioral responses may be partially due to the fact that the golden eagles in the area appear acclimated to the current high levels of outdoor recreational, including aviation, activities. Based on the results of this study, the authors recommended reduction of existing buffers around nest sites to 100 meters (325 feet) for helicopter activity.

Richardson and Miller (1997) reviewed buffers as protection for raptors against disturbance from ground-based human activities. No consideration of aircraft activity was included. They stressed a clear line of sight as an important factor in a raptor's response to a particular disturbance, with visual screening allowing a closer approach of humans without disturbing a raptor. A Geographic Information System-assisted viewshed approach combined with a designated buffer zone distance was found to be an effective tool for reducing potential disturbance to golden eagles from ground-based activities (Richardson and Miller 1997). They summarized recommendations that included a median 0.5-mile (800-meter) buffer (range = 200-1,600 meters, n = 3) to reduce human disturbances (from ground-based activities such as rock climbing, shooting, vehicular activity) around active golden eagle nests from February 1 to August 1 based on an extensive review of other studies (Richardson and Miller 1997). Physical characteristics (i.e., screening by topography or vegetation) are important variables to consider when establishing buffer zones based on raptors' visual- and auditory-detection distances (Richardson and Miller 1997).

Osprey. A study by Trimper et al. (1998), in Goose Bay, Labrador, Canada, focused on the reactions of nesting osprey to military overflights by CF-18 Hornets. Reactions varied from increased alertness and focused observation of planes to adjustments in incubation posture. No overt reactions (e.g., startle response, rapid nest departure) were observed as a result of an overflight. Young nestlings crouched as a result of any disturbance until 1 to 2 weeks prior to fledging. Helicopters, human presence, float planes, and other ospreys elicited the strongest reactions from nesting ospreys. These responses included flushing, agitation, and aggressive displays. Adult osprey showed high nest occupancy rates during incubation regardless of external influences. The osprey observed occasionally stared in the direction of the flight before it was audible to the observers. The birds may have been habituated to the noise of the flights; however, overflights were strictly controlled during the experimental period. Strong reactions to float planes and helicopter may have been due to the slower flight and therefore longer duration of visual stimuli rather than noise-related stimuli.

Red-tailed Hawk. Andersen et al. (1989), conducted a study that investigated the effects of low-level helicopter overflights on 35 red-tailed hawk nests. Some of the nests had not been flown over prior to the study. The hawks that were naïve (i.e., not previously exposed) to helicopter flights exhibited stronger avoidance behavior (9 of 17 birds flushed from their nests) than those that had experienced prior overflights. The overflights did not appear to affect nesting success in either study group. These findings were consistent with the belief that red-tailed hawks habituate to low-level air traffic, even during the nesting period.

UPLAND GAME BIRDS

Greater Sage-grouse. The greater sage-grouse was recently designated as a candidate species for protection under the Endangered Species Act after many years of scrutiny and research (USFWS 2010). This species is a widespread and characteristic species of the sagebrush ecosystems in the Intermountain West. Greater sage-grouse, like most bird species, rely on auditory signals as part of mating. Sage-grouse are known to select their leks based on acoustic properties and depend on auditory communication for mating behavior (Braun 2006). Although little specific research has been completed to determine what, if any, effects aircraft overflight and sonic booms would have on the breeding behavior of this species, factors that may be important include season and time of day, altitude, frequency, and duration of overflights, and frequency and loudness of sonic booms.

Booth in 2009 found, while attempting to count sage-grouse at leks (breeding grounds) using light sport aircraft at 150 meters (492 feet) to 200 meters (650 feet) AGL, that sage-grouse flushed from leks on 12 of 14 approaches when the airplane was within 656 to 984 feet (200–300 meters) of the lek (Booth et al. 2009). In the other two instances, male grouse stopped exhibiting breeding behavior and crouched but stayed on the lek. The time to resumption of normal behavior after disturbance was not provided in this study. Strutting ceased around the time when observers on the ground heard the aircraft. The light sport aircraft could be safely operated at very low speed (68 kilometers/hour or 37 nautical miles/hour) and was powered by either a two-stroke or a four-stroke engine. It is unclear how the response to the slow-flying light sport aircraft used in the study would compare to overflight by military jets, operating at speeds 10 to 12 times as great as the aircraft used in the study. It is possible that response of the birds was related to the slow speed of the light sport aircraft causing it to resemble an aerial predator.

Other studies have found disturbance from energy operations and other nearby development have adversely affected breeding behavior of greater sage-grouse (Holloran 2005; Doherty 2008; Walker et al. 2007; Harju et al. 2010). These studies do not specifically address overflight and do not isolate noise disturbance from other types (e.g., visual, human presence) nor do they generally provide noise levels or qualification of the noise source (e.g., continuous or intermittent, frequency, duration).

Because so few studies have been done on greater sage-grouse response to overflights or sonic booms, research on related species may be applicable. Observations on other upland game bird species include those on the behavior of four wild turkey (*Meleagris gallapavo*) hens on their nests during real and simulated sonic booms (Manci et al. 1988). Simulated sonic booms were produced by firing 5-centimeter mortar shells, 300 to 500 feet from the nest of each hen. Recordings of pressure for both types of booms measured 0.4 to 1.0 psf at the observer's location.

Turkey hens exhibited only a few seconds of head alert behavior at the sound of the sonic boom. No hens were flushed off the nests, and productivity estimates revealed no effect from the booms. Twenty brood groups were also subjected to simulated sonic booms. In no instance did the hens desert any poults (young birds), nor did the poults scatter or desert the rest of the brood group. In every observation, the brood group returned to normal activity within 30 seconds after a simulated sonic boom. Similarly, researchers cited in Manci et al. (1988) observed no difference in hatching success of bobwhite quail (*Colinus virginianus*) exposed to simulated sonic booms of 100 to 250 micronewtons per square meter.

MIGRATORY WATERFOWL

Fleming et al. (1996) conducted a study of caged American black ducks found that noise had negligible energetic and physiologic effects on adult waterfowl. Measurements included body weight, behavior, heart rate, and enzymatic activity. Experiments also showed that adult ducks exposed to high noise events acclimated rapidly and showed no effects.

The study also investigated the reproductive success of captive ducks, which indicated that duckling growth and survival rates at Piney Island, North Carolina, were lower than those at a background location. In contrast, observations of several other reproductive indices (i.e., pair formation, nesting, egg production, and hatching success) showed no difference between Piney Island and the background location. Potential effects on wild duck populations may vary, as wild ducks at Piney Island have presumably acclimated to aircraft overflights. It was not demonstrated that noise was the cause of adverse impacts. A variety of other factors, such as weather conditions, drinking water and food availability and variability, disease, and natural variability in reproduction, could explain the observed effects. Fleming noted that drinking water conditions (particularly at Piney Island) deteriorated during the study, which could have affected the growth of young ducks. Further research would be necessary to determine the cause of any reproductive effects (Fleming et al. 1996).

Another study by Conomy et al. (1998) exposed previously unexposed ducks to 71 noise events per day that equaled or exceeded 80 dB. It was determined that the proportion of time black ducks reacted to aircraft activity and noise decreased from 38% to 6% in 17 days and remained stable at 5.8% thereafter. In the same study, the wood duck did not appear to habituate to aircraft disturbance. This supports the notion that animal response to aircraft noise is species-specific. Because a startle response to aircraft noise can result in flushing from nests, migrants and animals living in areas with high concentrations of predators would be the most vulnerable to experiencing effects of lowered birth rates and recruitment over time. Species that are subjected to infrequent overflights do not appear to habituate to overflight disturbance as readily.

Black brant studied in the Alaska Peninsula were exposed to jets and propeller aircraft, helicopters, gunshots, people, boats, and various raptors. Jets accounted for 65% of all the disturbances. Humans, eagles, and boats caused a greater percentage of brant to take flight. There was markedly greater reaction to Bell-206-B helicopter flights than fixed-wing, single-engine aircraft (Ward et al. 1986).

The presence of humans and low-flying helicopters in the Mackenzie Valley North Slope area did not appear to affect the population density of Lapland longspurs, but the experimental group was shown to have reduced hatching and fledging success and higher nest abandonment. Human presence appeared to have a greater impact on the incubating behavior of the black brant, common eider, and Arctic tern than fixed-wing aircraft (Gunn and Livingston 1974).

Gunn and Livingston (1974) found that waterfowl and seabirds in the Mackenzie Valley and North Slope of Alaska and Canada became acclimated to float plane disturbance over the course of 3 days. Additionally, it was observed that potential predators (bald eagle) caused a number of birds to leave their nests. Non-breeding birds were observed to be more reactive than breeding birds. Waterfowl were affected by helicopter flights, while snow geese were disturbed by Cessna 185 flights. The geese flushed when the planes were less than 1,000 feet, compared to higher flight elevations. An overall reduction in

flock sizes was observed. It was recommended that aircraft flights be reduced in the vicinity of premigratory staging areas.

Manci et al. 1988, reported that waterfowl were particularly disturbed by aircraft noise. The most sensitive appeared to be snow geese. Canada geese and snow geese were thought to be more sensitive than other animals such as turkey vultures, coyotes, and raptors (Edwards et al. 1979).

WADING AND SHOREBIRDS

Black et al. (1984), studied the effects of low-altitude (less than 500 feet AGL) military training flights with sound levels from 55 to 100 dB on wading bird colonies (i.e., great egret, snowy egret, tricolored heron, and little blue heron). The training flights involved three or four aircraft, which occurred once or twice per day. This study concluded that the reproductive activity—including nest success, nestling survival, and nestling chronology—was independent of F-16 overflights. Dependent variables were more strongly related to ecological factors, including location and physical characteristics of the colony and climatology.

Another study on the effects of circling fixed-wing aircraft and helicopter overflights on wading bird colonies found that at altitudes of 195 to 390 feet, there was no reaction in nearly 75% of the 220 observations. Approximately 90% displayed no reaction or merely looked toward the direction of the noise source. Another 6% stood up, 3% walked from the nest, and 2% flushed (but were without active nests) and returned within 5 minutes (Kushlan 1979). Apparently, non-nesting wading birds had a slightly higher incidence of reacting to overflights than nesting birds. Seagulls observed roosting near a colony of wading birds in another study remained at their roosts when subsonic aircraft flew overhead (Burger 1981). Colony distribution appeared to be most directly correlated to available wetland community types and was found to be distributed randomly with respect to MTRs. These results suggest that wading bird species presence was most closely linked to habitat availability and that they were not affected by low-level military overflights (U.S. Air Force 2000).

Burger (1986) studied the response of migrating shorebirds to human disturbance and found that shorebirds did not fly in response to aircraft overflights, but did flush in response to more localized intrusions (i.e., humans and dogs on the beach). Burger (1981) studied the effects of noise from JFK Airport in New York on herring gulls that nested less than 1 kilometer from the airport. Noise levels over the nesting colony were 85-100 dB on approach and 94-105 dB on takeoff. Generally, there did not appear to be any prominent adverse effects of subsonic aircraft on nesting, although some birds flushed when the Concorde flew overhead and, when they returned, engaged in aggressive behavior. Groups of gulls tended to loaf in the area of the nesting colony, and these birds remained at the roost when the Concorde flew overhead. Up to 208 of the loafing gulls flew when supersonic aircraft flew overhead. These birds would circle around and immediately land in the loafing flock (U.S. Air Force 2000).

In 1970, sonic booms were potentially linked to a mass hatch failure of sooty terns on the Dry Tortugas (Austin et al. 1970). The cause of the failure was not certain, but it was conjectured that sonic booms from military aircraft or an overgrowth of vegetation were factors. In the previous season, sooty terns were observed to react to sonic booms by rising in a "panic flight," circling over the island, then usually settling down on their eggs again. Hatching that year was normal. Following the 1969 hatch failure, excess vegetation was cleared and measures were taken to reduce supersonic activity. The 1970 hatch

appeared to proceed normally. A colony of noddies on the same island hatched successfully in 1969, the year of the sooty tern hatch failure.

Subsequent laboratory tests of exposure of eggs to sonic booms and other impulsive noises (Cottereau 1972; Cogger and Zegarra 1980; Bowles et al. 1991, 1994) failed to show adverse effects on hatching of eggs. A structural analysis by Ting et al. (2002) showed that, even under extraordinary circumstances, sonic booms would not damage an avian egg.

Burger (1981) observed no effects of subsonic aircraft on herring gulls in the vicinity of JFK International Airport. The Concorde aircraft did cause more nesting gulls to leave their nests (especially in areas of higher density of nests), causing the breakage of eggs and the scavenging of eggs by intruder prey. Clutch sizes were observed to be smaller in areas of higher-density nesting (presumably due to the greater tendency for panic flight) than in areas where there were fewer nests.

Fish and Amphibians

The effects of overflight noise on fish and amphibians have not been well studied, but conclusions regarding their expected responses have involved speculation based upon known physiologies and behavioral traits of these taxa (Gladwin et al. 1988). Although fish do startle in response to low-flying aircraft noise, and probably to the shadows of aircraft, they have been found to habituate to the sound and overflights. Amphibians that respond to low frequencies and those that respond to ground vibration, such as spadefoot toads, may be affected by noise.

Summary

Some physiological/behavioral responses such as increased hormonal production, increased heart rate, and reduction in milk production have been described in a small percentage of studies. A majority of the studies focusing on these types of effects have reported short-term or no effects.

The relationships between physiological effects and how species interact with their environments have not been thoroughly studied. Therefore, the larger ecological context issues regarding physiological effects of jet aircraft noise (if any) and resulting behavioral pattern changes are not well understood.

Animal species exhibit a wide variety of responses to noise. It is therefore difficult to generalize animal responses to noise disturbances or to draw inferences across species, as reactions to jet aircraft noise appear to be species-specific. Consequently, some animal species may be more sensitive than other species and/or may exhibit different forms or intensities of behavioral responses. For instance, wood ducks appear to be more sensitive and more resistant to acclimation to jet aircraft noise than Canada geese in one study. Similarly, wild ungulates seem to be more easily disturbed than domestic animals.

The literature does suggest that common responses include the “startle” or “fright” response and, ultimately, habituation. It has been reported that the intensities and durations of the startle response decrease with the numbers and frequencies of exposures, suggesting no long-term adverse effects. The majority of the literature suggests that domestic animal species (cows, horses, chickens) and wildlife species exhibit adaptation, acclimation, and habituation after repeated exposure to jet aircraft noise and sonic booms.

Animal responses to aircraft noise appear to be somewhat dependent on, or influenced by, the size, shape, speed, proximity (vertical and horizontal), engine noise, color, and flight profile of planes. Helicopters

also appear to induce greater intensities and durations of disturbance behavior as compared to fixed-wing aircraft. Some studies showed that animals that had been previously exposed to jet aircraft noise exhibited greater degrees of alarm and disturbance to other objects creating noise, such as boats, people, and objects blowing across the landscape. Other factors influencing response to jet aircraft noise may include wind direction, speed, and local air turbulence; landscape structures (i.e., amount and type of vegetative cover); and, in the case of bird species, whether the animals are in the incubation/nesting phase.

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104th Fighter Wing at Westfield-Barnes Regional Airport (BAF)

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Table MA-1 Proposed Construction and Modification for the F-15EX Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
1.1 (Option 1) 1.2 (Option 2) 1.3 (Option 3)	Renovate/Construct Wing HQ	Project would either renovate the existing Wing HQ (Building 1) or construct a new Wing HQ at one of two optional locations. Option 1 – Renovate Wing HQ, existing Building 1 Option 2 – Construct a 16,900 SF Wing HQ at the Building 20 location. The new building would include the following: Reserve Forces General Training Support Honor Guard (4,600 SF) and Reserve Forces Operational Training (12,300 SF). The project would also include 13,800 SF for parking. The project would also involve demolishing the current Wing HQ (Building 1) (22,400 SF) and returning it to green space and demolishing Building 20. Option 3 – Construct a 42,800 SF Wing HQ. The new building would consolidate administrative and support functions including the following: Reserve Forces General Training Support Honor Guard (2,600 SF), Services Flight (4,900 SF), Reserve Forces Operational Training (16,500 SF), Dining and Training Facility (8,500 SF), Physical Fitness (2,400 SF), and Deployment Processing Center (7,900 SF). The project would also include approximately 1,000 LF of utilities (water, sewer, stormwater and electric/telecom) and parking for 150 spots (approximately 59,000 SF including driving aisles). The entire project would be constructed on undeveloped land (in wooded area of newly acquired parcel by new Entry Control Point Gatehouse & Road). The project would also involve demolishing the current Wing HQ (Building 1) (22,400 SF) and returning it to green space.	FY 2027	Option 2- 30,700 SF (entire new construction) Option 3 – 102,800 SF (entire new construction)	Option 2- 30,700 SF (entire new construction) minus 22,400 SF new green space = 8,300 SF Option 3 – 102,800 SF (entire new construction) minus 22,400 SF new green space = 80,400 SF
2	Alter Supply Warehouse (Building 54)	Project would implement internal modifications to improve storage solutions at the Supply Warehouse (Building 54).	FY 2025	Internal modifications	N/A
3	Construct Taxiway Juliet	Project would construct a 33,600 SF new taxiway including shoulder areas to remove aircraft taxiing choke point.	FY 2026	33,600 SF	33,600 SF

Table MA-1 Proposed Construction and Modification for the F-15EX Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
4	Renovate POL Shop (Building 33)	Project would implement internal modifications to improve POL testing and administration in POL Shop (Building 33).	FY 2026	Internal modifications	N/A
5	Renovate Avionics Shop (Building 26)	Project would implement internal modifications and repair fire suppression and HVAC systems in Avionic Shop (Building 26).	FY 2026	Internal modifications	N/A
6	Repair MNS	Project would add external mass notification and occupied building notifications to comply with MNS criteria. The project would add 2 to 3 poles with 2-foot diameter concrete pads. The locations would be based on a noise study and are not shown on Figure MA2.1-3.	FY 2027	10 SF	10 SF
7	Construct Vehicle Operations Parking Sheds	Project would demolish existing parking sheds (Buildings 56 and 58) and build new covered parking (Building 56). The project would reconfigure the vehicle operations yard to increase efficiency.	FY 2027	N/A	N/A
8	Construct Redundant Utilities	Project would add redundant feeds for power, water, and natural gas on existing paved areas. a. Telecomm: 3,500 LF b. Power: 4,000 LF c. Water: 400 LF d. Gas: 400 LF	FY 2030	8,300 LF	N/A
9	Renovate JISCC Storage	Project would implement internal modifications to improve storage for Communications Flight JISCC mission.	FY 2028	Internal modifications	N/A

Table MA-1 Proposed Construction and Modification for the F-15EX Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
10.1 (Option 1) 10.2 (Option 2)	Construct Running Track	Project would construct a new 0.25-mile running track (approximately 17,000 SF). Option 1 - The track would be constructed on undeveloped land west of TSG Austin C Cooper Road and north of a paved parking lot by the Aviation Readiness Support Facility and the current Main Gate. This option is dependent on a real estate agreement with the Army National Guard. Option 2 – The project would be located in the wooded area on the east side of Building 3 and the parking lot.	FY 2033	17,000 SF	17,000 SF
11	Alter AAS Signage	Project would move existing AAS signs in compliance with FAA criteria. Project would clear the requirement for the existing airfield waiver. Signs would be located on either side of the runway on an 18-inch diameter sonna tube.	FY 2029	N/A	N/A
12	Repair Base Roads and Parking Lots	Project would repair multiple parking lots and base roads to modernize paved infrastructure on the installation. The project would involve repairing approximately 50 percent of the parking lots and roads.	FY 2032	N/A	N/A
13	Construct Base Engineer Storage Yard	Project would construct an outdoor, uncovered storage 5,400 SF gravel yard for base engineer equipment and materials.	FY 2033	5,400 SF	N/A
14	Alter Civil Engineer Building (Building 40)	Project would reconfigure internal Civil Engineer Administrative area in Building 40 and add a 4,300 SF addition for the Emergency Management functions to the facility. Emergency Management functions are currently located in Building 8.	FY 2029	4,300 SF	4,300 SF
15.1 (Option 1) 15.2 (Option 2)	Add/Alter Dining Facility (Building 3)	Project would add/alter the Dining Facility (Building 3). Option 1 – Construct a 2,400 SF gym as an addition to Building 003. Demolish Building 12 (9,400 SF) and return it to green space. Option 2 – Renovate 12,915 SF of Building 3 to include a gym.	FY 2029	Option 1 – 2,400 SF	Option 1 – 2,400 SF minus 9,400 SF of new green space = - 7,000 SF

Table MA-1 Proposed Construction and Modification for the F-15EX Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
16.1 (Option 1) 16.2 (Option 2)	Construct Flight Simulator Facility	Project would construct a new 20,000 SF flight simulator that includes all utilities required for the structures. Option 1 – Construct the facility north of Building 25 over Building 36 and Building 37 footprint. Part of the new facility will be constructed over approximately 6,400 SF of grassy area. (Preferred) Option 2 – Construct the facility west of Building 29 in the existing paved parking lot.	FY 2029	20,000 SF	Option 1 - 6,400 SF
17	Repair HAZMAT HVAC (Building 52)	Project would upgrade the HVAC system to meet the environmental requirements for storage of paint specific to the F-15EX. The HVAC system would be located on an existing paved area outside of Building 52.	FY 2024	N/A	N/A
18	ADAL WLT Door (Building 23)	Project would modify existing WLT facility (Building 23) for new access door and ramp on the existing paved area to accommodate weapons maintenance requirements.	FY 2024	Internal modification/ Exterior modification on existing paved area for the ramp	N/A
19	Demo Liquid Oxygen Facility (Building 38 & 39)	Project would demolish the overhang structures and facilities in POL Yard, but the existing pads would remain in place.	FY 2030	N/A	N/A
20	Repair Munitions Administration Facility (Building 65)	Project would repair and reconfigure the Munitions Administration facility (Building 65) to provide increased space for munitions trailer maintenance to accommodate increase in munitions for air-to-ground mission training. Includes modifications to HVAC, fire suppression, and utilities as required.	FY 2028	Internal repair	N/A

Table MA-1 Proposed Construction and Modification for the F-15EX Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
21	Construct PL3 Fence Line	Project would construct a physical security fence line (approximately 1,800 LF) and access points to consolidate PL3 resources areas and reduce SFS personnel requirements. The project would be completed after most major construction in affected area is completed.	FY 2029	1,800 LF	1,800 LF
22.1 (Option 1) 22.2 (Option 2)	Construct Temporary Facility (Squadron Operations) (Building 25)	Project would provide a temporary squadron operations area (approximately 3,000 SF) until completion of Squadron Operations modifications (Project 29, Building 25). The project would involve temporary trailers situated on the existing paved areas. Option 1 – Between Buildings 25 and 36 (paved area) Option 2 – East of Building 25 and the ramp (paved road)	FY 2024	N/A	N/A
23	Investigative Study for Squadron Operations (second floor and Simulator location) (Building 25)	Project would conduct an engineering study to determine best course of action for future projects. The project would study site locations for Squadron Operations (Projects 22.1 and 22.2) and Flight Simulator (Projects 16.1 and 16.2) projects. Option 1 – single-story addition. Option 2 – two-story addition.	FY 2024	N/A	N/A
24	Add HVAC (Building 37)	Project would add HVAC system for computers in Tool Crib facility (Building 37). The HVAC system might be pad mounted (18 SF) on a grassy area immediately east or west of Building 37.	FY 2024	Internal modification/ 18 SF if pad mounted	18 SF if pad mounted
25	Repair MAC Pad	Project would repair the existing 7,650 SF MAC Pad on the southeast side of Building 65. The repairs might require the removal of the existing hardstand.	FY 2028	7,560 SF	N/A

Table MA-1 Proposed Construction and Modification for the F-15EX Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
26	Repair Maintenance Shops (Building 15)	Project would provide for relocation of shops to the Maintenance Hangar (Building 15) to correctly size them for the maintenance functions required, establishment of a battery maintenance shop, and electrical power upgrades to provide 480V power where required. The internal modifications to the hangar would include renovations to the Battery Storage, Tool Crib, Electric Shop, Egress, and Metals Tech.	FY 2024	Internal repair/ reconfiguration	N/A
27	ADAL Fuel Cell (Building 27)	Project would provide adequate and adequately configured space for CFT Maintenance and an external pad for drop tank storage. The 750 SF external pad would be constructed on the northeast corner of Building 27.	FY 2028	750 SF	750 SF
28	ADAL Alert Crew Readiness (Building 48)	Project would provide a 1,500 SF addition for six additional bed spaces while providing minor renovations to the existing space for most efficient use and flow. The addition would be located on the east and south of Building 48 on a grassy area.	FY 2030	1,500 SF	1,500 SF
29	ADAL Squadron Operations Facility (Building 25)	Project would implement internal modifications and expand usable footprint to second story, including increasing Aircrew Flight Equipment, Pilot Locker Room, administrative and common spaces. The 6,600 SF two-story addition would be located within the paved area.	FY 2029	3,400 SF	N/A
30	Repair Avionics Facility (Building 26)	Project would repair and reconfigure the existing Avionics Facility (Building 26) for ECM pod storage and maintenance. The 9,200 SF addition would be constructed on a grassy area north of Building 26.	FY 2025	9,200 SF	9,200 SF

Note: *Year of construction is estimated and is dependent upon funding.

Legend: ADAL = Addition and Alteration; CFT = Conforming Fuel Tank; ECM = Electronic Countermeasures; FY = Fiscal Year; HAZMAT = Hazardous Materials; HQ = Headquarters; HVAC = Heating, Ventilation, and Air Conditioning; LF = linear feet; MNS = Mass Notification System; N/A = Not Applicable; PL3 = Protection Level 3; PN = Person; POL = Petroleum, Oil, and Lubricants; SF = square foot/feet; SFS = Security Forces Specialist; TBD = To be determined; WLT = Weapons Load Crew Training.

Sources: 104 FW n.d.; ACC and NGB 2021a; NGB 2021a.

Table MA-2 Proposed Construction and Modification for the F-35A Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
1.1 (Option 1) 1.2 (Option 2) 1.3 (Option 3)	Renovate/Construct Wing HQ	Project would either renovate the existing Wing HQ (Building 1) or construct a new Wing HQ at one of two optional locations. Option 1 – Renovate Wing HQ, existing Building 1 Option 2 – Construct a 16,900 SF Wing HQ at the Building 20 location. The new building would include the following: Reserve Forces General Training Support Honor Guard (4,600 SF) and Reserve Forces Operational Training (12,300 SF). The project would also include 13,800 SF for parking. The project would also involve demolishing the current Wing HQ (Building 1) (22,400 SF) and returning it to green space and demolishing Building 20. Option 3 – Construct a 42,800 SF Wing HQ. The new building would consolidate administrative and support functions including the following: Reserve Forces General Training Support Honor Guard (2,600 SF), Services Flight (4,900 SF), Reserve Forces Operational Training (16,500 SF), Dining and Training Facility (8,500 SF), Physical Fitness (2,400 SF), and Deployment Processing Center (7,900 SF). The project would also include approximately 1,000 LF of utilities (water, sewer, stormwater and electric/telecom) and parking for 150 spots (approximately 59,000 SF including driving aisles). The entire project would be constructed on undeveloped land (in wooded area of newly acquired parcel by new Entry Control Point Gatehouse & Road). The project would also involve demolishing the current Wing HQ (Building 1) (22,400 SF) and returning it to green space.	FY 2027	Option 2- 30,700 SF (entire new construction) Option 3 – 102,800 SF (entire new construction)	Option 2- 30,700 SF (entire new construction) minus 22,400 SF new green space = 8,300 SF Option 3 – 102,800 SF (entire new construction) minus 22,400 SF new green space = 80,400 SF
2	Alter Supply Warehouse (Building 54)	Project would implement internal modifications to improve storage solutions at the Supply Warehouse (Building 54).	FY 2025	Internal modifications	N/A
3	Construct Taxiway Juliet	Project would construct a 33,600 SF new taxiway including shoulder areas to remove aircraft taxiing choke point.	FY 2026	33,600 SF	33,600 SF

Table MA-2 Proposed Construction and Modification for the F-35A Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
4	Renovate POL Shop (Building 33)	Project would implement internal modifications to improve POL testing and administration in POL Shop (Building 33).	FY 2026	Internal modifications	N/A
5	Renovate Avionics Shop (Building 26)	Project would implement internal modifications and repair fire suppression and HVAC systems in Avionic Shop (Building 26).	FY 2026	Internal modifications	N/A
6	Repair MNS	Project would add external mass notification and occupied building notifications to comply with MNS criteria. The project would add 2 to 3 poles with 2-foot diameter concrete pads. The locations would be based on a noise study and are not shown on Figure MA2.1-3.	FY 2027	10 SF	10 SF
7	Construct Vehicle Operations Parking Sheds	Project would demolish existing parking sheds (Buildings 56 and 58) and build new covered parking (Building 56). The project would reconfigure the vehicle operations yard to increase efficiency.	FY 2027	N/A	N/A
8	Construct Redundant Utilities	Project would add redundant feeds for power, water, and natural gas on existing paved areas. a. Telecomm: 3,500 LF b. Power: 4,000 LF c. Water: 400 LF d. Gas: 400 LF	FY 2030	8,300 LF	N/A
9	Renovate JISCC Storage	Project would implement internal modifications to improve storage for Communications Flight JISCC mission.	FY 2028	Internal modifications	N/A
10.1 (Option 1) **10.2 (Option 2)**	Construct Running Track	Project would construct a new 0.25-mile running track (approximately 17,000 SF). Option 1 - The track would be constructed on undeveloped land west of TSG Austin C Cooper Road and north of a paved parking lot by the Aviation Readiness Support Facility and the current Main Gate. This option is dependent on a real estate agreement with the Army National Guard. Option 2 – The project would be located in the wooded area on the east side of Building 3 and the parking lot.	FY 2033	17,000 SF	17,000 SF

Table MA-2 Proposed Construction and Modification for the F-35A Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
11	Alter AAS Signage	Project would move existing AAS signs in compliance with FAA criteria. Project would clear the requirement for the existing airfield waiver. Signs would be located on either side of the runway on an 18-inch diameter sonna tube.	FY 2029	N/A	N/A
12	Repair Base Roads and Parking Lots	Project would repair multiple parking lots and base roads to modernize paved infrastructure on the installation. The project would involve repairing approximately 50 percent of the parking lots and roads.	FY 2032	N/A	N/A
13	Construct Base Engineer Storage Yard	Project would construct an outdoor, uncovered storage 5,400 SF gravel yard for base engineer equipment and materials.	FY 2033	5,400 SF	N/A
14	Alter Civil Engineer Building (Building 40)	Project would reconfigure internal Civil Engineer Administrative area in Building 40 and add a 4,300 SF addition for the Emergency Management functions to the facility. Emergency Management functions are currently located in Building 8.	FY 2029	4,300 SF	4,300 SF
15.1 (Option 1) 15.2 (Option 2)	Add/Alter Dining Facility (Building 3)	Project would add/alter the Dining Facility (Building 3). Option 1 – Construct a 2,400 SF gym as an addition to Building 3. Option 2 – Renovate 12,915 SF of Building 3 to include a gym.	FY 2029	Option 1 – 2,400 SF	Option 1 – 2,400 SF minus 9,400 SF of new green space = - 7,000 SF
16.1 (Option 1) 16.2 (Option 2)	Construct Flight Simulator Facility	Project would construct a new 20,000 SF flight simulator that includes all utilities required for the structures. Option 1 – Construct the facility north of Building 25 over Building 36 and Building 37 footprint. Part of the new facility will be constructed over approximately 6,400 SF of grassy area. (Preferred) Option 2 – Construct the facility west of Building 29 in the existing paved parking lot.	FY 2029	20,000 SF	Option 1 – 6,400 SF

Table MA-2 Proposed Construction and Modification for the F-35A Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
17	Repair HAZMAT HVAC (Building 52)	Project would upgrade HVAC system to meet the environmental requirements for storage of paint specific to the F-15EX. The HVAC system would be located on an existing paved area outside of Building 52.	FY 2024	N/A	N/A
18	ADAL WLT Door (Building 23)	Project would modify existing WLT facility for new access door and ramp on the existing paved area to accommodate weapons maintenance requirements.	FY 2024	Internal modification/ Exterior modification on existing paved area for the ramp	N/A
19	Demo Liquid Oxygen Facility (Building 38 & 39)	Project would demolish the overhang structures and facilities in POL Yard, but the existing pads would remain in place.	FY 2030	N/A	N/A
20	Repair Munitions Administration Facility (Building 65)	Project would repair and reconfigure the Munitions Administration facility to provide increased space for munitions trailer maintenance to accommodate increase in munitions for air-to-ground mission training. Includes modifications to HVAC, fire suppression, and utilities as required.	FY 2028	Internal repair	N/A
21	Construct PL3 Fence Line	Project would construct a physical security fence line (approximately 1,800 LF) and access points to consolidate PL3 resources areas and reduce SFS personnel requirements. The project would be completed after most major construction in affected area is completed.	FY 2029	1,800 LF	1,800 LF
22.1 (Option 1) 22.2 (Option 2)	Construct Temporary Facility (Squadron Operations) (Building 25)	Project would provide a temporary squadron operations area (approximately 3,000 SF) until completion of Squadron Operations modifications (Project 36, Building 25). The project would involve temporary trailers situated on the existing paved areas. Option 1 – Between Buildings 25 and 36 (paved area) Option 2 – East of Building 25 and the ramp (paved road)	FY 2024	N/A	N/A

Table MA-2 Proposed Construction and Modification for the F-35A Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
23	Investigative Study for Squadron Operations (second floor and Simulator location) (Building 25)	Project would conduct an engineering study to determine best course of action for future projects. The project would study site locations for Squadron Operations (Projects 22.1 and 22.2) and Flight Simulator (Projects 16.1 and 16.2) projects. Option 1 – single-story addition. Option 2 – two-story addition.	FY 2024	N/A	N/A
24	Add HVAC (Building 37)	Project would add HVAC system for computers in Tool Crib facility (Building 37). The HVAC system might be pad mounted (18 SF) on a grassy area immediately east or west of Building 37.	FY 2024	Internal modification/ 18 SF if pad mounted	18 SF if pad mounted
25	Repair MAC Pad	Project would repair the existing 7,650 SF MAC Pad on the southeast side of Building 65. The repairs might require the removal of the existing hardstand.	FY 2028	7,560 SF	N/A
31	Construct Aircraft Shelters and Shades	Project would add six aircraft shelters and four aircraft shades to the aircraft parking apron along the north and south side.	FY 2027	N/A	N/A
32	Install Power Converters (Buildings 13, 27, 45, 46, 47)	Project would install electrical power convertors in five aircraft shelters for support.	FY 2024	N/A	N/A
33	Repair Maintenance Shops (Building 15) (specific for F-35A)	Project would provide for relocation of shops (Hydraulics, Egress, Collateral Storage, Crew Chiefs, MOF, Electric Shop and Battery Storage) to the Maintenance Hangar (Building 15) to correctly size them for the maintenance functions required, electrical power upgrades, and potential relocation of maintenance administration to the second story.	FY 2025	Internal repair/ reconfiguration	N/A
34	Convert Shelter to Wash Rack (Building 19)	Project would add utilities (water, sewer, etc.) and drainage required to convert existing aircraft shelter into an aircraft wash rack. The project would include approximately 400 SF of disturbance on the existing paved area for the water line and the sewer line connections.	FY 2026	400 SF	N/A

Table MA-2 Proposed Construction and Modification for the F-35A Beddown at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
35	Repair LRS (Levelator, Building 54)	Project would modify (widen) existing loading dock to allow for clearances and capacity to load/off-load aircraft engines. Work would be performed on the existing paved hardstand.	FY 2024	N/A	N/A
36	Repair Squadron Operations (Building 25)	Project would include modifications to expand interior areas and interior repairs to move spaces.	FY 2024	Internal modifications	N/A
37	Repair Avionics Facility (Building 26) (specific for F-35A)	Project would repair and reconfigure the existing Avionics Facility (Building 26) for ECM pod storage and maintenance.	FY 2025	Internal modifications	N/A
38	Repair Drop Tank Storage for AGE (Building 116)	Project would convert existing pre-engineered storage building from fuel tank storage to serve as an AGE storage facility. The project would include approximately 200 SF of ground disturbance on a paved area for heating utilities (natural gas).	FY 2026	200 SF	N/A

Note: *Year of construction is estimated and is dependent upon funding.

