

# Lockheed Martin Storm Drain System Improvements Environmental Assessment

Fort Worth, Texas

April 10, 2026

PREPARED FOR:



PREPARED BY:

**Westwood**

# Storm Drain System Improvements Environmental Assessment

**Lockheed Martin**

Fort Worth, Texas

**Prepared For:**

Lockheed Martin Aeronautics Company

Fort Worth, Texas

**Prepared By:**

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| 1        | 16 Jun 26 | Incorporate JPOE Commentary       | var            |
|          |           |                                   |                |
|          |           |                                   |                |

## Finding of No Significant Impact and Finding of No Practicable Alternative

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## LIST OF ABBREVIATIONS

| <b><u>Abbreviation</u></b> | <b><u>Term/Phrase/Name</u></b>                  |
|----------------------------|-------------------------------------------------|
| AFMAN                      | Air Force Manual                                |
| AFP4                       | Air Force Plant No. 4                           |
| AICUZ                      | Air Installation Compatible Use Zone            |
| BACT                       | Best Available Control Technology               |
| CAA                        | Clean Air Act                                   |
| CEQ                        | Code of Federal Regulations                     |
| CFR                        | Code of Federal Regulations                     |
| cfs                        | cubic feet per second                           |
| dBA                        | decibel A-weighted                              |
| EA                         | Environmental Assessment                        |
| EIAP                       | Environmental Impact Analysis Process           |
| EO                         | Executive Order                                 |
| EPA                        | Environmental Protection Agency                 |
| FEMA                       | Federal Emergency Management Agency             |
| FIRM                       | Flood Insurance Rate Map                        |
| FONPA                      | Finding of No Practicable Alternative           |
| FONSI                      | Finding of No Significant Impact                |
| FRP                        | Full Rate Production                            |
| FWWD                       | Fort Worth Water Department                     |
| HAPs                       | Hazardous Air Pollutants                        |
| IPaC                       | Information for Planning and Consultation       |
| IRP                        | Installation Restoration Program                |
| LMAC                       | Lockheed Martin Aeronautics Company, Fort Worth |
| LRIP                       | Low-Rate Initial Production                     |
| MGD                        | millions of gallons per day                     |
| NAAQS                      | National Ambient Air Quality Standards          |
| NAS JRB FW                 | Naval Air Station Joint Reserve Base Fort Worth |
| NEPA                       | National Environmental Policy Act               |
| NHPA                       | National Historic Preservation Act              |
| NOx                        | nitrogen oxide                                  |
| NWI                        | National Wetland Inventory                      |
| OSHA                       | Occupational Safety and Health Administration   |
| SHPO                       | State Historic Preservation Office              |
| SOP                        | Site Operating Permit                           |
| SW3P                       | Storm Water Pollution Prevention Plan           |
| TPDES                      | Texas Pollutant Discharge Elimination System    |

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| <b><u>Abbreviation</u></b> | <b><u>Term/Phrase/Name</u></b>            |
|----------------------------|-------------------------------------------|
| TPWD                       | Texas Parks and Wildlife Department       |
| tpy                        | tons per year                             |
| TCE                        | trichloroethylene                         |
| TCEQ                       | Texas Commission on Environmental Quality |
| TxDOT                      | Texas Department of Transportation        |
| UFC                        | United Facilities Criteria                |
| U.S.C.                     | U.S. Code                                 |
| USFWS                      | U.S. Fish and Wildlife Service            |
| USGS                       | U.S. Geological Survey                    |
| VOC                        | Volatile Organic Compounds                |

## PAGE LIMIT & TIMELINE CERTIFICATION

**Project Title:** Lockheed Martin Storm Drain System Improvements  
Environmental Assessment

**Lead Agency:** U.S. Department of Environmental Quality

**Prepared By:** Westwood

**Date:** April 10, 2026, updated June 16, 2026

### 1. Page Limit Certification

In accordance with 40 CFR 1501.10 and agency NEPA implementing procedures, the Environmental Assessment for the Lockheed Martin Storm Drain System Improvements has been prepared within the prescribed page limits:

- **Main EA body:** 63 pages (limit: 75 pages)
- **Appendices:** 20 pages (limit: 150 pages)
- **Total:** 83 pages (combined limit: 225 pages)

The document length is consistent with the requirement to be concise, focused on significant issues, and avoid unnecessary detail.

### 2. Timeline Certification

The EA was developed and completed within the established timeline:

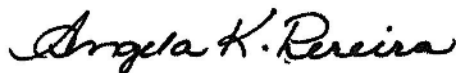
- **Notice of Intent issued:** Not issued
- **Draft EA completed:** 10 April 2026
- **Public comment period:** 5 May – 5 June 2026 (30 days)
- **Final EA completed:** June 16, 2026
- **Decision Notice/FONSI issued:** June 22, 2026

Total preparation time: 8 months.

### 3. Certification Statement

I hereby certify that the Lockheed Martin Storm Drain System Improvements Environmental Assessment complies with applicable page limit and timeline requirements under NEPA and agency regulations.

**Signature:**



**Name:** Angela K. Pereira, PE

**Title:** Project Manager, Lockheed Martin Aeronautics

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# **FINDING OF NO SIGNIFICANT IMPACT/ FINDING OF NO PRACTICABLE ALTERNATIVE TO REDIRECTION OF STORM WATER AT LOCKHEED MARTIN AERONAUTICS CORPORATION, FORT WORTH, TARRANT COUNTY, TEXAS**

Pursuant to the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), Title 40 of the Code of Federal Regulations (CFR) §§1500-1508; Westwood Professional Services has prepared an environmental assessment (EA) to identify and assess the potential impacts on the natural and human environment associated with facility improvements at Lockheed Martin Aeronautics Corporation in Fort Worth, Texas. Lockheed Martin proposes to approve the construction of Storm Drain System Improvements at the Lockheed Martin Aeronautics Corporation facility in Fort Worth, Tarrant County, Texas.

**PURPOSE AND NEED FOR ACTION (EA § 1.0)** - Since the opening of Air Force Plant No. 4 (AFP4) approximately 80 years ago, multiple storm drain systems have been installed throughout the site as AFP4 has rapidly grown, adding acres of buildings and impervious surfaces. The systems that were installed did not account for the large increase in impervious area and are now under capacity. Due to age and wear, some of the systems have begun to deteriorate, causing poor conveyance and flooding on-site. Under existing conditions, the 10-year storm events cause severe inundation and spread problems in parking lots, Grants Lane, and cause buildings to flood internally. Improvements were proposed in areas where the storm drain pipes or inlets had insufficient capacity, causing surcharges in the upstream systems or ponding around the structures. Due to the complexity of Lockheed Martin's production schedule, no improvements were chosen for the internal and roof storm drain systems. Improvements were limited to areas in parking lots, roadways, and taxiways. The improvements will be designed and installed in phases.

## **DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (EA §2.0)**

The following Project will be constructed:

- Storm Drain System Improvements

### **Storm Drain System Improvements- The Proposed Project and Preferred Alternative**

The Lockheed Martin storm drain system improvements provide many benefits to the AFP4 campus. Maximum surface inundation in the Hercules Lot and Falcon Lot for the 10-year storm event has the potential to be reduced from depths greater than 1-foot to less than 1-

inch. The proposed improvements to the infrastructure at Outfalls 1, 2, 4, and 6 allow for future improvements to be implemented around the campus as well. With the increase in system capacities and the addition of relief lines, the amount of surcharge into the internal building drainage systems will be relieved. Potential improvements to the internal drainage system will be possible in the future due to the external system improvements. The main goal of the Storm Drain System Improvement design was to capture as much surface runoff as possible to avoid ponding and flooding into critical buildings and areas. Upsizing existing inlets to allow more inflow into the system will resolve this issue and will work to reduce ponding in higher-level storms like the 50-year event. The improvements proposed in this design have been broken into seven different areas, each with multiple phases. The phasing was done for construction budgetary purposes. The improvements should be installed downstream to upstream from the outfalls to allow proper drainage and prevent overloading undersized downstream systems.

Area 4 Phase 1 improvements have been chosen as the first phase to be constructed due to impending City of Fort Worth infrastructure improvements that impact the Lockheed Martin infrastructure connections. This phase will allow for future Area 2 and 3 improvements to be installed. Areas 2, 3, and 4 all contribute flows to Outfall 1. The Area 4 improvements also include an improved chemical runoff trench that will be able to safely convey possibly contaminated runoff from the staging areas to the processing tanks. The maximum inundation of the 10-year storm in Area 4 is reduced from 0.38-feet to 0.11-feet with improvements. The Area 4 improvements provide many benefits to the storm drain infrastructure, including relief from the roof drains of Building 181, and allow for future improvement phases of other contributing systems (Areas 2 and 3). The Area 2 improvements provide relief to the surface flooding in the Falcon Lot and along Grants Lane. The Area 3 improvements will provide relief to the roof drains along Building 4 and increase the capacity of the system to convey 50-year storm runoff. The majority of the improvements for Areas 2, 3, and 4 are being conducted within the AFP4 property. There is a portion of the project that will be located off of AFP4 property along Clifford Street and State Route Spur 341. The off-site improvements will affect one private property parcel and City of White Settlement and TxDOT road rights-of-way. The existing drainage easement with the private property parcel will need to be revised to include the area of proposed improvements.

Areas 1 and 6 contribute to Outfall 6. The Area 1 improvements will extend from Hercules Lot to Outfall 6. Area 1 improvements will provide relief to the surface flooding in Hercules Lot and Building 138. The maximum 10-year surface inundation with the proposed improvements is 2.6 inches. The main benefit from the Area 1 improvements is the increase in the system capacity and redirection of flow from Outfall 6 to Outfall 1. Currently, the existing Area 1 system contributes to the Area 2 and Area 6 systems. Without their respective improvements, Areas 2 and 6 storm drain systems are under capacity; diverting flow away from them will relieve the existing systems. The proposed improvements give the downstream portion of the Area 1 system a capacity of 226 cubic feet per second (cfs), which is enough to handle the 50-year design storm. The majority of the improvements for Area 1 are being conducted within the AFP4 property. There is a portion of the project that will be

located off of the north boundary of the AFP4 property. The off-site improvements will affect property owned by the City of Fort Worth, which are contained within an existing drainage easement.

Area 5 experiences surface flooding on the north side of Building 12 and the southwest corner of Building 234. Area 5 is discharged through Outfall 4. The maximum inundation in the lot north of Building 12 for the 10-year storm is 0.79-feet. A maximum inundation outside of Building 234 is 0.25-feet and causes surcharges in the roof and internal storm drain systems. The Area 5 improvements are located in two areas of AFP4, Area 5-A and Area 5-B. Area 5-A improvements extend from the north side of Building 12 to the north side of Building 13. Area 5-B improvements extend from the southwest corner of Building 234 to Outfall 4. The Area 5 improvements will provide relief to surface flooding around Buildings 12, 13, and 234. The maximum inundation of the 10-year storm in Area 5-A is reduced from 0.79-feet to 0.65-feet with the improvements. The Area 5-B improvements will add capacity to the downstream outfall pile, which will relieve surcharge in the upstream lies included in the Area 5-A system. Most of the improvements for Area 5 are being conducted within the AFP4 property. There is a portion of the project that will be located off of the west boundary of the AFP4 property. The off-site improvements will affect property owned by the City of Fort Worth. The existing drainage easement within the City of Fort Worth parcel will need to be revised to include the area of proposed improvements.

Area 7 experiences flooding around Site 30 on the north side of AFP4. A maximum inundation in the alley for the 10-year storm is 1.14-feet. The Area 7 improvements are located on the north side of AFP4, north of Site 30. The Area 7 improvements are part of one of four systems that contribute to Outfall 2 from AFP4. The maximum inundation for the 10-year storm in Area 7 is reduced to less than 1-inch with the proposed improvements. The Area 7 improvements will provide relief to external and internal flooding at Site 30, as well as provide an increase in downstream capacity for future upstream improvements. The majority of the improvements for Area 1 are being conducted within the AFP4 property. There is a portion of the project that will be located off of the north boundary of the AFP4 property. The off-site improvements will affect property owned by the City of Fort Worth, which are contained within an existing drainage easement.

Some phases have areas of improvement under active taxiways or critical operation areas. The installation method of the improvements in these areas will either be open-cut or jack and bore. The method will need to be determined with the Lockheed Martin facilities engineering team before the bidding and kickoff of construction for the phase.

The preferred alternative is the only reasonable alternative available that exists to accomplish the purpose and need of the project. As discussed previously, AFP4 is an existing facility that has been operating for approximately 80 years. The only feasible alternative is to improve the existing storm drain system so that it can handle increased flows that have occurred on-site due to the additional buildings and impervious surfaces that have increased over the years of operation. It would not be economical or feasible to attempt to re-route or move any of the storm drain facilities outside of its existing footprint. Site constraints (i.e., building locations) and site contours have dictated the location of the storm drain system

within AFP4. The storm drain system already functions to drain per site contours and identified drainage areas. There is no reasonable location for the proposed improvements other than the existing location of the system.

The No Action Alternative for the Storm Drain System Improvements Project will not involve additional construction. The No Action Alternative is not conducive to the current drainage issues on-site.

## **ENVIRONMENTAL CONSEQUENCES (EA § 3.0)**

The EA for Storm Drain System Improvements at AFP4 assesses the potential environmental impacts of implementing the Preferred Alternative for the proposed project and the No Action Alternative. The EA is incorporated by reference into this Finding of No Significant Impact (FONSI). Based on the analysis in the EA, construction of the Preferred Alternative for the proposed project will not result in significant adverse or cumulative impacts to the environment. A summary of resource impacts described in the EA is presented below.

**LAND USE (EA § 3.1)** – No new impervious areas will be constructed, and the existing land use at AFP4 will remain the same, resulting in land use impacts being insignificant.

**NOISE (EA § 3.2)** – Construction of new outfall locations will generate temporary construction noise, but after completion, there will be no changes to plant manufacturing operational noise.

Construction at outfall locations involves excavating the ground, installing the outfall pipe or channel, and constructing any necessary structures like headwalls or flared end sections. This construction will be expected to generate 8-hour sound levels above the protection limit for personnel working outside in the immediate vicinity of the construction, requiring hearing protection similar to what is normally required in a flight line environment.

**AIR QUALITY (EA § 3.3)** – The storm drain system improvements were evaluated under the General Conformity Rules issued under the Clean Air Act (CAA). General Conformity Rules (40 CFR Subpart B) apply to federal agency projects in the area designated by the EPA as nonattainment and maintenance for the National Ambient Air Quality Standards (NAAQS). The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact associated with the proposed project. The Dallas-Fort Worth area is nonattainment for ozone. Impacts on regional air quality resulting from the storm drain system improvements project would be associated with construction activities. This impact would be temporary, minimal, considered de minimis. The ACAM model shows that the project would not require General Conformity Analysis and the emission level for the proposed project will not have significant impacts on air quality.

**WATER RESOURCES (EA § 3.4)** – The hydrologic and hydraulic analysis for the Lockheed Martin Storm Drain System Improvements project in Fort Worth, Texas, focused on evaluating peak discharges for existing and proposed storm drain conditions during a 10-year storm event. Utilizing InfoWorks ICM2 and HEC-HMS software, the study analyzed

Tarrant County precipitation data and delineated the AFP4 watershed, which includes 273 drainage basins, to compute peak discharges and create hydrographs. The analysis maintained consistent hydrologic parameters across conditions, with no new impervious areas introduced. The hydraulic assessment employed both 1D and 2D modeling to evaluate the interaction between underground infrastructure and surface flow, using updated boundary conditions from Federal Emergency Management Agency (FEMA) Flood Insurance Study reports. The Proposed Conditions Model included enhancements like upsized pipes and new lines to better manage runoff, resulting in revised water surface elevation levels at key outfalls compared to previous models.

The existing conditions analysis at the AFP4 site reveals significant flooding issues, particularly during a 10-year storm event, with inundation depths exceeding 14 inches in some areas and numerous storm drain pipes exhibiting insufficient capacity. Key areas, such as Grants Lane and the Hercules Lot, experience inundation depths exceeding 1 foot, leading to severe ponding and internal flooding in several buildings. Proposed improvements aim to enhance storm water management by increasing pipe sizes, redirecting flow, and installing new junction boxes to alleviate flooding and manage runoff more effectively. The improvements are prioritized based on urgency, with Area 4 receiving the highest ranking due to potential chemical runoff concerns, followed by Areas 1, 2, and 3, each addressing specific flooding issues and enhancing overall drainage capacity. The proposed modifications are expected to significantly reduce inundation depths and improve the efficiency of the storm water management system across the site. All construction will be in accordance with local floodplain administrator, state and federal requirements, including notices, Storm Water Pollution Prevention Plan (SW3P) and restoration of disturbed sites.

**SAFETY AND HEALTH (EA § 3.5)** – AFP4 has established protocols to address safety and health issues. All construction will be in accordance with standard construction management practices and all federal, state, and local health and safety laws.

**HAZARDOUS MATERIALS (EA § 3.6)** – No increase in hazardous and regulated waste is anticipated by the proposed project. Construction activities would not generate hazardous waste. Any waste generated during construction activities would be contained properly on-site and sent to appropriate landfills.