Legend: AAS = Airfield Arresting System; ADAL = Addition and Alteration; AGE = Aerospace Ground Equipment; ECM = Electronic Countermeasures; FY = Fiscal Year; HAZMAT = Hazardous Materials; HQ = Headquarters; HVAC = Heating, Ventilation, and Air Conditioning; JISCC = Joint Incident Site Communications Capability; LF = linear foot/feet; LRS = Logistics Readiness Squadron; MNS = Mass Notification System; MOF = Maintenance Operations Flight; N/A = Not Applicable; PL3 = Protection Level 3; PN = Person; POL = Petroleum, Oil, and Lubricants; SF = square foot/feet; SFS = Security Forces Specialist; TBD = To be determined; WLT = Weapons Load Crew Training.

Sources: 104 FW n.d.; ACC and NGB 2021a; NGB 2021b.

Table MA-3 Proposed Construction and Modification for the Legacy Aircraft at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
1.1 (Option 1) 1.2 (Option 2) 1.3 (Option 3)	Renovate/Construct Wing HQ	Project would either renovate the existing Wing HQ (Building 1) or construct a new Wing HQ at one of two optional locations. Option 1 – Renovate Wing HQ, existing Building 1 Option 2 – Construct a 16,900 SF Wing HQ at the Building 20 location. The new building would include the following: Reserve Forces General Training Support Honor Guard (4,600 SF) and Reserve Forces Operational Training (12,300 SF). The project would also include 13,800 SF for parking. The project would also involve demolishing the current Wing HQ (Building 1) (22,400 SF) and returning it to green space and demolishing Building 20. Option 3 – Construct a 42,800 SF Wing HQ. The new building would consolidate administrative and support functions including the following: Reserve Forces General Training Support Honor Guard (2,600 SF), Services Flight (4,900 SF), Reserve Forces Operational Training (16,500 SF), Dining and Training Facility (8,500 SF), Physical Fitness (2,400 SF), and Deployment Processing Center (7,900 SF). The project would also include approximately 1,000 LF of utilities (water, sewer, stormwater and electric/telecom) and parking for 150 spots (approximately 59,000 SF including driving aisles). The entire project would be constructed on undeveloped land (in wooded area of newly acquired parcel by new Entry Control Point Gatehouse & Road). The project would also involve demolishing the current Wing HQ (Building 1) (22,400 SF) and returning it to green space.	FY 2027	Option 2- 30,700 SF (entire new construction) Option 3 – 102,800 SF (entire new construction)	Option 2- 30,700 SF (entire new construction) minus 22,400 SF new green space = 8,300 SF Option 3 – 102,800 SF (entire new construction) minus 22,400 SF new green space = 80,400 SF
2	Alter Supply Warehouse (Building 54)	Project would implement internal modifications to improve storage solutions at the Supply Warehouse (Building 54).	FY 2025	Internal modifications	N/A
3	Construct Taxiway Juliet	Project would construct a 33,600 SF new taxiway including shoulder areas to remove aircraft taxiing choke point.	FY 2026	33,600 SF	33,600 SF

Table MA-3 Proposed Construction and Modification for the Legacy Aircraft at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
4	Renovate POL Shop (Building 33)	Project would implement internal modifications to improve POL testing and administration in POL Shop (Building 33).	FY 2026	Internal modifications	N/A
5	Renovate Avionics Shop (Building 26)	Project would implement internal modifications and repair fire suppression and HVAC systems in Avionic Shop (Building 26).	FY 2026	Internal modifications	N/A
6	Repair MNS	Project would add external mass notification and occupied building notifications to comply with MNS criteria. The project would add 2 to 3 poles with 2-foot diameter concrete pads. The locations would be based on a noise study and are not shown on Figure MA2.1-3.	FY 2027	10 SF	10 SF
7	Construct Vehicle Operations Parking Sheds	Project would demolish existing parking sheds (Buildings 56 and 58) and build new covered parking (Building 56). The project would reconfigure the vehicle operations yard to increase efficiency.	FY 2027	N/A	N/A
8	Construct Redundant Utilities	Project would add redundant feeds for power, water, and natural gas on existing paved areas. a. Telecomm: 3,500 LF b. Power: 4,000 LF c. Water: 400 LF d. Gas: 400 LF	FY 2030	8,300 LF	N/A
9	Renovate JISCC Storage	Project would implement internal modifications to improve storage for Communications Flight JISCC mission.	FY 2028	Internal modifications	N/A
10.1 (Option 1) **10.2 (Option 2)**	Construct Running Track	Project would construct a new 0.25-mile running track (approximately 17,000 SF). Option 1 – The track would be constructed on undeveloped land west of TSG Austin C Cooper Road and north of a paved parking lot by the Aviation Readiness Support Facility and the current Main Gate. This option is dependent on a real estate agreement with the Army National Guard. Option 2 – The project would be located in the wooded area on the east side of Building 3 and the parking lot.	FY 2033	17,000 SF	17,000 SF

Table MA-3 Proposed Construction and Modification for the Legacy Aircraft at the 104 FW Installation at BAF

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
11	Alter AAS Signage	Project would move existing AAS signs in compliance with FAA criteria. Project would clear the requirement for the existing airfield waiver. Signs would be located on either side of the runway on an 18-inch diameter sonna tube.	FY 2029	N/A	N/A
12	Repair Base Roads and Parking Lots	Project would repair multiple parking lots and base roads to modernize paved infrastructure on the installation. The project would involve repairing approximately 50 percent of the parking lots and roads.	FY 2032	N/A	N/A
13	Construct Base Engineer Storage Yard	Project would construct an outdoor, uncovered storage 5,400 SF gravel yard for base engineer equipment and materials.	FY 2033	5,400 SF	N/A
14	Alter Civil Engineer Building (Building 40)	Project would reconfigure internal Civil Engineer Administrative area in Building 40 and add a 4,300 SF addition for the Emergency Management functions to the facility. Emergency Management functions are currently located in Building 8.	FY 2029	4,300 SF	4,300 SF
15.1 (Option 1) 15.2 (Option 2)	Add/Alter Dining Facility (Building 3)	Project would add/alter the Dining Facility (Building 3). Option 1 – Construct a 2,400 SF gym as an addition to Building 003. Demolish Building 12 (9,400 SF) and return it to green space. Option 2 – Renovate 12,915 SF of Building 3 to include a gym.	FY 2029	Option 1 – 2,400 SF	Option 1 – 2,400 SF minus 9,400 SF of new green space = -7,000 SF

Note: *Year of construction is estimated and is dependent upon funding.

Legend: AAS = Airfield Arresting System; FY = Fiscal Year; HQ = Headquarters; HVAC = Heating, Ventilation, and Air Conditioning; JISCC = Joint Incident Site Communications Capability; LF = linear feet; MNS = Mass Notification System; N/A = Not Applicable; PN = person; POL = Petroleum, Oil, and Lubricants; SF = square foot/feet; TBD = To be determined.

Source: 104 FW n.d.

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104th Fighter Wing

Pride - Professionalism - Patriotism

Table Top Brief
F-15EX & F-35A
Operational Beddown

104th Fighter Wing

Barnes Air National Guard Base

Westfield, MA

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  - **Project ID 27 - Add/Alter Fuel Cell**
  - **Project ID 28 - Add/Alter Alert Crew Readiness**
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Overview

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F-15EX Projects

F-15EX Proposed Construction Map

Project Locations are Notional, Project Numbers correspond to those in Table MA2.1-3

1.1 - Renovate Wing HQ
1.2 - Construct Wing HQ
1.3 - Construct Wing HQ
2 - Alter Supply Warehouse
3 - Construct Taxiway Juliet
4 - Renovate POL Shop
5 - Renovate Avionics Shop
6 - Repair MNS (not shown)
7- Construct Vehicle Parking Sheds
8 - Construct Redundant Utilities (not shown)
9 - Renovate JISCC Storage
10.1 - Construct Running Track
10.2 - Construct Running Track
11 - Alter AAS Signage
12 - Repair Roads and Parking Lots
13 - Construct Storage Yard
14 - Alter Civil Engineering
15.1 - Dining Facility Addition
15.2 - Renovate Dining Facility
16.1 - Construct Flight Simulator
16.2 - Construct Flight Simulator
17 - Repair HAZMAT HVAC
18 - ADAL WLT Door
19 - Demo Liquid Oxygen Facility
20 - Repair Munitions Administration
21 - Construct PL3 Fence Line
22.1 - Construct Squadron Operations
22.2 - Construct Squadron Operations
23 - Investigative Study
24 - Add HVAC
25 - Repair MAC Pad
26 - Repair Maintenance Shops
27 - ADAL Fuel Cell
28 - ADAL Alert Crew Readiness
29 - ADAL Squadron Operations
30 - Repair Avionics Facility

Construct Flight Simulator Facility Option 1

- **Project ID: 16.1**
- **Lat/Long: 42.169484, -72.718094**
- **Estimated Height: 30’**
- **Size: 20,000 SF**

Construct Flight Simulator Facility
Option 2

- **Project ID: 16.2**
- **Lat/Long:**
  42.171181, -72.719607
- **Estimated Height:**
  30’
- **Size:**
  20,000 SF

Construct PL3 Fence Line

- **Project ID: 21**
- **Lat/Long:**
  42.170704, -72.717912
- **Estimated Height:**
  8’
- **Size:**
  1,800 LF

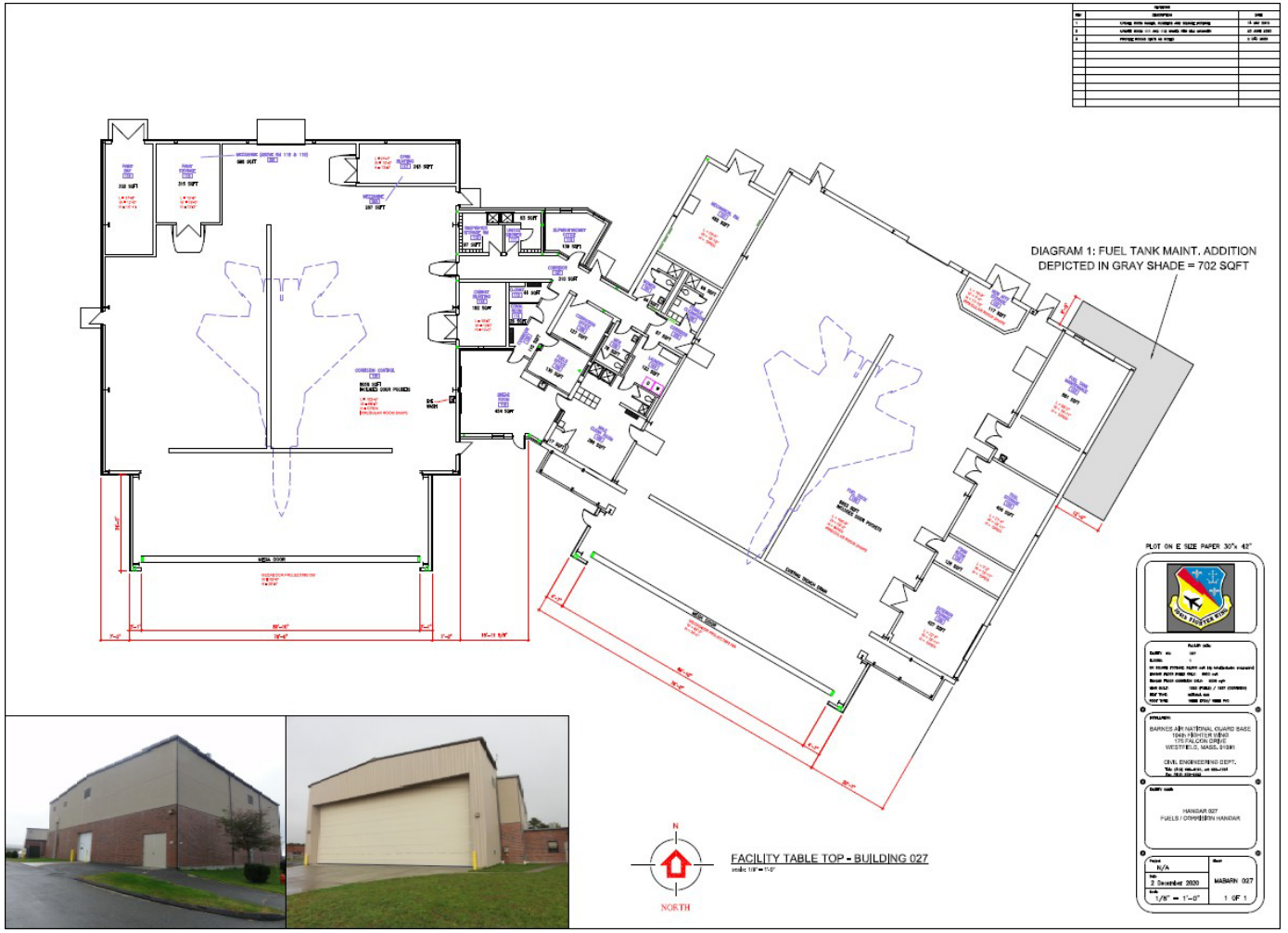
Construct Temporary Facilities Options 1 and 2

- **Project ID: 22.1**
- **Lat/Long: 42.169416, -72.718256**
- **Estimated Height: 15’**
- **Size: 3,000 SF**

- **Project ID: 22.2**
- **Lat/Long: 42.169002, -72.718155**
- **Estimated Height: 15’**
- **Size: 3,000 SF**

Add/Alter Fuel Cell

- **Project ID: 27**
- **Lat/Long: 42.170505, -72.715602**
- **Estimated Height: 38’-2”**
- **Size: 750 SF**



Add/Alter Alert Crew Readiness

- **Project ID: 28**
- **Lat/Long: 42.166090, -72.716880**
- **Estimated Height: 25’**
- **Size: 1,500 SF**

DIAGRAM 1: ACA CREW QUARTERS S.E. ADDITION DEPICTED IN GRAY SHADE = 1460 SQFT

Add/Alter Squadron Operations

- **Project ID: 29**
- **Lat/Long:**
  42.168865, -72.718253
- **Estimated Height:**
  34’
- **Size:**
  3,400 SF

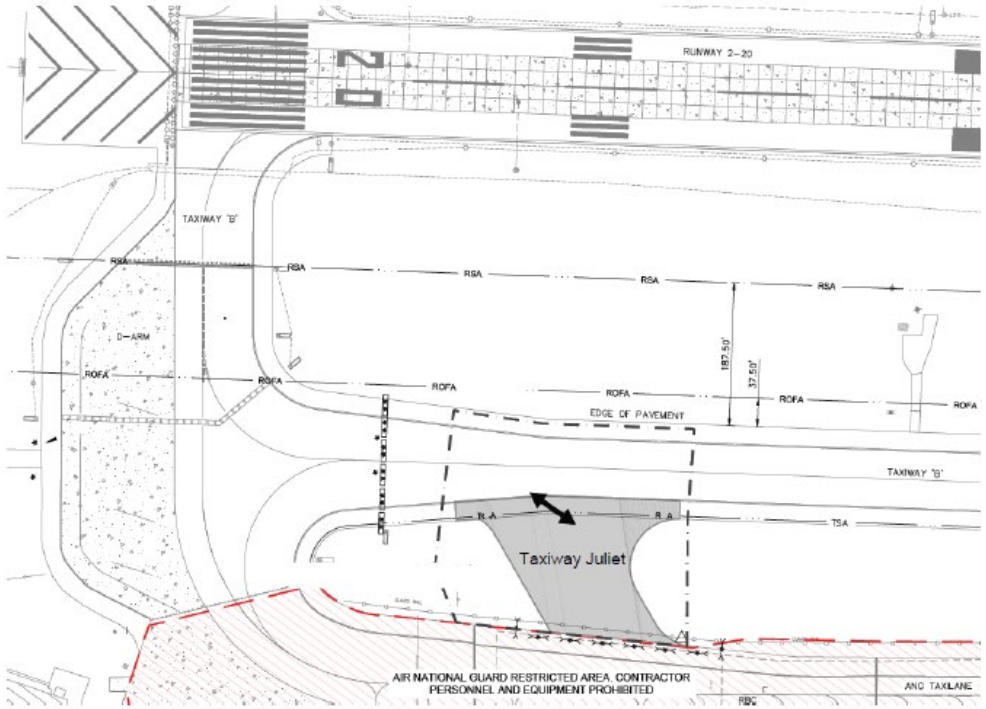
F-35A Projects

F-35A Proposed Construction Map

Construct Taxiway Juliet

- **Project ID: 3**
- **Lat/Long: 42.168776, -72.715514**
- **Estimated Height: 0’**
- **Size: 33,600 SF**

ACA Taxiway Juliet (Cancelled)



Construct Vehicle Operations Parking Sheds

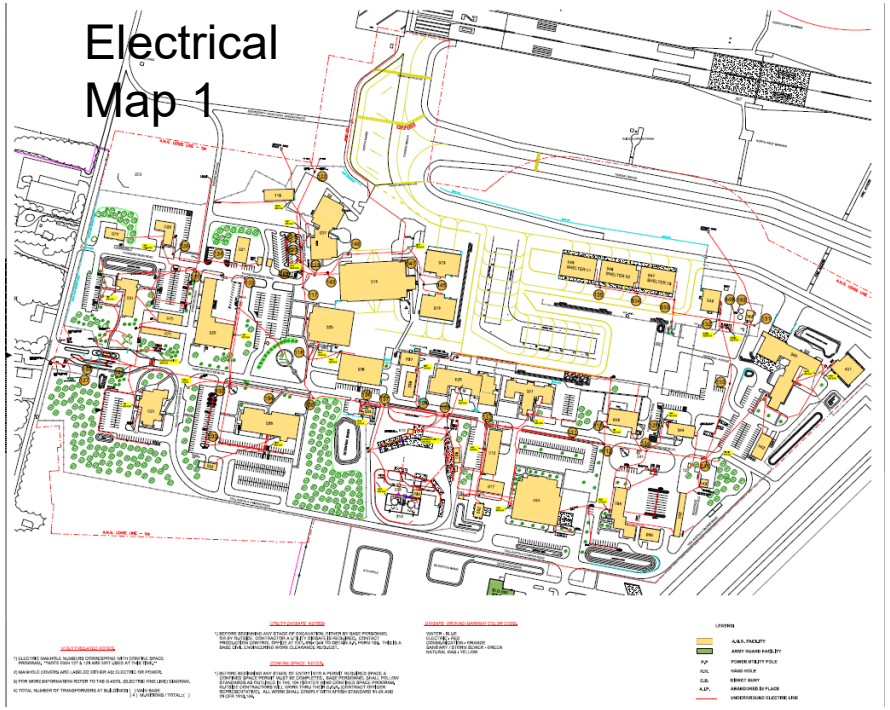
- **Project ID: 7**
- **Lat/Long: 42.166743, -72.720668**
- **Estimated Height: 21’**
- **Size:**

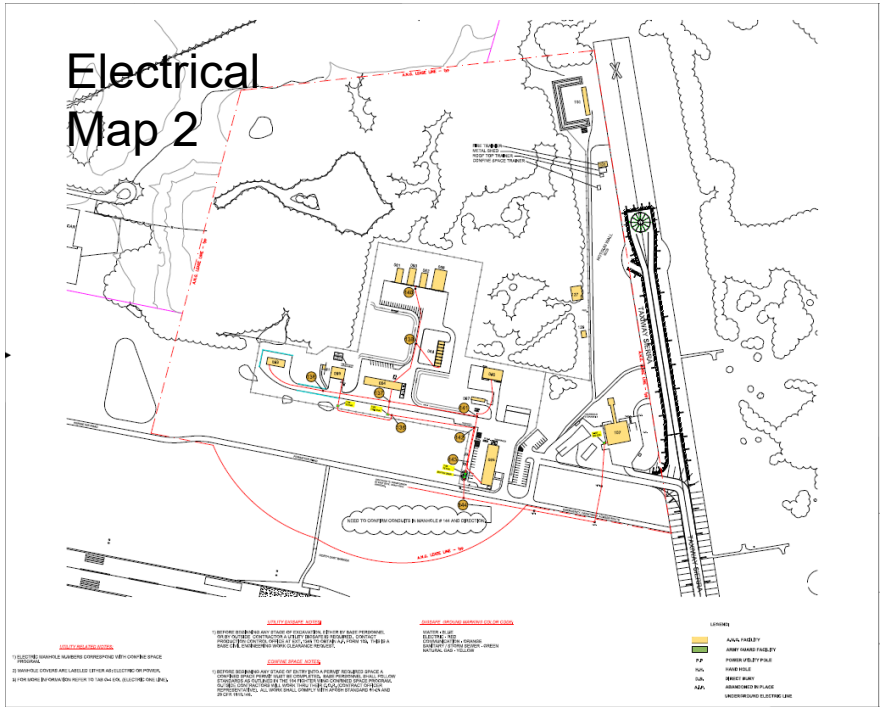
  8,276 SF (No new ground disturbance)

Construct Redundant Utilities

- **Project ID: 8**
- **Lat/Long: 42.167824, -72.717236**
- **Estimated Height: 0’**
- **Size:**

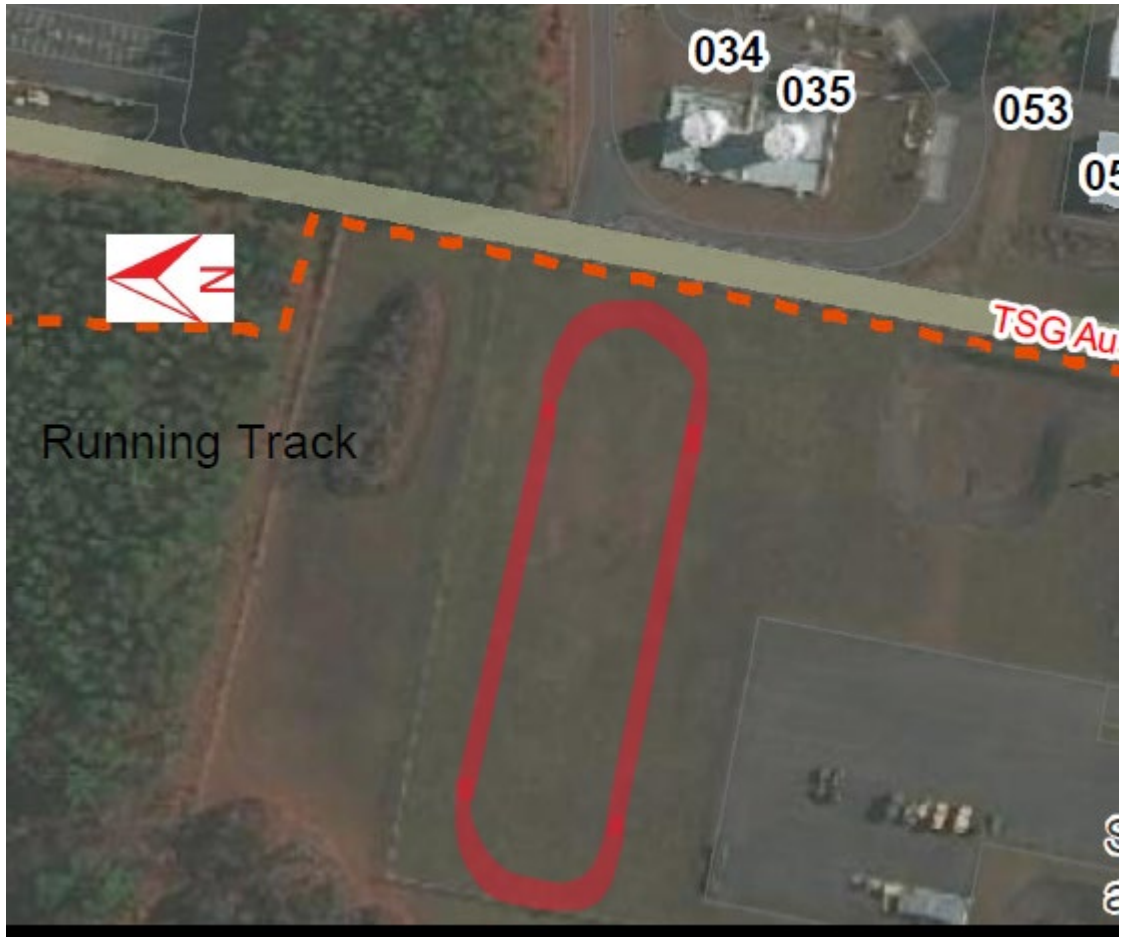
  8,300 LF





Construct Running Track
Option 1

- **Project ID: 10.1**
- **Lat/Long:**
  42.169965, -72.721547
- **Estimated Height:**
  0’
- **Size:**
  17,000 SF



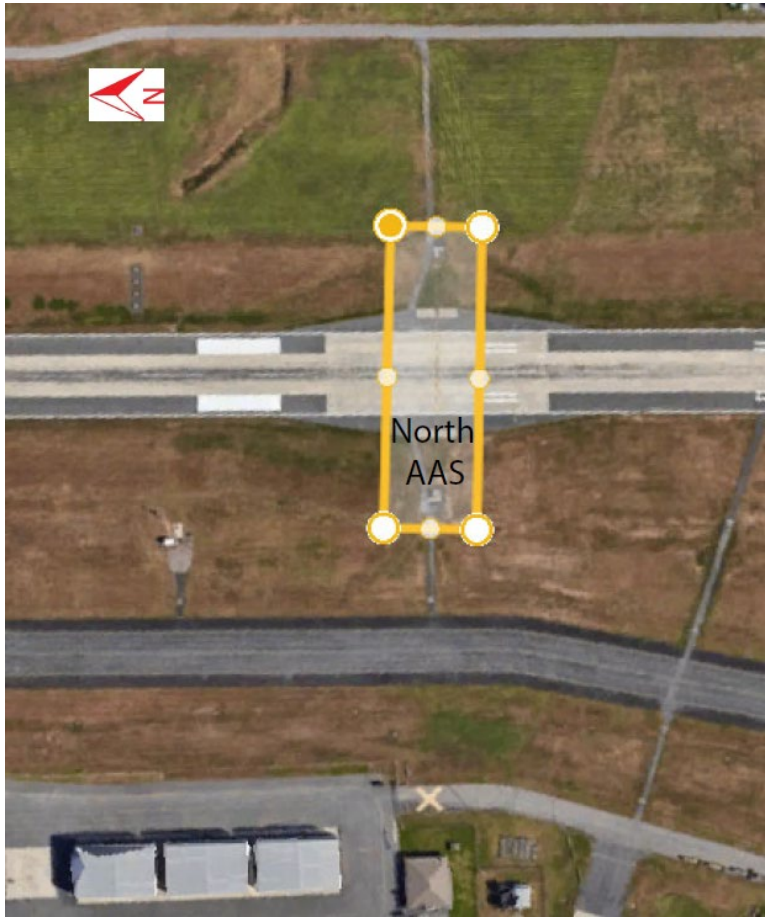
Construct Running Track
Option 2

- **Project ID: 10.2**
- **Lat/Long:**
  42.172595, -72.720518
- **Estimated Height:**
  0’
- **Size:**
  17,000 SF

Alter AAS Signage

- **Project ID: 11**
- **Lat/Long:**
  42.165694, -72.713864
  42.149134, -72.717888
- **Estimated Height:**
  N/A
- **Size:**

  N/A (relocation of existing AAS signs)



Construct Base Engineer Storage Yard

- **Project ID: 13**
- **Lat/Long: 42.166152, -72.719258**
- **Estimated Height: 0’**
- **Size: 5,400 SF**

Alter Civil Engineer Building (Building 40)

- **Project ID: 14**
- **Lat/Long: 42.165263, -72.718335**
- **Estimated Height: 29’**
- **Size: 4,300 SF**

Add/Alter Dining Facility (Building 3) Option 1

- **Project ID: 15.1**
- **Lat/Long: 42.1172511, -72.719242**
- **Estimated Height: 17’**
- **Size:**

  2,400 SF

Add/Alter Dining Facility(Building 3) Option 2

- **Project ID: 15.2**
- **Lat/Long: 42.169484, -72.718094**
- **Estimated Height: N/A**
- **Size:**

  NA (internal renovation)

Construct Flight Simulator Facility Option 1

- **Project ID: 16.1**
- **Lat/Long: 42.169484, -72.718094**
- **Estimated Height: 30’**
- **Size: 20,000 SF**

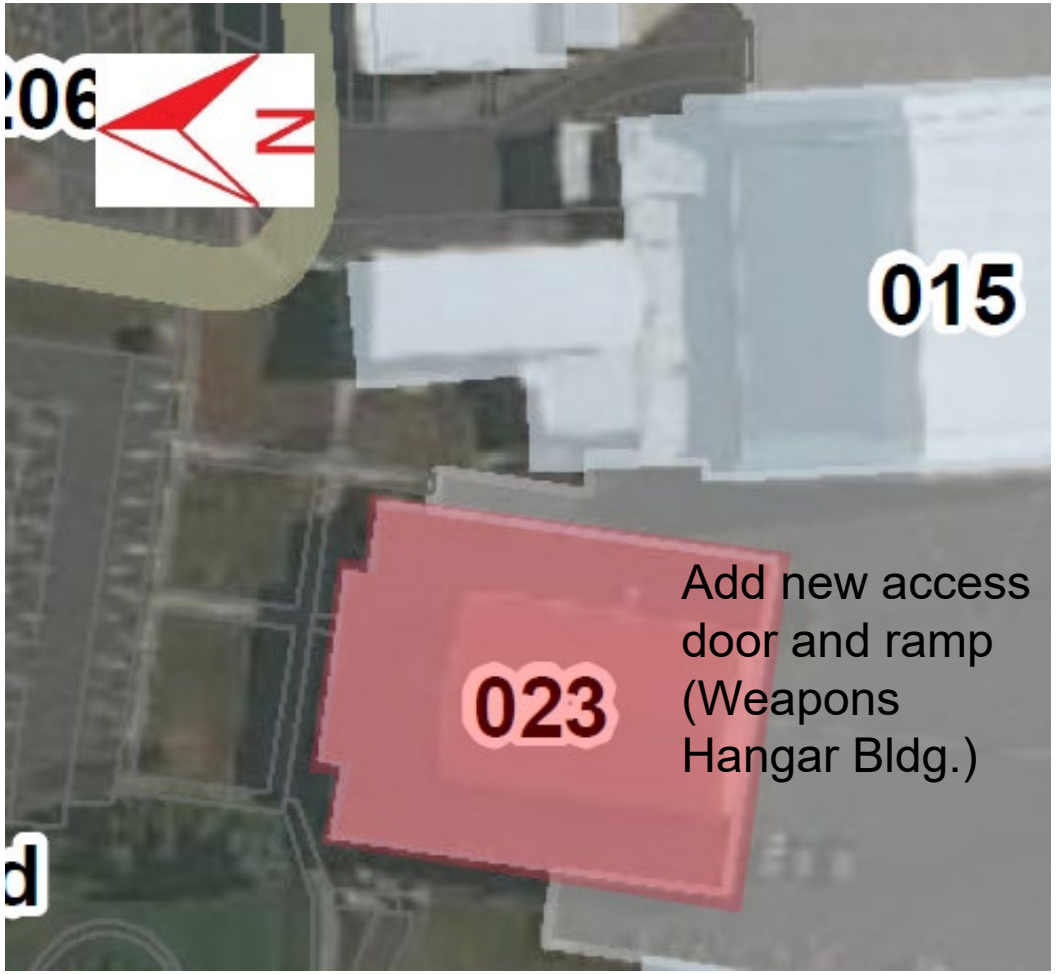
Construct Flight Simulator Facility Option 2

- **Project ID: 16.2**
- **Lat/Long: 42.171181, -72.719607**
- **Estimated Height: 30’**
- **Size: 20,000 SF**

ADAL WLT Door (Building 23)

- **Project ID: 18**
- **Lat/Long: 42.170437, -72.717663**
- **Estimated Height: N/A**
- **Size:**

  N/A (internal renovation)



Construct PL3 Fence Line

- **Project ID: 21**
- **Lat/Long:**
  42.170704, -72.717912
- **Estimated Height:**
  8’
- **Size:**
  1,800 LF

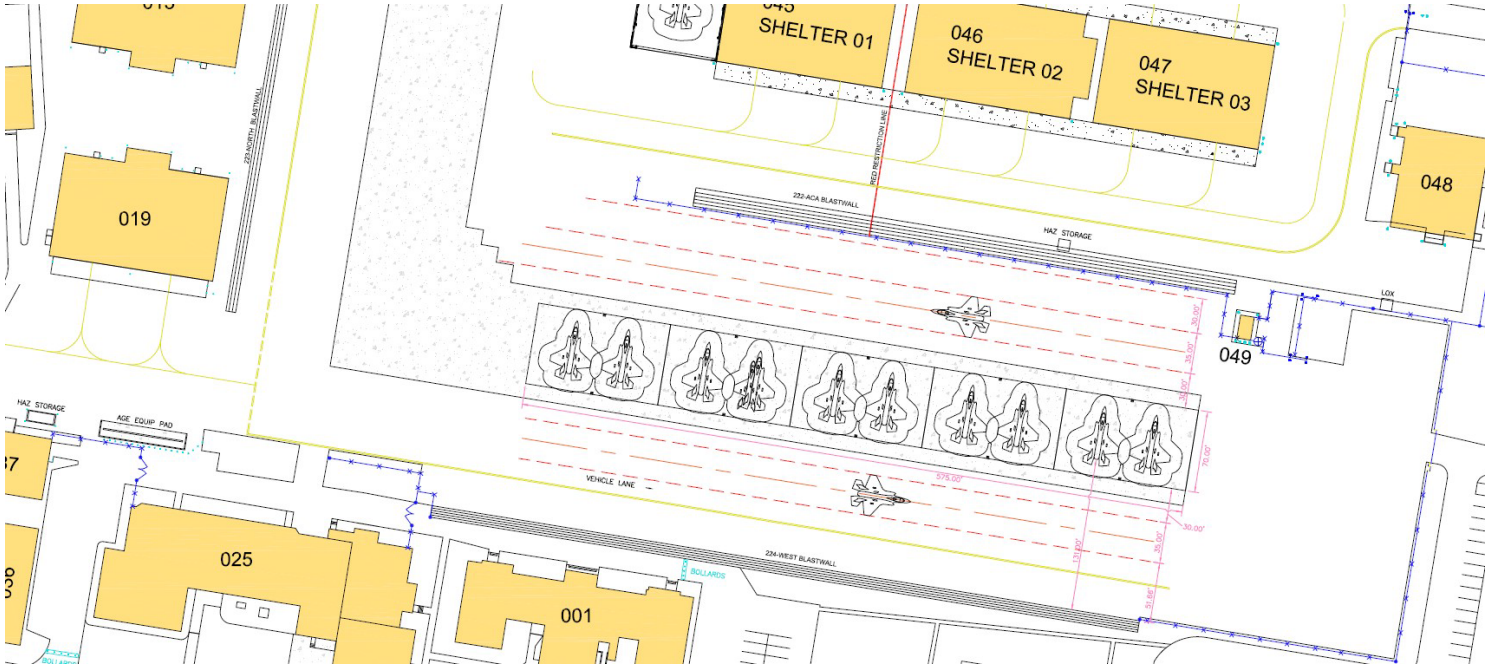
Construct Temporary Facilities Options 1 and 2