**BIOLOGICAL RESOURCES (EA § 3.7)** – Common urban wildlife and plant species are found in the vicinity of AFP4. The project will not affect federally listed or state-protected species.

**CULTURAL RESOURCES (EA § 3.8)** – No historic properties will be affected by the proposed project.

**GEOLOGY AND SOILS (EA § 3.9)** – Although underlying rocks consist of limestone, geologic formations in Fort Worth do not contain karst features. The geology and soil of the proposed project would not be affected by the proposed project because the majority of the proposed project is located in previously developed areas.

**TRAFFIC AND PARKING (EA §3.10)** – Some parking spaces would be temporarily displaced during the construction of the proposed project. The number of parking spaces impacted would be minimal and temporary. The current road network and existing parking lots are adequately sized to accommodate the additional traffic that will occur as a result of the construction of the proposed project. Land-closures along Clifford Street and State Route Spur 341 will be necessary during the construction of the portion of Area 4 located outside of AFP4 property. This will be a temporary construction impact on local roads.

**SOCIOECONOMICS (EA § 3.11)** – Implementation of the proposed project would result in a positive socioeconomic effect on the local economy. Temporary construction jobs would be generated and would result in moderate economic activity from the increase of construction workers in the area during the construction period. No increase in permanent job numbers is anticipated.

**MITIGATION MEASURES AND MANAGEMENT ACTIONS (EA § 4.16)** – For the purposes of this EA, the term "mitigation" has been applied in a generic manner to include standard management measures such as standard construction practices, or normal tie-ins to existing utility resources, or normal operational methods. These standard practices are not required to achieve a Finding of No Significant Impact. The Preferred Alternative is insignificant in impact, and there are no non-standard practices that need to be included in the implementation of the Preferred Alternative.

## **PUBLIC REVIEW/INTERAGENCY COORDINATION**

A notice was placed in the Fort Worth Star Telegram, Fort Worth, Texas, on four consecutive Tuesdays beginning May 4, 2026, beginning the 30-day public review period. A second notice was placed in the White Settlement Bomber News, White Settlement Texas, on four consecutive Thursdays beginning May 7, 2026. The EA and FONSI/FONPA were made available for public review at the Fort Worth Public Library- Clifford Crossing, and at the White Settlement Public Library. The 30-day comment period ended on June 4, 2026.

## **FINDING OF NO SIGNIFICANT IMPACT**

Based on Westwood's review of the facts and analysis summarized above and contained within the attached EA, I find the proposed decision to approve Storm Drain System Improvements at Air Force Plant 4, Fort Worth, Texas, will not have significant individual or cumulative impacts on the natural or human environment.

## FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)

Pursuant to the requirements of Executive Order 11988, *Floodplain Management*, as amended by Executive Order (EO) 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, and considering all supporting information, I find there is no practicable alternative to action within the floodplain as described in the attached EA and that the Proposed Action includes all practicable measures to minimize harm to the environment.

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Morgan Russell

Branch Chief, AF Industrial Plants Division

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Date

For

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Laurel Papadopoulos

Division Chief, AF Industrial Plants Division

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Date

## **1.0 PURPOSE AND NEED**

The U.S. Air Force, in conjunction with its contractor Lockheed Martin Aeronautics Company—Fort Worth (LMAC), proposes to improve the existing storm drain systems at AFP4 in Fort Worth, Texas. This EA analyzes the environmental effects associated with this proposed project and has been prepared in accordance with the NEPA and Air Force regulations.

### **1.1 Introduction**

The F-35 program is the fifth-generation strike aircraft weapon system for the U.S. Navy, U.S. Air Force, U.S. Marines, and our allies. The focus of the program is affordability – reducing the development cost, production cost, and ownership cost of the F-35 family of aircraft.

LMAC serves as the prime contractor on the F-35 program. The majority of work in the engineering, manufacturing, development, and production phases takes place at LMAC's facility at AFP4. AFP4 shares access to the runways and the support facilities with Naval Air Station Joint Reserve Base Fort Worth (NAS JRB FW). The facility currently includes approximately 7.7 million square feet of industrial floor space for aircraft assembly.

AFP4 is a U.S. Government-owned industrial facility that has been continuously utilized as a U.S. Air Force aerospace development and production facility since it was constructed in 1941. Since then, AFP4 has produced more than 7,000 aircraft, including the B-24, B-32, B-36, B-58, F-111, F-16, and the F-35.

### **1.2 Purpose and Need**

The purpose of the proposed improvements is to safely contain and convey the 10-year storm event runoff on-site to outfalls located within the AFP4 campus. Since the opening of AFP4 approximately 80 years ago, multiple storm drain systems have been installed throughout the site as AFP4 has rapidly grown, adding acres of buildings and impervious surfaces. The systems that were installed did not account for the large increase in impervious areas and are now under capacity. Due to age and wear, some of the systems have begun to deteriorate, causing poor conveyance and flooding on-site. Under existing conditions, the 10-year storm events cause severe inundation and spread problems in parking lots, Grants Lane, and cause buildings to internally flood. Under existing conditions, all four lanes of Grants Lane were inundated by a minimum of 1.2 inches and a maximum of 14.04 inches. Buildings 138, 200, and 220 have serious ponding problems along the building's exteriors and have been known to flood internally during low-level storm events. The hangers to the southeast of Building 220 experience large amounts of sheet flow that runs into the active runway.

Improvements to the storm drain system will provide many benefits to the AFP4 campus. Increasing the system's capacities and the addition of relief lines will relieve the amount of surcharge into the internal building drainage systems. Potential improvements to the internal drainage system will be possible in the future due to the external system improvements. The proposed project is important in maintaining AFP4's continued operations. The following subsection describes the proposed project in more detail.

### **1.2.1 Storm Drain System Improvements**

The main goal of the storm drain system improvements project is to capture as much surface runoff as possible to avoid ponding and flooding into critical buildings and areas. The Design Analysis conducted by Pacheco Koch, a Westwood Company, deduced that upsizing existing inlets to allow more inflow into the system has resolved this issue and works to reduce ponding in higher-level storms like the 50-year event. The improvements proposed in this design have been broken into seven different areas, each with multiple phases. The phasing was done for construction budgetary purposes. The improvements should be installed downstream to upstream from the outfalls to allow proper drainage and prevent overloading undersized downstream systems.

### **1.3 Decision to be Made**

This project is considered storm drain system improvements on federal property. As such, it is a federal action requiring NEPA compliance with U.S. Air Force approval of the proposed project. The U.S. Air Force's proposed action is to approve the construction and operation of the Storm Drain System Improvements Project. This EA provides the agencies with documentation of environmental impacts. The decision to be made is either:

- Approve a FONSI based upon the proposed analysis contained herein; or
- Determine that a FONSI is not applicable, resulting in the need for an Environmental Impact Statement.

These decisions will not be made until after a 30-day public comment period on this EA and a review of any public comments received.

### **1.4 Applicable Regulatory Requirements and Coordination**

The following sections summarize the regulatory requirements and coordination. Effects on physical, natural, and social resources were evaluated in compliance with NEPA and related laws and regulations.

#### **1.4.1 Air Installation Compatible Use Zones (AICUZ)**

Department of Defense Instruction 4165.57 implements the Federal Management Circular 75-2, *Compatible Land Uses at Federal Airfields*, and requires military departments to develop, implement, and maintain an Air Installation Compatible Use Zone (AICUZ) program for each installation. New U.S. Air Force facility siting, construction, and land use designations must be consistent with the published AICUZ land use compatibility guidelines and height restrictions for that installation.

#### **1.4.2 Air Quality**

In 2018, the Environmental Protection Agency (EPA) designated ten counties (Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties) in North Central Texas as nonattainment for the pollutant ozone in accordance with the 2015 8-hour ozone standard. The storm drain system improvements project was evaluated under the

General Conformity Rule issued under the CAA. General Conformity Rules (40 CFR 93 Subpart B) apply to federal agency projects in areas designated by the EPA as nonattainment and maintenance for the NAAQS. The General Conformity Rule will be required if emissions from the proposed project exceed the de minimis threshold of 25 tons per year (tpy) for nitrogen oxides (NOx) or volatile organic compounds (VOC). The Air Force's ACAM was used to perform an analysis to assess the potential air quality impact associated with the proposed project.

#### **1.4.3 Water Resources**

In support of the Clean Water Act (Public Law 92-500, as amended, 33 U.S. Code [U.S.C.] 1251 et seq.), the Air Force would evaluate the implementation of environmental management systems at the facility to determine compliance with Texas Pollutant Discharge Elimination System (TPDES) permit requirements. AFP4 is currently permitted to discharge surface water run-off through twelve major outfalls. Issuance of a new permit, permit amendment, or permit renewal would require notification of applicable authorities during the submittal of the application. Assessment of proposed activities would determine if there would be an increase in quantity change in the location of any discharge and if the activities would maintain or improve the quality of any authorized discharge. The effects of the proposed project on groundwater cleanup at AFP4 are included in the EA. Compliance with EO 11988, *Flood Plain Management*, as amended by EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, and EO 11990, *Protection of Wetlands*, is evaluated in the EA.

#### **1.4.4 Safety and Occupational Health**

The storm drain system improvements may involve concerns about excavation, trenching, hazardous water and material handling, and personal protective equipment. Safety aspects related to the proposed project are evaluated in the EA.

#### **1.4.5 Hazardous Materials and Waste**

Hazardous materials stored and used within the facilities must comply with 40 CFR Parts 260-272; Solid and Hazardous Waste Compliance, Air Force Manual (AFMAN) 32-7002; and Hazardous Waste Management Guide, Air Force Pamphlet 32- 7043. The potential additional hazardous waste to be generated by the proposed project is evaluated in the EA.

#### **1.4.6 Biological Resources**

Effects on biological resources were evaluated as required by NEPA and the Endangered Species Act (16 U.S.C. §1539; 50 CFR 17 Subparts C, D, F, and G). The U.S. Fish and Wildlife Service (USFWS) list of endangered and threatened species for Tarrant County was reviewed to determine species that could occur in the county. The results of this review and a review of state-listed endangered and threatened species that could be affected by the proposed project are included in the EA.

#### **1.4.7 Cultural Resources**

Consistent with Section 106 of the National Historic Preservation Act (NHPA), which is implemented by 36 CFR 800, the U.S. Air Force would review the proposed action for the determination of effects on cultural resources. If the potential for impacts exists, the U.S. Air Force will solicit coordination with the State Historic Preservation Officer (SHPO) as required by Section 106. Concurrence from the SHPO on the proposed action would be achieved via formal Section 106 consultation between the Air Force and the SHPO. The U.S. Air Force will provide tribal governments with cultural affiliation to the Fort Worth area with a copy of the EA. This EA provides an assessment of the effects of the proposed project on historic properties.

#### **1.4.8 Geology and Soils**

Geological and soil information relevant to the construction of the proposed project is evaluated in the EA. The Farmland Protection Policy Act would not apply due to the urban location of the proposed project.

#### **1.4.9 Traffic and Parking**

The additional traffic generated from the construction and operation of the proposed project is evaluated in the EA, along with the capacity of AFP4 to provide parking for the additional vehicles. Land-closures along Clifford Street and State Route Spur 341 necessary during construction of the portion of Area 4 located outside of AFP4 property is also evaluated in the EA.

#### **1.4.10 Socioeconomics**

The projected increase in employment due to the construction and operation of the proposed project is included in the EA.

### **1.5 Organization of the Document**

This EA contains five chapters. Chapter 1 is an introduction to the document, identifies the location of the proposed action, states the decision to be made, summarizes the analysis process, lists the applicable regulatory requirements, and describes the organization of the EA. Chapter 2 provides a description of the proposed upgrade to storm drain systems at AFP4 and the alternatives that were considered. Chapter 3 provides a description of the potential environmental impacts, and Chapter 4 focuses on cumulative impacts. Chapter 5 provides a list of references.

## **2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

This section describes the preferred alternative and the No Action Alternative. The No Action Alternative is defined as no new construction. Under Air Force NEPA regulations at 32 CFR 989.14(c)(d), an EA includes the No Action Alternative. This helps the reader to evaluate the current environmental baseline for comparison with the action alternatives.

### **2.1 Proposed Action (Preferred Alternatives)**

The proposed action includes storm drain system improvements in seven areas that drain to four existing outfall locations at AFP4, described below. Each of these outfall locations would be examined for capacity impacts and best-fit solutions to support the new and future facilities.

#### **2.1.1 Storm Drain System Improvements (Preferred Alternative)**

There are a total of eight outfall locations for the AFP4 storm drain systems. Four of these outfalls are included in the proposed project. Three (3) outfalls discharge into Lake Worth (Outfalls 2, 4, and 6), and one outfall (Outfall 1) discharges to Farmers Branch.

The following proposed projects are proposed to support continued operations at AFP4 (Figure 2-1):

- Increasing the size of the existing storm drain pipe system associated with Area 1 that contributes to Outfall #6.
- Increasing the size of the existing storm drain pipe system associated with Areas 2, 3, 4, and 6 that contributes to Outfall #1.
- Increasing the size of the existing storm drain pipe system associated with Area 5 that contributes to Outfall #4.
- Increasing the size of the existing storm drain pipe system associated with Area 7 that contributes to Outfall 2.

Proposed improvements divert flow from some outfalls to others. Table 2-1: Outfall Discharge Comparison details the changes in discharges at the four outfall locations from existing to proposed conditions. A downstream assessment has been performed for each of the storm drain systems to ensure that any discharge increases to downstream or adjacent property owners do not cause a significant impact beyond what existing storm drain systems and receiving streams are designed for.

KEYED NOTES:

- 1 GUARD GATE 2  
CONSTRUCTION ACCESS GATE  
(MAIN ACCESS FOR CONSTRUCTION EQUIPMENT,  
PERSONNEL, AND SUPPLIES).
- 2 RAILROAD GATE (ALTERNATE ENTRANCE).  
IF GUARD GATE 2 IS CLOSED DUE TO  
CONSTRUCTION, CONTRACTOR SHALL USE THE  
RAILROAD GATE OR ANOTHER GATE AS DIRECTED  
BY THE OWNER'S REPRESENTATIVE.
- 3 MAIN GATE (ALTERNATE ENTRANCE).  
IF PROJECT AREA IS WITHIN PARKING AREAS  
BEYOND THE MAIN GATE, CONTRACTOR SHALL  
USE THE MAIN GATE OR ANOTHER GATE AS  
DIRECTED BY THE OWNER'S REPRESENTATIVE.