- **Project ID: 22.1**
- **Lat/Long: 42.169416, -72.718256**
- **Estimated Height: 15’**
- **Size: 3,000 SF**

- **Project ID: 22.2**
- **Lat/Long: 42.169002, -72.718155**
- **Estimated Height: 15’**
- **Size: 3,000 SF**

Construct Aircraft Shelters & Shades

- **Project ID: 31**
- **Lat/Long 42.168228, -72.717686**
- **Estimated Height: 38’-3”**
- **Size: 40,250 SF (No new ground disturbance)**



144th Fighter Wing at Fresno Yosemite International Airport (FAT)

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Table CA-1 Proposed Construction and Modification for the F-15EX Beddown at the 144 FW Installation at FAT

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
Locational Scenario 1 – Installation to Remain in Place					
1	Construct Munitions Administration	Project would construct a 4,400 SF munitions administration facility to address explosive safety arc concerns. New building would be located northwest of Building 2601 on open, undeveloped land.	FY 2024	4,400 SF	4,400 SF
2	Construct Entry Control Area – Munitions Dakota Gate	Project would construct Entry Control Facilities at the Munitions Dakota Gate to include security fence, gatehouse, vehicle turnaround area, vehicle inspection area, Overwatch area, and respective roads and pavements.	FY 2025	139,400 SF	45,000 SF
3	Construct Three Phase ECP – Main Gate	Project would demolish existing ECP and construct Entry Control Facilities at the Main Gate (Griffin Way & Falcon Drive) to include security fence, gatehouse, vehicle turnaround area, Overwatch area, and respective roads and pavements. The project would bring the gate up to DAF code.	FY 2025	139,400 SF	45,000 SF
4	Construct Vehicle Maintenance Complex	Project would demolish existing Vehicle Maintenance facilities and construct a 26,500 SF Vehicle Maintenance Complex for authorized 129 vehicles location to be determined. Vehicle Maintenance Facilities: - Vehicle Maintenance Support Core = 5,000 SF - Vehicle/Vehicular Equipment Maintenance = 6,300 SF - Customer Service = 1,200 SF - Under 20 material handling = 2,500 SF - Refueling Maintenance = 3,500 SF - Total = 18,500 SF Parking areas and large vehicle turning radius entryways = 8,000 SF	FY 2024	26,500 SF	N/A

Table CA-1 Proposed Construction and Modification for the F-15EX Beddown at the 144 FW Installation at FAT

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
5	Construct Med Training and SFS EMEDS Facility	Project would construct a Medical Training and SFS EMEDS Facility. New facility would be located at the existing parking lot between Building 125 and Building 123.	FY 2024	10,300 SF	10,300 SF
6	Repair Airfield Pavements	Project would replace the existing apron. The existing apron pavement is subject to severe alkali-silica reaction (also known as concrete cancer) and is in poor and rapidly declining condition. This project would replace the entire apron to full-depth as the only means of long-term repair. The project would involve the removal of the current shelters (to be recycled or reused), demolition of the concrete (approximately 26,000 CY) with the use of a batch plant, and removal of the aggregate concrete from the site.	FY 2025	702,000 SF	N/A
7	Repair Munitions M&I (Building 2600)	Project would repair the existing Munitions M&I facility (Building 2600). Facility is in overall good condition. This project would modify the existing administrative space to be another pull-through munitions bay for efficiency.	FY 2028	Internal repair	N/A
8	ADAL Building 2606 for ATG Munitions / Construct MAC Pad	Project would repair the existing Building 2606 in the munitions area to accommodate air-to-ground munitions inspection & assembly and training functions. In addition, the project would construct a MAC Pad southeast of Building 2606 and west of Building 2620 on an undeveloped, grassy area.	FY 2027	Internal repairs to Building 2606. 7,600 SF for MAC Pad	7,600 SF for MAC Pad
9.1 (Option 1)	Construct Fire Station	Project would construct a 17,400 SF fire response station with six bays and 68,100 SF of associated paved apron and taxiway connectors for access to the airfield. Current Fire Station has four bays and would be demolished in the future. For the South COA, the proposed location is Option 1. Between the track and the south side of the runway on open, undeveloped land at the same 'level' as current location.	FY 2024	85,500 SF	85,500 SF

Table CA-1 Proposed Construction and Modification for the F-15EX Beddown at the 144 FW Installation at FAT

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
10	ADAL Squadron Operations (Building 194)	Project would consist of a 1,200 SF addition to Building 194 and modification of the remaining 24,400 SF facility to accommodate increased space, administrative requirements, and administrative space for additional crew. The 1,200 SF addition would be constructed on an open, grassy area to the northwest side of Building 194.	FY 2025	1,200 SF	1,200 SF
11	Repair Small Maintenance Hangar (Building 159)	Project would repair the Small Maintenance Hangar, Building 159. Facility is in overall good condition. This project would provide adequate clean and dirty room separation as required by DAF code.	FY 2025	Internal repair	N/A
12	Repair Fuel Cell HVAC (Building 157)	Project would repair existing HVAC system in order to provide adequate make-up air for fuel cell operations. The HVAC system and facility as a whole are in otherwise good condition.	FY 2028	Internal repair	N/A
13	ADAL Alert Crew Readiness	Project would renovate the existing Alert Crew Readiness facility (Building 155). Facility is in overall good condition but is undersized for the mission requirement. This project would provide the maximum addition allowable by the site footprint while renovating the existing space for most efficient use and flow. It also brings the inadequate alert ECP up to security standards. Notes: Alternative to constructing a new Alert Crew Readiness Facility.	FY 2026	Internal repair	N/A
14	Construct F-15EX Four Bay FMS Facility	Project would construct a 20,000 SF facility to house four FMSs and support systems and associated administrative spaces. The new facility would be located on open, undeveloped land north of Building 120.	FY 2027	20,000 SF	20,000 SF

Table CA-1 Proposed Construction and Modification for the F-15EX Beddown at the 144 FW Installation at FAT

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
15	Construct WLT Hangar	Project would construct a 10,000 SF single bay WLT hangar and associated pavements on the south side of the runway. The new hangar would be located on open, undeveloped land east of Building 167.	FY 2027	10,000 SF	10,000 SF
16	Construct CFT Maintenance Facility	Project would construct a 2,300 SF facility for maintenance of the F-15EX specific CFTs. A facility for this activity currently does not exist. The facility would be constructed north of Building 167 on an undeveloped grassy area.	FY 2027	2,300 SF	2,300 SF
Locational Scenario 2 – ACA Mission Only Move to North					
1	Construct Munitions Administration	Project would construct a 4,400 SF munitions administration facility to address explosive safety arc concerns. New building would be located northwest of Building 2601 on open, undeveloped land.	FY 2024	4,400 SF	4,400 SF
2	Construct Entry Control Area – Munitions Dakota Gate	Project would construct Entry Control Facilities at the Munitions Dakota Gate to include security fence, gatehouse, vehicle turnaround area, vehicle inspection area, Overwatch area, and respective roads and pavements.	FY 2025	139,400 SF	45,000 SF
3	Construct Three Phase ECP – Main Gate	Project would demolish existing ECP and construct Entry Control Facilities at the Main Gate (Griffin Way & Falcon Drive) to include security fence, gatehouse, vehicle turnaround area, Overwatch area, and respective roads and pavements. The project would bring the gate up to DAF code.	FY 2025	139,400 SF	45,000 SF

Table CA-1 Proposed Construction and Modification for the F-15EX Beddown at the 144 FW Installation at FAT

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
4	Construct Vehicle Maintenance Complex	Project would demolish existing Vehicle Maintenance facilities and construct a 26,500 SF Vehicle Maintenance Complex for authorized 129 vehicles on the existing footprint of Buildings 102 and 116. Vehicle Maintenance Facilities: - Vehicle Maintenance Support Core = 5,000 SF - Vehicle/Vehicular Equipment Maintenance = 6,300 SF - Customer Service = 1,200 SF - Under 20 material handling = 2,500 SF - Refueling Maintenance = 3,500 SF - Total = 18,500 SF Parking areas and large vehicle turning radius entryways = 8,000 SF	FY 2024	26,500 SF	N/A
5	Construct Med Training and SFS EMEDS Facility	Project would construct a Medical Training and SFS EMEDS Facility. New facility would be located at the existing parking lot between Building 125 and Building 123.	FY 2024	10,300 SF	10,300 SF
6	Repair Airfield Pavements	Project would replace the existing apron. The existing apron pavement is subject to severe alkali-silica reaction (also known as concrete cancer) and is in poor and rapidly declining condition. This project would replace the entire apron to full-depth as the only means of long-term repair. The project would involve the removal of the current shelters (to be recycled or reused), demolition of the concrete (approximately 26,000 CY) with the use of a batch plant, and removal of the aggregate concrete from the site.	FY 2025	702,000 SF	N/A

Table CA-1 Proposed Construction and Modification for the F-15EX Beddown at the 144 FW Installation at FAT

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
7	Repair Munitions M&I (Building 2600)	Project would repair the existing Munitions M&I facility (Building 2600). Facility is in overall good condition. This project would modify the existing administrative space to be another pull-through munitions bay for efficiency.	FY 2028	Internal repair	N/A
8	ADAL Building 2606 for ATG Munitions / Construct MAC Pad	Project would construct an addition to and repair existing Building 2606 in the munitions area to accommodate air-to-ground munitions inspection & assembly and training functions. In addition, the project would construct a MAC Pad southeast of Building 2606 and west of Building 2620 on an undeveloped, grassy area.	FY 2027	Internal repairs to Building 2606. 7,600 SF for MAC Pad	7,600 SF for MAC Pad
9.1 (Option 1) **9.2 (Option 2)**	Construct Fire Station	Project would construct a 17,400 SF fire response station with six bays and 68,100 SF of associated paved apron and taxiway connectors for access to the airfield. Current Fire Station has four bays and would be demolished in the future. There are two proposed locations for ACA Mission Only Move to North COA: Option 1. Adjacent to Building 145 and the south side of the runway on open, undeveloped land at the same 'level' as current location. Option 2. North side northwest of the Marine Corps ramp on existing concrete hardstand.	FY 2024	85,500 SF	85,500 SF for Option 1 N/A for Option 2
10	ADAL Squadron Operations (Building 194)	Project would consist of a 1,200 SF addition to Building 194 and modification of the remaining 24,400 SF facility to accommodate increased space, administrative requirements, and administrative space for additional crew. The 1,200 SF addition would be constructed on an open, grassy area to the northwest side of Building 194.	FY 2025	1,200 SF	1,200 SF
11	Repair Small Maintenance Hangar (Building 159)	Project would repair the Small Maintenance Hangar, Building 159. Facility is in overall good condition. This project would provide adequate clean and dirty room separation as required by DAF code.	FY 2025	Internal repair	N/A

Table CA-1 Proposed Construction and Modification for the F-15EX Beddown at the 144 FW Installation at FAT

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
12	Repair Fuel Cell HVAC (Building 157)	Project would repair existing HVAC system in order to provide adequate make-up air for fuel cell operations. The HVAC system and facility as a whole are in otherwise good condition.	FY 2028	Internal repair	N/A
14	Construct F-15EX Four Bay FMS Facility	Project would construct a 20,000 SF facility to house four FMSs and support systems and associated administrative spaces. The new facility would be located on open, undeveloped land north of Building 120.	FY 2027	20,000 SF	20,000 SF
15	Construct WLT Hangar	Project would construct a 10,000 SF single bay WLT hangar and associated pavements on the south side of the runway. The new hangar would be located on open, undeveloped land east of Building 167.	FY 2027	10,000 SF	10,000 SF
16	Construct CFT Maintenance Facility	Project would construct a 2,300 SF facility for maintenance of the F-15EX specific CFTs. A facility for this activity currently does not exist. The facility would be constructed north of Building 167 on an undeveloped grassy area.	FY 2027	2,300 SF	2,300 SF
17	Construct Alert Spots 5 & 6	Project would construct the final two parking spots (approximately 63,000 SF) for the full ACA mission on the new north side installation.	FY 2028	63,000 SF	63,000 SF
18	Construct Alert Complex	Project would construct a 10,210 SF Alert Crew Readiness facility, along with a 270,000 SF adjacent aircraft parking apron for the initial four aircraft mission, taxiway connectors, and security fencing with ECP. Proposed location is on the former Marine Corps Reserve Center.	FY 2024	280,210 SF	280,210 SF

Table CA-1 Proposed Construction and Modification for the F-15EX Beddown at the 144 FW Installation at FAT

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
19	Construct North Utilities Infrastructure	Project would construct approximately 96,000 SF of utility service lines for electricity, natural gas, water, sewer, and ducting for telecommunications to the new north side installation.	FY 2024	96,000 SF	96,000 SF
20	Construct ECP – E. Airway Boulevard	Project would construct a 100 SF check house and vehicle search pit for a total of 300 SF.	FY 2024	300 SF	300 SF

Note: *Year of construction is estimated and is dependent upon funding.
Legend: ACA = Aerospace Control Alert; ADAL = Addition and Alteration; ASE = Aircraft Support Equipment; ATG = air-to-ground; CFT = Conforming Fuel Tank; COA = course of action; CY = cubic yard; DAF = Department of the Air Force; ECP = Entry Control Point; EMEDS = Expeditionary Medical Support; FMS = Full Mission Simulator; FY = fiscal year; GFE = Government Furnished Equipment; HVAC = Heating, Ventilation, and Air Conditioning; M&I = Maintenance and Inspection; MAC = Munitions Assembly Conveyor; MCCA = Military Construction Cooperative Agreement; N/A = Not Applicable; SF = square foot/feet; SFS = Security Forces Squadron; WLT = Weapons Load Crew Training.
Source: ACC and NGB 2021b; NGB 2021c.

Table CA-2 Proposed Construction and Modification for the F-15C Legacy Aircraft Mission at the 144 FW Installation at FAT

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
1	Construct Munitions Administration Facility	Project would construct a 4,400 SF munitions administration facility to address explosive safety arc concerns. New building would be located northwest of Building 2601 on open, undeveloped land.	FY 2024	4,400 SF	4,400 SF
2	Construct Entry Control Area – Munitions Dakota Gate	Project would construct Entry Control Facilities at the Munitions Dakota Gate to include security fence, gatehouse, vehicle turnaround area, vehicle inspection area, Overwatch area, and respective roads and pavements.	FY 2025	139,400 SF	45,000 SF
3	Construct Three Phase ECP – Main Gate	Project would demolish existing ECP and construct Entry Control Facilities at the Main Gate (Griffin Way & Falcon Drive) to include security fence, gatehouse, vehicle turnaround area, Overwatch area, and respective roads and pavements. The project would bring the gate up to DAF code.	FY 2025	139,400 SF	45,000 SF
4	Construct Vehicle Maintenance Complex	Project would demolish existing Vehicle Maintenance facilities and construct a 26,500 SF Vehicle Maintenance Complex for authorized 129 vehicles on the existing footprint of Buildings 102 and 116. Vehicle Maintenance Facilities: - Vehicle Maintenance Support Core = 5,000 SF - Vehicle/Vehicular Equipment Maintenance = 6,300 SF - Customer Service = 1,200 SF - Under 20 material handling = 2,500 SF - Refueling Maintenance = 3,500 SF - Total = 18,500 SF Parking areas and large vehicle turning radius entryways = 8,000 SF.	FY 2024	26,500 SF	N/A

Table CA-3 Proposed Construction and Modification for the F-15C Legacy Aircraft Mission at the 144 FW Installation at FAT

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
5	Construct Med Training and SFS EMEDS Facility	Project would construct a Medical Training and SFS EMEDS Facility. New facility would be located at the existing parking lot between Building 125 and Building 123.	FY 2024	10,300 SF	10,300 SF
6	Repair Airfield Pavement	Project would replace the existing apron. The existing apron pavement is subject to severe alkali-silica reaction (also known as concrete cancer) and is in poor and rapidly declining condition. This project would replace the entire apron to full-depth as the only means of long-term repair. The project would involve the removal of the current shelters (to be recycled or reused), demolition of the concrete (approximately 26,000 CY) with the use of a batch plant, and removal of the aggregate concrete from the site.	FY 2024	702,000 SF	N/A
21	Building 130 Renovation	Comprehensive renovation.	FY 2024	Internal renovation	N/A
22	Building 135 Dining Facility Remodel	Perform Dining Facility renovation.	FY 2024	Internal renovation	N/A

Note: *Year of construction is estimated and is dependent upon funding.
Legend: CY = cubic yard; DAF = Department of the Air Force; ECP = Entry Control Point; EMEDS = Expeditionary Medical Support; FY = fiscal year; MCCA = Military Construction Cooperative Agreement; N/A = Not Applicable; SF = square foot/feet; SFS = Security Forces Squadron.
Source: 144 FW n.d.

F-15EX FACILITIES

F-15EX PROPOSED CONSTRUCTION

OVERVIEW – LOCATIONAL SCENARIO 1

Project Locations are Notional, Project Numbers correspond to those in Table CA2.1-3

0 Meters 200
0 Feet 500

1 - Construct Munitions Administration
2 - Construct 3 Phase ECP - MUNS Dakota Gate
3 - Construct 3 Phase ECP - Main Gate
4 - Construct Vehicle Maintenance (TBD)
5 - Construct Medical Training Facility
6 - Repair Airfield Pavements
7 - Repair M and I
8 - ADAL Building 2606/MAC Pad
9.1 - Construct Fire Station
10 - ADAL Squadron Operations
11 - Repair Small Maintenance Hangar
12 - Repair Fuel Cell HVAC
13 - ADAL Alert Crew Facility
14 - Construct FMS Facility
15 - Construct WLT
16 - Construct CFT Facility

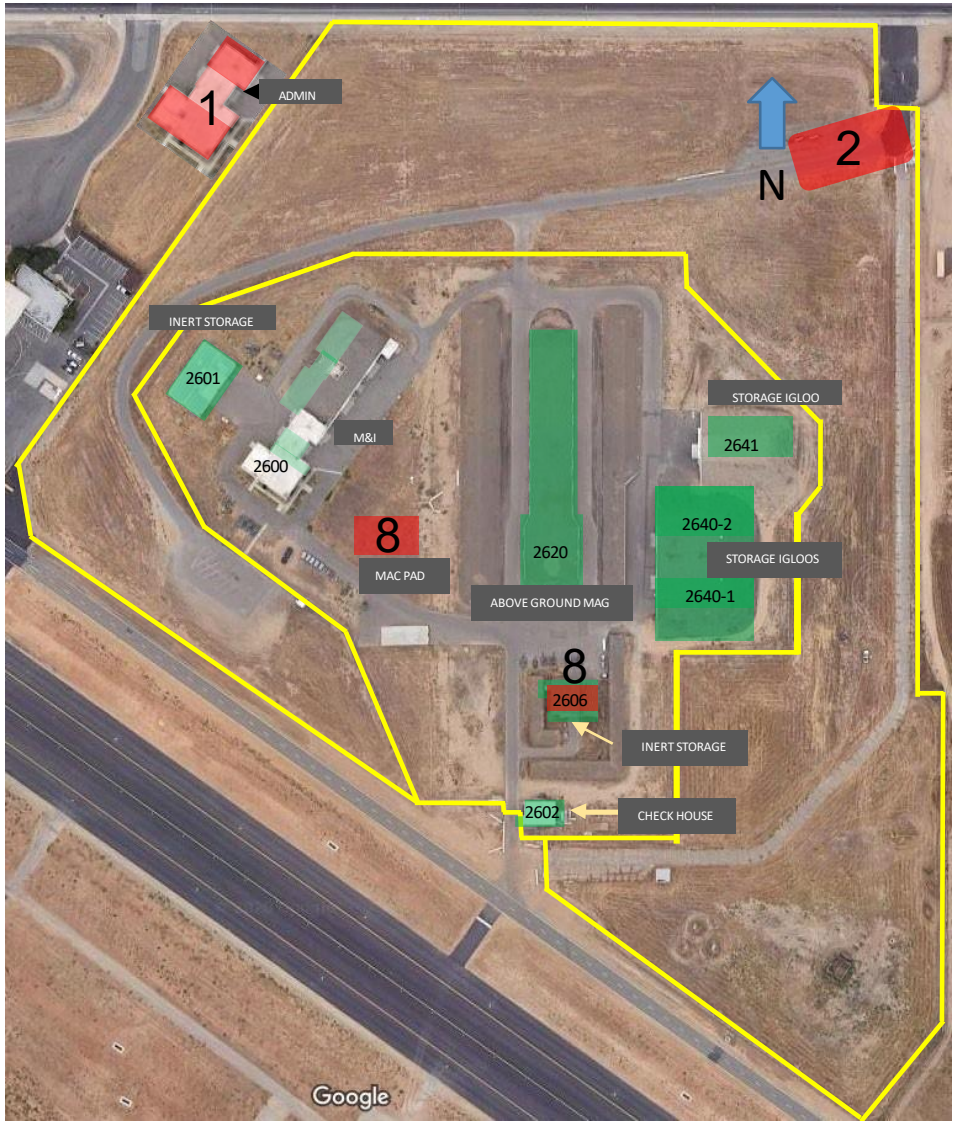
2

Source: CA ANG 2022, ESRI 2022

F-15EX PROPOSED CONSTRUCTION

OVERVIEW – Locational Scenario 1 (MSA Vicinity)

Project ID	Facility	Height (feet)	Distance from 29R (feet)	Total Square Feet
1	Muns Admin	20’	1,385	4.4K
2	ECP	23’	1,900	45K
8	MAC Pad	25’ (If Covered)	1,040	7.6K



Project 1 – Construct Munitions Administration Facility

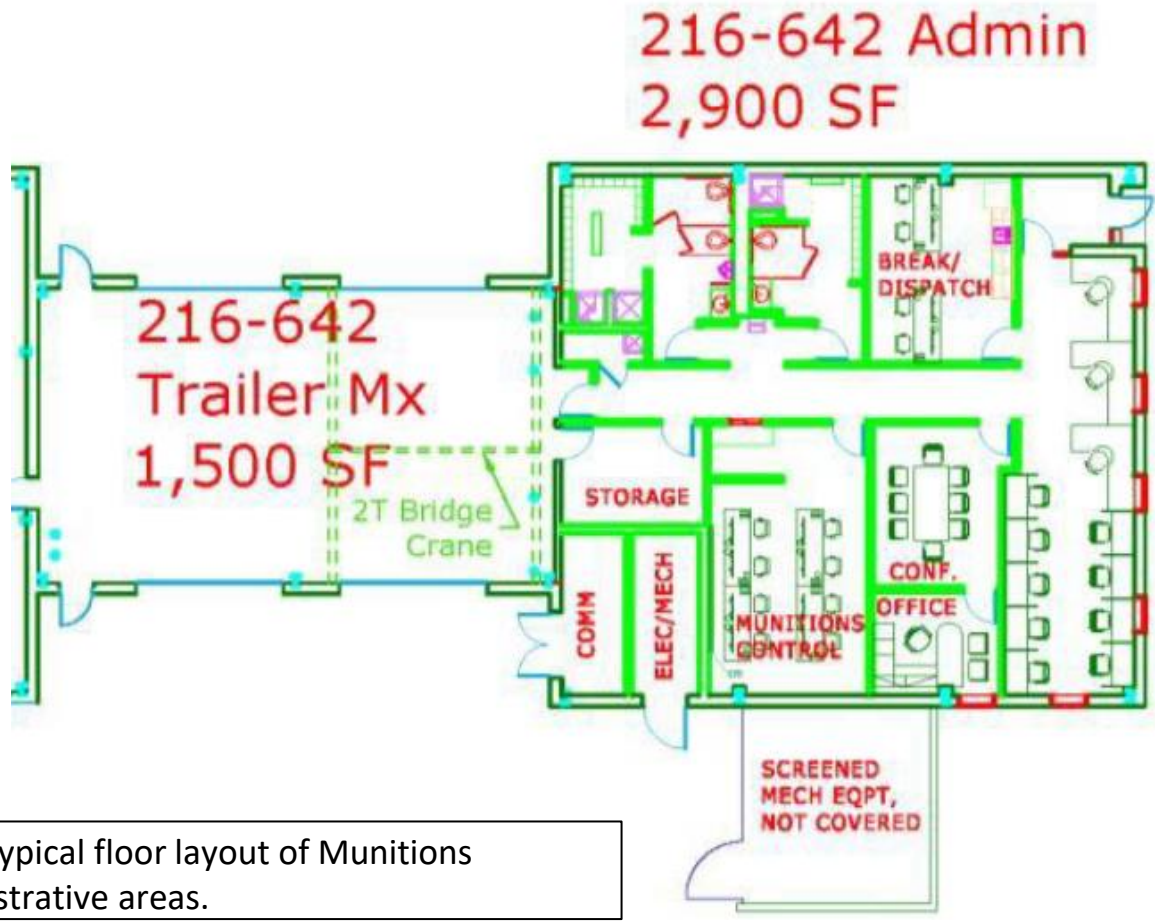
Project 2 – Construct Entry Control Point (ECP)

Project 8 – Addition/Alter Building 2606 / Construct MAC Pad

F-15EX PROPOSED CONSTRUCTION
Construct Munitions Administration

Project ID	Facility	Height (feet)	Distance from 29R (feet)	Total Square Feet
1	Muns Admin	20’	1,385	4.4K

Project constructs a 4,400 SF munitions administration facility. The current facility is connected to a live munitions inspection and assembly facility, in violation of explosive safety arc requirements. This project corrects this serious safety deficiency.

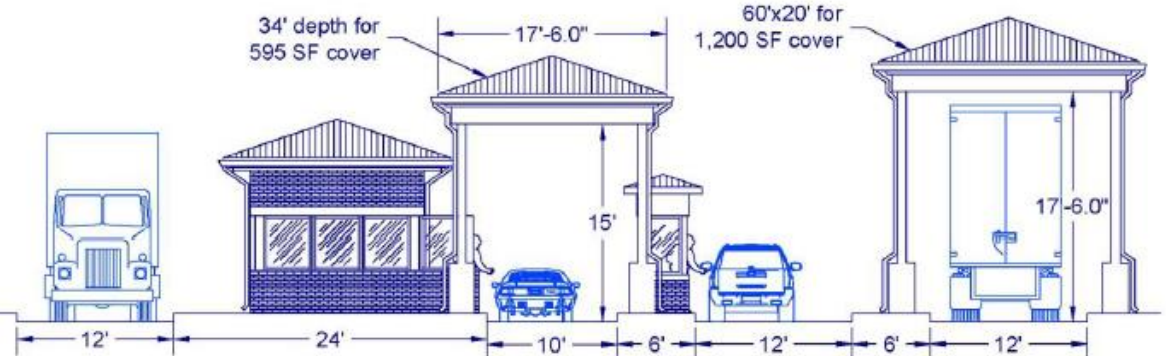


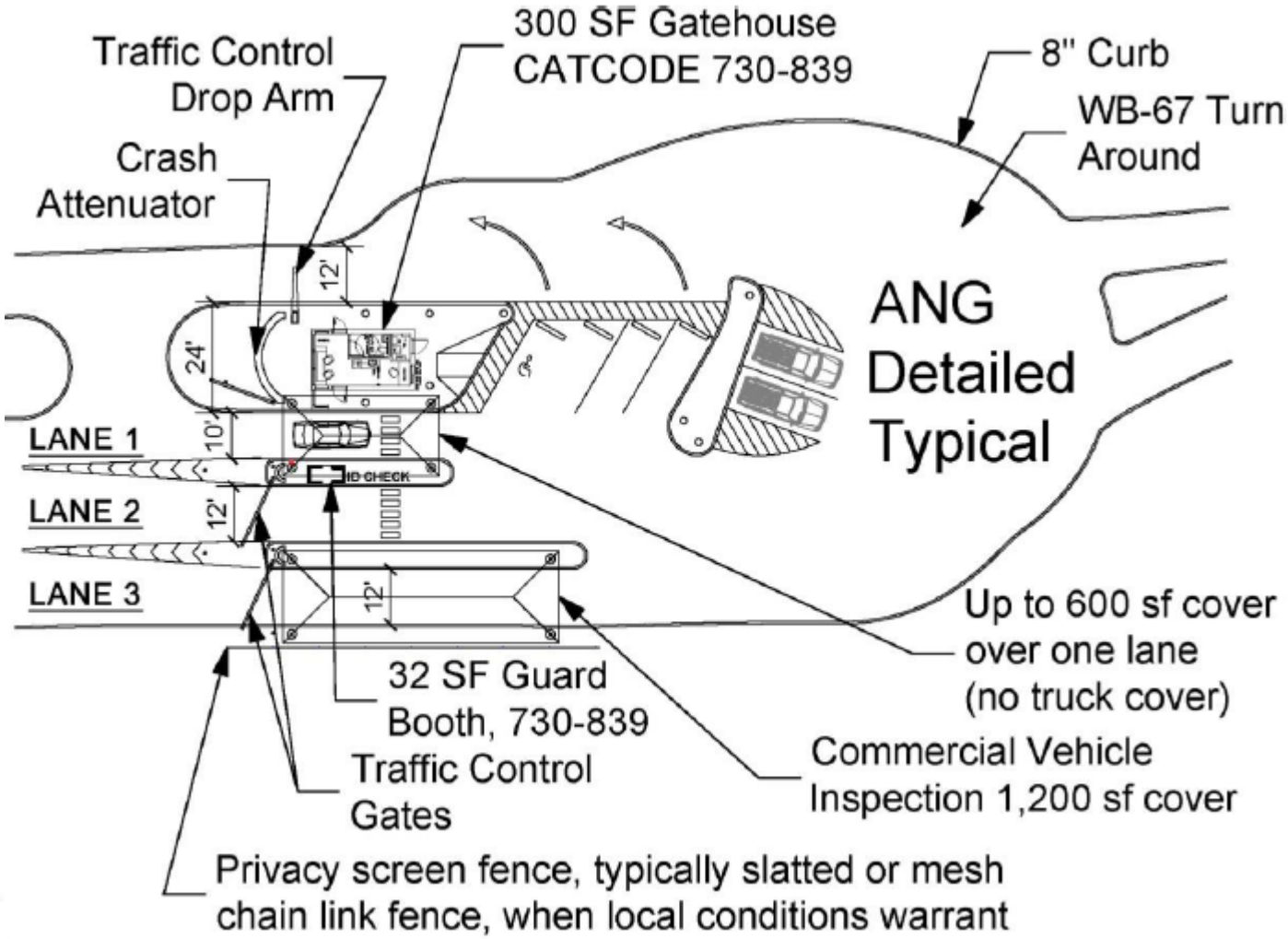
Note: Typical floor layout of Munitions Administrative areas.

F-15EX PROPOSED CONSTRUCTION
Construct Entry Control Point (ECP)

Project ID	Facility	Height (feet)	Distance from 29R (feet)	Total Square Feet
2	ECP	23’	1,900	45K

Note: This project creates an ECP at the Munitions Dakota Gate into the Munitions Storage Area. As conditions allow, the project would include a 300 SF entry control admin facility, two 100 SF check houses, and covered canopy.





F-15EX PROPOSED CONSTRUCTION
Add/Alter M&I (B2606) & Construct MAC Pad

Project ID	Facility	Height (feet)	Distance from 29R (ft)	Total Square Feet
8	MAC Pad	25’ (If Covered)	1,040	7.6K

This project modifies the existing admin space, Building 2606 (which will be re-built due to explosive safety, see Project 1) to be another pull-through munitions bay for efficiency. This project also constructs a MAC Pad.

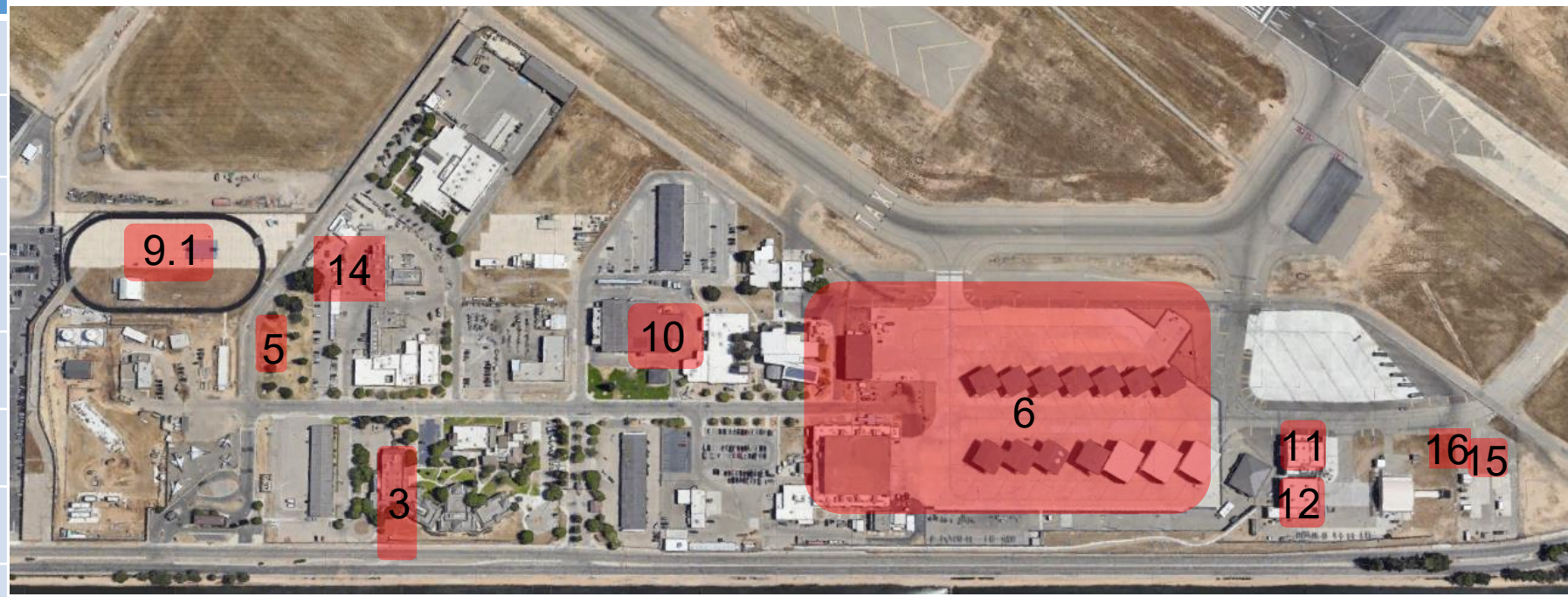
MAC Pad Example

F-15EX PROPOSED CONSTRUCTION

OVERVIEW – Locational Scenario 1 (Main Base)

Project ID	Facility	Height (ft)	Distance from 29L (ft)	Total Square Feet
3	ECP Main Gate	23	1,530	45,000
5	Med Trng Facility	30	1,200	10,300
6	Apron	0	330	702,000
9.1	Fire Station	30	640	85,000
10	Ops Squadron	25	830	1,200
11	Corrosion Ctrl	40	920	8,500*
12	Fuel Cell	30	340	11,300*
14	FMS Facility	25	1,170	20,000
15	WLT Hangar	30	640	10,000
16	CFT Facility	25	300	2,300

* Internal repair only.