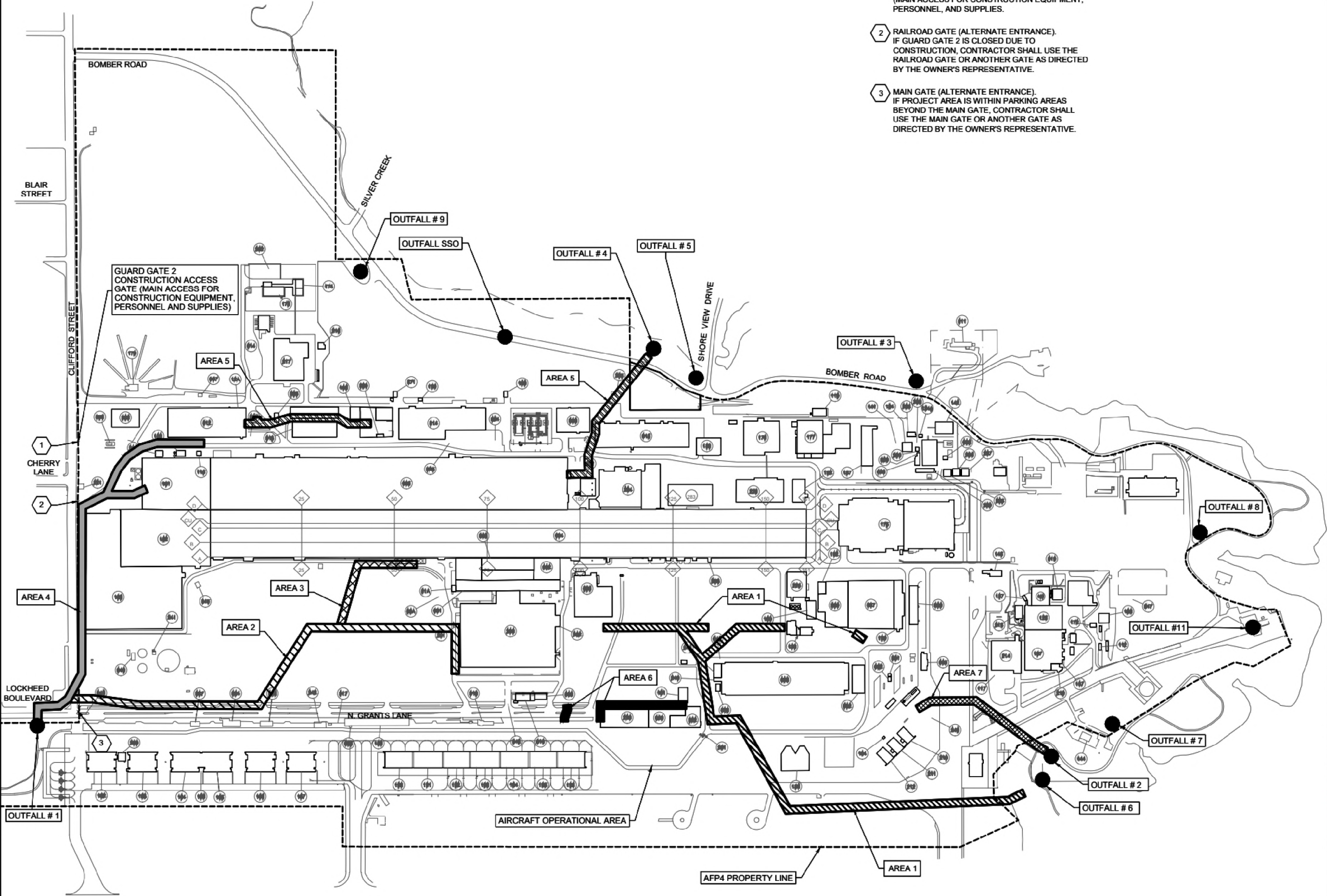


FIGURE 1.1 LOCATION OF PROPOSED ACTION

300' 0 300' 600'  
SCALE IN FEET

LEGEND:

- (156) BUILDING NUMBER  
PROPERTY LINE  
AIRCRAFT OPERATIONAL AREA  
GENERAL HAUL ROUTE  
STORM DRAIN OUTFALL LOCATION
- AREA 1  
AREA 2  
AREA 3  
AREA 4  
AREA 5  
AREA 6  
AREA 7



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Figure 2-1  
Location of Proposed Action  
Lockheed Martin Aeronautics  
Air Force Plant 4  
Fort Worth, Tarrant County, Texas

LOCKHEED MARTIN-STORM DRAIN SYSTEM IMPROVEMENTS

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**Table 2-1: Outfall Discharge Comparison**

| Storm Event                                                                                                                                                      | Outfall Name | Existing Conditions Discharge (cfs) | Proposed Conditions Discharges (cfs) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------|--------------------------------------|
| 1-YR                                                                                                                                                             | 1            | 382.2                               | 518.1                                |
| 5-YR                                                                                                                                                             |              | 454.9                               | 662.6                                |
| 10-YR                                                                                                                                                            |              | 477.0                               | 682.0                                |
| 100-YR                                                                                                                                                           |              | 558.5                               | 890.2                                |
| 1-YR                                                                                                                                                             | 2 & 6*       | 394.7                               | 556.4                                |
| 5-YR                                                                                                                                                             |              | 490.9                               | 697.3                                |
| 10-YR                                                                                                                                                            |              | 528.9                               | 740.0                                |
| 100-YR                                                                                                                                                           |              | 697.8                               | 1020.2                               |
| 1-YR                                                                                                                                                             | 4            | 135.1                               | 142.4                                |
| 5-YR                                                                                                                                                             |              | 173.1                               | 155.2                                |
| 10-YR                                                                                                                                                            |              | 180.4                               | 161.1                                |
| 100-YR                                                                                                                                                           |              | 195.3                               | 192.9                                |
| * Discharges from Outfalls 2 and 6 were combined due to the hydrologic and hydraulic modeling methodology and the proximity of these two outfalls to each other. |              |                                     |                                      |

Each of the four outfalls drains seven improvement areas, which are outlined in the list below.

- Outfall 1 drains Areas 2, 3, and 4.
- Outfall 2 drains Area 7.
- Outfall 4 drains Area 5.
- Outfall 6 drains Areas 1 and 6.

The purpose of the proposed improvements is to safely contain and convey the 10-year storm event runoff on-site to outfalls located within the AFP4 campus. Improvements to the system will mainly be accomplished by increasing the system capacities, by upsizing existing storm pipes, or by adding relief lines within the system. Upsizing inlets will also allow for more inflow in the system, which will allow for more surface runoff to be captured. Installation methods of the improvements will be either open-cut or jack and bore. The method of installation will be determined by the Lockheed Martin facilities engineering team before bidding and kick-off of construction for each phase.

Areas 2, 3, and 4 all contribute to Outfall 1. Area 4 Phase 1 improvements have been chosen as the first phase to be constructed due to impending City of Fort Worth infrastructure improvements that impact the Lockheed Martin infrastructure connections. This phase will allow for future Areas 2 and 3 improvements to be installed. The Area 4 improvements also include an improved chemical runoff trench that will be able to safely convey possibly contaminated runoff from the staging areas to the processing tanks. The Area 4 improvements provide many benefits to the storm drain infrastructure, including relief from the roof drains of Building 181, and allow for future improvement phases of other contributing systems (Areas 2 and 3). The Area 2 improvements provide relief to the surface flooding in the Falcon Lot and along Grants Lane. The Area 3 improvements will provide relief to the roof drains along Building 4 and increase the capacity of the system to convey 50-year storm runoff. The majority of the improvements for Areas 2, 3, and 4 are being conducted within the AFP4

property. There is a portion of the project that will be located off of AFP4 property along Clifford Street and State Route Spur 341. The off-site improvements will affect one private property parcel and City of White Settlement and TxDOT road rights-of-way. The existing drainage easement with the private property parcel will need to be revised to include the area of proposed improvements.

Areas 1 and 6 all contribute to Outfall 6. The Area 1 improvements will extend from Hercules Lot to Outfall 2. The main benefit from the Area 1 improvements is the increase in the system capacity and redirection of flow from Outfall 6 to Outfall 1. Currently, the existing Area 1 system contributes to the Area 2 and Area 6 systems. Without their respective improvements, Areas 2 and 6 storm drain systems are under capacity; diverting flow away from them will relieve the existing systems. The Area 6 improvements will provide relief to external and internal flooding of Buildings 220 and 20. The majority of the improvements for Area 1 are being conducted within the AFP4 property. There is a portion of the project that will be located off of the north boundary of the AFP4 property. The off-site improvements will affect property owned by the City of Fort Worth, which are contained within an existing drainage easement.

Area 5 is discharged through Outfall 4. Area 5 experiences surface flooding on the north side of Building 12 and the southwest corner of Building 234. The Area 5 improvements are located in two areas of AFP4, Area 5-A and Area 5-B. Area 5-A improvements extend from the north side of Building 12 to the north side of Building 13. Area 5-B improvements extend from the southwest corner of Build 234 to Outfall 4. The Area 5 improvements will provide relief to surface flooding around Buildings 12, 13, and 234. The Area 5-B improvements will add capacity to the downstream outfall pile, which will relieve surcharge in the upstream lies included in the Area 5-A system. The majority of the improvements for Area 5 are being conducted within the AFP4 property. There is a portion of the project that will be located off of the west boundary of the AFP4 property. The off-site improvements will affect property owned by the City of Fort Worth. The existing drainage easement within the City of Fort Worth parcel will need to be revised to include the area of proposed improvements.

The Area 7 improvements contribute to Outfall 2. Area 7 experiences flooding around Site 30 on the north side of AFP4. The Area 7 improvements will provide relief to external and internal flooding at Site 30, as well as provide an increase in downstream capacity for future upstream improvements. The majority of the improvements for Area 1 are being conducted within the AFP4 property. There is a portion of the project that will be located off of the north boundary of the AFP4 property. The off-site improvements will affect property owned by the City of Fort Worth, which are contained within an existing drainage easement.

### **3.0 AFFECTED ENVIRONMENT AND IMPACTS**

This section describes the environmental setting of AFP4, the potential impacts of the proposed project, and the alternatives considered.

#### **3.1 Land Use Considerations for the Proposed Project**

A Future Land Use Plan prepared in August 2025 describes the land uses at AFP4 (Figure 3-1). In addition, zoning plans exist for the city of White Settlement, Westworth Village, and the City of Fort Worth, covering private lands and lands owned by Fort Worth (Lake Worth) surrounding AFP4 and NAS JRB FW. These documents were considered in developing the land use analysis.

AFP4 facilities are grouped according to areas for Administration, Manufacturing, Material Delivery, System Development, Aircraft Operations, Utilities, Airfield, and Parking uses (Figure 3-1). The proposed project does not affect current land use.

AFP4 is surrounded by a reservoir, Lake Worth, to the north and northwest, the NAS JRB FW to the east, and residential, industrial, and commercial areas to the south and west (Figure 3-2). Areas northwest of AFP4 are within the city of Fort Worth; these areas are zoned for one-family residential detached dwellings (Figure 3-3). Within the city of Fort Worth, on the opposite side of Lake Worth, to the west of the facility, is residential shoreline development. Areas west and south are in the city of White Settlement and include additional residential development (Figure 3-4). However, the city of White Settlement Zoning Map indicates that the northeastern portion of the city near Lockheed Boulevard is zoned Heavy Industrial. Areas southeast of AFP4 are in Westworth Village (Figure 3-5). NAS JRB FW occupies the portions of Westworth Village in the vicinity of AFP4. These areas are zoned Light Industrial.

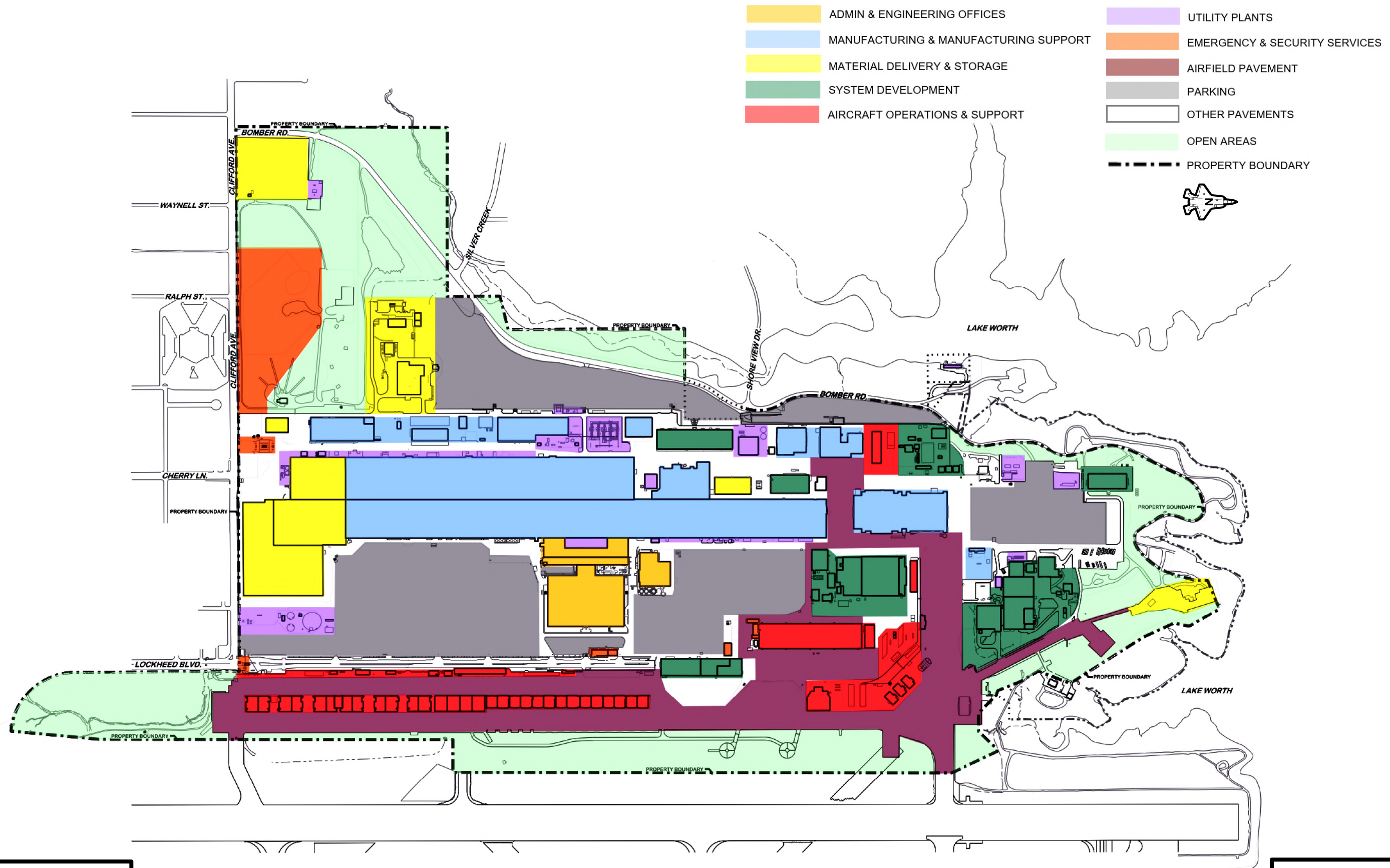
##### **3.1.1 Preferred Alternative for Storm Drain System Improvements**

The four outfall locations (Outfalls 1, 2, 4, and 6) would be upgraded for the proposed project. Each of the four outfalls drains seven improvement areas, which are outlined in the list below.

- Outfall 1 drains Areas 2, 3, and 4.
- Outfall 2 drains Area 7.
- Outfall 4 drains Area 5.
- Outfall 6 drains Areas 1 and 6.

Discharge measurements at each location would be impacted as proposed improvements divert flow from some outfalls to others. Improvements were ranked for construction priority. The rankings are based on constructability, future improvement requirements, and known issues, such as surface flooding on-site and building internal flooding, that need to be addressed as soon as possible. Improvements to the system will include increasing system capacity and, in some locations, adding relief lines, which will allow for relief to internal building drainage systems. Inlets will also be upsized to allow for more inflow into the system. This will allow for the capture of more surface runoff and reduce flooding on-site. Due to the