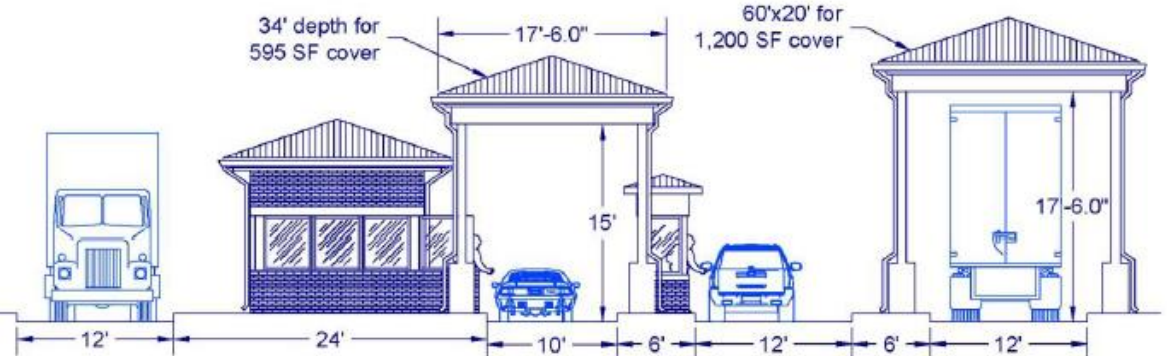


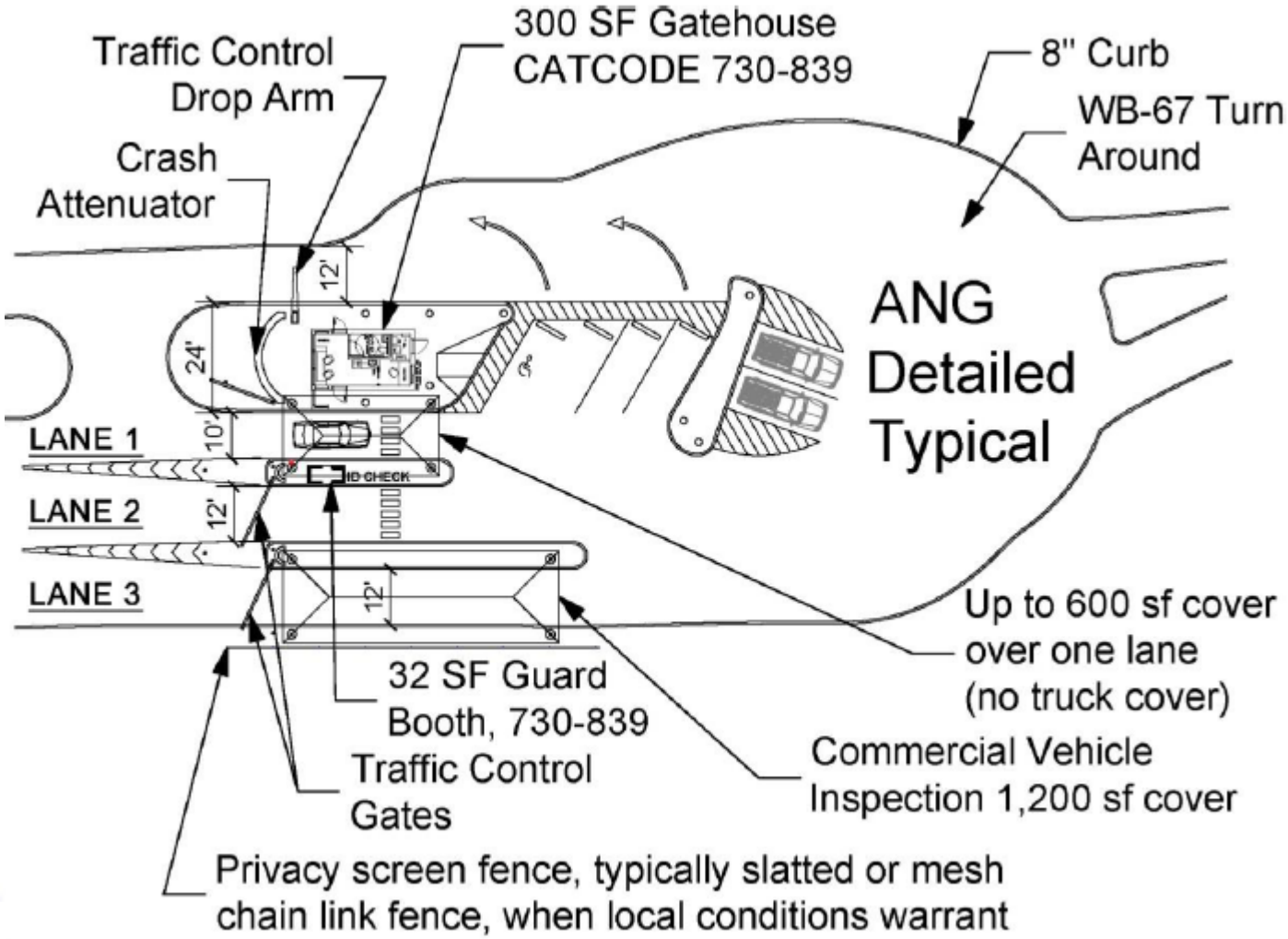
Project 3 – Construct Entry Ctrl Point
Project 5 – Construct Medical Training Facility
Project 6 – Repair Airfield Pavements
Project 9.1 – Construct Fire Station
Project 10 – Add/Alter Ops Squadron B194
Project 11 – Repair Small Mx Hangar B159
Project 12 – Repair Fuel Cell HVAC (B157)
Project 14 – Construct F-15EX Full Mission Simulator
Project 15 – Construct Weapons Loadcrew Trainer (WLT)
Project 16 – Construct Conformal Fuel Tank (CFT)

F-15EX PROPOSED CONSTRUCTION
Construct Entry Control Point (ECP)

Project ID	Facility	Height (feet)	Distance from 29L (feet)	Total Square Feet
3	Main Gate	23	1,530	45,000

Note: This project creates an ECP at the current Main Gate. As conditions allow, the project would include a 300 SF entry control admin facility, two 100 SF check houses, and covered canopy.

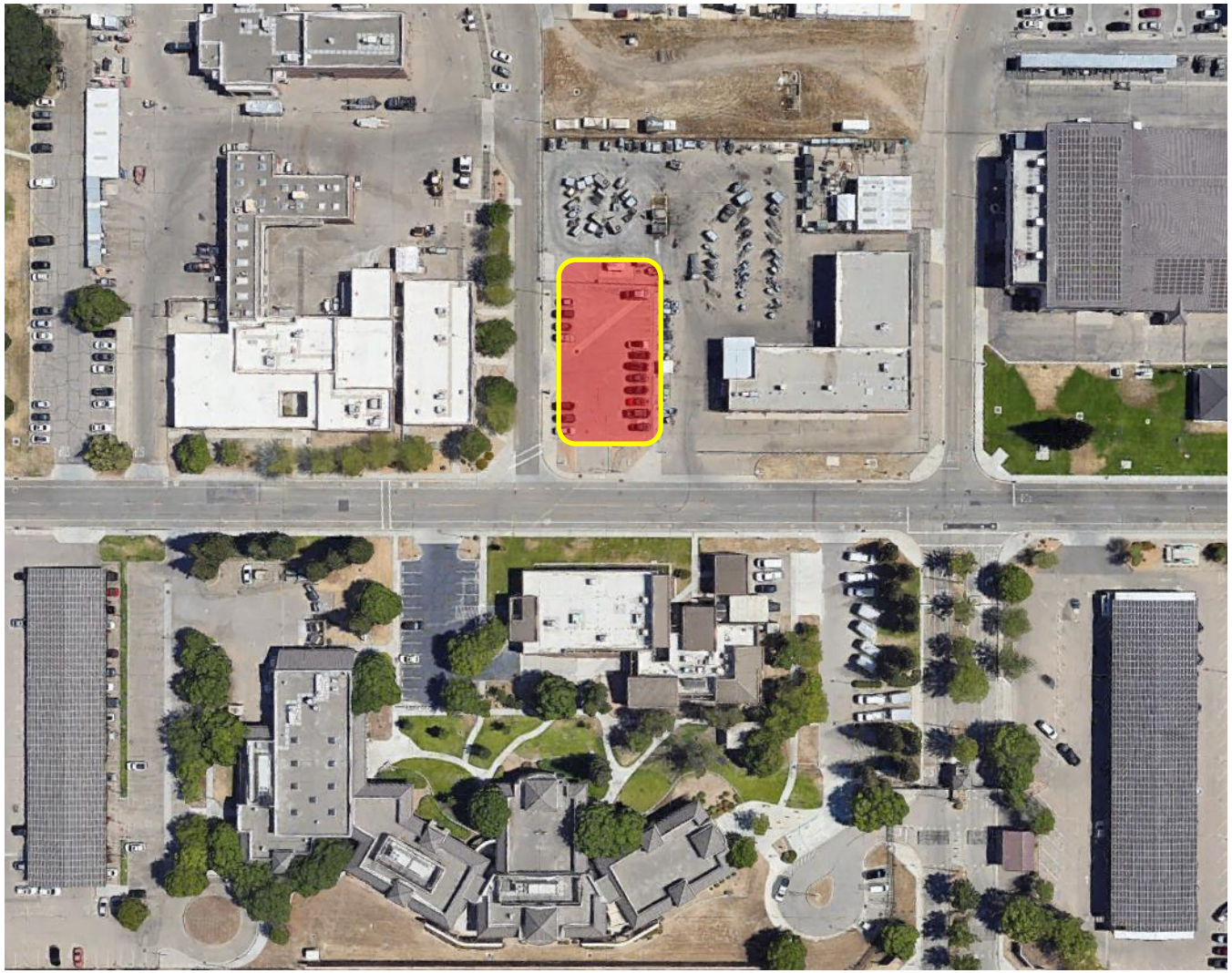




F-15EX PROPOSED CONSTRUCTION
Construct Medical Training Facility

Project ID	Facility	Height (feet)	Distance from 29L (feet)	Total Square Feet
5	Med Trng Facility	30	1,200	10,300

This new construction provides space for medical training and administration and will include areas designated for CBRNE Enhanced Response Force Package personnel and equipment to support a flying unit and state emergency responses.



F-15EX PROPOSED CONSTRUCTION
Construct Fire Station

Project ID	Facility	Height (feet)	Distance from 29L (feet)	Total Square Feet
9.1	Fire Station	30	640	85,000

Project constructs an Aircraft Rescue Fire Fighting station and associated apron and taxiway connectors for access to the airfield.

F-15EX PROPOSED CONSTRUCTION
Add/Alter Squadron Ops B194

Project ID	Facility	Height (feet)	Distance from 29L (feet)	Total Square Feet
10	Ops Squadron	25	830	1,200

Project constructs an addition to the existing facility, Building 194 and accommodates for increased secure space, administrative requirements, and administrative space for additional crew.

F-15EX PROPOSED CONSTRUCTION
Construct F-15EX Full Mission Simulator

Project ID	Facility	Height (feet)	Distance from 29L (feet)	Total Square Feet
14	FMS Facility	25	1,170	20K

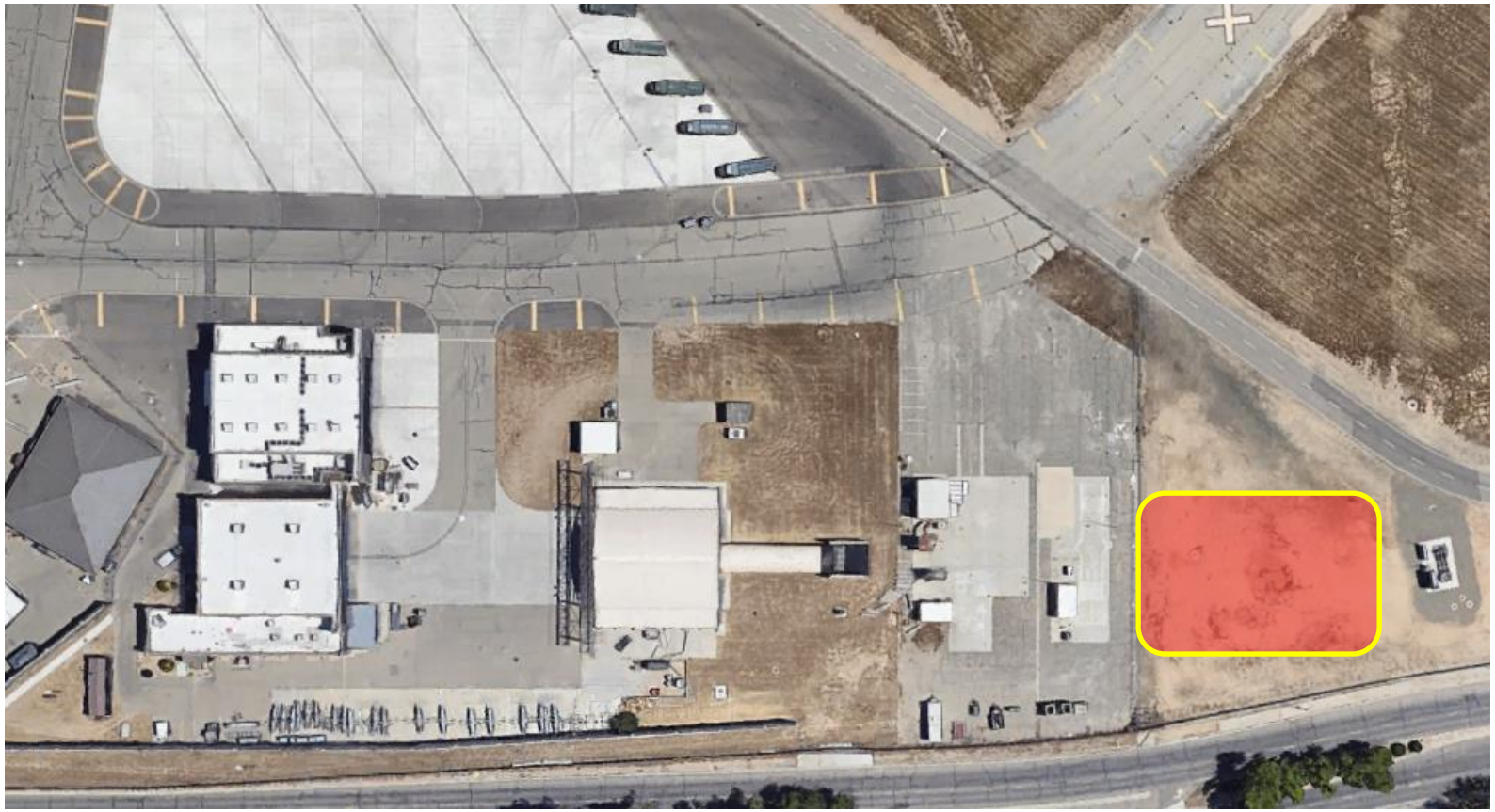
This project provides a facility for four Full Mission Simulators (FMS), support systems, and associated administrative spaces.

F-15EX PROPOSED CONSTRUCTION
Construct Weapon Loadcrew Trainer

Project ID	Facility	Height (feet)	Distance from 29L (feet)	Total Square Feet
15	WLT	30	640	10,000

Project would construct a 10,000 SF single bay WLT hangar and associated pavements on the south side of the runway.

The new hangar would be located on open, undeveloped land.



F-15EX PROPOSED CONSTRUCTION
Construct Conformal Fuel Tank Facility

Project ID	Facility	Height (feet)	Distance from 29L (feet)	Total Square Feet
16	CFT Facility	25	300	2,300

This project constructs a 2,300 SF facility for maintenance of the F-15EX specific conforming fuel tanks.

F-15EX PROPOSED CONSTRUCTION OVERVIEW – LOCATIONAL SCENARIO 2

F-15EX PROPOSED CONSTRUCTION

OVERVIEW – Locational Scenario 2 (Alert North Area)

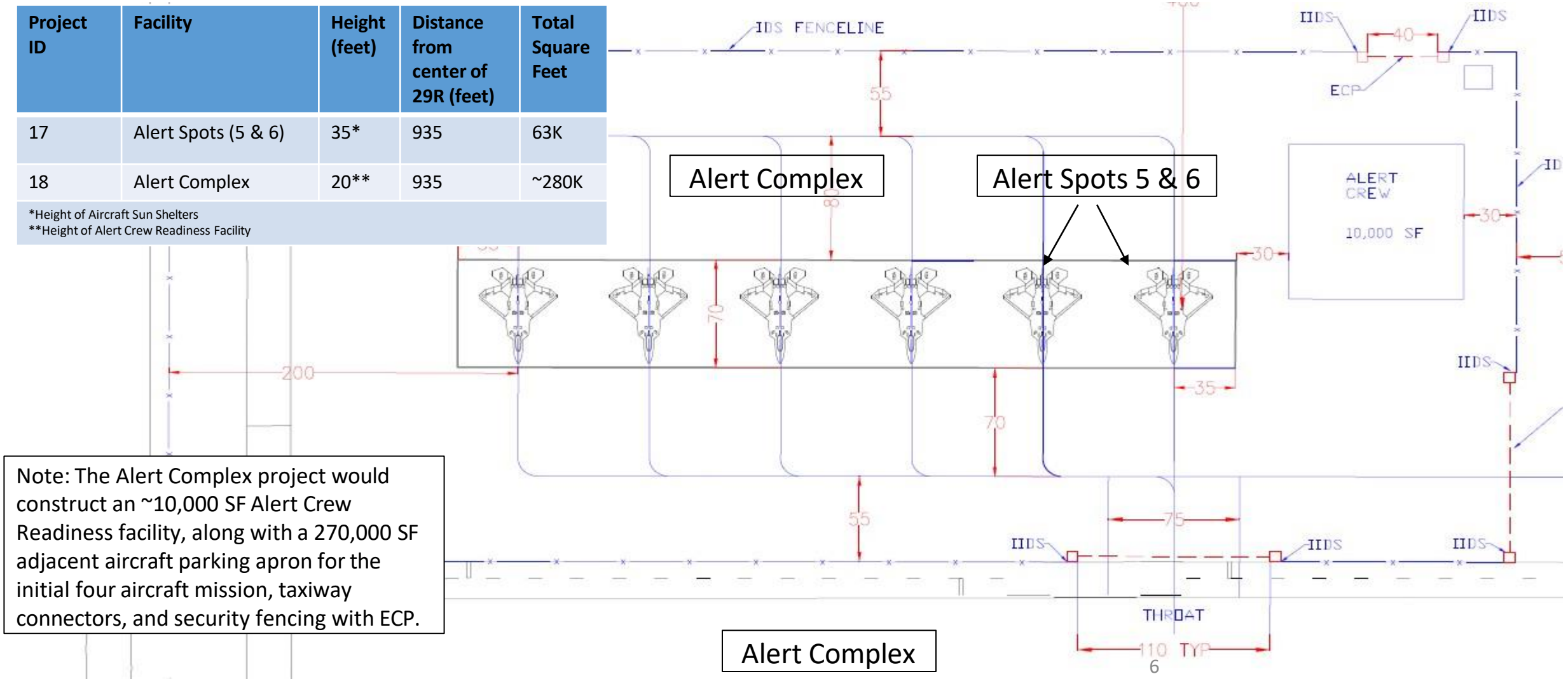
Project ID	Facility	Height (ft)	Distance from 29R (ft)	Total Square Feet
9.2	Fire Station	20’	1,350	85,500
17	Alert Spots	23’	915	63,000
18	Alert Complex	20’	1,210	280,210
19	Utilities	0’	N/A	96,000
20	Entry Ctrl Point (ECP)	20’	1,620	300

Project 9.2 – Construct Fire Station
Project 17 – Construct Alert Spots 5 & 6
Project 18 – Construct Alert Complex
Project 19 – Construct Utilities
Project 20 – Construct Entry Ctrl Point (E. Airway Blvd)

F-15EX PROPOSED CONSTRUCTION
Construct Alert Complex & Spots 5&6

Project ID	Facility	Height (feet)	Distance from center of 29R (feet)	Total Square Feet
17	Alert Spots (5 & 6)	35*	935	63K
18	Alert Complex	20**	935	~280K

*Height of Aircraft Sun Shelters
**Height of Alert Crew Readiness Facility



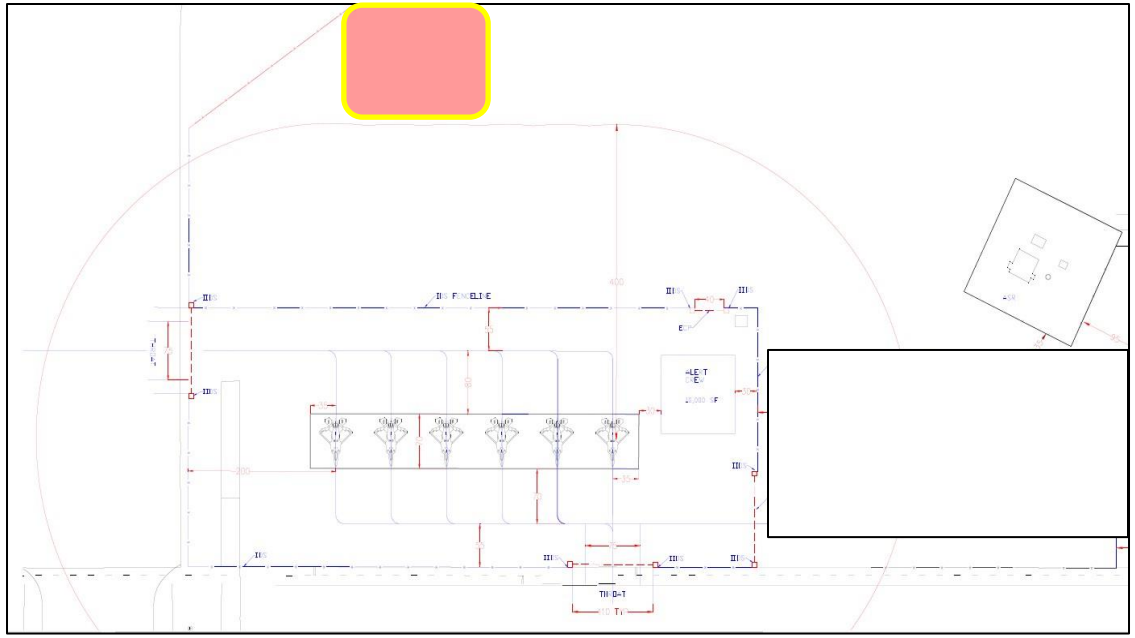
Alert Complex

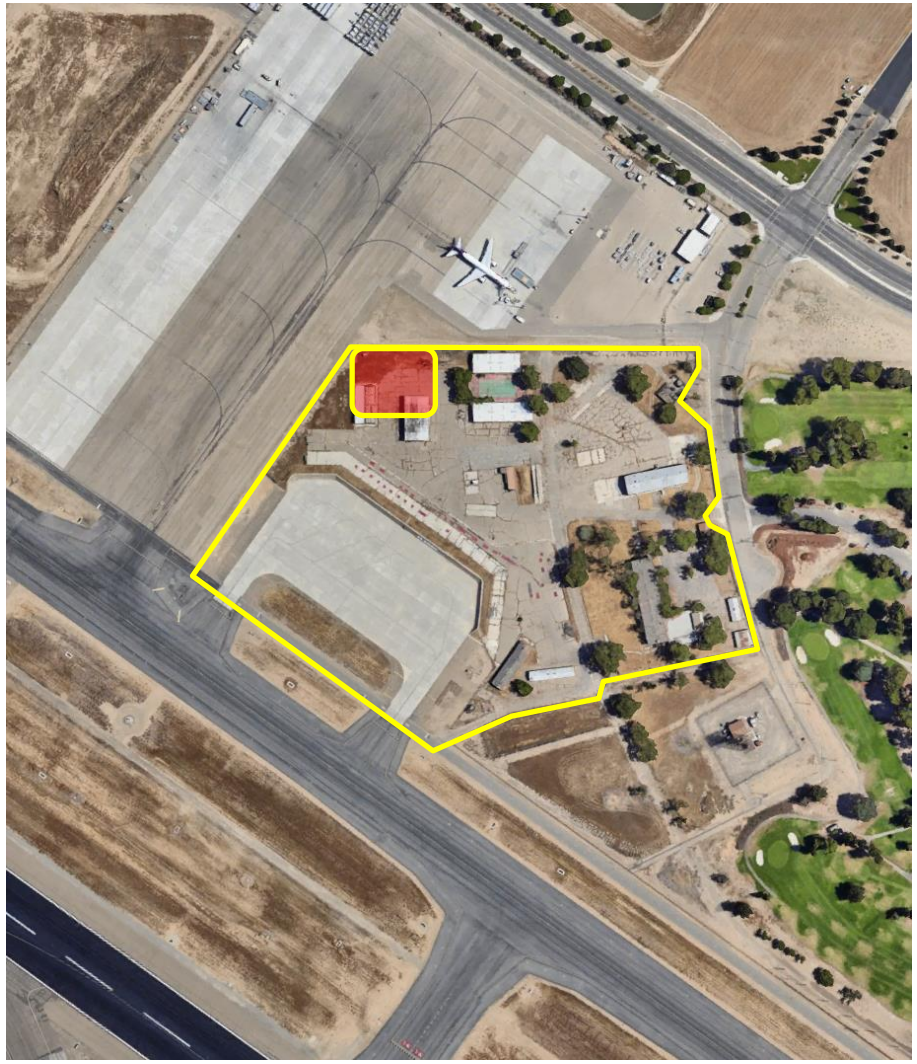
Note: The Alert Complex project would construct an ~10,000 SF Alert Crew Readiness facility, along with a 270,000 SF adjacent aircraft parking apron for the initial four aircraft mission, taxiway connectors, and security fencing with ECP.

F-15EX PROPOSED CONSTRUCTION
Construct Fire Station

Project ID	Facility	Height (feet)	Distance from center of 29R (feet)	Total Square Feet
9.2	Fire Station	25	962	85,500

Project constructs an Aircraft Rescue Fire Fighting station and associated apron and taxiway connectors for access to the airfield.





F-15EX PROPOSED CONSTRUCTION
Construct Entry Control Point (ECP)

Project ID	Facility	Height (feet)	Distance from 29L (feet)	Total Square Feet
20	Entry Ctrl Point	20’	1,620	300

Note: This project creates an ECP in accordance with design standards for the Alert Complex. As conditions allow, the project would include a 300 SF entry control admin facility or check house, and covered canopy.

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159th Fighter Wing at NAS JRB New Orleans

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Table LA-1 Proposed Construction and Modification for the F-15EX Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
1	Repair Hangar Maintenance Shops (Building 5) (Full Rehab)	Project would completely repair Hangar 5 throughout the various shops in the hangar. It would replace the existing hangar door and add a new megadoor, two passenger elevators, and service elevator. Second floor offices have an abundance of space with opportunities to utilize the spaces more efficiently.	FY 2032	Internal repair	N/A
2	Repair Avionics Building 425 for MEDGP CERF-P/ Demolish Building 144	Project would involve converting the vacant space in Building 425 (once Avionics is relocated to Building 119 [Building 119 repair project is funded in FY 2022]) into an administration space for the ANG MEDGP CERF-P activity.	FY 2028	Internal repair	N/A
3	Construct New Communications Facility	Project would construct a new 10,200 SF Communications Facility in the existing parking lot of Building 149. The current Communications Facility functions are spread throughout six facilities on base. The project will include administrative communications functions, planning and programming, Communications Focal Point and other telecommunications functions to maintain the computer network on the installation.	FY 2031	10,200 SF	N/A
4	Construct Weapons Load Facility (Building 386)	Project would construct a 20,700 SF WLT and Weapons Release Facility (Building 386). The facility would provide space for the overhaul and repair of fighter aircraft weapons release and gun systems which include bomb racks, pylons, ejection racks, and weapons loading tools/equipment. The facility also has offices, bench stock room, test equipment and spare parts. Total ground disturbance would be 25,000 SF.	FY 2031	25,000 SF	22,000 SF
5	Renovate Building 144	Project would renovate Building 144. The building houses the 159 FW Support Staff (Mental Health, Yellow Ribbon, Drug Reduction Program, etc.) and many finishes have exceeded its useful life.	FY 2024	Internal repairs	N/A

Table LA-1 Proposed Construction and Modification for the F-15EX Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
6	Construct Parking Lot	Project would construct a 30,000 SF parking lot. It is located near Building 197 and near the old POL yard. Parking lot will be used for various organizational vehicles. Total ground disturbance would be 35,000 SF.	FY 2030	35,000 SF	30,000 SF
7	Renovate Building 119	Project would renovate Building 119 and include NDI and FAB shops for aircraft repair, maintenance and training. It will also include offices, classrooms, break room and mechanical room.	FY 2024	Internal repairs	N/A
8	Renovate Building 820	Project would renovate Building 820 which is located in Alexandra, LA. The building does not meet the current mission needs of the 259 ATCS. *Notes: This project is not depicted in the figures.*	FY 2024–2025	Internal repairs	N/A
9.1 (Option 1) 9.2 (Option 2)	ADAL Fuel Lab, Building 142	Project would involve setting up a POL Fuel Lab that meets Air Force requirements. *Notes: Option 1 – Renovate the Navy POL lab in Building 503 (Preferred)* *Option 2 – Construct a new 1,500 SF POL Fuel Lab addition to Building 142.*	FY 2029	Option 2 – 1,500 SF	Option 2 – 1,500 SF
10	Repair AGE (Building 489)	Project would construct a 500 SF additional bay on the paved west side of the AGE facility (Building 489) with two overhead doors and a 4-ton hoist with hook height of 17 feet. The project would also provide for a special foundation due to the poor soil conditions on base along with transformer and panel upgrades.	FY 2024	500 SF	N/A
11	Construct Inert MAC Pad	Project would construct a 10,000 SF concrete Inert MAC Pad on open, undeveloped land.	FY 2027	10,000 SF	10,000 SF

Table LA-1 Proposed Construction and Modification for the F-15EX Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
12	Construct Munitions Administration Facility (Joint Navy)	Project would construct an 8,800 SF Munitions Administration Facility with a total ground disturbance of 10,000 SF. The existing administration function is currently co-located with the M&I Facility (Building 90), but the administration function cannot be collocated with M&I due to operational and safety concerns.	FY 2025	10,000 SF	9,000 SF
13	Repair Munitions M&I (Building 90)	Project would renovate the Munitions M&I Facility (Building 90) after the Munitions Administration function has moved. The renovation is required to restore the facility to a Munitions M&I facility.	FY 2027	Internal repairs	N/A
14	Repair Munitions Security Fence Line	Project would update the fence line around the munitions area after Munitions Administration is moved. The fencing would be 728 linear feet and 8 feet high, galvanized steel with 3 strands of barbwire.	FY 2027	728 LF	728 LF
15	Construct Two Munitions Igloos	Project would construct two igloos for air-to-ground munitions. The project would be a total of 5,200 SF with a total ground disturbance of 7,000 SF for the igloos. In addition, a 1,500 SF access road would need to be constructed to get access to the igloos. Location of the igloos would need to be coordinated with the Navy.	FY 2028	8,500 SF	7,500 SF
16	Repair Hangar Maintenance Shops (Building 5)	Project would repair hangar (Building 5) for the F-15EX conversion. The hangar is capable of parking six aircraft. The project would provide electrical converters. Second floor offices have an abundance of space with opportunities to utilize the spaces more efficiently.	FY 2024	Internal repair	N/A
17	ADAL Simulator Facility 5 Tons HVAC (Building 197)	Project would add 5 tons of air conditioning to support the four new simulators for the F-15EX. The project would incorporate a construction surveillance plan due to the secure space in the facility.	FY 2025	Internal repair	N/A

Table LA-1 Proposed Construction and Modification for the F-15EX Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
18	Repair OHWS/JWICS Intel (Building 197)	Project would construct a 4,500 SF addition and convert 600 SF of underutilized space in Building 197 into an OWHS/JWICS facility. Notes: Current Simulator Facility.	FY 2026	Internal repair	N/A
19	ADAL Simulator Facility (Building 197)	Project would construct a 4,500 SF addition adjacent to the existing facility (Building 197) with up to 6,000 SF of ground disturbance. Project would consist of a large open space for four simulators with sufficient HVAC, with offices for instructors.	FY 2027	6,000 SF	4,500 SF
20	Fuel Cell Hangar Power Upgrade (Building 195)	Project would upgrade the power in Fuel Cell Hangar, Building 195.	FY 2025	Internal repair	N/A
21	ADAL Alert Facility	Project would add four additional bedrooms, mechanical room, ready rooms and common area to the new Alert Facility that is under construction. The project would also add a second hallway in order to not disturb current occupants during construction.	FY 2027	Internal repair	N/A
22	Repair Squadron Operations (Building 590) OHWS/JWICS	Project would upgrade electronic system for JWICS in Building 590.	FY 2027	Internal repair	N/A
23	ADAL Squadron Operations (Building 590)	Project would include repairs for OHWS which consists of physical health services for pilots and JWICS which consists of a computer network system integrated into the facility (Building 590) with communications rooms and network cabling.	FY 2027	Internal repair	N/A
24.1 (Option 1)	Ramp Shelters (up to 18 new shelters)	Project would construct up to 18 aircraft ramp shelters on existing aircraft apron surface for F-15EX aircraft if existing shelters cannot be repaired. Each aircraft shelter is approximately 5,300 SF and the total SF for 18 shelters is 95,400 SF.	FY 2028	95,400 SF	N/A

Table LA-1 Proposed Construction and Modification for the F-15EX Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
24.2 (Option 2)	Demolish Two Ramp Shelters (#9 & #18)	Project would demolish Aircraft Shelters 9 and 18 due to apron clearance issues. The shelters would be unbolted from hardstand and removed for scrap metal.	FY 2025	N/A	N/A
24.3 (Option 3)	Ramp Shelters (up to 3 new shelters)	Project would construct up to three aircraft ramp shelters on existing aircraft apron surface. Each shelter is approximately 5,300 SF and the total for three shelters is 15,900 SF.	FY 2031	15,900 SF	N/A
25	Modify Fuel Cell for CFT Storage and Maintenance (Building 195A)	Project would modify the Fuel Cell second bay to support CFT storage and maintenance. Project would include the upgrading of the HVAC and installation of a fire suppression system.	FY 2027	Internal repair	N/A
26	Repair Fuel Cell Hangar, Building 195	Project would include renovations to the Fuel Cell Hangar (Building 195). The facility currently consists of two hangar bays separated by tool rooms and offices. One bay would be converted into a corrosion control bay with modifications made to temperature and humidity controls throughout the facility. Notes: All internal (half would remain fuel cell, other half corrosion control). According to Maj Askins, corrosion control will not occur locally on the F-35A, so this would be another maintenance hangar (the other half).	FY 2025	Internal repair	N/A
27	Add Squadron Operations CSO Lockers	Project would add lockers for the additional CSO crews in the Squadron Operations Facility, Building 590.	FY 2027	Internal repair	N/A

Note: *Year of construction is estimated and is dependent upon funding and the date the ROD is signed.

Legend: 159 FW = 159th Fighter Wing; 259 ATCS = 259th Air Traffic Control Squadron; ADAL = Addition and Alteration; AGE = Aerospace Ground Equipment; ANG = Air National Guard; CERF-P = Chemical, Biological, Radiological/Nuclear, and Explosive (CBRNE) – Enhanced Response Force Package; CFT = Conformal Fuel Tank; CSO = Combat Systems Officer; FAB = Fabrication; FY = Fiscal Year; HVAC = Heating, Ventilation, and Air Conditioning; JWICS = Joint Worldwide Intelligence Communication System; LA = Louisiana; M&I = Maintenance & Inspection; MAC = Munitions Assembly Conveyor; MEDGP = Medical Group; N/A = Not Applicable; NDI = Non-Destructive Inspection; OWHS = Optimizing Human Weapon System; POL = petroleum, oil, and lubricant; SF = square foot/feet; WTT = Weapons and Tactics Trainer.

Sources: ACC and NGB 2021d; NGB 2021f.

Table LA-2 Proposed Construction and Modification for the F-35A Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
1	Repair Hangar Maintenance Shops (Building 5) (Full Rehab)	Project would completely repair Hangar 5 throughout the various shops in the hangar. It would replace the existing hangar door and add a new megadoor, two passenger elevators, and service elevator. Second floor offices have an abundance of space with opportunities to utilize the spaces more efficiently.	FY 2032	Internal repair	N/A
2	Repair Avionics Building 425 for MEDGP CERF-P/ Demolish Building 144	Project would involve converting the vacant space in Building 425 (once Avionics is relocated to Building 119 [Building 119 repair project is funded in FY 2022]) into an administration space for the ANG MEDGP CERF-P activity.	FY 2028	Internal repair	N/A
3	Construct New Communications Facility	Project would construct a new 10,200 SF Communications Facility in the existing parking lot of Building 149. The current Communications Facility functions are spread throughout six facilities on base. The project will include administrative communications functions, planning and programming, Communications Focal Point, and other telecommunications functions to maintain the computer network on the installation.	FY 2031	10,200 SF	N/A
4	Construct Weapons Load Facility (Building 386)	Project would construct a 20,700 SF WLT and Weapons Release Facility (Building 386). The facility would provide space for the overhaul and repair of fighter aircraft weapons release and gun systems which include bomb racks, pylons, ejection racks, and weapons loading tools/equipment. The facility also has offices, bench stock room, test equipment and spare parts. Total ground disturbance would be 25,000 SF.	FY 2031	25,000 SF	22,000 SF
5	Renovate Building 144	Project would renovate Building 144. The building houses the 159 FW Support Staff (Mental Health, Yellow Ribbon, Drug Reduction Program, etc.) and many finishes have exceeded its useful life.	FY 2024	Internal repairs	N/A

Table LA-2 Proposed Construction and Modification for the F-35A Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
6	Construct Parking Lot	Project would construct a 30,000 SF parking lot. It is located near Building 197 and near the old POL yard. Parking lot will be used for various organizational vehicles. Total ground disturbance would be 35,000 SF.	FY 2030	35,000 SF	30,000 SF
7	Renovate Building 119	Project would renovate Building 119 and include NDI and FAB shops for aircraft repair, maintenance and training. It will also include offices, classrooms, break room and mechanical room.	FY 2024	Internal repairs	N/A
8	Renovate Building 820	Project would renovate Building 820 which is located in Alexandra, LA. The building does not meet the current mission needs of the 259 ATCS. *Notes: This project is not depicted in the figures.*	FY 2024-2025	Internal repairs	N/A
9.1 (Option 1) 9.2 (Option 2)	ADAL Fuel Lab, Building 142	Project would involve setting up a POL Fuel Lab that meets Air Force requirements. *Notes: Option 1 – Renovate the Navy POL lab in Building 503 (Preferred)* *Option 2 -Construct a new 1,500 SF POL Fuel Lab addition to Building 142.*	FY 2029	Option 2 – 1,500 SF	Option 2 – 1,500 SF
10	Repair AGE (Building 489)	Project would construct a 500 SF additional bay on the paved west side of the AGE facility (Building 489) with two overhead doors and a 4-ton hoist with hook height of 17 feet. The project would also provide for a special foundation due to the poor soil conditions on base along with transformer and panel upgrades.	FY 2024	500 SF	N/A
11	Construct Inert MAC Pad	Project would construct a 10,000 SF concrete Inert MAC Pad on open, undeveloped land.	FY 2027	10,000 SF	10,000 SF

Table LA-2 Proposed Construction and Modification for the F-35A Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
12	Construct Munitions Administration Facility (Joint Navy)	Project would construct an 8,800 SF Munitions Administration Facility with a total ground disturbance of 10,000 SF. The existing administration function is currently co-located with the M&I Facility (Building 90), but the administration function cannot be collocated with M&I due to operational and safety concerns.	FY 2025	10,000 SF	9,000 SF
13	Repair Munitions M&I (Building 90)	Project would renovate the Munitions M&I Facility (Building 90) after the Munitions Administration function has moved. The renovation is required to restore the facility to a Munitions M&I facility.	FY 2027	Internal repairs	N/A
14	Repair Munitions Security Fence Line	Project would update the fence line around the munitions area after Munitions Administration is moved. The fencing would be 730 linear feet and 8 feet high, galvanized steel with 3-strands of barbwire.	FY 2027	730 LF	730 LF
15	Construct Two Munitions Igloos	Project would construct two igloos for air-to-ground munitions. The project would be a total of 5,200 SF with a total ground disturbance of 7,000 SF for the igloos. In addition, a 1,500 SF access road would need to be constructed to get access to the igloos. Location of the igloos would need to be coordinated with the Navy.	FY 2028	8,500 SF	7,500 SF
28	Construct Flight Simulator Facility	Project would construct a 20,000 SF facility with a special foundation due to the poor soil conditions on the base. The project demolishes Buildings 144, 164, or 146 (depending on the site selection). The facility will include a secure space. Notes: Building 144 is preferred to be demolished. Alternative locations are 164 or 146. Functions currently in Building 144 would be transferred to Hangar 5. Simulator needs to be as close to Operations (Building 590) as possible. Current Simulator (Building 197) will get a new function.	FY 2025	20,000 SF	N/A

Table LA-2 Proposed Construction and Modification for the F-35A Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
29.1 (Option 1)	Demolish 3 Ramp Shelters & Reorient 3 Shelters (Option 1)	Project would demolish aircraft shelters #7–9 due to apron clearance issues and reorient the three shelters to eliminate clearance issues. Notes: Demo the three shelters that are requiring an airfield waiver; reorient (Option 1), re-use the existing 18 shelters. These would require a waiver because they are too short for the F-35 tails. In order to demolish the shelters, they would need to be unbolted from the hardstand and then removed for scrap metal.	FY 2025	N/A	N/A
29.2 (Option 2)	Demolish 18 Ramp Shelters and Replace Shelters (Options 1-3)	Project would demolish aircraft shelters #1–18 and reorient 16 new shelters to allow for a more efficient aircraft taxiing pattern on the ramp. Notes: New shelters will be oriented perpendicular to the runway. Old shelters are not large enough and would be demolished. Option 1 – Demo and reorient 16 new shelters. Option 2 – Demo and reorient 12 shelters. Option 3 – Option 1 but extend the hardstand (20,000 SF) into the grassy areas to either side, parallel to the runway. Total ground disturbance would be 30,000 SF.	FY 2025	Option 1- N/A Option 2- N/A Option 3 – 30,000 SF	Option 1- N/A Option 2- N/A Option 3 – 20,000 SF
30	Repurpose Building 197 for OHWS/JWICS Intel	Project would repurpose Building 197 for F-35A intelligence-related activities (OWHS/JWICS facility). Building 197 is the current F-15C Simulator Facility and is next door to Squadron Operations, Building 590 making it well-suited for the Intelligence activity. The facility would be in a secure space and fitted with an IDS.	FY 2026	Internal repair	N/A

Table LA-2 Proposed Construction and Modification for the F-35A Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
31	Repair Fuel Cell, Modify Clean/Dirty (Building 195)	Project would include renovations to the Fuel Cell Hangar (Building 195). The facility currently consists of two hangar bays separated by tool rooms and offices. One bay would be converted into a corrosion control bay with modifications made to temperature and humidity controls throughout the facility. Five additional electrical drops would be required along with a major repair of the High Expansion Foam system. Notes: All internal (half would remain fuel cell, other half corrosion control). According to Maj Askins, corrosion control will not occur locally on the F-35A, so this would be another maintenance hangar (the other half).	FY 2025	Internal repair	N/A
32	Install LRS Levelator (Building 31)	Project would install a 100-inch levelator and reconfigure the loading dock with 200 cubic yards of concrete for a more efficient loading/off-loading of supplies. All external repairs would be performed on the existing hardstand.	FY 2024	N/A	N/A
33	Renovate Supply DSP (Building 31)	Project would repair the co-use Navy/ANG Supply facility (Building 31) for the DSP. Notes: Option 1 – all internal; Option 2 – Repair DSP, Building 31	FY 2027	Internal repair	N/A
34	Install Blast Deflectors	Project would install 600 feet of blast deflectors between aircraft parking spots 10–18 and the flightline facilities. Two hundred feet of separation is required behind the F-35A jetblast and that distance is unattainable due to the ramp's close proximity to the flightline facilities. Low level vehicle jersey barriers would be replaced with blast deflectors on top of the existing pavement.	FY 2026	N/A.	N/A
35	Repair Engine Shop (Building 385)/Recertify Crane (Building 385B)	Project would recertify the crane and perform structural repairs as necessary.	FY 2027	Internal repair	N/A

Table LA-2 Proposed Construction and Modification for the F-35A Beddown at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*[1]	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
36	Repair Supply DSP Roll Up Doors (Option 1) (Buildings 195A/ Building 385A)	Project would replace five 12-foot by 14-foot overhead doors, five 12-foot by 12-foot overhead doors and two 30-foot by 60-foot aircraft doors.	FY 2026	Internal repair	N/A
37	Repair Squadron Operations Vault (Building 590)	Project would modify the 1,600 SF storage room for the ALIS and Administration to secure facility standards in Building 590. The ALIS/Administration Room will be adjacent to the Mission Planning Room and Mission Briefing Room and will be equipped with an IDS.	FY 2024	Internal repair	N/A
38	Repair Hangar Maintenance Shops (Building 5)	The hangar (Building 5) is capable of parking six aircraft. The Machine Shop and Sheet Metal Shops will be relocated to another facility as part of a current mission FY 2022 SRM project. The current Hydraulic Shop is not required for the F-35A. As a result, these three shop areas would provide spaces for F-35A maintenance functions. Due to the size of the hangar, two elevators would be required. A Battery Shop would also be required for this facility. Second floor offices have an abundance of space with opportunities to utilize the spaces more efficiently. Adds four electrical converters and associated wiring.	FY 2025	Internal repair	N/A
39	Repair LRS (HVAC) (Building 31)	Project would update the failing HVAC system within the ANG held portions of Building 31.	FY 2026	Internal repair	N/A

Note: *Year of construction is estimated and is dependent upon funding.

Legend: 159 FW = 159th Fighter Wing; 259 ATCS = 259th Air Traffic Control Squadron; ADAL = Addition and Alteration; AGE = Aerospace Ground Equipment; ALIS = Autonomic Logistics Information System; ANG = Air National Guard; CERF-P = Chemical, Biological, Radiological/Nuclear, and Explosive (CBRNE) – Enhanced Response Force Package; DSP = Defense Support Program; FAB = Fabrication; FY = Fiscal Year; HVAC = Heating, Ventilation, and Air Conditioning; IDS = Intrusion Detection System; JWICS = Joint Worldwide Intelligence Communication System; LF = linear foot/feet; LRS = Logistics Readiness Squadron; M&I = Maintenance & Inspection; MAC = Munitions Assembly Conveyor; MEDGP = Medical Group; N/A = Not Applicable; NDI = Non-Destructive Inspection; OWHS = Optimizing Human Weapon System; POL = petroleum, oil, and lubricant; SF = square foot/feet; SRM = Facilities Sustainment, Restoration; WLT = Weapons Load Crew Training.

Sources: ACC and NGB 2021d; NGB 2021g.

Table LA-3 Proposed Construction and Modification for the Legacy Aircraft at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
1	Repair Hangar Maintenance Shops (Building 5) (Full Rehab)	Project would completely repair Hangar 5 throughout the various shops in the hangar. It would replace the existing hangar door and add a new megadoor, two passenger elevators, and service elevator. Second floor offices have an abundance of space with opportunities to utilize the spaces more efficiently.	FY 2032	Internal repair	N/A
2	Repair Avionics Building 425 for MEDGP CERF-P/ Demolish Building 144	Project would involve converting the vacant space in Building 425 (once Avionics is relocated to Building 119 [Building 119 repair project is funded in FY 2022]) into an administration space for the ANG MEDGP CERF-P activity.	FY 2028	Internal repair	N/A
3	Construct New Communications Facility	Project would construct a new 10,200 SF Communications Facility in the existing parking lot of Building 149. The current Communications Facility functions are spread throughout six facilities on base. The project will include administrative communications functions, planning and programming, Communications Focal Point and other telecommunications functions to maintain the computer network on the installation.	FY 2031	10,200 SF	N/A
4	Construct Weapons Load Facility (Building 386)	Project would construct a 20,700 SF WLT and Weapons Release Facility (Building 386). The facility would provide space for the overhaul and repair of fighter aircraft weapons release and gun systems which include bomb racks, pylons, ejection racks, and weapons loading tools/equipment. The facility also has offices, bench stock room, test equipment and spare parts. Total ground disturbance would be 25,000 SF.	FY 2031	25,000 SF	22,000 SF
5	Renovate Building 144	Project would renovate Building 144. The building houses the 159 FW Support Staff (Mental Health, Yellow Ribbon, Drug Reduction Program, etc.) and many finishes have exceeded its useful life.	FY 2024	Internal repairs	N/A

Table LA-3 Proposed Construction and Modification for the Legacy Aircraft at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
6	Construct Parking Lot	Project would construct a 30,000 SF parking lot. It is located near Building 197 and near the old POL yard. Parking lot will be used for various organizational vehicles. Total ground disturbance would be 35,000 SF.	FY 2030	35,000 SF	30,000 SF
7	Renovate Building 119	Project would renovate Building 119 and include NDI and FAB shops for aircraft repair, maintenance and training. It will also include offices, classrooms, break room and mechanical room.	FY 2024	Internal repairs	N/A
8	Renovate Building 820	Project would renovate Building 820 which is located in Alexandra, LA. The building does not meet the current mission needs of the 259 ATCS. *Notes: This project is not depicted in the figures.*	FY 2024-2025	Internal repairs	N/A
9.1 (Option 1) 9.2 (Option 2)	ADAL Fuel Lab, Building 142	Project would involve setting up a POL Fuel Lab that meets Air Force requirements. *Notes: Option 1 – Renovate the Navy POL lab in Building 503 (Preferred)* *Option 2 – Construct a new 1,500 SF POL Fuel Lab addition to Building 142.*	FY 2029	Option 2 – 1,500 SF	Option 2 – 1,500 SF

Table LA-3 Proposed Construction and Modification for the Legacy Aircraft at the 159 FW Installation at NAS JRB New Orleans

Project ID	*Project Name*	*Description*	*Anticipated Year of Implementation**	*Approximate Total Area of New Ground Disturbance (SF)*	*Approximate New Impervious Surface (SF)*
40	Construct Munitions Administration Facility	Project would construct a new 8,800 SF Munitions Administration Facility (not with the Navy). The facility would consist of drive through work bays, office space, control center, training areas, inert storage and latrines. No munitions are stored or maintained in this facility and the facility is sited outside of any Quantity-Distance explosive arc. Total ground disturbance would be 10,000 SF.	FY 2031	10,000 SF	9,000 SF

Note: *Year of construction is estimated and is dependent upon funding.

Legend: 159 FW = 159th Fighter Wing; 259 ATCS = 259th Air Traffic Control Squadron; ADAL = Addition and Alteration; ANG = Air National Guard; CERF-P = Chemical, Biological, Radiological/Nuclear, and Explosive (CBRNE) – Enhanced Response Force Package; FAB = Fabrication; FY = Fiscal Year; LA = Louisiana; MEDGP = Medical Group; N/A = Not Applicable; NDI = Non-Destructive Inspection; POL = petroleum, oil, and lubricant; SF = square foot/feet; WLT = Weapons Load Crew Training.

Source: 159 FW 2022.

There are no construction footprints for NAS JRB New Orleans as it is a Navy installation and the footprints were not required for FAA analysis.

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D Air Quality

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Appendix D
Air Quality Analysis Resources and Methodologies

The following information is provided for additional detail on air pollutants evaluated in the Proposed Action air quality impacts analysis and on the methodology used in the impact analysis.

Criteria Pollutants

National Ambient Air Quality Standards (NAAQS) are currently established for the criteria air pollutants ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), respirable particulate matter (including particulates equal to or less than 10 microns in diameter [PM10] and particulates equal to or less than 2.5 microns in diameter [PM2.5]), and lead (Pb). The primary NAAQS represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant concentration necessary to protect vegetation, crops, and other public resources in addition to maintaining visibility standards.

The criteria pollutant O3 is not usually emitted directly into the air but is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants, or "O3 precursors." These O3 precursors consist primarily of nitrogen oxides (NO_X) and volatile organic compounds (VOCs) that are directly emitted from a wide range of emission sources. For this reason, regulatory agencies limit atmospheric O3 concentrations by controlling VOC pollutants (also identified as reactive organic gases) and NO_X.

The USEPA has recognized that particulate matter emissions can have different health effects depending on particle size and, therefore, developed separate NAAQS for coarse particulate matter (PM10) and fine particulate matter (PM2.5). The pollutant PM2.5 can be emitted from emission sources directly as very fine dust and/or liquid mist or formed secondarily in the atmosphere as condensable particulate matter, typically forming nitrate and sulfate compounds. Secondary (indirect) emissions vary by region depending upon the predominant emission sources located there and thus which precursors are considered significant for PM2.5 formation and identified for ultimate control.

The CAA and USEPA delegated responsibility for ensuring compliance with NAAQS to the states and local agencies. As such, each state must develop air pollutant control programs and promulgate regulations and rules that focus on meeting NAAQS and maintaining healthy ambient air quality levels. When a region or area fails to meet a NAAQS for a pollutant, that region is classified as "non-attainment" for that pollutant. In such cases, the affected state must develop a state implementation plan (SIP) that is subject to USEPA review and approval. A SIP is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS. Any changes to the compliance schedule or plan (e.g., new regulations, emissions budgets, controls) must be incorporated into the SIP and approved by USEPA.

Analytical Methodology

Construction

Construction emissions were quantified based on construction footprints. Equipment selection and duration were based on the South Coast Air Quality Management District construction survey to estimate default phase lengths based on total project acreage. These data are found in Appendix A of the CALEEMOD Users Guide (Trinity Consultants 2021). Additional information used for estimating worker and vendor trips were generated using the same resource.

Truck sizes were selected based on average standards – concrete truck capacity = 9 CY of material

Dump truck sizes vary based on material weight and range from 10-16 CY. 12 CY was used as average capacity for the construction.

CALEEMOD was used to model construction activities at Fresno ANGB. Similar construction estimates were made for Barnes ANGB and NAS JRB New Orleans, but were modeled using ACAM.

F-15C, F-15EX, and F-35A Aircraft

Departures, landings and closed patterns for these aircraft were evaluated in ACAM. EnviroSolutio provided time in modes (TIMs) for closed patterns and landings. Departure TIMS were calculated separately because of the requirement to use two distinct departures types: Military departure and Afterburner departure. These were further allocated based on frequency of use per each installation, as identified in Table 2.2-3 in the EIS.

Jet engine test cell data were provided by Fresno ANGB. Increases in jet engine test cell use were based on the proportion of increase in aircraft populations and engine use. The data provided by Fresno ANGB were used as surrogates for the jet engine test cell activity at the other two installations.

AGE data were provided by Fresno ANGB. Because the same aircraft were evaluated at each installation, the data were used for each. Where AGE equipment was located in ACAM, those emission factors were used to calculate the AGE emissions. As none of the installations being evaluated have F-35A aircraft located onsite, no AGE data for this aircraft model is available. As a result, the AGE used for the F-15 models was used for the F-35A as surrogates.

Engine maintenance data for the aircraft was obtained from the noise studies for each installation. The data for F-35A were identical for each installation.

Greenhouse Gases (GHGs)

GHG emissions are generated by both natural processes and human activities. The accumulation of GHGs in the atmosphere helps regulate the earth's temperature and contribute to global climate change. Primary GHGs include water vapor, methane, NOx, hydrofluorocarbons, and chlorofluorocarbons. While water vapor is considered a GHG, note that atmospheric temperature controls the amount of water vapor in the air and the other GHGs control the atmospheric

temperature. As a result, the amount of water vapor in the air is determined by the amount of other GHGs present in the atmosphere. This is how the greenhouse effect has rapidly increased over the last 100 years –when emissions of CO_2 and other GHGs significantly increased due to man's activities.

Each GHG has an estimated global warming potential (GWP), which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface. The GWP of a particular gas provides a relative basis for calculating its CO2 equivalent (CO2e) or the amount of CO2e to the emissions of that gas. CO2 has a GWP of 1 and is, therefore, the standard by which all other GHGs are measured.

GHG Emissions

Because GHG emission impacts are independent of altitude, the entire flight horizon for all aircraft sorties was estimated. In addition to land, departure and closed pattern operations, estimates of emissions for sorties was based on the settings for approach and intermediate (Climb out) operations. These were split 50/50 for the sortie duration. Average sortie durations are unique to each installation: 1.6 hours for Fresno ANGB, 1.65 hours for Barnes ANGB, and 1.37 hours for NAS JRB New Orleans.

A 50-year lifetime horizon was estimated based on the lifespan of the F-15C, though both the F-35A and F-15EX have estimated lifetimes in excess of 50 years. Building emissions for the 50-year period were not calculated as too little information is available on what sources could exist and the DAF's plan to become net zero by 2046 cannot be calculated, though emissions would be anticipated to steadily decline over the period.

The social cost of carbon dioxide emissions was calculated through 2050. The actual 50-year timespan would extend to 2076 and 2077, but the Federal Office of Management and Budget has not published the cost of GHG emission tons past 2050. These data may or may not be available by the time the EIS is published in its final form. The SC-CO2 is a measure, in dollars, of the long-term damage done by a ton of CO2 emissions in a given year. The dollar figure can also represent the value of damages avoided for an emission reduction. The cost analysis evaluated two different discount rates. A 3% discount provides a statistical average of damages. A more conservative discount uses the 95^{th} percentile of estimates based on the 3 percent discount rate, with a higher cost to society per ton of CO_2 emitted. The 95^{th} percentile rate is close to the revised cost values that EPA is considering for a new estimate for the social cost of carbon emissions using a 2% discount rate

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104th Fighter Wing at Westfield-Barnes Regional Airport (BAF)

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104 FW

Conformity Evaluation Report for Westfield Barnes Regional Airport, Westfield, MA

Draft

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TABLES

ACRONYMS AND ABBREVIATIONS

Acronym	*Definition*
104 FW	104th Fighter Wing
ACAM	Air Conformity Applicability Model
AFI	Air Force Instruction
AGE	aerospace ground equipment
ANG	Air National Guard
AR	Attrition Reserve
BAA	Backup Aerospace Vehicle Authorized
BAF	Westfield-Barnes Regional Airport
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DAF	Department of the Air Force
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
MA	Massachusetts
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
O_3	ozone
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
PM_{10}	particulate matter less than or equal to 10 microns in diameter
PSD	Prevention of Significant Deterioration
ROCA	Record of Conformity Analysis
ROI	Region of Influence
SF	square foot/feet
SIP	State Implementation Plan
SO_2	sulfur dioxide
U.S.	United States
USC	United States Code
VOC	Volatile Organic Compound

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1.0 INTRODUCTION

The United States (U.S.) Department of the Air Force (DAF) and National Guard Bureau (NGB) propose to maintain the combat capability of the Air National Guard (ANG) fighter wings currently flying the F-15C/D aircraft. These aircraft have reached the end of their lifespan and will be retired due to safety and maintenance concerns. These fighter wings (that are not already undergoing similar evaluation) include the 104th Fighter Wing (104 FW) at Westfield-Barnes Regional Airport (BAF) in Westfield, Massachusetts (MA); the 144th Fighter Wing at Fresno Yosemite International Airport in Fresno, California; and the 159th Fighter Wing at Naval Air Station Joint Reserve Base New Orleans, in Belle Chasse, Louisiana. The proposal is the beddown, operation, and associated infrastructure construction of one squadron of F-15EX Eagle II aircraft at two of these fighter wings and one squadron of F-35A Lightning II aircraft at one of the fighter wings. These aircraft would replace the aging F-15C/D fighter aircraft at the selected wings. It is also conceivable that one or more of these fighter wings would retain the legacy F-15C/D aircraft for the foreseeable future and construction associated with that alternative would be implemented to support the current legacy aircraft.

In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321-4347), Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and Air Force Instruction (AFI) 32-7061 as promulgated at 32 CFR Part 989 et seq., Environmental Impact Analysis Process (EIAP), the DAF and NGB have prepared an Environmental Impact Statement (EIS), which considers the potential consequences to the human and natural environment that may result from implementation of this action. This Conformity Evaluation Report has been prepared in accordance with Section 176(c)(1) of the Clean Air Act (CAA) and as specified in requirements found in 40 CFR 93 Subpart B, and is included in Appendix D of the EIS.

This document addresses the U.S. Environmental Protection Agency's (EPA's) General Conformity Rule requirements and how they relate to the actions associated with the implementation of the Proposed Action. The CAA requires any federal agency, such as the NGB, to assess whether their proposed action would contribute to further degradation of air quality or prevent the attainment of air quality standards. The NGB proposes to implement a federal action that would contribute to regional air emissions at BAF in Westfield, MA and associated environs in Hampden County, MA. Therefore, the Region of Influence (ROI) includes BAF as well as all of Hampden County. This is an area that previously did not meet air quality standards for ozone (O_3) and is currently under a maintenance plan under the CAA (refer to Section 3.3, *Existing Air Quality Attainment Status*).

2.0 AIR QUALITY STANDARDS

Individual states are delegated the responsibility to regulate air quality in order to achieve or maintain air quality in attainment with these standards. The MA Department of Environmental Protection enforces air pollution regulations and sets guidelines to attain and maintain the National Ambient Air Quality Standards (NAAQS). These guidelines are found in the MA State Implementation Plan (SIP). Table 1 summarizes the NAAQS.

Table 1 National Ambient Air Quality Standards

Pollutant		*Primary/Secondary*[1, 2]	*Averaging Time*	*Level*
Carbon Monoxide (CO)		Primary	8 hours	9 ppm
Carbon Monoxide (CO)		Primary	1 hour	35 ppm
Nitrogen Dioxide (NO_2)		Primary	1 hour	100 ppb
Nitrogen Dioxide (NO_2)		Primary and Secondary	Annual	53 ppb
Ozone (O_3)		Primary and Secondary	8 hours	0.070 ppm
Particulate Matter	$PM_{2.5}$	Primary	Annual	12 µg/m^3
Particulate Matter	$PM_{2.5}$	Secondary	Annual	15 µg/m^3
Particulate Matter	$PM_{2.5}$	Primary and Secondary	24 hours	35 µg/m^3
Particulate Matter	PM_{10}	Primary and Secondary	24 hours	150 µg/m^3
Sulfur Dioxide (SO_2)		Primary	1 hour	75 ppb
Sulfur Dioxide (SO_2)		Secondary	3 hours	0.5 ppm
Lead (Pb)		Primary and Secondary	Rolling 3-month average	0.15 µg/m^3

Notes: [1]Primary Standards: the levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the EPA.
[2]Secondary Standards: the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
Legend: µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; ppm = parts per million; ppb = parts per billion.
Source: EPA 2022a.

The CAA also established a national goal of preventing degradation or impairment in federally designated Class I areas. Class I areas are defined as those areas where any appreciable degradation in air quality or associated visibility impairment is considered significant. As part of the Prevention of Significant Deterioration (PSD) Program, Congress assigned mandatory Class I status to all national parks, national wilderness areas (excluding wilderness study areas or wild and scenic rivers), and memorial parks greater than 5,000 acres. In Class I areas, visibility impairment is defined as atmospheric discoloration (such as from an industrial smokestack), and a reduction in regional visual range. Visibility impairment or haze results from smoke, dust, moisture, and vapor suspended in the air. Very small particles are either formed from gases (sulfates, nitrates) or are emitted directly into the atmosphere from sources like electric utilities, industrial processes, and vehicle emissions. Stationary sources are regulated under the PSD Program, and the PSD permitting process requires a review of impacts to all Class I areas within 62 miles of any proposed major stationary source. Mobile sources, including aircraft and associated operations such as those occurring at ANG installations, are not subject to the requirements of PSD.

2.1 AIR QUALITY DESIGNATIONS

As part of the CAA, the EPA has established criteria for major pollutants of concern, called "criteria pollutants." These criteria pollutants include carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), O_3, particulate matter less than or equal to 10 microns in diameter (PM_{10}), particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead. Volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) are precursors to O_3. Emissions of lead are not addressed because the affected areas contain no significant sources of this criteria pollutant, and 104 FW operations would not result in substantial emissions of lead. The criteria set for these pollutants, the NAAQS, represent maximum levels of background pollution that are considered safe, with an adequate margin of safety to protect the public health and welfare. Based on measured ambient criteria pollutant data, the EPA designates areas in the U.S. as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. Areas that lack monitoring data to demonstrate attainment or nonattainment status are designated as unclassified and are treated as attainment areas for regulatory purposes. Varying levels of attainment have been established for O_3, CO, and PM_{10} to indicate the severity of the air quality problem (i.e., the classification runs from moderate to serious for CO and PM_{10} and from marginal to extreme for O_3).

2.2 FEDERAL REQUIREMENTS

The CAA (42 USC §§ 7401-7671q, as amended) provided the authority for the EPA to establish nationwide air quality standards to protect public health and welfare. Federal standards, known as the NAAQS, were developed for the criteria pollutants: O_3, NO_2, CO, SO_2, both coarse and fine inhalable particulate matter PM_{10} and $PM_{2.5}$, and lead (refer to Table 1). The Act also requires that each state prepare a SIP for maintaining and improving air quality and eliminating violations of the NAAQS. The CAA requires federal agencies to determine whether their proposed actions in nonattainment and maintenance areas conform with the applicable SIP, and demonstrate that their actions will not (1) cause or contribute to a new violation of the NAAQS; (2) increase the frequency or severity of any existing violation; or (3) delay timely attainment of any standard, emission reduction, or milestone contained in the SIP.

2.3 STATE REQUIREMENTS

The CAA requires each state to develop, adopt, and implement a SIP to achieve, maintain, and enforce federal air quality standards throughout the state. States develop SIPs on a pollutant-by-pollutant basis whenever there is a violation of one or more air quality standards. MA has adopted the federal ambient air quality standards and does not maintain any additional standards.

2.4 GENERAL CONFORMITY REGULATIONS

The General Conformity Rule was promulgated by the EPA on November 30, 1993 at 40 CFR Part 93 Subpart B *Determining Conformity of General Federal Actions to State or Federal Implementation Plans* for all federal activities except those covered under transportation conformity (EPA 1993). The General Conformity Regulations were revised by the EPA on April 5, 2010 (75 Federal Register 17253-17279) and changed the existing regulations found in 40 CFR Part 93, Subpart B (EPA 2010). The EPA also modified 40 CFR Part 51, Subpart W, to change state or Tribal adoption and submittal of general conformity SIPs from a requirement to a voluntary measure in 40 CFR § 51.851(a). In addition, the EPA provided in 40 CFR § 51.851(b) that until such time as EPA approves a state's or Tribe's revision to the conformity implementation plan permitted under this section, that federal agencies must meet the requirements of 40 CFR Part 93, Subpart B.

The General Conformity Rule requires any federal agency responsible for an action in a nonattainment or maintenance area to determine that the action conforms to the applicable SIP. Emissions of attainment pollutants are exempt from conformity analysis. Actions would conform to a SIP if their annual direct and indirect emissions would remain less than the applicable *de minimis* thresholds. Formal conformity determinations are required for any actions that would equal or exceed these thresholds.

Analyses required by the General Conformity Regulations focus on the net increase in air emissions from a Proposed Action compared to ongoing historical conditions. Existing SIPs are presumed to have accounted for routine, ongoing federal agency activities. Conformity analyses are further limited to those direct and indirect emissions over which the federal agency has continuing program responsibility and control over. General conformity analyses are not required to analyze emission sources beyond the responsibility and control of the federal agency. Conformity determinations are also not required to address emissions that are not reasonably foreseeable or reasonably quantifiable.

2.5 GENERAL CONFORMITY ANALYSIS PROCEDURES

The EPA General Conformity Regulations incorporate a stepwise process, beginning with an applicability analysis (EPA 1993, 2010). According to EPA guidance, before any approval is given for a federal action to go forward, the regulating federal agency must apply the applicability requirements found at 40 CFR § 93.153(b) to the federal action to evaluate whether, on a pollutant-by-pollutant basis, a determination of general conformity is required. If the regulating federal agency determines that the General Conformity Regulations do not apply to the federal action, no further analysis or documentation is required. However, if the General Conformity Regulations do apply to a federal action, the action proponent must make its own conformity determination in

accordance with the criteria and procedures outlined in the implementing regulations, publish a draft determination of general conformity for public review, consider comments from interested parties, and then publish the final determination of general conformity.

3.0 ELEMENTS OF THE PROPOSED ACTION

The Proposed Action involves both construction of new facilities to accommodate the conversion of F-15Cs to F-15EXs or F-35As, or construction of facilities required to continue the legacy mission of the F-15Cs, and operational emissions associated with either aircraft.

3.1 CONSTRUCTION EMISSIONS

The Proposed Action would include construction activities at the 104 FW to provide for additional infrastructure and facilities needed to support the proposed F-15EX or F-35A operations, or facilities required for the continued mission of the F-15C if neither aircraft were to be selected. Air quality impacts from construction would occur from (1) combustion emissions due to the use of fossil fuel-powered equipment and vehicles; and (2) fugitive dust emissions ($PM_{2.5}$ and PM_{10}) during demolition activities, earth-moving activities, and the operation of equipment on bare soil.

All proposed construction would occur within the footprint of the developed installation. To ensure the maximum annual emissions from construction are captured, the calculations have been performed to account for each construction project being completed within 12 months of the year it is programmed (e.g., if a project is planned for implementation in fiscal year 2024, the construction is assumed to occur between January and December 2025), even though some projects would last longer than 12 months.

3.2 OPERATIONAL EMISSIONS

Operational emissions associated with the Proposed Action include emissions from aircraft operations and associated equipment, along with commuter emissions from additional personnel required to operate either the F-15EX or F-35A. Mobile source emissions include emissions from aircraft operations (takeoffs and landings), aerospace ground equipment (AGE), personal vehicle operations, and maintenance aircraft operations performed with the engines still mounted on the aircraft (engine run-ups and trim checks). The Proposed Action would include either an increase of 101 personnel under the F-15EX beddown or 80 personnel under the F-35A beddown.