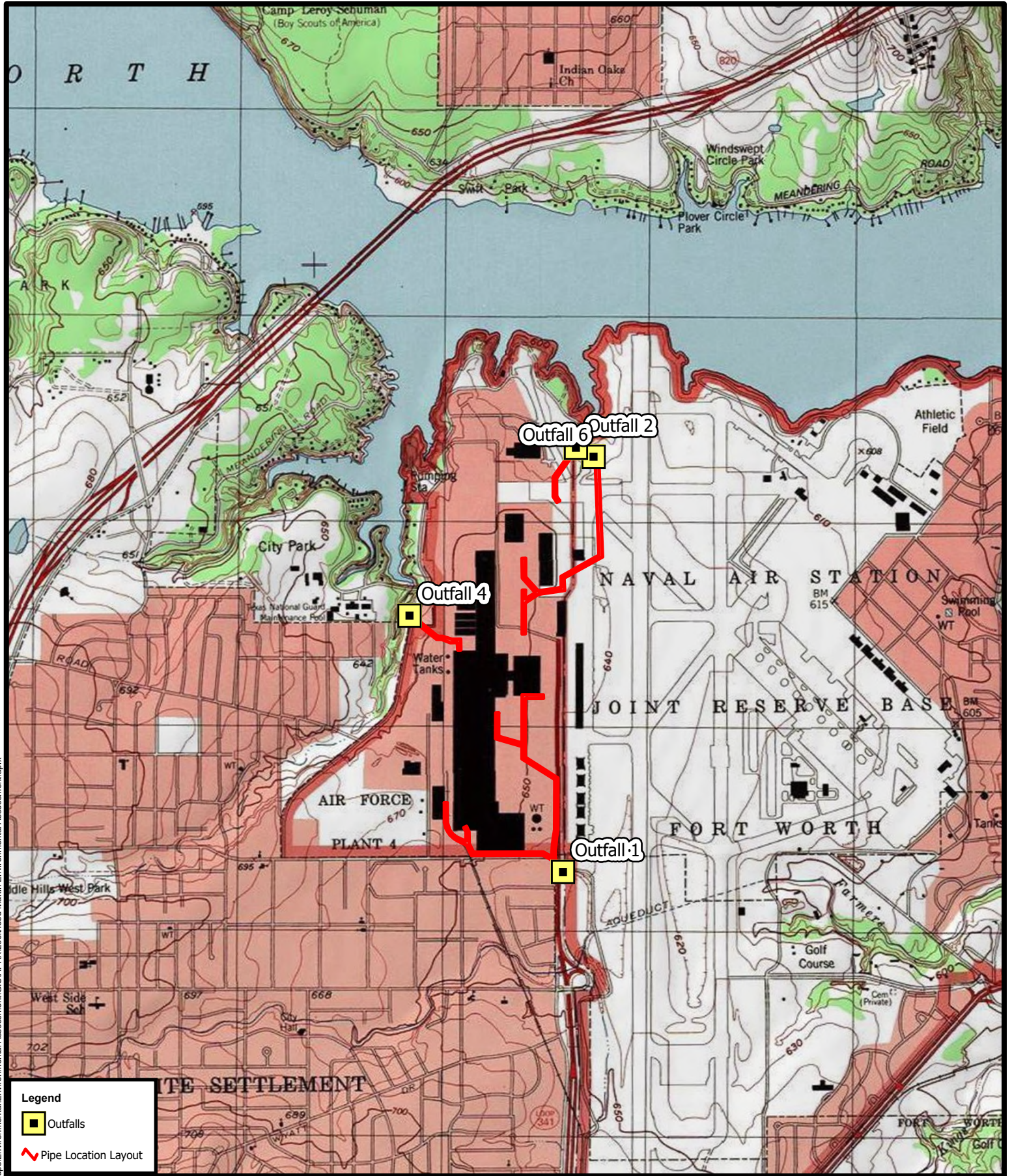
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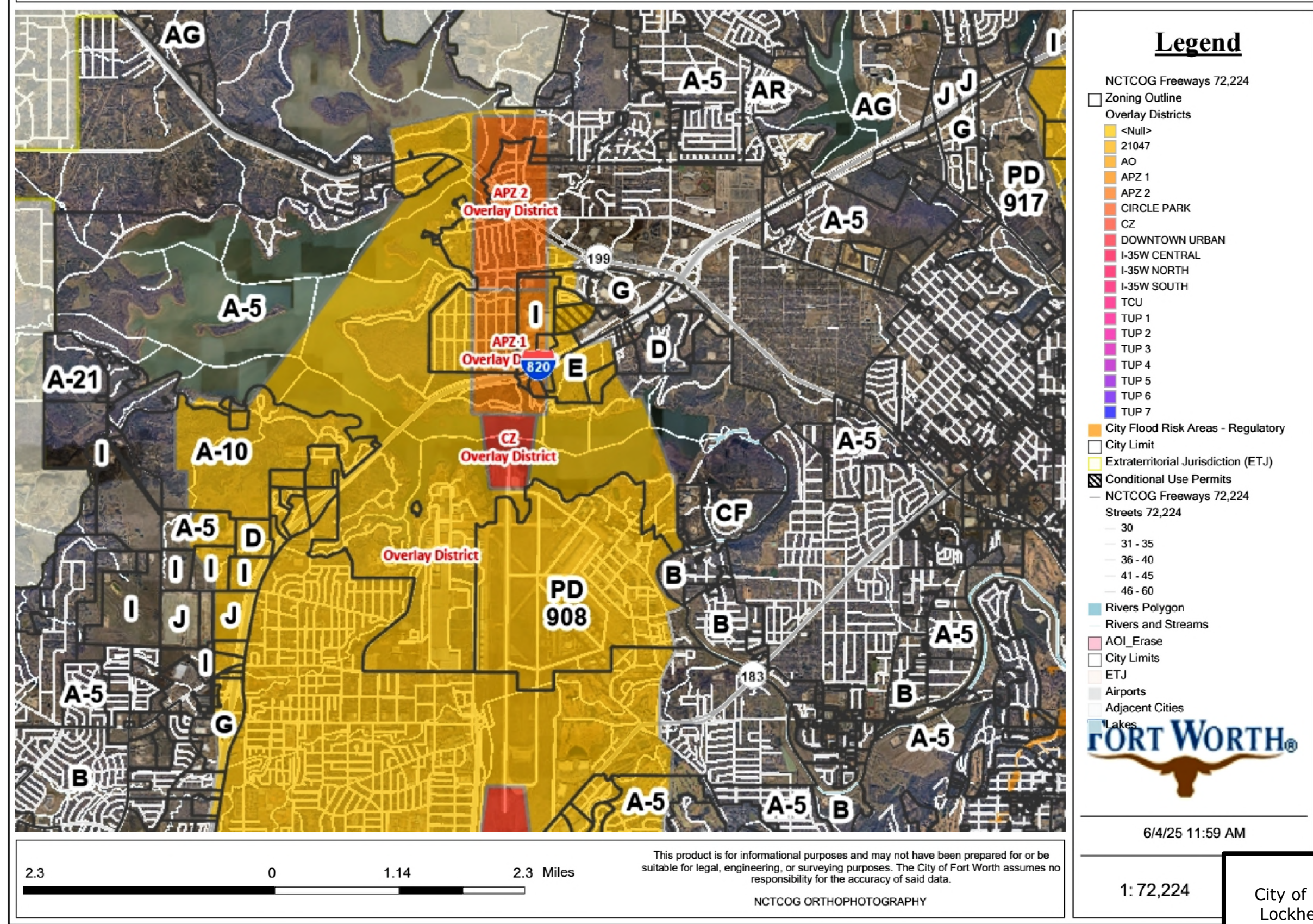
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Figure 3-1  
AFP4 Future Land Use Plan  
Lockheed Martin Aeronautics  
Air Force Plant 4  
Fort Worth, Tarrant County, Texas



# City of Fort Worth Zoning Map 06/2025

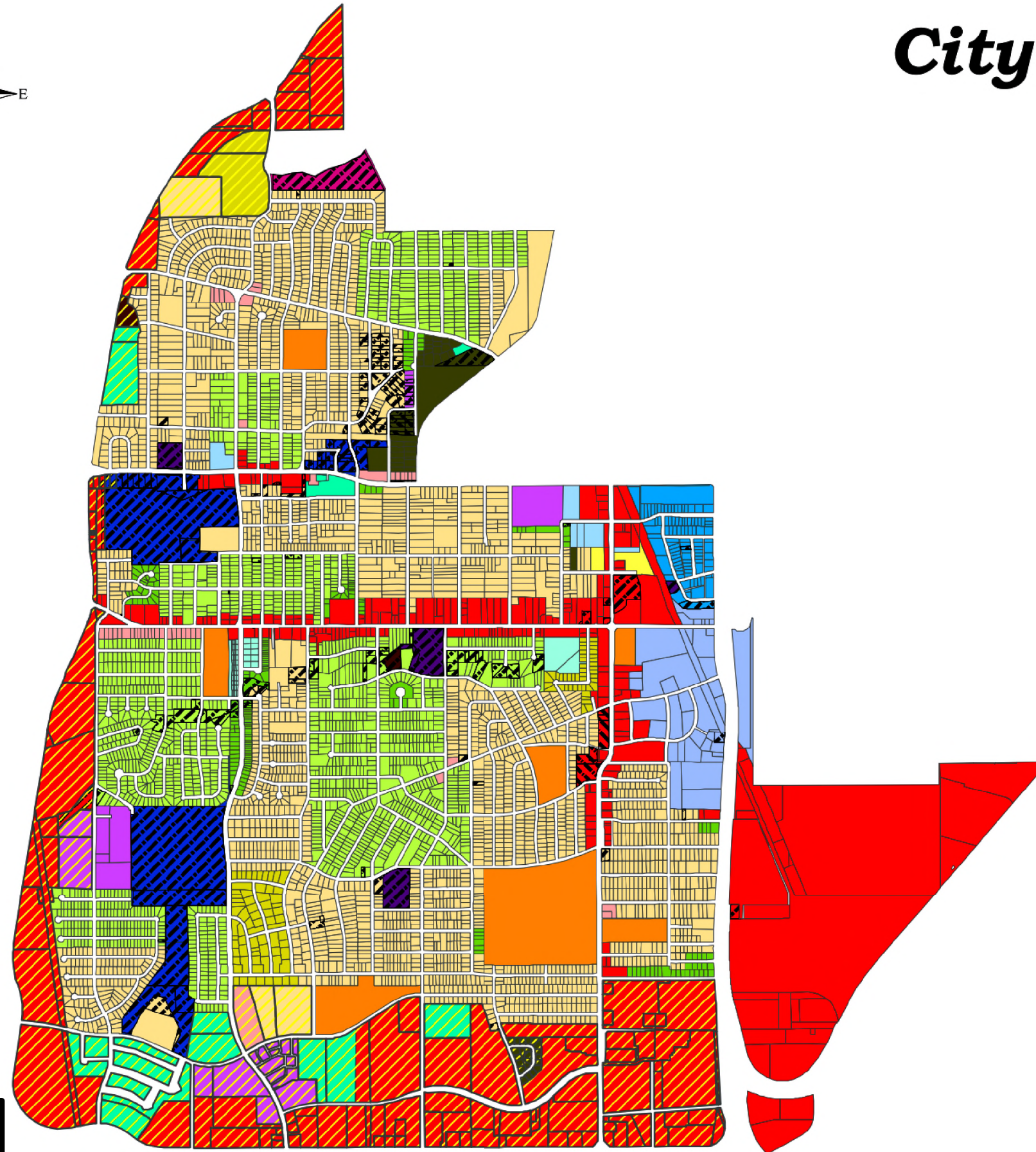
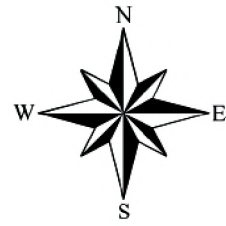


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Figure 3-3  
City of Fort Worth Zoning Map  
Lockheed Martin Aeronautics  
Air Force Plant 4  
Fort Worth, Tarrant County, Texas

# City of White Settlement

## Existing Zoning



### LEGEND

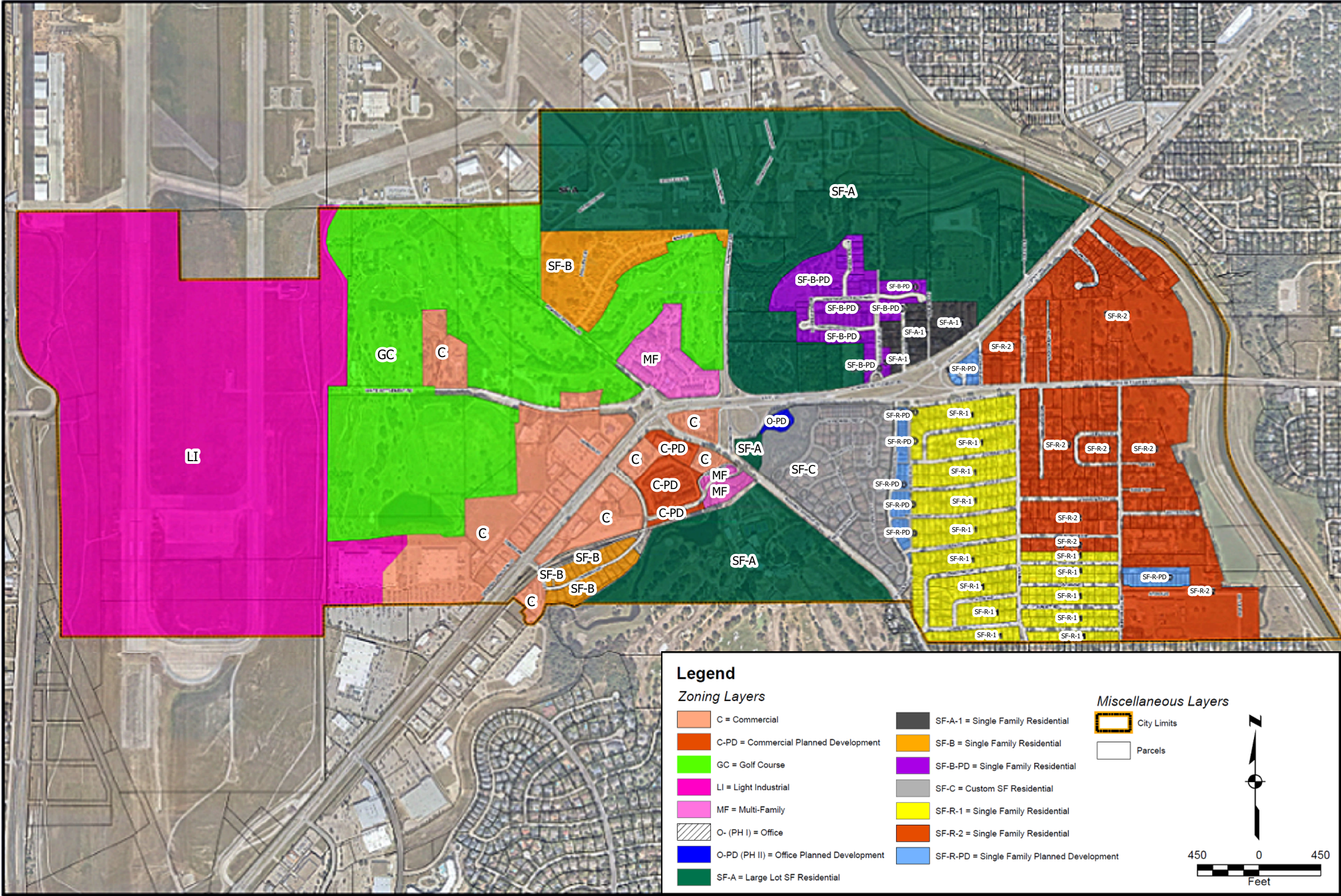
- Mixed Use Overlay District
- Parcels**
  - EDC Property
  - City of White Settlement Property
- Zoning**
  - C-C, CORRIDOR COMMERCIAL
  - C-N, COMMERCIAL NEIGHBORHOOD
  - I-H, MEDIUM AND HEAVY INDUSTRIAL
  - I-L, LIGHT INDUSTRIAL AND WAREHOUSING
  - M-H, HUD CODE MANUFACTURED HOUSING
  - MF-16, MULTI-FAMILY RESIDENTIAL, 16 UNITS PER ACRE
  - MF-24, MULTI-FAMILY RESIDENTIAL, 24 UNITS PER ACRE
  - PD, PLANNED DEVELOPMENT
  - R-5, SINGLE FAMILY RESIDENTIAL - 1,400 SQ FT HOUSES
  - R-6, SINGLE FAMILY RESIDENTIAL - 1,600 SQ FT HOUSES
  - R-7, SINGLE FAMILY RESIDENTIAL - 1,800 SQ FT HOUSES
  - R-8, SINGLE FAMILY RESIDENTIAL - 2,000 SQ FT HOUSES
  - R-C, SINGLE FAMILY RESIDENTIAL CLUSTER
  - R-D, RESIDENTIAL DUPLEX
  - R-V, RECREATIONAL VEHICLE PARK
  - T - CITY FACILITIES
  - T - MUSEUMS
  - T - PARKS
  - T - SCHOOLS

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Figure 3-4  
City of White Settlement Zoning Map  
Lockheed Martin Aeronautics  
Air Force Plant 4  
Fort Worth, Tarrant County, Texas

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Figure 3-5  
Westworth Village Zoning Map  
Lockheed Martin Aeronautics  
Air Force Plant 4  
Fort Worth, Tarrant County, Texas

*Page left blank for Figure 3-1*

*Page left blank for Figure 3-2*

*Page left blank for Figure 3-3*

*Page left blank for Figure 3-4*

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known problem of the potential chemical runoff and the improvements to the Outfall 1 area, the Area 4 improvements are suggested to be installed first. As no new impervious areas will be constructed and existing land uses at AFP4 would remain the same, land use impacts would be insignificant.

Improvements associated with Outfalls 1, 2, 4 and 6 will affect property located outside of AFP4. For improvements associated with Outfalls 2 and 6, the proposed improvements outside of AFP4 will be contained within existing easements in these locations. For improvement associated with Outfalls 1 and 4, the proposed improvements outside of AFP4 are located within existing easements in these location; however, they will need to be expanded to include additional areas affected. LMAC will acquire the additional easement prior to construction activities commencing.

**3.1.2 No Action Alternative for Storm Drain System Improvements**

There would be no impacts on land use if no construction were to occur.

**3.1.3 Summary and Comparison of Land Use Impacts**

The Preferred Alternatives for the Storm Drain System Improvements would upgrade previously designated drainage areas and would be compatible with operations currently taking place.

Improvements to the four outfalls and seven area improvement alternatives would be compatible with the Land Use Plan of AFP4 and zoning plans of surrounding communities. Accordingly, the impacts of the Preferred Alternatives (seven area improvement alternatives) would be insignificant with respect to land use and would be compatible with surrounding community zoning (Table 3-1).

**Table 3-1: Summary and Comparison of Land Use Impacts**

| Alternative Projects                                       | Impacts              |
|------------------------------------------------------------|----------------------|
| <b>Storm Drain System Improvements</b>                     |                      |
| Storm Drain System Improvements<br>(Preferred Alternative) | No land use impacts. |
| No Action for Storm Drain System<br>Improvements           | No land use impacts. |

**3.2 Noise Considerations for the Proposed Project**

Current noise sources at AFP4 include those associated with aircraft manufacturing, engine testing at the run stations facing NAS JRB FW, and aircraft taxi operations in the same area. Commercial office buildings facing the existing runway at NAS JRB FW are exposed to aircraft takeoff, landing, and run station noise levels.

During the storm drain system improvements project, temporary noise from construction equipment will be produced. Noise levels will vary based on the phase of construction that is

occurring on a given day. Construction noise may be perceptible in the vicinity of the project area for limited periods of time, depending on construction phase/schedule, equipment type, etc., but construction noise impacts will be temporary and limited to daytime hours. Expected construction equipment may include backhoes, excavators, jackhammers, and concrete saws. The highest expected construction noise is expected to occur during concrete saw and jackhammer use; however, these elevated levels would only occur during the limited time that equipment is being used, while all other construction noise is anticipated to emit significantly lower noise levels. The Federal Highway Administration (FHWA) Construction Noise Handbook lists measured peak noise at 50 feet as 89 dBA for jackhammers and 90 dBA for concrete saws (USDOT 2006). At distances beyond 100 feet, noise levels are expected to be below 85 dBA due to distance attenuation (~6 dBA reduction per doubling distance). At the property line, the construction noise would likely not be noticeable in the community compared to what is typically expected to occur at AFP4.

**3.2.1 Preferred Alternative for Storm Drain System Improvements**

The storm drain system improvements project would not affect operational noise levels. Construction noise would have a temporary impact.

**3.2.2 No Action for Storm Drain System Improvements**

If no new construction occurred, no new noise sources would be introduced to the area.

**3.2.3 Summary and Comparison of Noise Impacts**

The construction of new outfalls for the storm drain system improvements would produce temporary construction noise. Because of the location of proposed outfalls and because of the use of hearing protection, noise impacts would be insignificant.

**Table 3-2: Summary and Comparison of Noise Impacts**

| Proposed Project                                        | Impacts                                                                           |
|---------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Storm Drain System Improvements</b>                  |                                                                                   |
| Storm Drain System Improvements (Preferred Alternative) | Temporary construction noise; no changes in plant manufacturing operational noise |
| No Action for Storm Drain System Improvements           | No additional noise impacts                                                       |

**3.3 Air Quality Considerations for the Proposed Project**

AFP4 is a major source of criteria pollutants under the Title V Operating Permit Program and currently operates under Site Operating Permit (SOP) No. O-1294. The permit regulates specific major stationary sources of air emissions at AFP4 and requires that the emissions from these sources do not exceed major source values regulated under the Title V Program. AFP4 also operates numerous coating operations during the research, development, and manufacturing of aircraft components and assembled aircraft. These coating operations are

covered under Air Quality Flexible Permit No. 16862. AFP4 uses Best Available Control Technology (BACT) to control air emissions, keeping the levels in compliance with permit limits. Mobile sources of air emissions include vehicles and aircraft. Mobile sources are not regulated under the Title V SOP or the Air Quality Flexible Permit. AFP4 also emits hazardous air pollutants (HAPs) during fuel storage, painting, and other activities. HAP emissions at AFP4 are estimated on an annual basis.

The storm drain system improvements project was evaluated under the General Conformity Rules issued under the CAA. General Conformity Rules (40 CFR 93 Subpart B) apply to federal agency projects in areas designated by the EPA as nonattainment and maintenance for the NAAQS. The Dallas-Fort Worth area is nonattainment for ozone. The General Conformity Rule would be required if emissions from the proposed project exceed the de minimis threshold of 25 tpy for either NOx or VOC for the project. The proposed project was evaluated using ACAM. ACAM was used to perform a quantitative analysis for the project emission against regulatory thresholds which would trigger a Conformity Determination. A copy of the ACAM is provided in **Appendix A**.

**3.3.1 Preferred Alternative for Storm Drain System Improvements**

Impacts on regional air quality resulting from the storm drain system improvements project would be associated with construction activities, such as dust and exhaust from construction equipment. A copy of the ACAM is provided in **Appendix A**. This impact would be temporary, minimal, and considered de minimis. The ACAM model shows that the project would not require General Conformity Analysis and the emission level for the proposed project will not have significant impacts on air quality.

**3.3.2 No Action Alternative for Storm Drain System Improvements**

No new construction would occur, and air emissions from AFP4 would not change.

**3.3.3 Summary and Comparison of Air Quality Impacts**

The construction of new outfalls for the storm drain system improvements would produce emissions below the de minimis threshold for either NOx or VOC. Therefore, the impact on air quality would be insignificant.

**Table 3-3: Summary and Comparison of Air Quality Impacts**

| Proposed Project                                                                             | Impacts                                                                       |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Additional Vehicles Arriving at the Proposed Project Associated with Construction Activities | Increase in regional air quality would be temporary, minimal, and de minimis. |
| No Action to Storm Drain System Improvements                                                 | No air emission increases.                                                    |

3.4 Water Resources

The water resources analysis considers the impacts of the storm drain system improvements project, including water supply, storm water runoff, groundwater, wetlands, and floodplains.

3.4.1 Water Supply and Wastewater Considerations for the Proposed Project

The Fort Worth Water Department (FWWD) supplies water for drinking and domestic use. The source is six area lakes, and water is processed at four treatment plants. During 2024, the average daily use of the city was 219 million gallons per day (MGD) (Fort Worth, 2024). AFP4 used an average of 525,134 gallons per day of domestic water and 313,109 gallons per day of sewage discharge in 2024. The water enters AFP4 through a 16-inch line and is stored in one 2 million gallon tank and two smaller tanks for distribution. FWWD supplies industrial process water. No permits are associated with the water service from FWWD.

An industrial and sanitary wastewater collection system services AFP4 buildings. AFP4 holds an industrial wastewater pretreatment permit issued by Fort Worth. The wastewater is discharged to Fort Worth’s Village Creek Water Reclamation Facility, which has a capacity of 166 MGD (Fort Worth, 2020).

3.4.1.1 Preferred Alternative for Storm Drain System Improvements

No increase in needed drinking or domestic use or increase in wastewater produced is anticipated by the storm drain system improvements project.

3.4.1.2 No Action for Storm Drain System Improvements

No new construction would occur, and no changes to the water supply or wastewater from AFP4 would occur.

3.4.1.3 Summary and Comparison of Water and Wastewater Impacts

No change in the utilization of domestic water or increase in wastewater is anticipated as a result of the storm drain system improvements project.

Table 3-4: Summary and Comparison of Water and Wastewater Impacts

| Proposed Project                                        | Impacts                           |
|---------------------------------------------------------|-----------------------------------|
| Storm Drain System Improvements                         |                                   |
| Storm Drain System Improvements (Preferred Alternative) | No impact on water or wastewater. |
| No Action for Storm Drain System Improvements           | No impact on water or wastewater. |

### 3.4.2 Storm Water Considerations for the Proposed Project

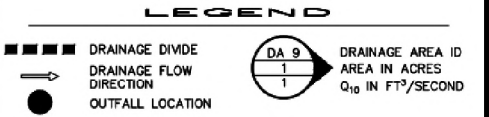
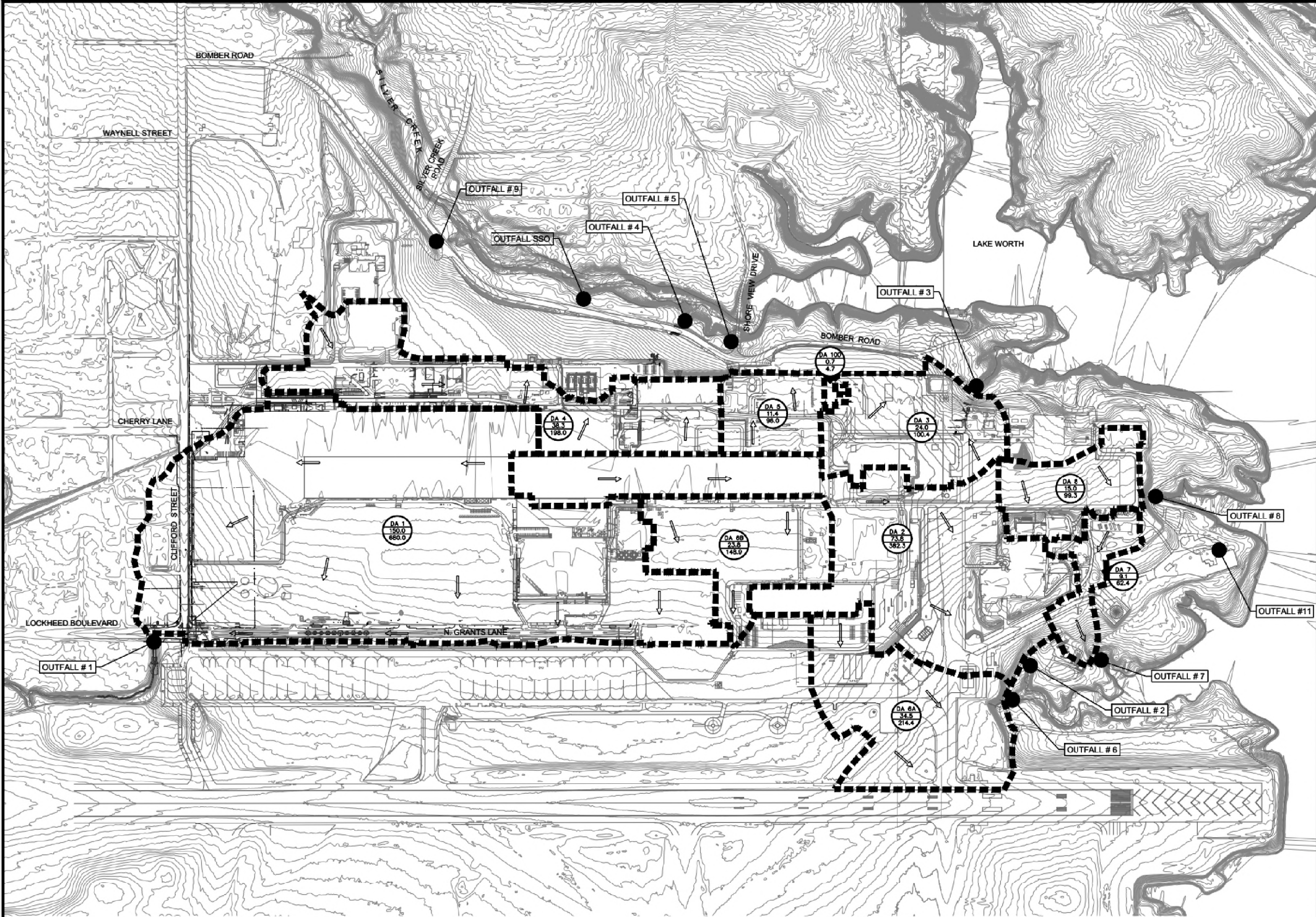
Drainage from the AFP4 is discharged at eleven outfalls into Lake Worth and Farmers Branch (Figure 3-6). This project includes the replacement of four of the eleven outfalls. Three of these outfalls discharge into Lake Worth (Outfalls 2, 4, and 6), and one (Outfall 1) discharges into Farmers Branch. Existing conditions of the current storm drain system result in large areas of AFP4 being inundated by the 10-year storm event, and a large number of the storm drains have been found to have insufficient capacity.

Construction activities proposed for the storm drain system improvements project include ground excavation, grading, and installation of the storm drain system. The movement of soil and the exposure of soil to wind, rain, and storm water runoff increase the erosion potential. Storm water runoff from the construction areas has the potential to pick up and transport pollutants to receiving waters (nonpoint sources of water pollution). Storm water runoff typically picks up pollutants such as oil and grease, fuel, landscape fertilizers and other materials used during operations activities.

Construction areas greater than 1 acre require a Storm Water Pollution Prevention Plan (SW3P). The SW3P requires a project proponent to prepare and implement a SW3P and monitoring plan before commencement of soil-disturbing activities. A construction storm water permit and SW3P will be prepared for the proposed project since the proposed disturbance will be over 1 acre.

During the construction of the project, sediment control measures such as silt fences, inlet protection, check dams, etc., will be utilized. The construction site would be kept clean. There is a known trichloroethylene (TCE) plume located within Areas 2, 3, and 4. This site is identified as Installation Restoration Program (IRP) Site OT022 – Window East Corner, East Parking Lot Groundwater Remediation Area. There is known shallow soil contamination that exists near or within the footprints of Areas 2, 3, 4, 5, and 7 (IRP Sites OT022, FT005, DP011, SS019P, and SS020P). There is known groundwater contamination that exists within the footprint of Areas 2, 3, 4, and 7 (IRP Sites OT022, SS018P, SS019, and SS020). Soil contamination also exists within Area 5, associated with IRP Sites FT005 – Former Fire Department Training Area and DP011-Chrome Pit No. 2. Fuel-related free product was identified in site soils at IRP Site FT005, and the depth of groundwater in the range of 3.83 to 6.80 feet in the latest survey in 2024. An unlined chrome disposal pit was used to dispose of chromate sludge, miscellaneous liquids, and soils at IPR Site DP011.

During construction, soil and groundwater would be properly contained, inspected, and tested. Any contaminated soil or groundwater found will be disposed of appropriately as determined by the LMAC environmental compliance engineer for the AFP4 Facility. Any excess soil, including shallow groundwater, generated by the project would be handled under existing LMAC waste disposal procedures, and documentation will be provided to AFCEC per AFP4's Installation Development Plan/Land Use Control Implementation Plan process. Additionally, any PFAS-containing materials will be destroyed or disposed of following Department of Defense disposal guidance (Department of Defense 2023a and 2023b).



| DRAINAGE AREA DATA TABLE |           |               |
|--------------------------|-----------|---------------|
| DRAINAGE AREA            | AREA (AC) | 10-YR Q (CFS) |
| DA-1                     | 150.0     | 680.0         |
| DA-2                     | 73.8      | 302.3         |
| DA-3                     | 24.0      | 100.4         |
| DA-4                     | 38.3      | 198.0         |
| DA-5                     | 11.4      | 96.0          |
| DA-6A                    | 34.5      | 214.4         |
| DA-6B                    | 23.8      | 148.9         |
| DA-7                     | 9.1       | 62.4          |
| DA-8                     | 15.0      | 99.3          |
| DA-100                   | 0.7       | 4.7           |

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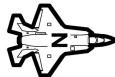


Figure 3-6  
Outfall Drainage Area Map  
Lockheed Martin Aeronautics  
Air Force Plant 4  
Fort Worth, Tarrant County, Texas

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Storm water from the proposed project would be covered under AFP4's existing multi-sector general permit for industrial storm water discharge issued by the Texas Commission on Environmental Quality (TCEQ) in 2001 and renewed in 2006, 2011, 2016, and 2021. The Permit number is TXR05M673 under the Texas Multi-Sector General Permit (TXR050000). AFP4's permit is valid through August of 2026. Updated state wide permits will be issued by TCEQ in August of 2026 and at that time, AFP4 will apply to renew the site permits. This cycle of renewal will continue for the duration of the construction of storm water system improvements.

### **3.4.2.1 Preferred Alternative for Storm Drain System Improvements**

The proposed storm drain system improvements address the inundation of large areas at AFP4 by a 10-year storm event. There is an increase in discharge from existing to proposed conditions into Outfalls 1, 2, and 6 due to the proposed improvements conveying floodwaters that are ponding in parking lots under existing conditions. Outfalls 2 and 6 have a maximum 100-year discharge increase of approximately 320 cfs between existing and proposed conditions. Outfalls 2 and 6 flow into Lake Worth. Lake Worth is an impoundment on the West Fork Trinity River with a surface area of 3,489 acres and a conservation pool of 31,530,305 acre-feet. The proposed increase in discharge would result in approximately 600 acre-feet volume increase to Lake Worth, or approximately 0.002% of the lake volume, which would not result in a significant increase in surface water within the lake. The routing and storage effect of Lake Worth would result in no significant impact to adjacent or downstream properties.

Under existing conditions, the systems contributing to Outfall 1 cannot capture enough runoff to prevent surface flooding. A large portion of runoff contributing to Outfall 1 is from surface runoff and not from the closed system discharge. The improvement to the systems that discharge to Outfall 1 makes the systems more efficient in capturing surface runoff, which increases the discharge from the closed system. The improvement at Outfall 1 and Area 2 will provide relief to the surface flooding in the area. Outfall 1 has a maximum 100-year discharge increase of approximately 330 cfs between existing and proposed conditions. Outfall 1 discharges to a man-made, trapezoidal channel on Lockheed Martin AFP4 property, which flows into Farmers Branch and is located within the extents of the floodplain of Farmers Branch, located off-site. HEC-RAS hydraulic modeling of the Farmers Branch effective FEMA 100-year storm event with the proposed 330 cfs increase from Outfall 1 results in a maximum 0.25-inch rise. Further watershed timing analysis indicates that this 0.25-inch rise arrives at Farmers Branch and dissipates before the time of peak for the much-larger stream. The trapezoidal channel is located in a grass infield area, which acts as a retention area that allows flows and discharges to dissipate before leaving AFP4. Therefore, increasing flow to Outfall 1 will not increase the flows within Farmers Branch and will have no significant impact to existing properties downstream of the proposed project.

The proposed discharge at Outfall 4 will remain relatively the same as existing discharge conditions, with only a decrease of 2.4 cfs between existing and proposed conditions. Increasing the pipe size from the existing 42-inch reinforced concrete pipe (RCP) to a

proposed 60-inch RCP increases discharges earlier in the storm event and results in a peak discharge decrease for proposed conditions.

The installation method of improvements in these areas will either be via open-cut or jack and bore.

**3.4.2.2 No Action Alternative for Storm Drain System Improvements**

There would be no change in storm water as no new facilities would be built.

**3.4.2.3 Summary and Comparison of Storm Water Impacts**

The storm drain system improvements will add capacity to the AFP4 site to safely contain and convey on-site 10-year storm event runoff to the four outfalls. Drainage improvements for Lockheed Martin’s AFP4 were designed to meet the requirements of the UFC, which default to the local City of Fort Worth criteria. The proposed upsizing of existing inlets to allow more inflow into the system will resolve flooding and reduce ponding in higher-level storms like the 50-year event.