Under the Proposed Action, the 104 FW would convert from 18 F-15C aircraft to a total of 24 F-15EX including 2 Backup Aerospace Vehicle Authorized [BAA] and 1 Attrition Reserve [AR]) or 23 F-35A including 2 BAAs. If the 104 FW is selected to receive the F-15EX, the aircraft would be based at the installation by 2027, and if selected to receive the F-35A, the aircraft would be based by 2026. Existing operations for the F-15C aircraft at BAF total 4,100 operations

annually. The number of annual operations would increase by 2,766 annual operations under the Proposed Action for either the F-15EX or the F-35A.

3.3 EXISTING AIR QUALITY ATTAINMENT STATUS

Hampden County is part of the Hartford-New Haven-Springfield Interstate Air Quality Control Region (40 CFR 81.26) and the entire state of MA falls within the Ozone Transport Region boundary (40 CFR 81.457). Hampden County is currently designated as a maintenance area for the 8-Hour O_3 NAAQS (due to the Springfield, Western Massachusetts "orphan maintenance area" that includes Berkshire, Franklin, Hampden, and Hampshire counties) (EPA 2022a). The area was determined to be in attainment in 2012 (EPA 2012), so the maintenance area designation would remain in place until 2032. Hampden County is designated as unclassifiable, attainment, or better than national standards for all other NAAQS. The applicable *de minimis* thresholds for the area are listed in Table 2.

Table 2 Applicable General Conformity *de minimis* Thresholds (tons per year)

VOCs[1]	*NO_x*[1]	*CO*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
50	50	N/A[2]	N/A[2]	N/A[2]	N/A[2]

Notes: [1]Hampden County is a maintenance area for 8-Hour Ozone (1997) NAAQS and is within the ozone transport region. VOCs and NO_x are precursors to ozone.
[2]*De minimis* thresholds are not applicable because Hampden County is in attainment of the NAAQS. For attainment area criteria pollutants, this analysis uses the EPA's PSD permitting threshold of 250 tons per year as an initial indicator of the local significance of potential impacts on air quality.
Legend: CO = Carbon Monoxide; N/A = not applicable; NO_x = Nitrogen Oxides; $PM_{2.5}$ = Particulate Matter Less Than or Equal to 2.5 Microns in Diameter; PM_{10} = Particulate Matter Less Than or Equal to 10 Microns in Diameter; SO_2 = Sulfur Dioxide; TPY = tons per year; VOC = Volatile Organic Compound.
Source: 40 CFR 93.153.

4.0 GENERAL CONFORMITY EVALUATION

4.1 APPLICABILITY ANALYSIS

The first step in a general conformity evaluation is an analysis of whether the requirements apply to the federal action that is proposed in a nonattainment or a maintenance area. Unless exempted by the regulations or otherwise presumed to conform, a federal action requires a general conformity determination for each pollutant where the total of direct and indirect emissions caused by the federal action would equal or exceed an annual *de minimis* emission rate for any given maintenance or nonattainment pollutant (or precursor). If a proposed action would result in emission increases less than the identified applicable *de minimis* thresholds, then no conformity determination is required.

4.2 EXEMPTIONS FROM GENERAL CONFORMITY REQUIREMENTS

The general conformity requirements apply to a federal action if the net project emissions equal or exceed certain *de minimis* emission rates established in the General Conformity Regulations. The

de minimis thresholds differ based on the severity of the nonattainment status. The only exceptions to this applicability criterion include certain federal actions that are presumed to conform because of the thorough air quality analysis required to comply with other statutory requirements. Examples of these actions include those subject to the New Source Review program and remedial activities under the Comprehensive Environmental Response, Compensation, and Liability Act.

Other federal actions exempt from the conformity process include those actions that would result in no increase in emissions, or an increase in emissions that is clearly *de minimis*. Examples include continuing or recurring activities, routine maintenance and repair, and administrative and planning actions; however, the emissions that would result from this federal action do not meet any of these exempt categories. For this reason, a Level II Quantitative Assessment, as described in the *Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide – Fundamentals, Volume 1 of 2* (DAF 2019) was performed. This analysis is used to prepare an estimate of the worst-case annual net change (the total direct and indirect emissions associated with the Proposed Action), and these emissions were compared against *de minimis* thresholds for the pollutants of concern – VOCs and NO_x. Emissions were estimated using flight operations data and flight profiles for the installation, and aircraft model-specific emission factors, along with emission estimates generated in the DAF's Air Conformity Applicability Model (ACAM) for construction, AGE, and personal vehicle operations. The results were used to quantify the Proposed Action emissions.

4.3 EMISSION ESTIMATES

Existing emissions quantified include emissions from the F-15C aircraft, which would be replaced under the Proposed Action by either the F-15EX or F-35A aircraft. Annual operations under the Proposed Action for either the F-15EX or F-35A are anticipated to increase to 6,866 operations per year at the airfield compared to the existing 4,100 annual operations currently flown with the F-15C. If the 104 FW is not selected to receive the F-15EX or the F-35A aircraft, then ANG operations at the airfield would not change from current operations for the foreseeable future.

To evaluate emissions from ongoing historical conditions for evaluating the net emissions increases/decreases associated with the Proposed Action, aircraft operation emission estimates were derived from ACAM version 5.0.18b, using installation-specific data including landings and takeoffs, closed patterns, and annual engine testing. Additionally, AGE operations emissions estimates were also derived from ACAM using default values where installation-specific information was not available. Chapter 3.0 and Appendix D of the EIS provide a discussion of the methodology for quantifying emissions. Table 3 presents the emissions associated with operations of the F-15C aircraft.

Table 3 104 FW F-15C Emissions at the Westfield-Barnes Regional Airport (BAF) (tons per year)

Emission Source	*VOCs*	*NO_x*
F-15C Aircraft Operations	24.10	31.28
AGE	0.57	4.94
Total F-15C Operations Emissions[2]	**24.67**	**36.22**

Notes: [1]Includes maintenance testing (engine testing).
[1]Numbers may not add up due to rounding.
Legend: AGE = aerospace ground equipment; NO_x = Nitrogen Oxides; VOCs = Volatile Organic Compounds.

Construction activities at the 104 FW include demolition or renovation of existing structures, construction of new structures, and infrastructure upgrades, and would depend on the aircraft selected. Table 4 provides information on the construction projects anticipated to support the arrival of the F-15EX, F-35A or the continuation of the legacy F-15C mission. Table 5 presents the total area of building construction, demolition, and ground disturbance in square feet (SF) assumed to occur by calendar year for the F-15EX, F-35A, or the continuation of the F-15C mission at BAF, respectively. Additional details on the individual construction projects are available in Appendix C of the EIS.

Table 4 Summary of Construction and Modification Projects

Project ID	*Project Name*	*F-15EX*	*F-35A*	*Legacy F-15C*
1.1 (Option 1) 1.2 (Option 2) 1.3 (Option 3)	Renovate Wing HQ (Building 1)/Construct Wing HQ	X	X	X
2	Alter Supply Warehouse (Building 54)	X	X	X
3	Construct Taxiway Juliet	X	X	X
4	Renovate POL Shop (Building 33)	X	X	X
5	Renovate Avionics Shop (Building 26)	X	X	X
6	Repair MNS	X	X	X
7	Construct Vehicle Operations Parking Sheds	X	X	X
8	Construct Redundant Utilities	X	X	X
9	Renovate JISCC Storage	X	X	X
10.1 (Option 1) 10.2 (Option 2)	Construct Running Track	X	X	X
11	Alter AAS Signage	X	X	X
12	Repair Base Roads and Parking Lots	X	X	X
13	Construct Base Engineer Storage Yard	X	X	X
14	Alter Civil Engineer Building (Building 40)	X	X	X
15.1 (Option 1) 15.2 (Option 2)	ADAL Dining Facility (Building 3)	X	X	X

Project ID	*Project Name*	*F-15EX*	*F-35A*	*Legacy F-15C*
16.1 (Option 1) 16.2 (Option 2)	Construct Flight Simulator Facility	X	X	
17	Repair HAZMAT HVAC (Building 52)	X	X	
18	ADAL WLT Door (Building 23)	X	X	
19	Demo Liquid Oxygen Facility (Building 38 & 39)	X	X	
20	Repair Munitions Administration Facility (Building 65)	X	X	
21	Construct PL3 Fence Line	X	X	
22.1 (Option 1) 22.2 (Option 2)	Construct Temporary Facility (Squadron Operations) (Building 25)	X	X	
23	Investigative Study for Squadron Operations (second floor and Simulator location) (Building 25)	X	X	
24	Add HVAC (Building 37)	X	X	
25	Repair MAC Pad	X	X	
26	Repair Maintenance Shops (Building 15)	X		
27	ADAL Fuel Cell (Building 27)	X		
28	ADAL Alert Crew Readiness (Building 48)	X		
29	ADAL Squadron Operations Facility (Building 25)	X		
30	Repair Avionics Facility (Building 26)	X		
31	Construct Aircraft Shelters and Shades		X	
32	Install Power Converters (Buildings 13, 27, 45, 46, 47)		X	
33	Repair Maintenance Shops (Building 15) (specific for F-35A)		X	
34	Convert Shelter to Wash Rack (Building 19)		X	
35	Repair LRS (Levelator, Building 54)		X	
36	Repair Squadron Operations (Building 25)		X	
37	Repair Avionics Facility (Building 26) (specific for F-35A)		X	
38	Repair Drop Tank Storage for AGE (Building 116)		X	

Legend: AAS = Airfield Arresting System; ADAL = Addition and Alteration; AGE = Aerospace Ground Equipment; HAZMAT = Hazardous Materials; HQ = Headquarters; HVAC = Heating, Ventilation, and Air Conditioning; JISCC = Joint Incident Site Communications Capability; LRS = Logistics Readiness Squadron; MAC = Munitions Assembly Conveyor; MNS = Mass Notification System; PL3 = Protection Level 3; POL = Petroleum, Oil, and Lubricants; WLT = Weapons Load Crew Training.

Sources: 104 FW n.d.; ACC and NGB 2021; NGB 2021a, 2021b.

Table 5 Summary of Construction Footprints

Aircraft Type	*Total SF Disturbance*	*Total SF Net New Impervious*	*Years of Construction*
Based F-15C	173,900	128,400	FY 2026–2033
F-15EX	218,100	148,000	FY 2024[1]–2033
F-35A	203,800	136,600	FY 2024–2033

Note: [1]2024 but no sooner than ROD signature.
Legend: FY = Fiscal Year; SF = square foot/feet.

Table 6 summarizes the annual construction emissions associated with the continuation of the legacy F-15C mission associated with the Proposed Action.

Table 6 Annual Construction Emissions Estimates for the 104 FW Installation with Construction for Legacy F-15C (tons per year)

Emission Source	*VOCs*	*NO_x*	*CO*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*	*CO_2e*
2026 Construction Emissions	0.60	0.93	1.69	0.00	0.05	0.03	356
2027 Construction Emissions	0.42	0.95	1.57	0.00	0.45	0.03	350
2028 Construction Emissions	0.75	1.24	1.82	0.00	1.47	0.04	403
2029 Construction Emissions	0.18	0.90	1.46	0.00	0.03	0.03	321
2030 Construction Emissions	0.26	1.12	1.53	0.00	0.17	0.04	324
2031 Construction Emissions	0.21	0.60	0.90	0.00	0.12	0.02	212
2032 Construction Emissions[1]	-	-	-	-	-	-	-
2033 Construction Emissions	0.23	1.27	1.71	0.00	21.29	0.05	425
2034 Construction Emissions	0.21	1.14	1.58	0.00	1.83	0.04	376
de minimis or Comparative Threshold	50	50	250	250	250	250	N/A
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**	**N/A**

Note: [1]No construction projects are proposed to occur in calendar year 2032.
Legend: CO = carbon monoxide; CO_2e = carbon dioxide equivalent; N/A = Not Applicable; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

If neither the F-15EX or the F-35A is selected for the 104 FW, the legacy F-15C operations would continue and there would be no net change in ongoing operational emissions. Tables 7 and 8 present the ongoing net change in operational emissions that would occur from the F-15EX or F-35A being selected, respectively. The construction emissions for all years presented in Table 8 would be well below the *de minimis* threshold of 50 tons per year of both VOCs and NO_x. The operational emissions in the tables below represent the ongoing annual airfield operational emissions that would occur and continue with the complete basing of the F-15EX or the F-35A aircraft.

Table 7 Annual Airfield Emissions Estimates for the 104 FW Beginning in 2027 (tons per year)

Emission Source	*VOCs*	*NO_x*
F-15C Current Airfield Operations Removed	-24.67	-36.22
F-15EX Aircraft Operations Added	33.49	34.66
Net Change in Airfield Emissions – F-15EX	**8.82**	**-1.55**
F-15EX Additional Commuter Emissions	0.14	0.09
Total	**8.96**	**-1.46**

Legend: NO_x = nitrogen oxides; VOCs = volatile organic compounds.

Table 8 Annual Airfield Emissions for the 104 FW Beginning in 2026 (tons per year)

Emission Source	*VOCs*	*NO_x*
F-15C Current Airfield Operations removed	-24.67	-36.22
F-35A Aircraft Operations	1.14	52.96
Net Change in Aircraft Emissions – F-35A	**-23.54**	**16.74**
F-35A Additional Commuter Emissions	0.11	0.07
Total	**-23.42**	**16.82**

Legend: NO_x = nitrogen oxides; VOCs = volatile organic compounds.

The total annual emissions for both construction and operations occurring in a calendar year are presented in Table 9 for the F-15EX conversion and Table 10 for the F-35A conversion. No construction projects are proposed to begin after 2034.

Table 9 Total Annual Emissions Estimates for Construction and Operations with the F-15EX Conversion at the 104 FW (tons per year)

Year	*VOCs*	*NO_x*
2025 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.37	0.91
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2026 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.91	0.95
Net Change – F-15EX Operations Emissions (50% transition)	4.41	-0.78
Commuter Emissions (50% transition)	0.07	0.05
2026 Total Net Change Emissions[1]	**5.39**	**0.22**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2027 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.42	0.95
Net Change – F-15EX Operations Emissions	8.82	-1.55
Commuter Emissions	0.14	0.09
2027 Total Net Change Emissions[1]	**9.38**	**-0.52**

Year	*VOCs*	*NO_x*
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2028 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.75	1.24
Net Change – F-15EX Operations Emissions	8.82	-1.55
Commuter Emissions	0.14	0.09
2028 Total Net Change Emissions[1]	**9.71**	**-0.22**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2029 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.33	0.91
Net Change – F-15EX Operations Emissions	8.82	-1.55
Commuter Emissions	0.14	0.09
2029 Total Net Change Emissions[1]	**9.29**	**-0.55**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2030 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.57	1.14
Net Change – F-15EX Operations Emissions	8.82	-1.55
Commuter Emissions	0.14	0.09
2030 Total Net Change Emissions[1]	**9.53**	**-0.32**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2031 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.17	0.60
Net Change – F-15EX Operations Emissions	8.82	-1.55
Commuter Emissions	0.14	0.09
2031 Total Net Change Emissions[1]	**9.13**	**-0.86**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2032 Estimated Annual Net Change Air Emissions		
Construction Emissions[2]	-	-
Net Change – F-15EX Operations Emissions	8.82	-1.55
Commuter Emissions	0.14	0.09
2032 Total Net Change Emissions[1]	**8.96**	**-1.46**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**

Year	*VOCs*	*NO_x*
2033 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.23	1.27
Net Change – F-15EX Operations Emissions	8.82	-1.55
Commuter Emissions	0.14	0.09
2033 Total Net Change Emissions[1]	**9.19**	**-0.20**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2034 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.21	1.14
Net Change – F-15EX Operations Emissions	8.82	-1.55
Commuter Emissions	0.14	0.09
2034 Total Net Change Emissions[1]	**9.17**	**-0.32**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2035 Estimated Annual Net Change Air Emissions (Steady State)		
Net Change – F-15EX Operations Emissions	8.82	-1.55
Commuter Emissions	0.14	0.09
2035 (Steady State) Total Net Change Emissions[1]	**8.96**	**-1.46**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**

Note: [1]Numbers may not add up due to rounding.
[2]No construction projects are proposed to occur in calendar year 2032.

Legend: CO = carbon monoxide; CO_2e = carbon dioxide equivalent; N/A = Not Applicable; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

Table 10 Total Annual Emissions Estimates for Construction and Operations with the F-35A Conversion at the 104 FW (tons per year)

Emissions Source	*VOCs*	*NO_x*
2025 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.47	0.90
Net Change in Aircraft Emissions – F-35A (50% transition)	-11.77	8.37
Commuter Emissions (50% transition)	0.06	0.04
2025 Total Net Change Emissions[1]	**-11.24**	**9.30**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**

Emissions Source	*VOCs*	*NO_x*
2026 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.91	0.95
Net Change in Aircraft Emissions – F-35A	-23.54	16.74
Commuter Emissions	0.11	0.07
2026 Total Net Change Emissions[1]	**-22.51**	**17.77**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2027 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.42	0.95
Net Change in Aircraft Emissions – F-35A	-23.54	16.74
Commuter Emissions	0.11	0.07
2027 Total Net Change Emissions[1]	**-23.00**	**17.76**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2028 Estimated Annual Net Change Air Emissions		
Construction Emissions	1.18	1.34
Net Change in Aircraft Emissions – F-35A	-23.54	16.74
Commuter Emissions	0.11	0.07
2028 Total Net Change Emissions[1]	**-22.24**	**18.15**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2029 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.26	0.90
Net Change in Aircraft Emissions – F-35A	-23.54	16.74
Commuter Emissions	0.11	0.07
2029 Total Net Change Emissions[1]	**-23.17**	**17.72**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2030 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.51	1.14
Net Change in Aircraft Emissions – F-35A	-23.54	16.74
Commuter Emissions	0.11	0.07
2030 Total Net Change Emissions[1]	**-22.91**	**17.95**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2031 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.17	0.60

Emissions Source	***VOCs***	***NO_x***
Net Change in Aircraft Emissions – F-35A	-23.54	16.74
Commuter Emissions	0.11	0.07
2031 Total Net Change Emissions[1]	**-23.25**	**17.42**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2032 Estimated Annual Net Change Air Emissions		
Construction Emissions[2]	-	-
Net Change in Aircraft Emissions – F-35A	-23.54	16.74
Commuter Emissions	0.11	0.07
2032 Total Net Change Emissions[1]	**-23.42**	**16.82**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2033 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.23	1.27
Net Change in Aircraft Emissions – F-35A	-23.54	16.74
Commuter Emissions	0.11	0.07
2033 Total Net Change Emissions[1]	**-23.19**	**18.08**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2034 Estimated Annual Net Change Air Emissions		
Construction Emissions	0.21	1.14
Net Change in Aircraft Emissions – F-35A	-23.54	16.74
Commuter Emissions	0.11	0.07
2034 Total Net Change Emissions[1]	**-23.21**	**17.96**
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**
2035 Estimated Annual Net Change Air Emissions (Steady State)		
Net Change in Aircraft Emissions – F-35A	-23.54	16.74
Commuter Emissions	0.11	0.07
2035 (Steady State) Total Net Change Emissions[1]	**-23.42**	**16.82**

Emissions Source	*VOCs*	*NO_x*
de minimis or Comparative Threshold	50	50
Exceeds Threshold	**No**	**No**

Note: [1]Numbers may not add up due to rounding.
[2]No construction projects are proposed to occur in calendar year 2032.
Legend: CO = carbon monoxide; CO_2e = carbon dioxide equivalent; N/A = Not Applicable; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

As shown in Table 9 (Conversion to F-15EX), Table 10 (Conversion to F-35A), and Table 6 (Maintain Legacy F-15C), emissions associated with the Proposed Action at BAF would be below the General Conformity Rule *de minimis* thresholds for all pollutants.

4.4 APPLICABILITY OF GENERAL CONFORMITY TO THIS FEDERAL ACTION

The applicability of the General Conformity requirements to the Proposed Action was determined by comparing the federal action emissions to the conformity *de minimis* thresholds for all nonattainment and maintenance pollutants in the ROI. As shown in Tables 6, 9, and 10, the emissions of all pollutants are lower than their applicable *de minimis* thresholds.

5.0 FINDING OF CONFORMITY

In accordance with 40 CFR Part 93, Subpart B and the *Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide – Fundamentals, Volume 1 of 2* (DAF 2019), the emissions due to the Proposed Action were evaluated, including reasonable foreseeable direct and indirect emissions. The applicability analysis has found that:

- General Conformity is not applicable to this proposed federal action,
- a Conformity Determination is not required, and
- the General Conformity Evaluation is complete with a completed Record of Conformity Analysis (ROCA) to document the conclusion (included in Attachment 1 to this document).

6.0 REFERENCES

Department of the Air Force (DAF). 2019. Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide – Fundamentals, Volume 1 of 2. May.

United States Environmental Protection Agency (EPA). 1993. Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule. 40 CFR Parts 6, 51, and 93. 30 November.

_____. 2010. Revisions to the General Conformity Rule Regulations; Final Rule. 40 CFR Parts 51 and 93. 5 April.

_____. 2012. Approval and Promulgation of Air Quality Implementation Plans; Massachusetts; Determination of Attainment of the 1997 Ozone Standard for the Western Massachusetts Nonattainment Area. 77 Fed, Reg, 36404-36405 (June 19, 2012). Accessed at: https://www.govinfo.gov/content/pkg/FR-2012-06-19/pdf/2012-14719.pdf#page=1.

_____. 2022a. Nonattainment Areas for Criteria Pollutants (Green Book.). Accessed at: https://www.epa.gov/green-book.

_____. 2022b. NAAQS Table. Accessed at: https://www.epa.gov/criteria-air-pollutants/naaqs-table.

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ATTACHMENT 1
RECORD OF CONFORMITY ANALYSIS

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AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: BARNES ANGB
State: Massachusetts
County(s): Hampden
Regulatory Area(s): Springfield (Western MA), MA

b. Action Title: Air National Guard F-15EX Eagle II & F-35A Lightning II Operational Beddowns EIS: Barnes F-15EX

c. Project Number/s (if applicable):

d. Projected Action Start Date: 10 / 2026

e. Action Description:

The United States (U.S.) Department of the Air Force (DAF) and National Guard Bureau (NGB) propose to maintain the combat capability of the Air National Guard (ANG) by recapitalizing the remaining F-15C/D aircraft, which are being retired due to age and associated maintenance costs. There are three remaining ANG units that are still flying the F-15C/D aircraft (that are not already undergoing similar evaluation) at this time; these include the 104th Fighter Wing (104 FW) at Westfield-Barnes Regional Airport (BAF) in Westfield, Massachusetts (MA); the 144th Fighter Wing (144 FW) at Fresno Yosemite International Airport (FAT) in Fresno, California (CA); and the 159th Fighter Wing (159 FW) at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, in Belle Chasse, Louisiana (LA). The proposal is the beddown, operation, and associated infrastructure construction of one squadron of F-15EX Eagle II (F-15EX) aircraft at two of these fighter wings and one squadron of F-35A Lightning II (F-35A) aircraft at one of the fighter wings. These aircraft would replace the aging F-15C/D fighter aircraft at the selected wings.

f. Point of Contact:

Name: Caitlin Jafolla
Title: Air Quality SME
Organization: Cardno now Stantec
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

Conformity Analysis Summary:

Emissions Source	*VOCs*	*NO_x*	*CO*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2025 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.37	0.91	1.54	0.00	0.03	0.03

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2026 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.91	0.95	1.81	0.00	0.21	0.03
Net Change – F-15EX Operations Emissions (50% transition)	4.41	-0.78	6.77	-0.15	3.39	3.07
Commuter Emissions (50% transition)	0.07	0.05	0.92	0.00	0.00	0.00
Total 2026 Estimated Emissions[1]	**5.39**	**0.22**	**9.50**	**-0.14**	**3.61**	**3.10**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	**No**	No
2027 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.42	0.95	1.57	0.00	0.45	0.03
Net Change – F-15EX Operations Emissions (100% conversion - steady state)	8.82	-1.55	13.53	-0.29	6.79	6.13
Commuter Emissions	0.14	0.09	1.85	0.00	0.00	0.00
Total 2027 Estimated Emissions[1]	**9.38**	**-0.52**	**16.95**	**-0.29**	**7.24**	**6.16**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2028 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.75	1.24	1.82	0.00	1.47	0.04
Net Change – F-15EX Operations Emissions (steady state)	8.82	-1.55	13.53	-0.29	6.79	6.13
Commuter Emissions	0.14	0.09	1.85	0.00	0.00	0.00
2028 Total Net Change Emissions[1]	**9.71**	**-0.22**	**17.20**	**-0.29**	**8.26**	**6.18**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2029 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.33	0.91	1.51	0.00	0.13	0.03
Net Change – F-15EX Operations Emissions (steady state)	8.82	-1.55	13.53	-0.29	6.79	6.13
Commuter Emissions	0.14	0.09	1.85	0.00	0.00	0.00
2029 Total Net Change Emissions[1]	**9.29**	**-0.55**	**16.89**	**-0.29**	**6.92**	**6.16**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2030 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.57	1.14	1.67	0.00	0.63	0.04
Net Change – F-15EX Operations Emissions (steady state)	8.82	-1.55	13.53	-0.29	6.79	6.13
Commuter Emissions	0.14	0.09	1.85	0.00	0.00	0.00

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

2030 Total Net Change Emissions[1]	**9.53**	**-0.32**	**17.06**	**-0.29**	**7.42**	**6.17**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2031 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.17	0.60	0.89	0.00	0.17	0.02
Net Change – F-15EX Operations Emissions (steady state)	8.82	-1.55	13.53	-0.29	6.79	6.13
Commuter Emissions	0.14	0.09	1.85	0.00	0.00	0.00
2031 Total Net Change Emissions[1]	**9.13**	**-0.86**	**16.27**	**-0.29**	**6.96**	**6.16**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2032 Estimated Annual Net Change Air Emissions						
Construction Emissions	-	-	-	-	-	-
Net Change – F-15EX Operations Emissions (steady state)	8.82	-1.55	13.53	-0.29	6.79	6.13
Commuter Emissions	0.14	0.09	1.85	0.00	0.00	0.00
2032 Total Net Change Emissions[1]	**8.96**	**-1.46**	**15.38**	**-0.29**	**6.79**	**6.13**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2033 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.23	1.27	1.71	0.00	21.29	0.05
Net Change – F-15EX Operations Emissions (steady state)	8.82	-1.55	13.53	-0.29	6.79	6.13
Commuter Emissions	0.14	0.09	1.85	0.00	0.00	0.00
2033 Total Net Change Emissions[1]	**9.19**	**-0.20**	**17.09**	**-0.29**	**28.08**	**6.18**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2034 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.21	1.14	1.58	0.00	1.83	0.04
Net Change – F-15EX Operations Emissions (steady state)	8.82	-1.55	13.53	-0.29	6.79	6.13
Commuter Emissions	0.14	0.09	1.85	0.00	0.00	0.00
2034 Total Net Change Emissions[1]	**9.17**	**-0.32**	**16.96**	**-0.29**	**8.62**	**6.18**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2035 Estimated Annual Net Change Air Emissions (Steady State)						

AIR CONFORMITY APPLICABILITY MODEL REPORT
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Net Change – F-15EX Operations Emissions	8.82	-1.55	13.53	-0.29	6.79	6.13
Commuter Emissions	0.14	0.09	1.85	0.00	0.00	0.00
2035 Total Net Change Emissions[1]	**8.96**	**-1.46**	**15.38**	**-0.29**	**6.79**	**6.13**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

Caitlin Jafolla, Air Quality SME

22 February 2023

DATE

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

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b. Action Title: Air National Guard F-15EX Eagle II & F-35A Lightning II Operational Beddowns EIS: Barnes F-35A

c. Project Number/s (if applicable):

d. Projected Action Start Date: 10 / 2025

e. Action Description:

The United States (U.S.) Department of the Air Force (DAF) and National Guard Bureau (NGB) propose to maintain the combat capability of the Air National Guard (ANG) by recapitalizing the remaining F-15C/D aircraft, which are being retired due to age and associated maintenance costs. There are three remaining ANG units that are still flying the F-15C/D aircraft (that are not already undergoing similar evaluation) at this time; these include the 104th Fighter Wing (104 FW) at Westfield-Barnes Regional Airport (BAF) in Westfield, Massachusetts (MA); the 144th Fighter Wing (144 FW) at Fresno Yosemite International Airport (FAT) in Fresno, California (CA); and the 159th Fighter Wing (159 FW) at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, in Belle Chasse, Louisiana (LA). The proposal is the beddown, operation, and associated infrastructure construction of one squadron of F-15EX Eagle II (F-15EX) aircraft at two of these fighter wings and one squadron of F-35A Lightning II (F-35A) aircraft at one of the fighter wings. These aircraft would replace the aging F-15C/D fighter aircraft at the selected wings.

f. Point of Contact:

Name: Caitlin Jafolla
Title: Air Quality SME
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Email: caitlin.jafolla@cardno-gs.com
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

Conformity Analysis Summary:

Emissions Source	*VOCs*	*NO_x*	*CO*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2025 Estimated Annual Net Change Air Emissions						

AIR CONFORMITY APPLICABILITY MODEL REPORT
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Construction Emissions	0.47	0.90	1.56	0.00	0.03	0.03
Net Change – F-35A Operations Emissions (50% transition)	-11.77	8.37	-33.12	1.07	4.34	3.91
Commuter Emissions (50% transition)	0.06	0.04	0.73	0.00	0.00	0.00
2025 Total Net Change Emissions[1]	**-11.24**	**9.30**	**-30.83**	**1.08**	**4.37**	**3.94**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**
2026 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.91	0.95	1.81	0.00	0.21	0.03
Net Change – F-35A Operations Emissions	-23.54	16.74	-66.24	2.15	8.67	7.83
Commuter Emissions	0.11	0.07	1.46	0.00	0.00	0.00
2026 Total Net Change Emissions[1]	**-22.51**	**17.77**	**-62.96**	**2.15**	**8.89**	**7.86**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**
2027 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.42	0.95	1.57	0.00	0.45	0.03
Net Change – F-35A Operations Emissions	-23.54	16.74	-66.24	2.15	8.67	7.83
Commuter Emissions	0.11	0.07	1.46	0.00	0.00	0.00
2027 Total Net Change Emissions[1]	**-23.00**	**17.76**	**-63.20**	**2.15**	**9.13**	**7.86**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**
2028 Estimated Annual Net Change Air Emissions						
Construction Emissions	1.18	1.34	2.07	0.00	1.47	0.04
Net Change – F-35A Operations Emissions	-23.54	16.74	-66.24	2.15	8.67	7.83
Commuter Emissions	0.11	0.07	1.46	0.00	0.00	0.00
2028 Total Net Change Emissions[1]	**-22.24**	**18.15**	**-62.70**	**2.15**	**10.15**	**7.88**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**
2029 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.26	0.90	1.48	0.00	0.12	0.03
Net Change – F-35A Operations Emissions	-23.54	16.74	-66.24	2.15	8.67	7.83
Commuter Emissions	0.11	0.07	1.46	0.00	0.00	0.00
2029 Total Net Change Emissions[1]	**-23.17**	**17.72**	**-63.30**	**2.15**	**8.80**	**7.86**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**
2030 Estimated Annual Net Change Air Emissions (Steady State)						
Construction Emissions	0.51	1.14	1.65	0.00	0.57	0.04
Net Change – F-35A Operations Emissions	-23.54	16.74	-66.24	2.15	8.67	7.83
Commuter Emissions	0.11	0.07	1.46	0.00	0.00	0.00
2030 Total Net Change Emissions[1]	**-22.91**	**17.95**	**-63.13**	**2.15**	**9.25**	**7.87**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**
2031 Estimated Annual Net Change Air Emissions (Steady State)						
Construction Emissions	0.17	0.60	0.89	0.00	0.17	0.02
Net Change – F-35A Operations Emissions	-23.54	16.74	-66.24	2.15	8.67	7.83
Commuter Emissions	0.11	0.07	1.46	0.00	0.00	0.00
2031 Total Net Change Emissions[1]	**-23.25**	**17.42**	**-63.89**	**2.15**	**8.85**	**7.85**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**
2032 Estimated Annual Net Change Air Emissions (Steady State)						
Construction Emissions	-	-	-	-	-	-
Net Change – F-35A Operations Emissions	-23.54	16.74	-66.24	2.15	8.67	7.83
Commuter Emissions	0.11	0.07	1.46	0.00	0.00	0.00
2032 Total Net Change Emissions[1]	**-23.42**	**16.82**	**-64.77**	**2.15**	**8.68**	**7.83**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**
2033 Estimated Annual Net Change Air Emissions (Steady State)						
Construction Emissions	0.23	1.27	1.71	0.00	21.29	0.05
Net Change – F-35A Operations Emissions	-23.54	16.74	-66.24	2.15	8.67	7.83
Commuter Emissions	0.11	0.07	1.46	0.00	0.00	0.00
2033 Total Net Change Emissions[1]	**-23.19**	**18.08**	**-63.06**	**2.15**	**29.97**	**7.88**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

2034 Estimated Annual Net Change Air Emissions (Steady State)						
Construction Emissions	0.21	1.14	1.58	0.00	1.83	0.04
Net Change – F-35A Operations Emissions	-23.54	16.74	-66.24	2.15	8.67	7.83
Commuter Emissions	0.11	0.07	1.46	0.00	0.00	0.00
2034 Total Net Change Emissions[1]	**-23.21**	**17.96**	**-63.20**	**2.15**	**10.50**	**7.88**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**
2035 Estimated Annual Net Change Air Emissions (Steady State)						
Net Change – F-35A Operations Emissions	-23.54	16.74	-66.24	2.15	8.67	7.83
Commuter Emissions	0.11	0.07	1.46	0.00	0.00	0.00
2035 Total Net Change Emissions[1]	**-23.42**	**16.82**	**-64.77**	**2.15**	**8.68**	**7.83**
de minimis or Comparative Threshold	50	50	250	250	250	250
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

Caitlin Jafolla, Air Quality SME

22 February 2023

DATE

144th Fighter Wing at Fresno Yosemite International Airport (FAT)

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144 FW

Conformity Evaluation Report for Fresno Yosemite International Airport, Fresno, CA

Draft

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ACRONYMS AND ABBREVIATIONS

Acronym	*Definition*
144 FW	144th Fighter Wing
ACAM	Air Conformity Applicability Model
AFI	Air Force Instruction
AGE	aerospace ground equipment
ANG	Air National Guard
APCD	Air Pollution Control District
BAF	Westfield-Barnes Regional Airport
CA	California
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
CFR	Code of Federal Regulations
CO	carbon monoxide
DAF	Department of the Air Force
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
FAT	Fresno Yosemite International Airport
FY	fiscal year
NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
O_3	ozone
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
PM_{10}	particulate matter less than or equal to 10 microns in diameter
PSD	Prevention of Significant Deterioration
ROCA	Record of Conformity Analysis
SF	square foot/feet
SIP	State Implementation Plan
SO_2	sulfur dioxide
U.S.	United States
USC	United States Code
VOC	Volatile Organic Compound

1.0 INTRODUCTION

The United States (U.S.) Department of the Air Force (DAF) and National Guard Bureau (NGB) propose to maintain the combat capability of the Air National Guard (ANG) fighter wings currently flying the F-15C/D aircraft. These aircraft have reached the end of their lifespan and will be retired due to safety and maintenance concerns. These fighter wings (that are not already undergoing similar evaluation) include the 104th Fighter Wing at Westfield-Barnes Regional Airport (BAF) in Westfield, Massachusetts; the 144th Fighter Wing (144 FW) at Fresno Yosemite International Airport (FAT) in Fresno, California (CA); and the 159th Fighter Wing at Naval Air Station (NAS) Joint Reserve Base New Orleans, in Belle Chasse, Louisiana. The proposal is the beddown, operation, and associated infrastructure construction of one squadron of F-15EX Eagle II aircraft at two of these fighter wings and one squadron of F-35A Lightning II aircraft at either the 104th Fighter Wing or the 159th Fighter Wing. These aircraft would replace the aging F-15C/D fighter aircraft at the selected wings. It is also conceivable that one or more of these fighter wings would retain the legacy F-15C/D aircraft for the foreseeable future and construction associated with that alternative would be implemented to support the current legacy aircraft.

In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321-4347), Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and Air Force Instruction (AFI) 32-7061 as promulgated at 32 CFR Part 989 et seq., Environmental Impact Analysis Process, the DAF and NGB have prepared an Environmental Impact Statement (EIS), which considers the potential consequences to the human and natural environment that may result from implementation of this action. This Conformity Evaluation Report has been prepared in accordance with Section 176(c)(1) of the Clean Air Act (CAA) and as specified in requirements found in 40 CFR 93 Subpart B, and is included in Appendix D of the EIS.

This document addresses the U.S. Environmental Protection Agency's (EPA's) General Conformity Rule requirements and how they relate to the actions associated with the implementation of the Proposed Action. The CAA requires any federal agency, such as the NGB, to assess whether their proposed action would contribute to further degradation of air quality or prevent the attainment of air quality standards. The NGB proposes to implement a federal action that would contribute to regional air emissions at FAT in Fresno, California and associated environs in Fresno County, CA. Fresno County does not meet air quality standards for several air pollutants (refer to Section 3.3, *Existing Air Quality Attainment Status*). Fresno County falls within the San Joaquin Valley Intrastate Air Quality Control Region that also includes Madera County, Merced County, San Joaquin County, Stanislaus County, Tulare County, and the San Joaquin Valley Air Basin portion of Kern County (that portion of the county that straddles the Sierra

Nevada and Tehachapi mountains) (40 CFR 81.165). This eight-county area is also known as the San Joaquin Valley Air Pollution Control District (APCD).

2.0 AIR QUALITY STANDARDS

Individual states are delegated the responsibility to regulate air quality in order to achieve or maintain air quality in attainment with these standards. The California Air Resources Board enforces air pollution regulations and sets guidelines to attain and maintain the National Ambient Air Quality Standards (NAAQS). These guidelines are found in the California State Implementation Plan (SIP). Table 1 summarizes the NAAQS.

Table 1 National Ambient Air Quality Standards

Pollutant		*Primary/Secondary[1, 2]*	*Averaging Time*	*Level*
Carbon Monoxide (CO)		Primary	8 hours	9 ppm
Carbon Monoxide (CO)		Primary	1 hour	35 ppm
Nitrogen Dioxide (NO_2)		Primary	1 hour	100 ppb
Nitrogen Dioxide (NO_2)		Primary and Secondary	Annual	53 ppb
Ozone (O_3)		Primary and Secondary	8 hours	0.070 ppm
Particulate Matter	$PM_{2.5}$	Primary	Annual	12 µg/m^3
Particulate Matter	$PM_{2.5}$	Secondary	Annual	15 µg/m^3
Particulate Matter	$PM_{2.5}$	Primary and Secondary	24 hours	35 µg/m^3
Particulate Matter	PM_{10}	Primary and Secondary	24 hours	150 µg/m^3
Sulfur Dioxide (SO_2)		Primary	1 hour	75 ppb
Sulfur Dioxide (SO_2)		Secondary	3 hours	0.5 ppm
Lead		Primary and Secondary	Rolling 3-month average	0.15 µg/m^3

Notes: [1]Primary Standards: the levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the EPA.
[2]Secondary Standards: the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
Legend: µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; ppm = parts per million; ppb = parts per billion.
Source: EPA 2022a.

The CAA also established a national goal of preventing degradation or impairment in federally designated Class I areas. Class I areas are defined as those areas where any appreciable degradation in air quality or associated visibility impairment is considered significant. As part of the Prevention of Significant Deterioration (PSD) Program, Congress assigned mandatory Class I status to all national parks, national wilderness areas (excluding wilderness study areas or wild and scenic rivers), and memorial parks greater than 5,000 acres. In Class I areas, visibility impairment is defined as atmospheric discoloration (such as from an industrial smokestack), and a reduction in regional visual range. Visibility impairment or haze results from smoke, dust, moisture, and vapor suspended in the air. Very small particles are either formed from gases (sulfates, nitrates) or are emitted directly into the atmosphere from sources like electric utilities, industrial processes, and vehicle emissions. Stationary sources are regulated under the PSD Program, and the PSD

permitting process requires a review of impacts to all Class I areas within 62 miles of any proposed major stationary source. Mobile sources, including aircraft and associated operations such as those occurring at ANG installations, are not subject to the requirements of PSD.

2.1 AIR QUALITY DESIGNATIONS

As part of the CAA, the EPA has established criteria for major pollutants of concern, called "criteria pollutants." These criteria pollutants include carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), particulate matter less than or equal to 10 microns in diameter (PM_{10}), particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead. Emissions of lead are not addressed because the affected areas contain no significant sources of this criteria pollutant, and 144 FW operations would not result in substantial emissions of lead. The criteria set for these pollutants, the NAAQS, represent maximum levels of background pollution that are considered safe, with an adequate margin of safety to protect the public health and welfare. Based on measured ambient criteria pollutant data, the EPA designates areas in the U.S. as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. Areas that lack monitoring data to demonstrate attainment or nonattainment status are designated as unclassified and are treated as attainment areas for regulatory purposes. Varying levels of attainment have been established for O_3, CO, and PM_{10} to indicate the severity of the air quality problem (i.e., the classification runs from moderate to serious for CO and PM_{10} and from marginal to extreme for O_3).

2.2 FEDERAL REQUIREMENTS

The CAA (42 USC §§ 7401-7671q, as amended) provided the authority for the EPA to establish nationwide air quality standards to protect public health and welfare. Federal standards, known as the NAAQS, were developed for the criteria pollutants: O_3, NO_2, CO, SO_2, both coarse and fine inhalable particulate matter PM_{10} and $PM_{2.5}$, and lead (refer to Table 1). The Act also requires that each state prepare a SIP for maintaining and improving air quality and eliminating violations of the NAAQS. The CAA requires federal agencies to determine whether their proposed actions in nonattainment and maintenance areas conform with the applicable SIP, and demonstrate that their actions will not (1) cause or contribute to a new violation of the NAAQS; (2) increase the frequency or severity of any existing violation; or (3) delay timely attainment of any standard, emission reduction, or milestone contained in the SIP.

2.3 STATE REQUIREMENTS

The CAA requires each state to develop, adopt, and implement a SIP to achieve, maintain, and enforce federal air quality standards throughout the state. States develop SIPs on a pollutant-by-pollutant basis whenever there is a violation of one or more air quality standards.

2.4 GENERAL CONFORMITY REGULATIONS

The General Conformity Rule was promulgated by the EPA on November 30, 1993 at 40 CFR Part 93 Subpart B *Determining Conformity of General Federal Actions to State or Federal Implementation Plans* for all federal activities except those covered under transportation conformity (EPA 1993). The General Conformity Regulations were revised by the EPA on April 5, 2010 (75 Federal Register 17253-17279) and changed the existing regulations found in 40 CFR Part 93, Subpart B (EPA 2010). The EPA also modified 40 CFR Part 51, Subpart W by changing state or Tribal adoption and submittal of general conformity SIPs from a requirement to a voluntary measure in 40 CFR § 51.851(a). In addition, the EPA provided in 40 CFR § 51.851(b) that until such time as EPA approves a state's or Tribe's revision to the conformity implementation plan permitted under this section, that federal agencies must meet the requirements of 40 CFR Part 93, Subpart B.

The General Conformity Rule requires any federal agency responsible for an action in a nonattainment or maintenance area to determine that the action conforms to the applicable SIP. Emissions of attainment pollutants are exempt from conformity analysis. Actions would conform to a SIP if their annual direct and indirect emissions would remain less than the applicable *de minimis* thresholds. Formal conformity determinations are required for any actions that would equal or exceed these thresholds.

Analyses required by the General Conformity Regulations focus on the net increase in air emissions from a Proposed Action compared to ongoing historical conditions. Existing SIPs are presumed to have accounted for routine, ongoing federal agency activities. Conformity analyses are further limited to those direct and indirect emissions over which the federal agency has continuing program responsibility and control over. General conformity analyses are not required to analyze emission sources beyond the responsibility and control of the federal agency. Conformity determinations are also not required to address emissions that are not reasonably foreseeable or reasonably quantifiable.

2.5 GENERAL CONFORMITY ANALYSIS PROCEDURES

The EPA General Conformity Regulations incorporate a stepwise process, beginning with an applicability analysis (EPA 1993, 2010). According to EPA guidance, before any approval is given for a federal action to go forward, the regulating federal agency must apply the applicability requirements found at 40 CFR § 93.153(b) to the federal action to evaluate whether, on a pollutant-by-pollutant basis, a determination of general conformity is required. If the regulating federal agency determines that the General Conformity Regulations do not apply to the federal action, no further analysis or documentation is required. However, if the General Conformity Regulations do apply to a federal action, the action proponent must make its own conformity determination in

accordance with the criteria and procedures outlined in the implementing regulations, publish a draft determination of general conformity for public review, consider comments from interested parties, and then publish the final determination of general conformity.

3.0 ELEMENTS OF THE PROPOSED ACTION

The Proposed Action involves both construction of new facilities to accommodate the conversion of F-15Cs to F-15EXs, or the construction of facilities required to continue the legacy mission of the F-15Cs at FAT, and operational emissions associated with the F-15EX, if selected.

3.1 CONSTRUCTION EMISSIONS

Proposed construction varies based on the location for the F-15EX aircraft beddown alternative at FAT. Construction would also be required to support the legacy aircraft at FAT if not selected for the F-15EX. All proposed construction would occur within the footprint of the installation. To ensure the maximum annual emissions from construction are captured, the calculations have been performed to account for each construction project being completed within 12 months of the year that it is programmed (e.g., if a project is planned for implementation in fiscal year [FY] 2024, the construction is assumed to occur between January and December 2025).

3.2 OPERATIONAL EMISSIONS

Operational emissions associated with the Proposed Action include emissions associated with aircraft operations and associated equipment. Mobile source emissions include emissions from aircraft operations (takeoffs and landings), aerospace ground equipment (AGE), personal vehicle operations, and maintenance aircraft operations performed with the engines still mounted on the aircraft (engine run-ups and trim checks). The Proposed Action would include either an increase of 101 personnel under the F-15EX beddown.

Under the Proposed Action, the 144 FW would convert from 21 F-15C aircraft (includes Primary Aerospace Vehicles Authorized and Backup Aerospace Vehicles Authorized) to 24 F-15EX. If the 144 FW is selected to receive is selected to receive the F-15EX, the aircraft would be on-site and operational in 2027. Baseline operations for the F-15C aircraft at FAT total 3,802 operations annually. The number of annual operations would increase by 3,086 annual operations under the Proposed Action for the F-15EX.

3.3 EXISTING AIR QUALITY ATTAINMENT STATUS

The San Joaquin Valley APCD is currently designated as nonattainment for the following NAAQS: 8-hour O_3 (extreme), 24-hour $PM_{2.5}$ (serious), and annual $PM_{2.5}$ (serious) (40 CFR 81.305 and EPA 2022b). Volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) are

precursors to the formation of O_3, and SO_2 is a precursor to the formation of $PM_{2.5}$. In June 2021, the EPA announced it will reconsider the 2020 decision to retain the particulate matter NAAQS, which were last strengthened in 2012, because available scientific evidence and technical information indicate that the current standards may not be adequate to protect public health and welfare, as required by the CAA (EPA 2022c).

The San Joaquin Valley APCD reached levels of attainment status for PM_{10} in December 2008 and was reclassified from "non-attainment" to "maintenance," and is designated as unclassifiable, attainment, or better than national standards for the federal SO_2, CO, NO_2, and Pb NAAQS. The applicable *de minimis* thresholds for the area are listed in Table 2.

Table 2 Applicable General Conformity *De Minimis* Thresholds (tons per year)

Affected Areas	*VOCs*[1]	*NO_x*[1]	*SO_2*[1]	*PM_{10}*	*$PM_{2.5}$*
San Joaquin Valley APCD	10	10	70	100	70

Notes: [1]VOCs and NO_x are precursors to the formation of O_3; SO_2 is a precursor to the formation of $PM_{2.5}$.
Legend: NO_x = Nitrogen Oxides; $PM_{2.5}$ = Particulate Matter Less Than or Equal to 2.5 Microns in Diameter; PM_{10} = Particulate Matter Less Than or Equal to 10 Microns in Diameter; SO_2 = Sulfur Dioxide; VOC = Volatile Organic Compound.
Source: 40 CFR 93.153(b)(2).

4.0 GENERAL CONFORMITY EVALUATION

4.1 APPLICABILITY ANALYSIS

The first step in a general conformity evaluation is an analysis of whether the requirements apply to the federal action that is proposed in a nonattainment or a maintenance area. Unless exempted by the regulations or otherwise presumed to conform, a federal action requires a general conformity determination for each pollutant where the total of direct and indirect emissions caused by the federal action would equal or exceed an annual *de minimis* emission rate for any given maintenance or nonattainment pollutant (or precursor). If a proposed action would result in emission increases less than the identified applicable *de minimis thresholds*, then no conformity determination is required.

4.2 EXEMPTIONS FROM GENERAL CONFORMITY REQUIREMENTS

The general conformity requirements apply to a federal action if the net project emissions equal or exceed certain *de minimis* emission rates established in the General Conformity Regulations. The *de minimis* thresholds differ based on the severity of the nonattainment status. The only exceptions to this applicability criterion include certain federal actions that are presumed to conform because of the thorough air quality analysis required to comply with other statutory requirements. Examples of these actions include those subject to the New Source Review program and remedial activities under the Comprehensive Environmental Response, Compensation, and Liability Act.

Other federal actions exempt from the conformity process include those actions that would result in no increase in emissions, or an increase in emissions that is clearly *de minimis*. Examples include continuing or recurring activities, routine maintenance and repair, and administrative and planning actions; however, the emissions that would result from this federal action do not meet any of these exempt categories. For this reason, a Level II Quantitative Assessment, as described in the *Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide – Fundamentals, Volume 1 of 2* (DAF 2019) was performed. This analysis is used to prepare an estimate of the worst-case annual net change (the total direct and indirect emissions associated with the Proposed Action) and these emissions were compared against *de minimis* thresholds for the pollutants of concern – VOCs, NO_x, SO_2, $PM_{10,}$ and $PM_{2.5}$. Emissions were estimated using flight operations data and flight profiles for the installation, and aircraft model-specific emission factors, along with emission estimates generated in the Air Conformity Applicability Model (ACAM), along with AGE, and personal vehicle operations. Construction emission estimates were prepared using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 (California Air Pollution Control Officers Association 2023). Default values in CalEEMod were used for the length of construction phases within each calendar year and construction equipment used during each phase, which correspond to the total acres proposed for construction. Assumptions for on-road vehicle trips related to construction worker commutes and material deliveries were developed based on the total square footage of construction planned for each year as well as the number of pieces of construction equipment per phase. The results were used to quantify the Proposed Action emissions.

4.3 EMISSION ESTIMATES

Existing emissions quantified include emissions from the F-15C aircraft, which would be replaced under the Proposed Action by the F-15 EX aircraft. Annual operations under the Proposed Action for the F-15EX are anticipated to increase to 6,866 operations per year at the airfield compared to the existing 3,802 annual operations currently flown with the F-15C. If the 144 FW is not selected to receive the F-15EX aircraft, then ANG operations at the airfield would not change from current operations for the foreseeable future.

To evaluate emissions from ongoing historical conditions for evaluating the net emissions increases/decreases associated with the Proposed Action, aircraft operation emission estimates were derived from the DAF's ACAM version 5.0.18b, using installation-specific data including landings and takeoffs, closed patterns, and annual engine testing. Emission estimates were developed for the F-15C aircraft, using the Pratt and Whitney F100-PW-220 engine. Aircraft operation emission estimates were derived from the DAF's ACAM version 5.0.18b, using installation-specific data including landings and take-offs, closed patterns, and on-ground maintenance activities. AGE operations emissions were estimated using data provided by the

installation, ACAM, and EPA's NONROAD. Chapter 3.0 and Appendix D of the EIS provide a discussion of the methodology for quantifying emissions. Table 3 presents the total mobile source emissions associated with operations of the F-15C aircraft.

Table 3 144 FW F-15C Emissions at FAT (tons per year)

Emission Source	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
F-15C Aircraft Operations	**25.85**	**26.37**	**3.90**	**2.48**	**2.22**
AGE	0.25	2.18	0.25	0.24	0.23
Total	**26.10**	**30.44**	**4.15**	**2.72**	**2.45**

Notes: [1]Includes maintenance tests.
[1]Numbers may not add up due to rounding.
Legend: AGE = aerospace ground equipment; NO_x = Nitrogen Oxides; VOCs = Volatile Organic Compounds.

Construction activities at the 144 FW include demolition or renovation of existing structures, construction of new structures, and infrastructure upgrades, and would depend on the aircraft selected and location selected:

As described in the EIS Section CA2.1.3, there are two locational scenarios for construction projects considered for the F-15EX conversion:

- Locational Scenario 1: construction would occur at the current 144 FW cantonment area south of the runway, or
- Locational Scenario 2: the majority of the construction would occur at the current 144 FW cantonment area, with some projects related to the Aerospace Control Alert mission occurring north of the runway.

Table 4 provides information on the construction projects anticipated to support the arrival of the F-15EX or the continuation of the legacy F-15C mission.

Table 4 Construction Projects for 144 FW at FAT

Project ID	*Project Name*	*Year*	*F-15EX Location*		*Legacy F-15C*
			1	*2*	
1	Construct Munitions Administration	2025	X	X	X
2	Construct Three Phase ECP – Munitions Dakota Gate	2026	X	X	X
3	Construct Three Phase ECP – Main Gate	2026	X	X	X
4	Construct Vehicle Maintenance Complex	2025	X	X	X
5	Construct Med Training and SFS EMEDS Facility	2025	X	X	X
6	Repair Airfield Pavements (south side)	2026	X	X	X
7	Repair Munitions M&I (Building 2600)	2029	X	X	

Project ID	*Project Name*	*Year*	*F-15EX Location*		*Legacy F-15C*
			1	*2*	
8	ADAL Building 2606 for ATG Munitions & MAC Pad	2028	X	X	
9.1 (Option 1)	Construct Fire Station (Option 1) (South side)	2025	X	X	
9.2 (Option 2)	Construct Fire Station (Option 2) (North side - northwest of the Marine Corps ramp)	2025		X	
10	ADAL Squadron Operations (Building 194)	2026	X	X	
11	Repair Small Maintenance Hangar (Building 159)	2026	X	X	
12	Repair Fuel Cell HVAC (Building 157)	2029	X	X	
13	ADAL Alert Crew Readiness (South side)	2027	X		
14	Construct F-15EX Four Bay FMS Facility (South side)	2028	X	X	
15	Construct WLT (F-15EX South side)	2028	X	X	
16	Construct CFT Maintenance (South side)	2028	X	X	
17	Construct Alert Spots 5 & 6 (North side)	2029		X	
18	Construct Alert Complex (North side)	2025		X	
19	Construct North Utilities Infrastructure (North side)	2025		X	
20	Construct ECP – E. Airway Boulevard	2025		X	
21	Building 130 Renovation	2025			X
22	Building 135 Dining Facility Remodel	2025			X

Legend: ADAL = Addition and Alteration; ASE = Aircraft Support Equipment; ATG = air-to-ground; CFT = Conforming Fuel Tank; ECP = Entry Control Point; EMEDS = Expeditionary Medical Support; FMS = Full Mission Simulator; HVAC = Heating, Ventilation, and Air Conditioning; M&I = Maintenance and Inspection; MAC = Munitions Assembly Conveyor; MCCA = Military Construction Cooperative Agreement; SFS = Security Forces Squadron; WLT = Weapons Load Crew Training.

Table 5 presents a summary of anticipated construction footprints. Additional details on the individual construction projects are available in Appendix C of the EIS.

Table 5 Summary of Construction Footprints

Year	*Locational Scenario 1*		*Locational Scenario 2*	
	SF of New Construction or Renovation[1]	*SF of Demolition*[1]	*SF of New Construction or Renovation*[1]	*SF of Demolition*[1]
2025	50,600	42,502	157,110	42,502
2026	83,690	36,823	83,690	36,823
2027	3,400	3,400	N/A	N/A
2028	33,100	800	33,100	800
2029	6,250	6,250	6,250	6,250

Tables 6 and 7 summarize the annual construction emissions associated with the conversion to the F-15EX at the two location options.

Table 6 Annual Emissions Estimates for Construction with the F-15EX Conversion at Locational Scenario 1 at the 144 FW Installation (tons per year)

Year	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2025	0.86	3.85	0.01	0.30	0.19
2026	1.87	7.25	0.02	7.55	1.28
2027	0.05	0.31	0.00	0.02	0.01
2028	0.58	2.37	0.01	0.13	0.10
2029	0.10	0.58	0.00	0.03	0.02

Legend: NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

Table 7 Annual Emissions Estimates for Construction with the F-15EX Conversion at Locational Scenario 2 at the 144 FW Installation (tons per year)

Year	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2025	2.10	8.23	0.02	0.77	0.44
2026	1.87	7.25	0.02	7.55	1.28
2027	N/A	N/A	N/A	N/A	N/A
2028	0.58	2.37	0.01	0.13	0.10
2029	0.34	2.35	0.01	0.14	0.10

Legend: NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

Should the 144 FW retain the F-15C legacy aircraft at FAT, impacts would be less intensive in magnitude than the stationing of the F-15EX, as fewer construction projects with less square footage would be implemented. No additional personnel would be added to the 144 FW installation and the F-15C airfield operations would remain the same as baseline conditions. Table 8 shows the emissions for construction activities under the F-15C legacy aircraft scenario which are compared to the *de minimis* thresholds.

Table 8 Annual Emissions Estimates for Construction with the Legacy F-15C at the 144 FW Installation (tons per year)

Year	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2025	0.73	3.09	0.01	0.18	0.13
2026	1.40	3.57	0.01	7.47	1.23
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No

Legend: NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

If the 144 FW is selected to receive the F-15EX, the aircraft would be based at the installation by FY 2027–2028 . Drawdown of the 144 FW's F-15C aircraft would be complete approximately 6 months prior to the initial arrival of the new aircraft. Operational emissions associated with the Proposed Action are summarized in Table 9.

Table 9 144 FW Projected F-15 EX Operational Emissions, 2027 (Steady State) (tons per year)

Emission Source	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
F-15C Current Airfield Operations removed	-26.10	-30.44	-4.15	-2.72	-2.45
F-15EX Airfield Operations added	15.68	34.56	4.39	7.89	7.13
Net Change in Airfield Emissions – F-15EX	-10.42	4.13	0.24	5.17	4.68
F-15EX – Additional Commuter Emissions	0.14	0.06	0.00	0.01	0.00
2027 (Steady State) Total Net Change Emissions	**-10.28**	**4.19**	**0.24**	**5.18**	**4.68**

Legend: NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

The total annual emissions for both construction and operations occurring in a calendar year are presented in Tables 10 and 11.

Table 10 Total Annual Emissions Estimates for Construction and Operations with the F-15EX Conversion, Locational Scenario 1 at the 144 FW Installation (tons per year)

Year/Emissions Source	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2025 Estimated Annual Net Change Air Emissions					
Construction Emissions	0.86	3.85	0.01	0.30	0.19
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No
2026 Estimated Annual Net Change Air Emissions					
Construction Emissions	1.87	7.25	0.02	7.55	1.28
Net Change – F-15EX Operations Emissions (50% Transition)	-5.21	2.06	0.12	2.59	2.34
Commuter Emissions (50% Transition)	0.07	0.03	0.00	0.01	0.00
Total 2026 Estimated Emissions[1]	**-3.27**	**9.35**	**0.14**	**10.14**	**3.62**
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No
2027 Estimated Annual Net Change Air Emissions					
Construction Emissions	0.05	0.31	0.00	0.02	0.01
Net Change – F-15EX Operations Emissions	-10.42	4.13	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.00	0.01	0.00
Total 2027 Estimated Emissions[1]	**-10.22**	**4.49**	**0.24**	**5.20**	**4.69**
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No
2028 Estimated Annual Net Change Air Emissions					
Construction Emissions	0.58	2.37	0.01	0.13	0.10
Net Change – F-15EX Operations Emissions	-10.42	4.13	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.00	0.01	0.00
2028 Total Net Change Emissions[1]	**-9.69**	**6.55**	**0.25**	**5.32**	**4.77**
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No
2029 Estimated Annual Net Change Air Emissions					
Construction Emissions	0.10	0.58	0.00	0.03	0.02
Net Change – F-15EX Operations Emissions	-10.42	4.13	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.00	0.01	0.00
2029 Total Net Change Emissions[1]	**-10.17**	**4.77**	**0.24**	**5.21**	**4.70**
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No
2030 Estimated Annual Net Change Air Emissions (Steady State)					
Net Change – F-15EX Operations Emissions	-10.42	4.13	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.00	0.01	0.00
2030 Total Net Change Emissions[1]	**-10.28**	**4.19**	**0.24**	**5.18**	**4.68**
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No

Note: [1]Numbers may not add up due to rounding.

Legend: N/A = not applicable; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

Table 11 Total Annual Emissions Estimates for Construction and Operations with the F-15EX Conversion, Locational Scenario 2 at the 144 FW Installation (tons per year)

Year/Emissions Source	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2025 Estimated Annual Net Change Air Emissions					
Construction Emissions	2.10	8.23	0.02	0.77	0.44
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No
2026 Estimated Annual Net Change Air Emissions					
Construction Emissions	1.87	7.25	0.02	7.55	1.28
Net Change – F-15EX Operations Emissions (50% Transition)	-5.21	2.06	0.12	2.59	2.34
Commuter Emissions (50 % Transition)	0.07	0.03	0.00	0.01	0.00
2026 Total Net Change Emissions[1]	**-3.27**	**9.35**	**0.14**	**10.14**	**3.62**
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No
2027 Estimated Annual Net Change Air Emissions					
Construction Emissions	--	--	--	--	--
Net Change – F-15EX Operations Emissions	-10.42	4.13	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.00	0.01	0.00
2027 Total Net Change Emissions[1]	**-10.28**	**4.19**	**0.24**	**5.18**	**4.68**
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No
2028 Estimated Annual Net Change Air Emissions					
Construction Emissions	0.58	2.37	0.01	0.13	0.10
Net Change – F-15EX Operations Emissions	-10.42	4.13	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.00	0.01	0.00
2028 Total Net Change Emissions[1]	**-9.69**	**6.55**	**0.25**	**5.32**	**4.77**
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No
2029 Estimated Annual Net Change Air Emissions					
Construction Emissions	0.34	2.35	0.01	0.14	0.10
Net Change – F-15EX Operations Emissions	-10.42	4.13	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.00	0.01	0.00
2029 Total Net Change Emissions[1]	**-9.94**	**6.54**	**0.25**	**5.32**	**4.78**
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No
2030 Estimated Annual Net Change Air Emissions (Steady State)					
Net Change – F-15EX Operations Emissions	-10.42	4.13	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.00	0.01	0.00
2030 Total Net Change Emissions[1]	**-10.28**	**4.19**	**0.24**	**5.18**	**4.68**
de minimis Threshold	10	10	70	100	70
Exceeds Threshold	No	No	No	No	No

Note: [1]Numbers may not add up due to rounding.

Legend: N/A = not applicable; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

4.4 APPLICABILITY OF GENERAL CONFORMITY TO THIS FEDERAL ACTION

The applicability of the General Conformity requirements to the Proposed Action was determined by comparing the federal action emissions to the conformity *de minimis* thresholds for all nonattainment and maintenance pollutants in the region of influence. As shown in Tables 10 and 11 (F-15EX conversion at FAT), the emissions of all pollutants are lower than their applicable *de minimis* thresholds.

5.0 FINDING OF CONFORMITY

In accordance with 40 CFR Part 93, Subpart B and the *Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide – Fundamentals, Volume 1 of 2* (DAF 2019), the emissions due to the Proposed Action were evaluated, including reasonable foreseeable direct and indirect emissions. The applicability analysis has found that:

- General Conformity is not applicable to this proposed federal action,
- a Conformity Determination is not required, and
- the General Conformity Evaluation is complete with a completed Record of Conformity Analysis (ROCA) to document the conclusion (included in Attachment 1 to this document).

6.0 REFERENCES

California Air Pollution Control Officers Association. 2023. California Emissions Estimator Model®. Accessed at: http://www.aqmd.gov/caleemod/.

Department of the Air Force (DAF). 2019. Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide – Fundamentals, Volume 1 of 2. May.

United States Environmental Protection Agency (EPA). 1993. Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule. 40 CFR Parts 6, 51, and 93. 30 November.

_____. 2010. Revisions to the General Conformity Rule Regulations; Final Rule. 40 CFR Parts 51 and 93. 5 April.

_____. 2022a. NAAQS Table. Accessed at: https://www.epa.gov/criteria-air-pollutants/naaqs-table.

_____. 2022b. Nonattainment Areas for Criteria Pollutants (Green Book.). Accessed at: https://www.epa.gov/green-book.

_____. 2022c. EPA to Reexamine Health Standards for Harmful Soot that Previous Administration Left Unchanged. Accessed on 13 October 2022 at: https://www.epa.gov/newsreleases/epa-reexamine-health-standards-harmful-soot-previous-administration-left-unchanged. Last updated June 21, 2022.

ATTACHMENT 1
RECORD OF CONFORMITY ANALYSIS

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AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: FRESNO ANGB
State: California
County(s): Fresno
Regulatory Area(s): San Joaquin Valley, CA

b. Action Title: Air National Guard F-15EX Eagle II & F-35A Lightning II Operational Beddowns EIS: Fresno F-15EX

c. Project Number/s (if applicable):

d. Projected Action Start Date: 10 / 2026

e. Action Description:

The United States (U.S.) Department of the Air Force (DAF) and National Guard Bureau (NGB) propose to maintain the combat capability of the Air National Guard (ANG) by recapitalizing the remaining F-15C/D aircraft, which are being retired due to age and associated maintenance costs. There are three remaining ANG units that are still flying the F-15C/D aircraft (that are not already undergoing similar evaluation) at this time; these include the 104th Fighter Wing (104 FW) at Westfield-Barnes Regional Airport (BAF) in Westfield, Massachusetts (MA); the 144th Fighter Wing (144 FW) at Fresno Yosemite International Airport (FAT) in Fresno, California (CA); and the 159th Fighter Wing (159 FW) at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, in Belle Chasse, Louisiana (LA). The proposal is the beddown, operation, and associated infrastructure construction of one squadron of F-15EX Eagle II (F-15EX) aircraft at two of these fighter wings and one squadron of F-35A Lightning II (F-35A) aircraft at one of the fighter wings. These aircraft would replace the aging F-15C/D fighter aircraft at the selected wings.

f. Point of Contact:

Name: Caitlin Jafolla
Title: Air Quality SME
Organization: Cardno now Stantec
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

Location 1 – South

Emissions Source	*VOCs*	*NO_x*	*CO*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2025 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.86	3.85	4.83	0.01	0.30	0.19
de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	No	No	No	No	No
2026 Estimated Annual Net Change Air Emissions						
Construction Emissions	1.87	7.25	8.64	0.02	7.55	1.28
Net Change – F-15EX Operations Emissions (50% transition)	-5.21	2.06	3.19	0.12	2.59	2.34
Commuter Emissions (50% transition)	0.07	0.03	0.42	0.00	0.01	0.00
Total 2026 Estimated Emissions[1]	**-3.27**	**9.35**	**12.24**	**0.14**	**10.14**	**3.62**
de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	No	No	No	**No**	No
2027 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.05	0.31	0.40	0.00	0.02	0.01
Net Change – F-15EX Operations Emissions (100% conversion - steady state)	-10.42	4.13	6.37	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.83	0	0.01	0
Total 2027 Estimated Emissions[1]	**-10.22**	**4.49**	**7.60**	**0.24**	**5.20**	**4.69**
de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	No	No	No	No	No
2028 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.58	2.37	2.82	0.01	0.13	0.10
Net Change – F-15EX Operations Emissions (steady state)	-10.42	4.13	6.37	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.83	0	0.01	0
2028 Total Net Change Emissions[1]	**-9.69**	**6.55**	**10.02**	**0.25**	**5.32**	**4.77**
de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	No	No	No	No	No
2029 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.10	0.58	0.75	0.00	0.03	0.02
Net Change – F-15EX Operations Emissions (steady state)	-10.42	4.13	6.37	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.83	0	0.01	0
2029 Total Net Change Emissions[1]	**-10.17**	**4.77**	**7.95**	**0.24**	**5.21**	**4.70**
de minimis or Comparative Threshold	10	10	250	70	100	70

Exceeds Threshold	No	No	No	No	No	No
2030 Estimated Annual Net Change Air Emissions (Steady State)						
Net Change – F-15EX Operations Emissions	-10.42	4.13	6.37	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.83	0	0.01	0
2030 Total Net Change Emissions[1]	**-10.28**	**4.19**	**7.20**	**0.24**	**5.18**	**4.68**
de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	No	No	No	No	No

Location 2 – North

Emissions Source	***VOCs***	***NO_x***	***CO***	***SO_2***	***PM_{10}***	***$PM_{2.5}$***
2025 Estimated Annual Net Change Air Emissions						
Construction Emissions	2.10	8.23	10.21	0.02	0.77	0.44
de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	No	No	No	No	No
2026 Estimated Annual Net Change Air Emissions						
Construction Emissions	1.87	7.25	8.64	0.02	7.55	1.28
Net Change – F-15EX Operations Emissions (50% transition)	-5.21	2.06	3.19	0.12	2.59	2.34
Commuter Emissions (50% transition)	0.07	0.03	0.42	0.00	0.01	0.00
Total 2026 Estimated Emissions[1]	**-3.27**	**9.35**	**12.24**	**0.14**	**10.14**	**3.62**
de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	No	No	No	No	No
2027 Estimated Annual Net Change Air Emissions						
Construction Emissions	--	--	--	--	--	--
Net Change – F-15EX Operations Emissions (100% conversion - steady state)	-10.42	4.13	6.37	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.83	0	0.01	0
Total 2027 Estimated Emissions[1]	**-10.28**	**4.19**	**7.20**	**0.24**	**5.18**	**4.68**
de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	No	No	No	No	No
2028 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.58	2.37	2.82	0.01	0.13	0.10
Net Change – F-15EX Operations Emissions (steady state)	-10.42	4.13	6.37	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.83	0	0.01	0
2028 Total Net Change Emissions[1]	**-9.69**	**6.55**	**10.02**	**0.25**	**5.32**	**4.77**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	No	No	No	No	No
2029 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.34	2.35	2.77	0.01	0.14	0.10
Net Change – F-15EX Operations Emissions (steady state)	-10.42	4.13	6.37	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.83	0	0.01	0
2029 Total Net Change Emissions[1]	**-9.94**	**6.54**	**9.98**	**0.25**	**5.32**	**4.78**
de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	**Yes**	No	No	No	No
2030 Estimated Annual Net Change Air Emissions (Steady State)						
Net Change – F-15EX Operations Emissions	-10.42	4.13	6.37	0.24	5.17	4.68
Commuter Emissions	0.14	0.06	0.83	0	0.01	0
2030 Total Net Change Emissions[1]	**-10.28**	**4.19**	**7.20**	**0.24**	**5.18**	**4.68**
de minimis or Comparative Threshold	10	10	250	70	100	70
Exceeds Threshold	No	**Yes**	No	No	No	No