**Table 3-5: Summary and Comparison of Storm Water Impacts**

| Proposed Project                                        | Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Storm Drain System Improvements</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Storm Drain System Improvements (Preferred Alternative) | No change in impervious surface. Outfalls 1 and 2, and 6 will cause an increase in storm water discharge. Increases in discharge from these outfalls will not result in adverse impacts downstream of the project area. Outfalls 2 and 6 will discharge into Lake Worth does not result in a significant increase in surface volumes in the lake, and impact would be negligible. An increased flow from Outfall 1 will cause a 0.25-inch rise in floodplain elevation; however, it will be contained in a retention area and will dissipate before reaching the larger downstream system. Improvements to the system will resolve ponding and flooding on-site. |
| No Action for Storm Drain System Improvements           | No change in impervious surface or storm water runoff patterns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**3.4.3 Groundwater Considerations for the Proposed Project**

Three water-bearing zones exist in the subsurface beneath AFP4. The uppermost zone, the Terrace Alluvial system, is encountered in the terrace alluvial deposits, filling low areas in the underlying bedrock. The groundwater yield is low. The second water-bearing zone occurs locally beneath the East Parking Lot in the thin Upper Sand unit of the Paluxy Formation. The yield is also low and cannot sustain pumping levels typical of a potable water source. The

third water-bearing zone is the Paluxy Aquifer. The top of the aquifer typically occurs 15 to 20 feet below the top of the Paluxy Formation. The aquifer is approximately 150 to 170 feet thick in the vicinity of AFP4. It should be noted that the Upper Sand zone is separated from the Paluxy Aquifer by a dry zone that is approximately 10 to 20 feet thick and is considered hydraulically separated.

Beneath AFP4, the lower portion of the Cretaceous-age Paluxy Formation is considered an aquifer yielding small to moderate quantities of water (U.S. Geological Survey, 1998). The Paluxy Formation is approximately 130 to 175 feet thick and consists of fine- to coarse-grained sandstone interbedded with mudstone. At AFP4, the Paluxy Formation has been divided into three sandstone zones (upper, middle, and lower) separated by mudstones. The coarser-grained sandstones in the lower zone are the most permeable materials that make up the lower Paluxy Aquifer. Groundwater flow within the Paluxy Aquifer is in a generally southeasterly direction. The city of White Settlement operates municipal wells west and south of AFP4. The White Settlement water-supply wells are screened in the middle and lower zones of the Paluxy Formation. There are also numerous domestic wells in the region completed within the Paluxy Aquifer.

The Glen Rose Formation is a confining unit beneath the Paluxy Formation. It consists of low-permeability limestone, marl, clay, and very little sandstone.

The Goodland Limestone and Walnut Formation make up a confining unit that overlies the Paluxy Formation and has a very low permeability. This confining unit ranges from 0.5 to 70 feet thick at AFP4. Quaternary terrace alluvial deposits consisting of gravel, sand, silt, and clay, and fill materials overlie the Goodland-Walnut confining unit. Groundwater leakage between the surficial terrace alluvial aquifer and the Paluxy Aquifer is reportedly limited and occurs only in localized areas.

Groundwater contamination of the surficial terrace alluvial aquifer has occurred at AFP4. TCE and its degradation compounds have been detected above safe drinking water levels beneath AFP4 within the shallow terrace alluvial aquifer, in the Paluxy Upper Sand, and the upper Paluxy Aquifer. The lower Paluxy Aquifer is not contaminated. The AFP4 Superfund Site is generally defined by the base-wide TCE groundwater plume (EPA, 2009).

#### **3.4.3.1 Preferred Alternative for Storm Drain System Improvements**

During construction, piping for the storm drain system improvements will be installed using open-cut or jack and bore. Open cuts would be relatively shallow and would be between 7 to 10 feet. Temporary drainage during storms could infiltrate into the groundwater when the construction site is not covered. There are known areas where areas within the proposed project where contaminated groundwater could be encountered (IRP Sites OT022, SS018P, SS019, and SS020P). Any groundwater generated within Areas 2, 3, 4, and 7 will be contained and tested. If the groundwater is found to be contaminated, it will be disposed of appropriately as determined by the LMAC environmental compliance engineer for the AFP4 Facility. Any excess groundwater generated by the project would be handled under existing

LMAC waste disposal procedures, and documentation will be provided to AFCEC per AFP4's Installation Development Plan/Land Use Control Implementation Plan process.

When completed, drainage from AFP4 would be routed through storm drain system improvements, and there would be no potential for groundwater infiltration. The TCE plume is located within Areas 2, 3, and 4, associated with Outfall 1. The TCE plume contamination is approximately 27 to 34 feet deep (EPA, 2014; AFCEC 2024). Construction would not exceed a depth of 27 feet, and the contamination would not be disturbed by construction. During construction, soil would be inspected and tested appropriately as determined by the LMAC environmental compliance engineer for the AFP4 Facility. The proposed storm drain system improvements would have no impact on the ongoing remediation of the TCE plume or any IRP sites. The locations of IRP Sites will be included in construction plans, and the contractor will be advised that IRP sites cannot be disturbed. The Record of Decision for the AFP4 Superfund site (EPA, 1996; EPA, 2023) includes long-term monitoring as a component of the remedy for the site. There are critical IRP compliance monitoring wells that are within (or in the vicinity of) the footprint of the proposed project. All monitoring wells will be protected from damage during construction activities. If a monitoring well needs to be relocated, approval is required from AFCEC, EPA, and TCEQ must be obtained before relocating any monitoring wells.

#### **3.4.3.2 No Action Alternative for Storm Drain System Improvements**

No impact on aquifers and groundwater resources will occur from implementing the no action alternative because no construction would occur.

#### **3.4.3.3 Summary and Comparison of Groundwater Impacts**

The proposed project will be constructed in the area of the existing impervious surface, concrete pads, and areas that are sodded in grass, which will not have the potential to impact groundwater. Any chemical or fuel spills would be contained on the surface before having the opportunity to infiltrate into groundwater. Known contaminated groundwater exists within the proposed project. Shallow groundwater contamination within the footprint of Areas 2, 3, 4, and 7 (IRP Sites OT022, FT005, SS018P, SS019, and SS020). Any groundwater encountered in these areas will be properly contained, inspected, and tested. Contaminated groundwater will be disposed of appropriately as determined by the LMAC environmental compliance engineer for the AFP4 Facility. Groundwater encountered by the project would be handled under existing LMAC waste disposal procedures, and documentation will be provided to AFCEC per AFP4's Installation Development Plan/Land Use Control Implementation Plan. Standard construction management practices for sedimentation and erosion control, with any chemical spills during construction, will promptly be reported to the LMAC hazardous waste cleanup team and will be used to prevent groundwater infiltration (Table 3-6). With the use of the standard management practices described above, the impact on groundwater would be insignificant.

**Table 3-6: Summary and Comparison of Groundwater Impacts**

| <b>Proposed Project</b>                                 | <b>Impacts</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Acceptance Test Facility Expansion</b>               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Storm Drain System Improvements (Preferred Alternative) | <p>Shallow contaminated groundwater could be encountered within Areas 2, 3, 4, 5, and 7. Any groundwater encountered in these areas will be properly contained, inspected, and tested. Contaminated groundwater will be disposed of appropriately as determined by the LMAC environmental compliance engineer. Any chemical spills during construction would be reported to the LMAC hazardous waste cleanup team.</p> <p>IRP Site will not be disturbed. IRP Sites will be located on construction plans, and the contractor will be advised that IRP Sites cannot be disturbed.</p> |
| No Action for Storm Drain System Improvements           | No impact on groundwater.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

### 3.4.4 Wetlands Considerations for the Proposed Project

For screening of the potential for wetland impacts, USFWS's National Wetlands Inventory (NWI) was consulted. NWI maps show there are no water features located at the four outfalls (Figure 3-7). Wetland presence based on NWI maps provides preliminary screening but may not be an accurate assessment of potentially occurring jurisdictional wetlands. It is not anticipated that wetlands will be found within the vicinity of Outfalls 1, 2, 4, or 6, and no further screening is necessary.

#### 3.4.4.1 Preferred Alternative for Storm Drain System Improvements

There are no wetlands in the vicinity of the proposed storm drain system improvements project. Construction would take place in upland areas, and no wetlands would be affected.

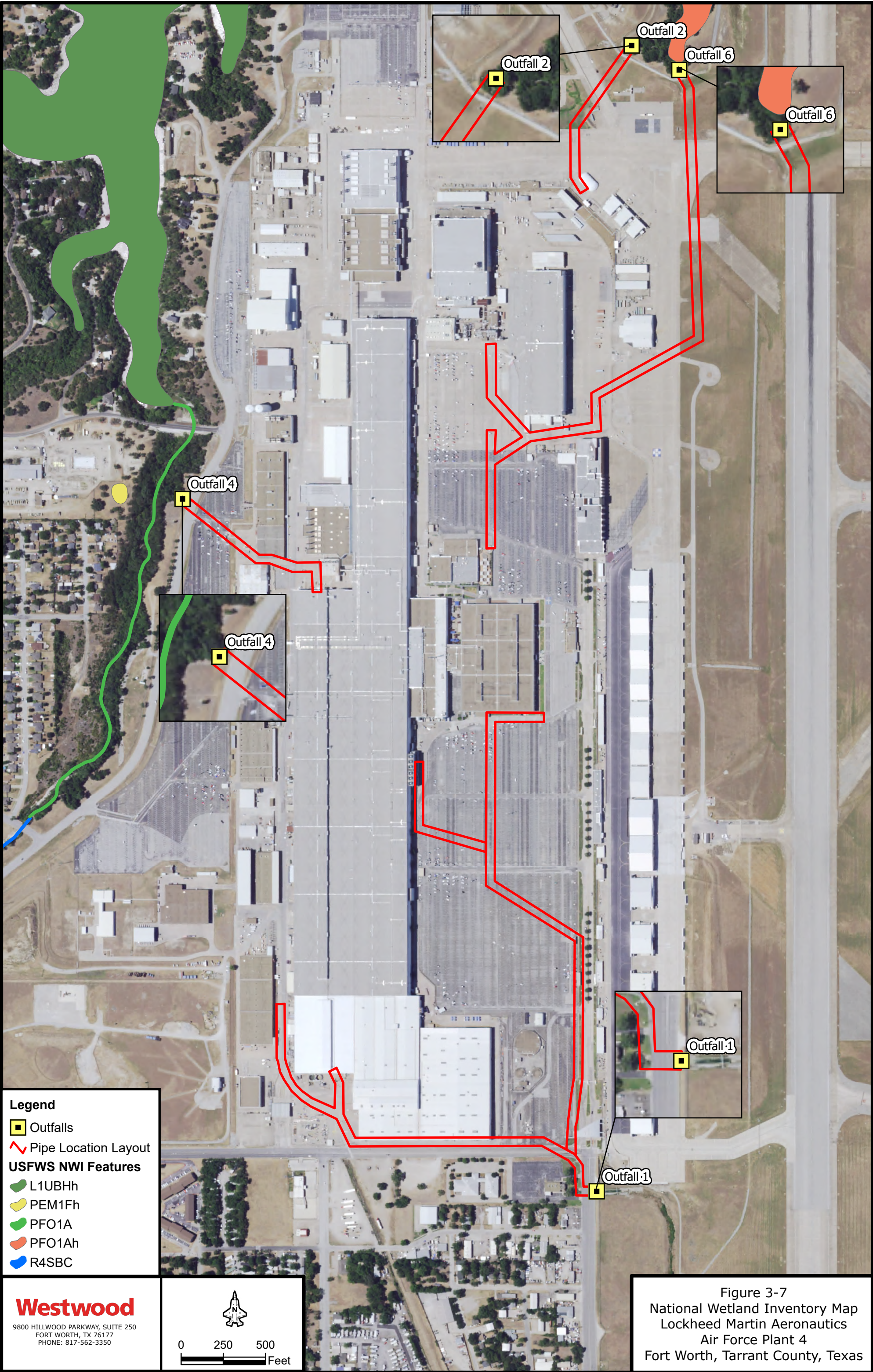
#### 3.4.4.2 No Action Alternative for Storm Drain System Improvements

Because no new construction would occur, no impacts to wetlands would occur.

#### 3.4.4.3 Summary and Comparison of Wetland Impacts

Construction of the storm drain system improvements would not affect wetlands or jurisdictional streams, based on a review of NWI maps and U.S. Geological Survey (USGS) topographic mapping.

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**Table 3-7: Summary and Comparison of Wetlands Impacts**

| Proposed Project                                        | Impacts                |
|---------------------------------------------------------|------------------------|
| <b>Storm Drain System Improvements</b>                  |                        |
| Storm Drain System Improvements (Preferred Alternative) | No impacts to wetlands |
| No Action for Storm Drain System Improvements           | No impacts to wetlands |

### 3.4.5 Floodplain Considerations for the Proposed Project

According to the Flood Insurance Rate Maps (FIRM) for the AFP4 area (Figure 3-8), Outfalls 2, 4, and 6 are not within the 100-year floodplain. Outfall 1 is located within the 100-year floodplain of Farmers Branch and adjoins the southeastern portion of AFP4. No changes to the floodplain are proposed by the installation of Outfall 1 improvements and the floodplain functions would be maintained.

#### 3.4.5.1 Preferred Alternative for Storm Drain System Improvements

According to the FIRM, Outfalls 2, 4, and 6 are not located within the floodplain, and there would be no impacts to the floodplain by these outfalls. Outfall 1 is located within the 100-year floodplain of Farmers Branch. No change to the floodplain is proposed by the installation of Outfall 1 improvements, and the floodplain functions would be maintained (**Appendix B**).

#### 3.4.5.2 No Action Alternative for Storm Drain System Improvements

No activities are currently taking place in a floodplain, and there would be no impact on floodplain functions or values.

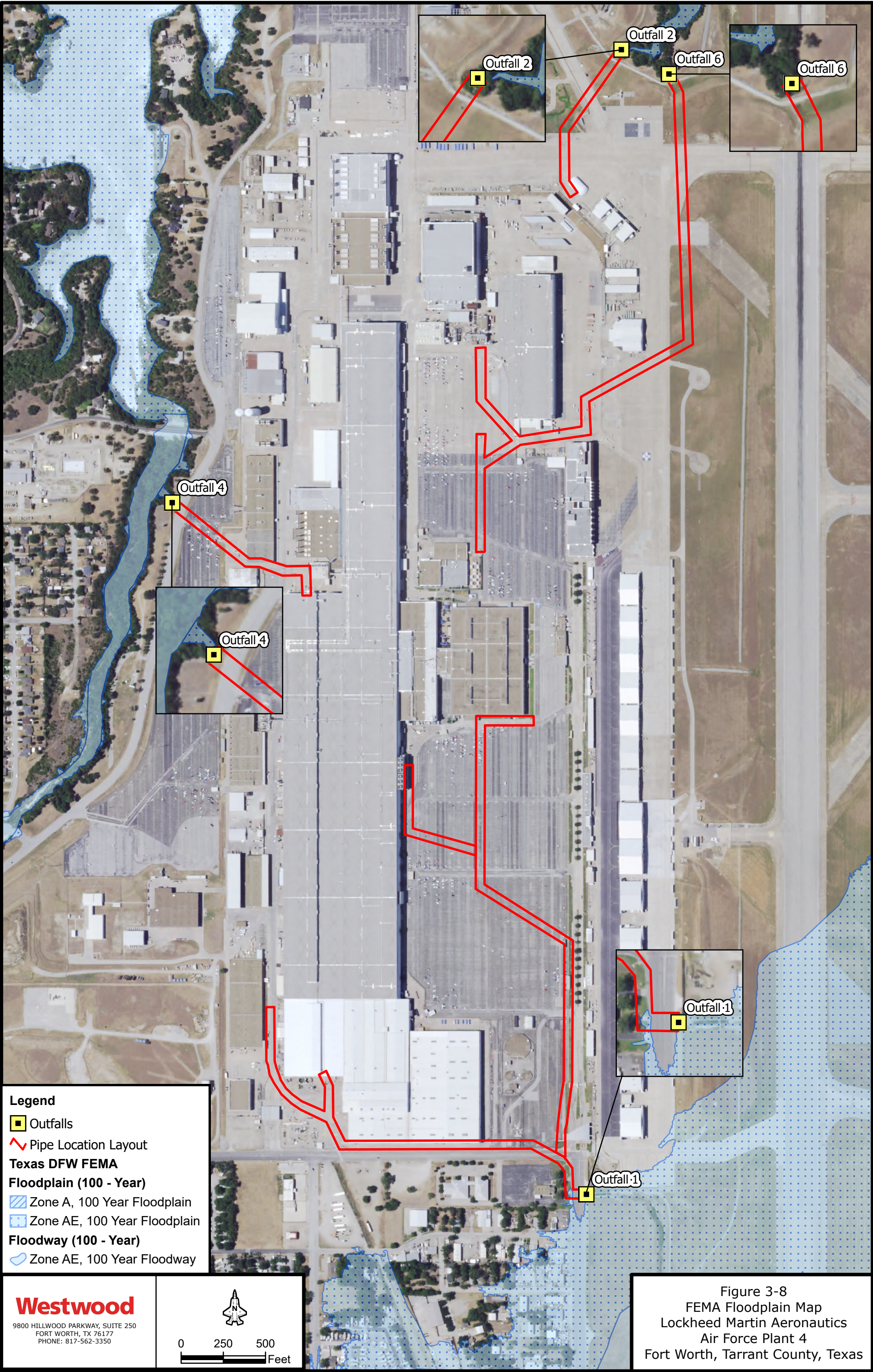
#### 3.4.5.3 Summary and Comparison of Floodplain Impacts

No change to the floodplain is proposed by the storm drain system improvements, and the floodplain functions would be maintained (Table 3-8).

**Table 3-8: Summary and Comparison of Floodplain Impacts**

| Proposed Project                                        | Impacts                   |
|---------------------------------------------------------|---------------------------|
| <b>Storm Drain System Improvements</b>                  |                           |
| Storm Drain System Improvements (Preferred Alternative) | No impacts to floodplains |
| No Action for Storm Drain System Improvements           | No impacts to floodplains |

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**3.5 Safety and Health Considerations for the Proposed Project**

During construction and operation, all contractor and subcontractor activities on the premises of AFP4 are governed by LMAC published Safe Practice Instructions, the Contractors Safety Handbook, as well as procedures specified in the General and Special Provisions of the contract. These procedures cover confined space constraints, fall protection, fire protection, hazardous waste and material handling and disposal, painting procedures, warning signs and barricades, excavation, trenching, scaffolding, personal protective equipment, and a myriad of other safety-related areas. All activities with potential safety and health issues would be accomplished according to all applicable laws and regulations.

**3.5.1 Preferred Alternative for Storm Drain System Improvements**

No new health and safety concerns would occur with the storm drain system improvements. Concerns related to the proposed project would include excavation, trenching, hazardous waste and materials handling, and personal protective equipment. Based upon these actions and compliance with required health and safety laws, no new impacts on safety and health are anticipated.

**3.5.2 No Action for Storm Drain System Improvements**

Because there would be no new construction, no new safety and health issues would occur, and all contractor and subcontractor activities would be covered by LM Aero's existing procedures.

**3.5.3 Summary and Comparison of Safety and Health Impacts**

Health and safety issues would be addressed by standard procedures in place at AFP4's existing facility. Health and safety are generally addressed by those procedures and the use of personal protective equipment. These would be managed according to Occupational Health and Safety Administration (OSHA) requirements by construction contractors (Table 3-9). With compliance with OSHA requirements, impacts on health and safety would be insignificant.

**Table 3-9: Summary and Comparison of Safety and Health Impacts**

| Proposed Project                                        | Impacts                              |
|---------------------------------------------------------|--------------------------------------|
| <b>Storm Drain System Improvements</b>                  |                                      |
| Storm Drain System Improvements (Preferred Alternative) | Standard health and safety concerns. |
| No Action for Storm Drain System Improvements           | No new health and safety concerns    |

**3.6 Hazardous Materials Considerations for the Proposed Project**

The proposed project is not anticipated to increase in hazardous and regulated waste that is generated on-site at AFP4. Any hazardous and regulated waste generated would be collected

and provided to LMAC hazardous waste control, which in turn provides the waste to an approved hazardous waste management facility.

In accordance with LMAC procedures, a subsurface investigation, including environmental sampling, to classify soils for proper disposal, would be conducted. No other chemical, radiation, or explosive hazards are anticipated in conjunction with the proposed actions or the No Action Alternative.

Construction waste would be sent to appropriate landfills in the Fort Worth area. There are currently four landfills managing the solid waste from Fort Worth, including the city’s Southeast Landfill and privately operated landfills Fort Worth C&D Landfills (City of Fort Worth 2017). Waste from the construction of the proposed project would be recycled if feasible, and the remaining would be sent to landfills. Landfill capacity is adequate to manage the additional construction waste.

**3.6.1 Preferred Alternative for Storm Drain System Improvements**

No increase in hazardous and regulated waste is anticipated by the proposed project. The construction of the storm drain system improvements would not generate hazardous waste. Any waste generated during construction activities would be contained properly on-site and sent to appropriate landfills.

**3.6.2 No Action Alternative for Storm Drain System Improvements**

No action would not increase or produce/generate hazardous waste.

**3.6.3 Summary and Comparison of Hazardous Waste Impacts**

No increase in hazardous waste is anticipated as a result of the proposed project (Table 3-10).

**Table 3-10: Summary and Comparison of Hazardous Waste Impacts**

| Proposed Project                                        | Impacts                          |
|---------------------------------------------------------|----------------------------------|
| <b>Storm Drain System Improvements</b>                  |                                  |
| Storm Drain System Improvements (Preferred Alternative) | No new hazardous waste generated |
| No Action for Storm Drain System Improvements           | No new hazardous waste generated |

**3.7 Biological Resources Considerations for the Proposed Project**

AFP4 is partially surrounded by urban development, with some undeveloped areas to the west and along the Lake Worth shoreline. Ecologically, this area is part of the Grand Prairie, a transition between prairie and forest. The original vegetation was tallgrass prairie with scattered elm, pecan, and hackberry in riparian areas (Griffith et al., 2004). These natural communities have been eliminated on AFP4 and adjacent NAS JRB FW, as well as in adjoining urban areas such as White Settlement, Westworth Village, and Fort Worth.

Terrestrial wildlife species that could occur on or in the vicinity of AFP4 would likely be common species that are tolerant of human activities and urban development. A list of these species could include field mice, opossum, raccoon, eastern cottontail, red foxes, fox squirrel, and armadillo. Rough, forage, and game fish species are present in Lake Worth, and common species of turtles, toads, frogs, lizards, and snakes likely occur in and along the banks of Lake Worth.

3.7.1      **Endangered and Threatened Species Considerations for Storm Drain System Improvements**

**Federally Listed Endangered and Threatened Species**

Westwood conducted an IPaC in coordination with the USFWS (USFWS 2025a) on June 17, 2026. Please note that IPaC results are only valid for 90 days. The results of the effort identified four federally threatened, endangered, or candidate for listing species as potentially occurring within the Project Area or surrounding region (Table 3-11). There are also two proposed federally endangered or threatened listed species within the project or surrounding areas. These species and their listing status are provided in Table 3-11. Although not identified by the IPaC, the Bald Eagle (*Haliaeetus leucocephalus*) is included for review due to being protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d).

**Table 3-11: Federally Protected Species Known or Likely to Occur in Tarrant County**

| Common Name ( <i>Scientific Name</i> )                      | Federal Status <sup>1, 2</sup> | Probability of Occurrence |
|-------------------------------------------------------------|--------------------------------|---------------------------|
| <b>Mammals</b>                                              |                                |                           |
| Tricolored Bat ( <i>Perimyotis subflavus</i> )              | PE                             | Review if uplisted        |
| <b>Birds</b>                                                |                                |                           |
| Piping Plover ( <i>Charadrius melodus</i> )                 | FT                             | Low                       |
| Rufa Red Knot ( <i>Calidris canutus rufa</i> )              | FT                             | Low                       |
| Whooping Crane ( <i>Grus americana</i> )                    | FE                             | Low                       |
| Bald Eagle ( <i>Haliaeetus leucocephalus</i> )              | BGEPA                          | Low                       |
| <b>Reptiles</b>                                             |                                |                           |
| Alligator Snapping Turtle ( <i>Macrochelys temminckii</i> ) | PT                             | Low                       |
| <b>Insects</b>                                              |                                |                           |
| Monarch Butterfly ( <i>Danaus plexippus</i> )               | C                              | Review if uplisted        |

1    PE = Proposed Endangered; FE = Federally endangered; FT = Federally threatened; C = Federal candidate for listing; BGEPA = Bald and Golden Eagle Protection Act; PT = Proposed Threatened; C = Candidate

2    The accuracy of this species list should be verified after 90 days.

**Tricolored Bat**

The tricolored bat is federally proposed as endangered due to population-level declines primarily caused by the fungal infection that manifests as white-nose syndrome, habitat degradation and fragmentation, winter disturbance, climate change, and environmental contaminants (USFWS 2025b). There are currently no state or federal protections for this species; however, it is currently under review for listing as endangered under the ESA

(USFWS 2022). No further actions are recommended at this time. If the species is reclassified to threatened or endangered prior to Project completion, further assessment should be considered.

### Piping Plover

Piping Plovers are federally and state threatened due to habitat fragmentation and degradation (TPWD 2025a, USFWS 2025c). Although identified by the IPaC, Piping Plovers only need to be considered at the federal level for wind projects; therefore, no further coordination at the federal level is anticipated for this species. However, Piping Plovers receive state-level protections and, therefore, are still included in this review.

Migratory individuals pass through the interior of Texas from July to August and March to April (TPWD 2025a). Suitable nesting habitats include sand and gravel shorelines with sparse vegetation and limited human disturbance (TPWD 2025a). Foraging areas include sandy mud flats, ephemeral pools, and seasonally emergent seagrass beds with abundant invertebrates (TPWD 2025a).

Piping Plovers are not known to occur in Tarrant County (TPWD 2025b). Additionally, the Project Area and surrounding region appear to lack potentially suitable stopover habitat, suggesting a low probability of occurrence. Based on these findings, limited to no impacts are anticipated to occur to Piping Plovers and no further actions are recommended at this time.

### Rufa Red Knot

The Rufa Red Knot is federally and state threatened due to habitat loss and degradation of overwintering habitat, climate change, shoreline stabilization, coastal development, commercial hunting, and the harvest of horseshoe crabs (*Limulus polyphemus*), whose eggs are a primary stop-over food source for Rufa Red Knot during migration (USFWS 2025d). Although identified by the IPaC, Rufa Red Knots only need to be considered at the federal level for wind projects; therefore, no further coordination at the federal level is anticipated for this species. However, the Rufa Red Knot receives state-level protections and, therefore, is still included in this review.

Rufa Red Knots overwinter in Texas around the northwestern portion of the Gulf Coast near the Guadalupe River Basin and San Antonio Bay estuary (GBRA 2022). Overwintering and migratory stopover habitats consist of muddy or sandy coastal areas near the mouths of bays, estuaries, and tidal flats, while mudflats and herbaceous wetlands can be used during rare inland encounters (TPWD 2025b).

Rufa Red Knots are not known to occur in Tarrant County (TPWD 2025b). Additionally, the Project Area and surrounding region appear to lack potentially suitable stopover habitat, suggesting a low probability of occurrence. Based on these findings, limited to no impacts are anticipated for Rufa Red Knots, and no further actions are recommended at this time.

### Whooping Crane

The Whooping Crane (*Grus americana*) is federally and state endangered due to habitat fragmentation and degradation from the conversion of primary nesting, migrating, and overwintering habitat to agricultural land (USFWS 2025e, TPWD 2025c). Whooping Cranes breed in Wood Buffalo National Park, Canada, in April and overwinter in Aransas National Wildlife Refuge on the Texas Gulf Coast (USFWS 2025e). Whooping Cranes migrate through central Texas to the central coast in October-November and again in April (TPWD 2025c). During migration, Whooping Cranes use a variety of habitats, with wetland mosaics being the most suitable, where they will use shallow emergent wetlands and surrounding croplands for feeding and roosting (USFWS 2025e).

Whooping Cranes are known to occur in Tarrant County, likely as transients during migration (TPWD 2025b). The Project Area is located within the 95% isopleth of the known Whooping Crane core migration corridor (Pearse et al. 2018). However, the Project Area contains limited potentially suitable wetland habitat, suggesting a low probability of occurrence. Based on these findings, limited to no impacts on Whooping Cranes are anticipated to occur, and no further actions are recommended at this time.

### Bald Eagle

Bald Eagles are protected under the BGEPA (16 U.S.C. 668-668d) and occur year-round in Texas (TPWD 2025b). Breeding Bald Eagles primarily occur in east Texas along the coastline; nonbreeding and wintering Bald Eagles primarily occur in the Panhandle, central, and east Texas (TPWD 2025b). Bald Eagles typically select nest sites away from developed areas and near lakes and rivers in forested areas where tall, large-diameter trees are less than one-half mile from a water source (Grier and Guinn 2003).

Bald Eagles are known to occur in Tarrant County (TPWD 2025b). However, suitable woodland habitat appears absent within the Project Area and the surrounding region, suggesting a low probability of occurrence. Based on these findings, limited to no impacts on Bald Eagles are anticipated, and no further actions are recommended at this time.

### Alligator Snapping Turtle

The alligator snapping turtle (*Macrochelys temminckii*) is federally proposed threatened, and state threatened due to population-level declines primarily caused by overharvesting and habitat loss, and degradation (86 FR 62434; NatureServe 2025a). There are currently no federal protection requirements for this species; however, it is currently under review for federal listing as threatened under the ESA. This species receives state-level protections and, therefore, is still included in this review.

Alligator snapping turtles inhabit slow-moving, deep-water rivers, canals, and lakes and may also be found in swamps, ponds, and creeks associated with larger rivers (NatureServe 2025a, TPWD 2025b). Alligator snapping turtles are known to occur in Tarrant County (TPWD 2025b). The Project Area is directly adjacent to Lake Worth, which constitutes a suitable habitat. However, urbanization and development limit available shorelines. Based on these

findings, limited to no impacts on the alligator snapping turtles are expected, and no further actions are recommended at this time.

### Monarch Butterfly

The monarch butterfly is a candidate species for listing due to habitat loss and pesticide use (USFWS 2025f). Currently, this species does not afford any state or federal protections; therefore, no further actions are recommended at this point. If the species is uplisted to threatened or endangered before Project completion, further assessment should be considered.

As no threatened or endangered species and no designated critical habitat are in or near the vicinity of the proposed expansion, the proposed expansion of AFP4 would have no effect on federally protected species. All project activities would occur within previously developed urban areas associated with AFP4 and NAS JRB FW. This finding applies to all four Proposed Projects evaluated in this EA.

Currently, AFP4 is waived from the Air Force requirement to develop an Integrated Natural Resources Management Plan due to a lack of habitat to support natural resources programs, including threatened and endangered species.

### **State Listed Endangered and Threatened Species**

Available information for Tarrant County was obtained from the Texas Parks and Wildlife Department (TPWD). According to the TPWD, 12 protected species are known or likely to occur within Tarrant County (Table 3-12).

None of these species would occur in the vicinity of the storm drain system improvements. Potential habitat for these protected species is not present within the proposed site selected for the project.

**Table 3-12: State-Protected Species Known or Likely to Occur in Tarrant County**

| Common Name         | Scientific Name                     | Federal Status      | State Status |
|---------------------|-------------------------------------|---------------------|--------------|
| Black rail          | <i>Laterallus jamaicensis</i>       | Threatened          | Threatened   |
| Interior least tern | <i>Sterna antillarum athalassos</i> | --                  | Endangered   |
| Piping plover       | <i>Charadrius melodus</i>           | Threatened          | Threatened   |
| Rufa red knot       | <i>Calidris canutus rufa</i>        | Threatened          | Threatened   |
| White-faced ibis    | <i>Plegadis chihi</i>               | --                  | Threatened   |
| Whooping crane      | <i>Crus americana</i>               | Endangered          | Endangered   |
| Black bear          | <i>Ursus americanus</i>             | --                  | Threatened   |
| Louisiana pigtoe    | <i>Pleurobema riddellii</i>         | Proposed Threatened | Threatened   |

**Table 3-12: State-Protected Species Known or Likely to Occur in Tarrant County**

| Common Name               | Scientific Name               | Federal Status      | State Status |
|---------------------------|-------------------------------|---------------------|--------------|
| Sandbank pocketbook       | <i>Lampsilis satura</i>       | --                  | Threatened   |
| Texas heelsplitter        | <i>Potamilus amphichaenus</i> | Proposed Endangered | Threatened   |
| Alligator snapping turtle | <i>Macrochelys temminckii</i> | Proposed Threatened | Threatened   |
| Texas horned lizard       | <i>Phrynosoma cornutum</i>    | --                  | Threatened   |

Source: <http://ecos.fws.gov/ipac/> and <http://tpwd.texas.gov/gis/rtest/>, 2025

### 3.7.2 Preferred Alternative for Storm Drain System Improvements

No impact on federal or state-listed species or their habitat would result from the proposed storm drain system improvements. All project activities would occur within previously developed urban areas associated with the existing AFP4 and NAS JRB FW.

### 3.7.3 No Action Alternative for Storm Drain System Improvements

Because no new construction would occur, no impacts to wetlands would occur.

### 3.7.4 Summary and Comparison of Biological Resources Impacts

No impact on federal or state-listed species or their habitat is anticipated as a result of the proposed project (Table 3-13).