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

Caitlin Jafolla, Air Quality SME

22 February 2023

DATE

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159th Fighter Wing at NAS JRB New Orleans

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AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: NEW ORLEANS JRB
State: Louisiana
County(s): Plaquemines
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Air National Guard F-15EX Eagle II & F-35A Lightning II Operational Beddowns EIS: NOLA F-15EX

c. Project Number/s (if applicable):

d. Projected Action Start Date: 10 / 2026

e. Action Description:

The United States (U.S.) Department of the Air Force (DAF) and National Guard Bureau (NGB) propose to maintain the combat capability of the Air National Guard (ANG) by recapitalizing the remaining F-15C/D aircraft, which are being retired due to age and associated maintenance costs. There are three remaining ANG units that are still flying the F-15C/D aircraft (that are not already undergoing similar evaluation) at this time; these include the 104th Fighter Wing (104 FW) at Westfield-Barnes Regional Airport (BAF) in Westfield, Massachusetts (MA); the 144th Fighter Wing (144 FW) at Fresno Yosemite International Airport (FAT) in Fresno, California (CA); and the 159th Fighter Wing (159 FW) at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, in Belle Chasse, Louisiana (LA). The proposal is the beddown, operation, and associated infrastructure construction of one squadron of F-15EX Eagle II (F-15EX) aircraft at two of these fighter wings and one squadron of F-35A Lightning II (F-35A) aircraft at one of the fighter wings. These aircraft would replace the aging F-15C/D fighter aircraft at the selected wings.

f. Point of Contact:

Name: Caitlin Jafolla
Title: Air Quality SME
Organization: Cardno now Stantec
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

Emissions Source	***VOCs***	***NO_x***	***CO***	***SO_2***	***PM_{10}***	***$PM_{2.5}$***
2025 Estimated Annual Net Change Air Emissions						
Construction Emissions	1.26	0.97	2.12	0.00	0.04	0.03
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2026 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.54	0.94	1.67	0.00	0.18	0.03
Net Change – F-15EX Operations Emissions (50% transition)	5.88	5.74	35.68	0.45	4.52	4.09
Commuter Emissions (50% transition)	0.076	0.045	1.14	0.00	0.00	0.00
Total 2026 Estimated Emissions[1]	**6.50**	**6.72**	**38.49**	**0.46**	**4.70**	**4.12**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2027 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.23	0.90	1.59	0.00	0.12	0.03
Net Change – F-15EX Operations Emissions (100% conversion - steady state)	11.76	11.48	71.36	0.91	9.05	8.18
Commuter Emissions	0.15	0.09	2.28	0.00	0.00	0.00
Total 2027 Estimated Emissions[1]	**12.15**	**12.47**	**75.23**	**0.91**	**9.17**	**8.21**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2028 Estimated Annual Net Change Air Emissions						
Construction Emissions	2.01	1.41	2.75	0.00	7.68	0.05
Net Change – F-15EX Operations Emissions (steady state)	11.76	11.48	71.36	0.91	9.05	8.18

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Commuter Emissions	0.15	0.09	2.28	0.00	0.00	0.00
2028 Total Net Change Emissions[1]	**13.93**	**12.98**	**76.39**	**0.92**	**16.73**	**8.23**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2029 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.45	0.93	1.62	0.00	0.21	0.03
Net Change – F-15EX Operations Emissions (steady state)	11.76	11.48	71.36	0.91	9.05	8.18
Commuter Emissions	0.15	0.09	2.28	0.00	0.00	0.00
2029 Total Net Change Emissions[1]	**12.37**	**12.50**	**75.26**	**0.91**	**9.26**	**8.21**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2030 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.18	0.90	1.46	0.00	0.06	0.03
Net Change – F-15EX Operations Emissions (steady state)	11.76	11.48	71.36	0.91	9.05	8.18
Commuter Emissions	0.15	0.09	2.28	0.00	0.00	0.00
2030 Total Net Change Emissions[1]	**12.10**	**12.47**	**75.10**	**0.91**	**9.11**	**8.21**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2031 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.21	1.11	1.56	0.00	2.83	0.04
Net Change – F-15EX Operations Emissions (steady state)	11.76	11.48	71.36	0.91	9.05	8.18
Commuter Emissions	0.15	0.09	2.28	0.00	0.00	0.00
2031 Total Net Change Emissions[1]	**12.12**	**12.68**	**75.20**	**0.91**	**11.88**	**8.23**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2032 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.58	1.27	1.94	0.00	0.56	0.04
Net Change – F-15EX Operations Emissions (steady state)	11.76	11.48	71.36	0.91	9.05	8.18
Commuter Emissions	0.15	0.09	2.28	0.00	0.00	0.00
2032 Total Net Change Emissions[1]	**12.50**	**12.84**	**75.58**	**0.92**	**9.61**	**8.23**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2033 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.84	1.29	2.12	0.00	0.11	0.04

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Net Change – F-15EX Operations Emissions (steady state)	11.76	11.48	71.36	0.91	9.05	8.18
Commuter Emissions	0.15	0.09	2.28	0.00	0.00	0.00
2033 Total Net Change Emissions[1]	**12.76**	**12.86**	**75.76**	**0.92**	**9.16**	**8.23**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2034 Estimated Annual Net Change Air Emissions (Steady State)						
Net Change – F-15EX Operations Emissions	11.76	11.48	71.36	0.91	9.05	8.18
Commuter Emissions	0.15	0.09	2.28	0.00	0.00	0.00
2034 Total Net Change Emissions[1]	**11.92**	**11.57**	**73.64**	**0.91**	**9.05**	**8.18**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	**No**	No	No	No	No

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

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Caitlin Jafolla, Air Quality SME DATE

AIR CONFORMITY APPLICABILITY MODEL REPORT
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1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: NEW ORLEANS JRB
State: Louisiana
County(s): Plaquemines
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Air National Guard F-15EX Eagle II & F-35A Lightning II Operational Beddowns EIS: NOLO F-35A

c. Project Number/s (if applicable):

d. Projected Action Start Date: 10 / 2025

e. Action Description:

The United States (U.S.) Department of the Air Force (DAF) and National Guard Bureau (NGB) propose to maintain the combat capability of the Air National Guard (ANG) by recapitalizing the remaining F-15C/D aircraft, which are being retired due to age and associated maintenance costs. There are three remaining ANG units that are still flying the F-15C/D aircraft (that are not already undergoing similar evaluation) at this time; these include the 104th Fighter Wing (104 FW) at Westfield-Barnes Regional Airport (BAF) in Westfield, Massachusetts (MA); the 144th Fighter Wing (144 FW) at Fresno Yosemite International Airport (FAT) in Fresno, California (CA); and the 159th Fighter Wing (159 FW) at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, in Belle Chasse, Louisiana (LA). The proposal is the beddown, operation, and associated infrastructure construction of one squadron of F-15EX Eagle II (F-15EX) aircraft at two of these fighter wings and one squadron of F-35A Lightning II (F-35A) aircraft at one of the fighter wings. These aircraft would replace the aging F-15C/D fighter aircraft at the selected wings.

f. Point of Contact:

Name: Caitlin Jafolla
Title: Air Quality SME
Organization: Cardno now Stantec
Email: caitlin.jafolla@cardno-gs.com
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

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"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

Emissions Source	*VOCs*	*NO_x*	*CO*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2025 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.71	8.23	10.21	0.02	0.77	0.44
Net Change – F-35A Operations Emissions (50% transition)	-14.95	4.84	-25.28	0.37	3.37	3.04
Commuter Emissions (50% transition)	0.06	0.04	0.90	0.00	0.00	0.00
2025 Total Net Change Emissions[1]	**-14.18**	**13.10**	**-14.16**	**0.39**	**4.14**	**3.48**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2026 Estimated Annual Net Change Air Emissions						
Construction Emissions	2.37	1.54	3.07	0.01	2.00	0.04
Net Change – F-35A Operations Emissions (100% transition)	-29.89	9.68	-50.56	0.74	6.73	6.08
Commuter Emissions	0.12	0.07	1.80	0.00	0.00	0.00
2026 Total Net Change Emissions[1]	**-27.40**	**11.29**	**-45.68**	**0.75**	**8.73**	**6.12**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2027 Estimated Annual Net Change Air Emissions						
Construction Emissions	1.78	1.03	2.45	0.00	0.12	0.03
Net Change – F-35A Operations Emissions	-29.89	9.68	-50.56	0.74	6.73	6.08
Commuter Emissions	0.12	0.07	1.80	0.00	0.00	0.00
2027 Total Net Change Emissions[1]	**-27.99**	**10.77**	**-46.30**	**0.75**	**6.85**	**6.11**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2028 Estimated Annual Net Change Air Emissions						

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Construction Emissions	0.59	1.16	1.76	0.00	0.17	0.04
Net Change – F-35A Operations Emissions	-29.89	9.68	-50.56	0.74	6.73	6.08
Commuter Emissions	0.12	0.07	1.80	0.00	0.00	0.00
2028 Total Net Change Emissions[1]	**-29.19**	**10.91**	**-46.99**	**0.75**	**6.90**	**6.12**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2029 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.45	0.93	1.62	0.00	0.21	0.03
Net Change – F-35A Operations Emissions	-29.89	9.68	-50.56	0.74	6.73	6.08
Commuter Emissions	0.12	0.07	1.80	0.00	0.00	0.00
2029 Total Net Change Emissions[1]	**-29.32**	**10.68**	**-47.13**	**0.75**	**6.95**	**6.11**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2030 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.22	1.16	1.64	0.00	0.07	0.04
Net Change – F-35A Operations Emissions	-29.89	9.68	-50.56	0.74	6.73	6.08
Commuter Emissions	0.12	0.07	1.80	0.00	0.00	0.00
2030 Total Net Change Emissions[1]	**-29.56**	**10.91**	**-47.11**	**0.75**	**6.80**	**6.12**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2031 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.21	1.11	1.56	0.00	2.83	0.04
Net Change – F-35A Operations Emissions	-29.89	9.68	-50.56	0.74	6.73	6.08
Commuter Emissions	0.12	0.07	1.80	0.00	0.00	0.00
2031 Total Net Change Emissions[1]	**-29.56**	**10.86**	**-47.19**	**0.75**	**9.56**	**6.12**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2032 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.58	1.27	1.94	0.00	0.56	0.04
Net Change – F-35A Operations Emissions	-29.89	9.68	-50.56	0.74	6.73	6.08
Commuter Emissions	0.12	0.07	1.80	0.00	0.00	0.00
2032 Total Net Change Emissions[1]	**-29.19**	**11.02**	**-46.81**	**0.75**	**7.29**	**6.12**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No

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2033 Estimated Annual Net Change Air Emissions						
Construction Emissions	0.84	1.29	2.12	0.00	0.11	0.04
Net Change – F-35A Operations Emissions	-29.89	9.68	-50.56	0.74	6.73	6.08
Commuter Emissions	0.12	0.07	1.80	0.00	0.00	0.00
2033 Total Net Change Emissions[1]	**-28.93**	**11.03**	**-46.64**	**0.75**	**6.85**	**6.12**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No
2034 Estimated Annual Net Change Air Emissions (Steady State)						
Net Change – F-35A Operations Emissions	-29.89	9.68	-50.56	0.74	6.73	6.08
Commuter Emissions	0.12	0.07	1.80	0.00	0.00	0.00
2034 Total Net Change Emissions[1]	**-29.77**	**9.75**	**-48.75**	**0.74**	**6.73**	**6.08**
de minimis or Comparative Threshold	250	250	250	250	250	250
Exceeds Threshold	No	No	No	No	No	No

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

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Caitlin Jafolla, Air Quality SME DATE

Baseline

Group	*Aircraft*	*LTOs*				
		Day	*Eve*	*Night*	*Total*	Ratio
144th FW	F-15C	1,668	141	2	**1811**	0.70
144th FW	C-26	150	8	2	160	0.06
Army Guard	UH-60	423	30	12	465	0.18
Army Guard	CH-47	142	10	3	155	0.06
	Total	*2,383*	*189*	*19*	*2591*	70% of all mil LTOs at FAT are F-15C

F-15EX Alternative

Group	*Aircraft*	*LTOs*				
		Day	*Eve*	*Night*	*Total*	Ratio
144 FW	F-15EX	3,022	255	4	3281	0.81
Other Military	C-26, UH60, CH47	715	48	17	780	
					4061	81% of all mil LTOs at FAT would be F-15EX

Additional AGE NOTE: These are equipment that are not in ACAM. Emission factors derived from MOVES 3, Airport Support Equipment, using 2010 as the year to account for older equipment

				Avg Run Time	EFs in g/hp-hr							
Equipment	Type	Model	HP	per Year (hr)	VOCs	CO	NOx	SO2	PM10	PM2.5	CO2	CH4
HYD PURIFIER	AC	100033-100	10	87.22	0.720	5.264	4.399	0.060	0.620	0.602	594	0.05
Generator	GENERATOR SET, DIESEL	AM32A-112	160	340.94	0.640	2.334	5.843	0.054	0.475	0.461	529	0.02
Bomblift	TRUCK, BOMBLIFT, AERIAL	MJ-1C	29.1	1,419.26	0.414	2.256	4.340	0.060	0.421	0.408	595	0.03
Bomb Lift	TRUCK, BOMBLIFT, AERIAL	MHU-83D/E	26.1	1,450.97	0.414	2.256	4.340	0.060	0.421	0.408	595	0.03
N2 Servicing Cart		NGC-15-TM	49	253.72	0.414	2.256	4.340	0.060	0.421	0.408	595	0.03
N2 Servicing Cart		130009-100	165	261.65	0.376	1.650	4.325	0.054	0.336	0.326	536	0.02
MC-20	rotary air compressor	MC-20-WHTZ-T4	10.2	444.01	0.720	5.264	4.399	0.060	0.620	0.602	594	0.05
HDU-43	duct type heater	HDU-43	6	134.79	0.720	5.264	4.399	0.060	0.620	0.602	594	0.05

Emissions in lb/year

	VOCs	CO	NOx	SO2	PM10	PM2.5	CO2	CH4	CO2e
THOR 200	1.38	10.12	8.46	0.12	1.19	1.16	1,142.35	0.10	1,145
AM32A-112	76.96	280.71	702.65	6.44	57.18	55.47	63,640.70	2.03	63,691
MJ-1C	37.65	205.39	395.20	5.48	38.29	37.14	54,174.17	2.94	54,248
MHU-83D/E	34.53	188.33	362.38	5.02	35.11	34.06	49,674.99	2.69	49,742
NGC-15-TM	11.33	61.83	118.96	1.65	11.53	11.18	16,307.66	0.88	16,330
130009-100	35.74	157.05	411.64	5.16	31.95	30.99	50,993.18	1.88	51,040
MC-20-WHTZ-T4F-E0	7.19	52.56	43.93	0.60	6.19	6.01	5,931.93	0.50	5,945
HDU-43	1.28	9.39	7.84	0.11	1.11	1.07	1,059.27	0.09	1,062
Total in Tons	**0.10**	**0.48**	**1.03**	**0.01**	**0.09**	**0.09**	**121.46**	**0.01**	**122**

AGE in ACAM

				Avg Run Time	EFs in lb/hr						
Equipment	Type	Model	HP	per Year (hr)	VOCs	CO	NOx	SO2	PM10	PM2.5	CO2e
Generator	GENERATOR, GAS TURBINE	A/M32A-60/A	180	2,783.02	0.270	5.480	1.820	0.306	0.211	0.205	221.10
Floodlights	FLOODLIGHT SET	FL-1D	10.5	1,030.75	0.025	0.13	0.17	0.043	0.16	0.155	30.7
Floodlights	FLOODLIGHT SET	NF-2D	10	1,712.63	0.01	0.08	0.11	0.043	0.01	0.01	22.1
MC-7	rotary air compressor	11M125RPDQ	48	459.87	0.057	0.642	1.285	0.023	0.109	0.105	75
Mule	TEST STAND, HYDRAULIC	TTU-228E/228	130	364.73	0.19	2.46	3.85	0.238	0.083	0.076	172

EFs from ACAM
NF-2 used for NF-2D

Emissions in lb/yr

	VOCs	CO	NOx	SO2	PM10	PM2.5	CO2e
A/M32A-60/A	751.41	15250.93	5065.09	851.60	587.22	570.52	615325.10
FL-1D	25.77	134.00	175.23	44.32	164.92	159.77	31643.94
NF-2D	17.13	137.01	188.39	73.64	17.13	17.13	37849.03
11M125RPDQ	26.21	295.24	590.94	10.58	50.13	48.29	34490.38
TTU-228E/228	69.30	897.23	1404.19	86.80	30.27	27.72	62732.85
Total in tons	**0.44**	**8.36**	**3.71**	**0.53**	**0.42**	**0.41**	**391.02**

	VOCs	CO	NOx	SO2	PM10	PM2.5	CO2e
AGE Emission Totals for Baseline	**0.55**	**8.84**	**4.74**	**0.55**	**0.52**	**0.50**	**513**

F-15EX

Additional AGE NOTE: These are equipment that are not in ACAM. Emission factors derived from MOVES 3, Airport Support Equipment, using 2010 as the year to account for older equipment

				Avg Run Time	EFs in g/hp-hr							
Equipment	Type	Model	HP	per Year (hr)	VOCs	CO	NOx	SO2	PM10	PM2.5	CO2	CH4
HYD PURIFIER	AC	100033-100	10	180.64	0.720	5.264	4.399	0.060	0.620	0.602	594	0.05
Generator	GENERATOR SET, DIESEL	AM32A-112	160	706.15	0.640	2.334	5.843	0.054	0.475	0.461	529	0.02
Bomblift	TRUCK, BOMBLIFT, AERIAL	MJ-1C	29.1	2,939.53	0.414	2.256	4.340	0.060	0.421	0.408	595	0.03
Bomb Lift	TRUCK, BOMBLIFT, AERIAL	MHU-83D/E	26.1	3,005.22	0.414	2.256	4.340	0.060	0.421	0.408	595	0.03
N2 Servicing Cart		NGC-15-TM	49	525.50	0.414	2.256	4.340	0.060	0.421	0.408	595	0.03
N2 Servicing Cart		130009-100	165	541.93	0.376	1.650	4.325	0.054	0.336	0.326	536	0.02
MC-20	rotary air compressor	MC-20-WHTZ-T4	10.2	919.63	0.720	5.264	4.399	0.060	0.620	0.602	594	0.05
HDU-43	duct type heater	HDU-43	6	279.17	0.720	5.264	4.399	0.060	0.620	0.602	594	0.05

Emissions in lb/year

	VOCs	CO	NOx	SO2	PM10	PM2.5	CO2	CH4	CO2e
THOR 200	2.87	20.96	17.52	0.24	2.47	2.40	2,366.02	0.20	2,371
AM32A-112	159.40	581.39	1455.31	13.33	118.43	114.88	131,810.98	4.20	131,916
MJ-1C	77.98	425.39	818.53	11.35	79.31	76.93	112,204.15	6.08	112,356
MHU-83D/E	71.51	390.07	750.55	10.40	72.72	70.54	102,885.57	5.57	103,025
NGC-15-TM	23.48	128.05	246.40	3.42	23.87	23.16	33,776.01	1.83	33,822
130009-100	74.03	325.28	852.58	10.68	66.17	64.18	105,615.76	3.89	105,713
MC-20-WHTZ-T4F-E0	14.88	108.86	90.98	1.24	12.83	12.44	12,286.07	1.05	12,312
HDU-43	2.66	19.44	16.25	0.22	2.29	2.22	2,193.94	0.19	2,199
Total in Tons	**0.21**	**1.00**	**2.12**	**0.03**	**0.19**	**0.18**	**251.57**	**0.012**	**252**

AGE in ACAM

				Avg Run Time	EFs in lb/hr						
Equipment	Type	Model	HP	per Year (hr)	**VOCs**	**CO**	**NOx**	**SO2**	**PM10**	**PM2.5**	**CO2e**
Generator	GENERATOR, GAS TURBINE	A/M32A-60/A	180	5,764.11	0.270	5.480	1.820	0.306	0.211	0.205	221.10
Floodlights	FLOODLIGHT SET	FL-1D	10.5	2,134.86	0.025	0.13	0.17	0.043	0.16	0.155	30.7
Floodlights	FLOODLIGHT SET	NF-2D	10	3,547.15	0.01	0.08	0.11	0.043	0.01	0.01	22.1
MC-7	rotary air compressor	11M125RPDQ	48	952.47	0.057	0.642	1.285	0.023	0.109	0.105	75
Mule	TEST STAND, HYDRAULIC	TTU-228E/228	130	755.41	0.19	2.46	3.85	0.238	0.083	0.076	172

EFs from ACAM
NF-2 used for NF-2D

Emissions in lb/yr

	VOCs	**CO**	**NOx**	**SO2**	**PM10**	**PM2.5**	**CO2e**
A/M32A-60/A	1556.31	31587.34	10490.69	1763.82	1216.23	1181.64	1274445.57
FL-1D	53.37	277.53	362.93	91.80	341.58	330.90	65540.11
NF-2D	35.47	283.77	390.19	152.53	35.47	35.47	78391.95
11M125RPDQ	54.29	611.49	1223.93	21.91	103.82	100.01	71435.60
TTU-228E/228	143.53	1858.31	2908.33	179.79	62.70	57.41	129930.68
Total in tons	**0.92**	**17.31**	**7.69**	**1.10**	**0.88**	**0.85**	**810**

	VOCs	**CO**	**NOx**	**SO2**	**PM10**	**PM2.5**	**CO2e**
AGE Emission Totals for F-15EX/F-35	**1.13**	**18.31**	**9.81**	**1.13**	**1.07**	**1.04**	**1062**
Change in Emissions	**0.59**	**9.47**	**5.07**	**0.58**	**0.55**	**0.54**	**549**

Baseline AGE Data

EQUIP ID	TYPE	NOMENCLATURE	MODEL NUMBER	AVG HOURS / Day	NOLA NAA	NOLA PA
A05	-60	GENERATOR	A/M32A-60/A	1.20		
A18	-60	GENERATOR	A/M32A-60/A	0.36		
A11	-60	GENERATOR	A/M32A-60/A	0.38		
A62	-60	GENERATOR	A/M32A-60/A	0.37		
A20	-60	GENERATOR	A/M32A-60/A	0.37		
A80	-60	GENERATOR	A/M32A-60/A	0.11		
A26	-60	GENERATOR	A/M32A-60/A	0.40		
TG01	-60	GENERATOR	A/M32A-60/A	0.30		
GT10	-60	GENERATOR	A/M32A-60/A	0.02		
			NAA Total Hrs per Day	3.51		
			NAA Total Hrs per Year	**1281.15**		
			NAA Total Hrs per Sortie	0.71	**2,783**	**5,764**
			PA Total Hrs Per Year	**2321.07**		
DG01	B809	GENERATOR	**AM32A-112**	0.11		
DG02	B809	GENERATOR	**AM32A-112**	0.11		
DG86	B809	GENERATOR	**AM32A-112**	0.16		
DG87	B809	GENERATOR	**AM32A-112**	0.05		
			NAA Total Hrs per Day	0.43		
			NAA Total Hrs per Year	**156.95**		
			NAA Total Hrs per Sortie	0.09	**341**	**706**
			PA Total Hrs Per Year	**284.35**		
BL49	MJ-1C	BOMBLIFT	**MJ-1C**	0.09		
B43	MJ-1C	BOMBLIFT	**MJ-1C**	0.05		
B69	MJ-1C	BOMBLIFT	**MJ-1C**	0.14		
B70	MJ-1C	BOMBLIFT	**MJ-1C**	0.42		
B44	MJ-1C	BOMBLIFT	**MJ-1C**	0.04		
B45	MJ-1C	BOMBLIFT	**MJ-1C**	0.25		
B46	MJ-1C	BOMBLIFT	**MJ-1C**	0.30		
B47	MJ-1C	BOMBLIFT	**MJ-1C**	0.39		
B48	MJ-1C	BOMBLIFT	**MJ-1C**	0.05		
B57	MJ-1C	BOMBLIFT	**MJ-1C**	0.06		
			NAA Total Hrs per Day	1.79		
			NAA Total Hrs per Year	**653.35**		
			NAA Total Hrs per Sortie	0.36	**1,419**	**2,940**
			PA Total Hrs Per Year	**1183.68**		
B32	MHU-83	BOMBLIFT	**MHU-83D/E**	0.03		
B24	MHU-83	BOMBLIFT	**MHU-83D/E**	0.34		
B37	MHU-83	BOMBLIFT	**MHU-83D/E**	0.03		
B41	MHU-83	BOMBLIFT	**MHU-83D/E**	0.04		
B50	MHU-83	BOMBLIFT	**MHU-83D/E**	1.31		
BL39	MHU-83	BOMBLIFT	**MHU-83D/E**	0.06		
D77	MHU-83	BOMBLIFT	**MHU-83D/E**	0.02		
			NAA Total Hrs per Day	1.83		
			NAA Total Hrs per Year	**667.95**		
			NAA Total Hrs per Sortie	0.37	**1,451**	**3,005**
			PA Total Hrs Per Year	**1210.13**		
C40	FL-1D	LIGHTS	FL-1D	0.36		
C53	FL-1D	LIGHTS	FL-1D	0.48		
C15	FL-1D	LIGHTS	FL-1D	0.28		
C16	FL-1D	LIGHTS	FL-1D	0.18		
			NAA Total Hrs per Day	1.30		
			NAA Total Hrs per Year	**474.50**		
			NAA Total Hrs per Sortie	0.26	**1,031**	**2,135**

			PA Total Hrs Per Year	**859.65**		
C20	NF-2D	LIGHTS	**NF-2D**	0.17	NF-2	
C37	NF-2D	LIGHTS	**NF-2D**	0.20		
C77	NF-2D	LIGHTS	**NF-2D**	0.39		
C36	NF-2D	LIGHTS	**NF-2D**	0.33		
C38	NF-2D	LIGHTS	**NF-2D**	0.34		
C81	NF-2D	LIGHTS	**NF-2D**	0.24		
C74	NF-2D	LIGHTS	**NF-2D**	0.12		
FL2	NF-2D	FLOOD LIGHTS	**NF-2D**	0.10		
FL3	NF-2D	FLOOD LIGHTS	**NF-2D**	0.08		
FL8	NF-2D	FLOOD LIGHTS	**NF-2D**	0.11		
FL09	NF-2D	FLOOD LIGHTS	**NF-2D**	0.04		
FL10	NF-2D	FLOOD LIGHTS	**NF-2D**	0.04		
			NAA Total Hrs per Day	2.16		
			NAA Total Hrs per Year	**788.40**		
			NAA Total Hrs per Sortie	0.44	**1,713**	**3,547**
			PA Total Hrs Per Year	**1428.35**		
NC66	SGNC	NITRO CART	**NGC-15-TM**	0.04		
NC56	SGNC	NITRO CART	**NGC-15-TM**	0.11		
NC83	SGNC	NITRO CART	**NGC-15-TM**	0.13		
NC47	SGNC	NITRO CART	**NGC-15-TM**	0.04		
			NAA Total Hrs per Day	0.32		
			NAA Total Hrs per Year	**116.80**		
			NAA Total Hrs per Sortie	0.06	**254**	**526**
			PA Total Hrs Per Year	**211.61**		
NC30	SGNC HP	NITRO CART	**130009-100**	**0.33**		
			NAA Total Hrs per Day	0.33		
			NAA Total Hrs per Year	**120.45**		
			NAA Total Hrs per Sortie	0.07	**262**	**542**
			PA Total Hrs Per Year	**218.22**		
J97	CPT	PRE TESTER	**AFM32T-1**	**0.11**		
			NAA Total Hrs per Day	0.11		
			NAA Total Hrs per Year	**40.15**		
			NAA Total Hrs per Sortie	0.02	**87**	**181**
			PA Total Hrs Per Year	**72.74**		
E70	HTS	HYD TEST STAND	TTU-228E/22	0.16		
E94	HTS	HYD TEST STAND	TTU-228E/22	0.10		
E55	HTS	HYD TEST STAND	TTU-228E/22	0.20		
			NAA Total Hrs per Day	0.46		
			NAA Total Hrs per Year	**167.90**		
			NAA Total Hrs per Sortie	0.09	**365**	**755**
			PA Total Hrs Per Year	**304.19**		
E76	SHTS	HYD TEST STAND	MK-1	N/A		
G40	MC-20	AIR COMPRESSOR	**MC-20-WHTZ-T4F-E01**	0.06		
G80	MC-20	AIR COMPRESSOR	**MC-20-WHTZ-T4F-E01**	0.04		
G60	MC-20	AIR COMPRESSOR	**MC-20-WHTZ-T4F-E01**	0.08		
G59	MC-20	AIR COMPRESSOR	**MC-20-WHTZ-T4F-E01**	0.33		
G61	MC-20	AIR COMPRESSOR	**MC-20-WHTZ-T4F-E01**	0.02		
G81	MC-20	AIR COMPRESSOR	**MC-20-WHTZ-T4F-E01**	0.03		
			NAA Total Hrs per Day	0.56		
			NAA Total Hrs per Year	**204.40**		
			NAA Total Hrs per Sortie	0.11	**444**	**920**
			PA Total Hrs Per Year	**370.31**		

G24	MC-7	AIR COMPRESSOR	**11M125RPDQ**	0.26		
G30	MC-7	AIR COMPRESSOR	**11M125RPDQ**	0.12		
G79	MC-7	AIR COMPRESSOR	**11M125RPDQ**	0.04		
G32	MC-7	AIR COMPRESSOR	**11M125RPDQ**	0.16		
			NAA Total Hrs per Day	0.58		
			NAA Total Hrs per Year	**211.70**		
			NAA Total Hrs per Sortie	0.12	**460**	**952**
			PA Total Hrs Per Year	**383.54**		
AC2	THOR	AIR CONDITIONER	HDT-THOR200	0.20		
TH01	THOR	AIR CONDITIONER	HDT-THOR200	0.20		
			NAA Total Hrs per Day	0.40		
			NAA Total Hrs per Year	**146.00**		
			NAA Total Hrs per Sortie	0.08	**317**	**657**
			PA Total Hrs Per Year	**264.51**		
F28	NGH	HEATER	**HDU-43**	0.02		
F66	NGH	HEATER	**HDU-43**	0.05		
F53	NGH	HEATER	**HDU-43**	0.03		
F67	NGH	HEATER	**HDU-43**	0.02		
F72	NGH	HEATER	**HDU-43**	0.02		
F90	NGH	HEATER	**HDU-43**	0.02		
F35	NGH	HEATER	**HDU-43**	0.01		
			NAA Total Hrs per Day	0.17		
			NAA Total Hrs per Year	**62.05**		
			NAA Total Hrs per Sortie	0.03	**135**	**279**
			PA Total Hrs Per Year	**112.42**		
P21	HYD PURI	PURIFIER	**100033-100**	0.04		
P22	HYD PURI	PURIFIER	**100033-100**	0.02		
P23	HYD PURI	PURIFIER	**100033-100**	0.05		
			NAA Total Hrs per Day	0.11		
			NAA Total Hrs per Year	**40.15**		
			NAA Total Hrs per Sortie	0.02	**87**	**181**
			PA Total Hrs Per Year	**72.74**		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: NEW ORLEANS JRB
State: Louisiana
County(s): Plaquemines
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Air National Guard F-15EX Eagle II & F-35A Lightning II Operational Beddowns EIS: New Orleans Legacy F-15C Construction Only

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2025

e. Action Description: F-15C Legacy Alternative Construction

The United States (U.S.) Department of the Air Force (DAF) and National Guard Bureau (NGB) propose to maintain the combat capability of the Air National Guard (ANG) by recapitalizing the remaining F-15C/D aircraft, which are being retired due to age and associated maintenance costs. There are three remaining ANG units that are still flying the F-15C/D aircraft (that are not already undergoing similar evaluation) at this time; these include the 104th Fighter Wing (104 FW) at Westfield-Barnes Regional Airport (BAF) in Westfield, Massachusetts (MA); the 144th Fighter Wing (144 FW) at Fresno Yosemite International Airport (FAT) in Fresno, California (CA); and the 159th Fighter Wing (159 FW) at Naval Air Station (NAS) Joint Reserve Base (JRB) New Orleans, in Belle Chasse, Louisiana (LA). The proposal is the beddown, operation, and associated infrastructure construction of one squadron of F-15EX Eagle II (F-15EX) aircraft at two of these fighter wings and one squadron of F-35A Lightning II (F-35A) aircraft at one of the fighter wings. These aircraft would replace the aging F-15C/D fighter aircraft at the selected wings.

f. Point of Contact:

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Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.517	250	
NOx	0.919	250	
CO	1.676	250	
SOx	0.004	250	
PM 10	0.066	250	
PM 2.5	0.027	250	
Pb	0.000	25	No
NH3	0.002	250	
CO2e	350.8		

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	
NOx	0.000	250	
CO	0.000	250	
SOx	0.000	250	
PM 10	0.000	250	
PM 2.5	0.000	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	0.0		

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	
NOx	0.000	250	
CO	0.000	250	
SOx	0.000	250	

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

PM 10	0.000	250	
PM 2.5	0.000	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	0.0		

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	
NOx	0.000	250	
CO	0.000	250	
SOx	0.000	250	
PM 10	0.000	250	
PM 2.5	0.000	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	0.0		

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.391	250	
NOx	0.918	250	
CO	1.582	250	
SOx	0.003	250	
PM 10	0.114	250	
PM 2.5	0.028	250	
Pb	0.000	25	No
NH3	0.001	250	
CO2e	341.2		

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.201	250	
NOx	1.110	250	
CO	1.504	250	
SOx	0.003	250	
PM 10	0.069	250	
PM 2.5	0.039	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	317.5		

2031

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.208	250	

AIR CONFORMITY APPLICABILITY MODEL REPORT
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NOx	1.112	250	
CO	1.558	250	
SOx	0.004	250	
PM 10	2.829	250	
PM 2.5	0.043	250	
Pb	0.000	25	No
NH3	0.001	250	
CO2e	364.9		

2032

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.582	250	
NOx	1.269	250	
CO	1.943	250	
SOx	0.004	250	
PM 10	0.559	250	
PM 2.5	0.044	250	
Pb	0.000	25	No
NH3	0.002	250	
CO2e	411.7		

2033

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.843	250	
NOx	1.286	250	
CO	2.115	250	
SOx	0.004	250	
PM 10	0.113	250	
PM 2.5	0.044	250	
Pb	0.000	25	No
NH3	0.003	250	
CO2e	434.8		

2034 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	
NOx	0.000	250	
CO	0.000	250	
SOx	0.000	250	
PM 10	0.000	250	
PM 2.5	0.000	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	0.0		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

Caitlin Jafolla, Air Quality SME

07/07/2023

DATE