**Table 3-13: Summary and Comparison of Biological Resources Impacts**

| Proposed Project                                        | Impacts                                      |
|---------------------------------------------------------|----------------------------------------------|
| <b>Storm Drain System Improvements</b>                  |                                              |
| Storm Drain System Improvements (Preferred Alternative) | No impact on federal or state-listed species |
| No Action for Storm Drain System Improvements           | No impact on federal or state-listed species |

## 3.8 Cultural Resources Considerations for the Proposed Project

There are no known prehistoric or historic archaeological resources or American Indian sites within the boundary of AFP4. The entire installation is heavily disturbed and developed, and there is little potential for these types of resources to occur. Tribal governments were notified of the proposed project with the release of this EA.

AFP4 was established in 1941 as the site of a new B-24 Liberator heavy bomber manufacturing plant. The plant was funded by the US Government and operated by Consolidated-Vultee

Aircraft Corporation. The plant, now operated by LMAC, has continued to produce aircraft during the Cold War and up to the present, including the F-111, F-16, and F-35 (Peyton 2013).

Cultural resource surveys completed in 1996 and 2005 determined that three buildings (Bldgs. 4 (Assembly Building), 5 (Parts Plant) and 7 (Experimental Building), were eligible for the National Register of Historic Places (Peyton 2013). The three buildings are listed because of their association with the manufacturing of B-24 and B-36 strategic bombers. There are no known prehistoric or historic archaeological sites per the Integrated Cultural Resources Management Plan (Peyton 2013).

The proposed project would not affect any of the three buildings eligible for the National Register of Historic Places.

Portions of the project are located outside of the AFP4 property. One portion associated with Outfall 1 is located between Clifford Street and State Route Spur 341. This tract is developed. The other portions of the project located outside of AFP4 are associated with Outfalls 2, 4, and 6. There is existing storm drain system and outfalls where the proposed improvements are proposed outside of the AFP4 property. Due to prior disturbances in these areas, it is unlikely that archeological sites (historic or prehistoric) would be present within this tract.

**3.8.1 Preferred Alternative for Storm Drain System Improvements**

The storm drain system improvements would not affect any of the three buildings eligible for the National Register of Historic Places. Additionally, it is unlikely that archeological sites would be present within the portion of the project located outside of AFP4 due to past disturbances on the site from the development and installation of the existing storm drain system.

**3.8.2 No Action Alternative for Storm Drain System Improvements**

Because no new construction would occur, no historic properties would be affected by the selection of the No Action Alternative for the Storm Drain System Improvements.

**3.8.3 Summary and Comparison of Cultural Resources Impacts**

The proposed project would not affect the historic properties on AFP4. There would be no potential to affect historic properties (Table 3-14).

**Table 3-14: Summary and Comparison of Cultural Resources Impacts**

| Proposed Project                                        | Impacts                            |
|---------------------------------------------------------|------------------------------------|
| <b>Storm Drain System Improvements</b>                  |                                    |
| Storm Drain System Improvements (Preferred Alternative) | No effects on historic properties. |
| No Action for Storm Drain System Improvements           | No effects on historic properties. |

### 3.9 Geology and Soils Considerations for the Proposed Project

As described in the groundwater section, the area is underlain by Lower Cretaceous limestones, marl, and clay (Griffith et al. 2004). According to soil survey information (NRCS 2015), the soils on AFP4 and adjoining NAS JRB FW are designated as Urban Land on soil survey maps by the Natural Resources Conservation Service. As Urban Land soils are located within the city limits of Fort Worth and Westworth Village, the area is not subject to an evaluation under the Farmland Protection Policy Act. Prior to development and disturbance, the most common soils in the Grand Prairie region of Texas were Vertisols, clay-rich soils known for extensive shrinkage and expansion depending on the soil moisture. AFP4 is generally located in alluvium and fluvial deposits overlying soils and rock of the Goodland geologic formation. According to the Texas Speleological Association, the Goodland limestone formation, which is present in the Fort Worth area, has “few or no caves because of some chemical or physical deficiency, perhaps high intergranular porosity or high clay content” (Smith 1968). This means that geologic formations in the Fort Worth area are not known to be prone to karst formations or otherwise large voids below ground. Further, according to the U.S. Geological Survey (Davies et al., 1984), karst geological formations are broadly shown to be present only in the western half of Texas and not in the Fort Worth area. The USGS report shows carbonate rocks present near Fort Worth, but does not indicate a likely presence of voids, fissures, tubes, or tunnels. The existing contamination of the AFP4 site is described in Section 3.4.3.

The geology of the proposed project would not be affected by the proposed construction. Soils found to be clean and uncontaminated on the proposed project would be subject to compaction and mixing of profiles or burying. These impacts would be of little consequence because the affected soils have been previously disturbed by past development within the area. There would be some soil loss caused by construction; however, the use of appropriate erosion and sediment control practices would be a part of the TPDES permit required for construction and would minimize soil loss.

#### 3.9.1 Preferred Alternative for Storm Drain System Improvements

AFP4 is a highly developed industrial site that is virtually all covered by pavement and buildings. Soil contamination is a risk during construction and operation activities. There is known shallow soil contamination that exists near or within the footprints of Areas 2, 3, 4, 5, and 7 (IRP Sites OT022, FT005, DP011, SS019P, and SS020P). Soil contamination also exists within Area 5, associated with IRP Sites FT005 and DP011. The locations of IRP Sites will be included in construction plans, and the contractor will be advised that IRP sites cannot be disturbed.

During construction, soil would be properly contained, inspected, and tested. Any contaminated soil found will be disposed of appropriately as determined by the LMAC environmental compliance engineer for the AFP4 Facility. Any excess soil, including shallow groundwater, generated by the project would be handled under existing LMAC waste disposal procedures, and documentation will be provided to AFCEC per AFP4's Installation Development Plan/Land Use Control Implementation Plan process. Any hazardous waste

generated during construction would be collected and delivered to the LMAC FW hazardous waste cleanup team. Construction of the storm drain system improvements would have no effects on soils or geology because the majority of the project is located in previously developed areas.

**3.9.2 No Action Alternative for Storm Drain System Improvements**

Because no construction would occur under the No Action Alternative, no effects on soils or geology would occur.

**3.9.3 Summary and Comparison of Geology and Soils Impacts**

Appropriate standard construction practices would be implemented to protect soils and prevent erosion that would move soil off-site (Table 3-15). During construction, soils would be properly contained, inspected, and tested. Any contaminated soils found will be disposed of appropriately as determined by the LMAC environmental compliance engineer. No impact to any IRP sites will occur. With the implementation of appropriate standard construction practices to protect soils and prevent erosion, impacts would be insignificant.

**Table 3-15: Summary and Comparison of Geology and Soils Impacts**

| Proposed Project                                        | Impacts                                                                                                                                                                                                                                         |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Storm Drain System Improvements</b>                  |                                                                                                                                                                                                                                                 |
| Storm Drain System Improvements (Preferred Alternative) | During construction, soil would be properly contained, inspected, and tested. Any contaminated soil found will be disposed of appropriately as determined by the LMAC environmental compliance engineer. No impact to any IRP sites will occur. |
| No Action for Storm Drain System Improvements           | No impacts due to previous development                                                                                                                                                                                                          |

**3.10 Traffic and Parking Considerations for the Proposed Project**

Most current traffic arrives on Lockheed Boulevard (State Route Spur 341), a six-lane divided facility extending north from Exit 7 on I-30. Upgrades to the roadway and signalization at Clifford Drive and Lockheed Boulevard were implemented in 2004. The Level of Service (LOS) at Lockheed Boulevard and Clifford Drive is currently LOS A in the morning and LOS B in the afternoon. Peak periods at the entrance gate are 6:45 to 7:45 am, 11:30 am to 12:30 pm, and 3:30 to 4:30 pm.

**3.10.1 Preferred Alternative for Storm Drain System Improvements**

Some parking spaces would be temporarily displaced by the proposed project. The number of parking spaces impacted would be minimal and would only be associated with construction activities. Any paving associated with parking areas will be replaced, and no parking spaces

will be permanently impacted by the proposed project. Parking for contractors during construction would be allowed in accordance with AFP4 standards. Vehicles would likely arrive from several directions, including from roads that intersect I-820 to the west and I-30 to the south. While most traffic would arrive from the south on Lockheed Boulevard and then turn left at the front entrance gate to access Bomber Road and various parking lots, other traffic would likely arrive from roadways off of I-820 and I-30. The diversity of possible entrances and exits to the AFP4 parking area would serve to disperse traffic immediately before arriving and after leaving the plant, avoiding concentrated traffic at one intersection. As a result, the additional traffic to AFP4 would not be noticeable and would be insignificant in impact. The current road network and existing parking lots are adequately sized to accommodate the additional traffic and parking associated with the proposed project; no impacts to traffic or parking are anticipated.

The contractor would be responsible for the transportation of staff from the contractor's parking lot to the construction site. These on-site vehicles would be contained within the fenced construction site. Road closures are not anticipated to result from the proposed project. However, traffic patterns would be temporarily affected by alternating lane closures and reduced speed limits to allow excavation and installation of storm drain improvements. Any necessary lane closures on public roads would be coordinated with the City of White Settlement, the City of Fort Worth, and the Texas Department of Transportation (TxDOT) before construction. During construction, temporary lane closures would be kept to a minimum in length and duration. The contractor would minimize disturbance and restrict work to single-lane widths, which would result in only minor disruptions in traffic flow. Access to adjacent properties would be maintained during construction. LMAC and the contractor will provide the appropriate entity with traffic control plans before any construction or lane closures on public roads. At a minimum, the contractor will follow the Traffic Control requirements that are outlined in the access and safety notes included in the construction plans for the proposed project. Standards that the contractor could utilize to minimize impact on traffic could include limiting lane closures to peak hours; utilizing a flagger, arrow boards, and signage to alert drivers and direct traffic; prohibiting overnight closures; open all traffic lanes to traffic at the close of each work day; and/or using temporary rumble strips at the approach of the lane closure. Any impact on public roads would be temporary during the excavation and installation of storm drain improvements within the public road.

### **3.10.2 No Action Alternative for Storm Drain Improvements**

Under the No Action Alternative, increased vehicular trips would not occur. No impacts to parking and traffic would occur.

### **3.11 Socioeconomics Considerations for the Proposed Project**

Implementation of the proposed project would result in an immediate short-term and sustained long-term positive socioeconomic effect to the local economy and to individual citizens. Temporary construction jobs would be generated by the proposed project. Initial construction activities would result in moderate economic activity from the increase in construction workers in the area during the construction period. Most of the construction

labor would be drawn from neighboring communities in the Fort Worth- Dallas area. No increase in permanent job numbers on-site is anticipated by the proposed project. Overall, implementation of the proposed action would result in a positive socioeconomic effect, and no long-term effects to socioeconomics are expected.

### **3.11.1 No Action Alternative for Storm Drain Improvements**

Under the No Action Alternative, positive socioeconomic impacts of the expansion would not occur.

## **4.0 CUMULATIVE IMPACTS AND SUMMARY TABLES**

### **4.1 Introduction**

Cumulative impacts result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency undertakes such other actions.

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

### **4.2 Analysis of Spatial and Temporal Boundaries**

The proposed project would affect already developed areas of AFP4 and would have limited potential to cause effects over a wider area. In most cases, the impacts would be limited to the boundaries of AFP4 and a small area of property to AFP4 between Clifford Street and Lockheed Martin Boulevard. For the purposes of natural resources, the geographic area of analysis for cumulative effects would be in the immediate vicinity of AFP4, including those on NAS JRB FW, the City of White Settlement to the south and west, subdivisions in the City of Fort Worth to the west, and Lake Worth, a reservoir that borders AFP4 to the north and west. For the purposes of cultural resources, the geographic area for analysis would be the historic properties within the boundaries of AFP4 or those visible from AFP4. The geographic area of analysis for air resources and socioeconomic resources would be the Fort Worth metropolitan area, affected by the employment and economic activity of the plant.

### **4.3 Land Use**

No land use change will occur by the proposed project. Adjacent cities (Fort Worth, Westworth Village, White Settlement) have zoned the areas adjacent to AFP4 to be compatible with the activities currently taking place there on-site and would be compatible with the proposed project. The Lake Worth Vision Plan (City of Fort Worth 2011) identifies the southern shore of Lake Worth as a Military Reserve to prevent development that may conflict with base operations. No facilities are planned in the adjoining cities that would conflict with the proposed project. Overall cumulative impacts to land use from the proposed project would be minimal to none, and the impacts of planned facilities in adjacent areas on the proposed project would be minimal to none. The majority of the construction would take place within the boundaries of AFP4. There is a small portion of the project that will be outside the AFP4 property between Clifford Street and Lockheed Boulevard. The area located outside of the AFP4 property will be returned to pre-construction contours and re-sodded following completion of construction. Therefore, no land use impacts to adjacent properties or nearby are expected.

### **4.4 Noise**

The only past, present, and reasonably foreseeable future actions that would add to the proposed noise levels would be continued air operations at NAS JRB FW. This impact is expected to be similar to existing levels and expectations of the public in the Fort Worth area. The proposed project is not near residential or recreational areas, and the construction noise

impacts are expected to be minimal compared to the existing noise levels produced by aircraft operations, manufacturing, etc.

## **4.5 Air Quality**

The proposed project emissions would not exceed the de minimis thresholds of the General Conformity Rule. The proposed project would, therefore, not make the nonattainment status of the Dallas-Fort Worth area worse. The emissions from the proposed project, combined with other past, present, and reasonably foreseeable future actions, would have no adverse effect on local ambient criteria pollutant concentrations.

## **4.6 Water Resources**

### **4.6.1 Water Supply and Wastewater**

As indicated in Section 3.4, no increase in needed drinking or domestic use or increase in wastewater produced is anticipated with the proposed project. Other past and present actions have resulted in the infrastructure that serves the AFP4 area, and the residential and commercial sectors in the nearby area are largely established.

### **4.6.2 Storm Water**

AFP4 is permitted through the TCEQ to discharge surface water run-off through 12 major outfalls. The proposed project will result in an increased discharge in both Outfalls #1 and 2. However, the discharge will have no adverse downstream impacts or cause a cumulative increase in storm water impacts in the area of Lake Worth or Farmers Branch.

### **4.6.3 Groundwater**

With the proposed project, the ongoing groundwater cleanup at AFP4 would continue. The ongoing cleanup action would not affect the alternatives, and the proposed actions would be designed to avoid affecting the groundwater cleanup. Storm drain improvements associated with Areas 2, 3, 4, 5, and 7 are located within and/or PFAS Plumes. Storm drain improvements associated with Areas 2, 3, and 4 are located within the TCE Plume. The proposed project would avoid interfering with the cleanup of the plume, and there would be no cumulative effects on the geology or soils of the area. Therefore, the past, present, and reasonably foreseeable future actions, together with the proposed project, would not cumulatively affect groundwater resources.

### **4.6.4 Wetlands**

The proposed project does not affect this wetland. The only other nearby wetlands are on the shoreline of Lake Worth. No reasonably foreseeable future actions have been identified that would affect these shoreline wetlands. Thus, no cumulative impacts to wetlands in the area were identified.

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#### **4.6.5 Floodplains**

The proposed project will result in improvements to an existing outfall (Outfall #1) within the 100-year floodplain of Farmers Branch. However, no change to the floodplain elevation will occur by this outfall. As part of this EA, it is anticipated that the Air Force will issue a FONSI and FONPA for locating this activity within the floodplain. No reasonably foreseeable future actions have been identified that would also affect this floodplain. Thus, no cumulative impacts to floodplains were identified.

#### **4.7 Safety and Health**

Safety and health issues related to past and present operations of the proposed project include excavation, trenching, hazardous waste and handling procedures, and personal protective equipment. AFP4 has established protocols to address these issues for ongoing and reasonably foreseeable future actions. Another reasonably foreseeable future action with the potential to cumulatively affect safety and health, in combination with the proposed project, would be the ongoing cleanup actions within the groundwater plume. LMAC would monitor and coordinate construction activities to avoid impacts to safety and health related to this cleanup action.

#### **4.8 Hazardous Materials**

The proposed project is not anticipated to increase hazardous and regulated waste at AFP4. AFP4 has established protocols for hazardous waste management that address the generation and disposal of these materials, which would be valid for the small amounts of additional materials, if any are generated by the proposed project. There are no other reasonably foreseeable future actions that would generate additional quantities of hazardous materials. There is known contamination located on-site and within the boundaries of the AFP4 property. Soil and groundwater will be tested during the construction process. If any contamination is found, the soil and/or groundwater will be properly contained and disposed of off-site at an approved facility.

#### **4.9 Biological Resources**

Past and present actions created an urban and suburban environment around AFP4 and NAS JRB FW, with some areas of natural vegetation in the City of Fort Worth property associated with Lake Worth. The Proposed Project, together with reasonably foreseeable future actions, would not adversely affect these terrestrial communities or the aquatic communities of Lake Worth. Plant communities on AFP4 or NAS JRB FW are landscaped or maintained with grass along the airfield, and the only wildlife likely to use AFP4 or NAS JRB FW would be common urban species. As discussed in Section 3.7, the proposed project would not affect federally listed or state-protected endangered and threatened species. Therefore, there is no potential for cumulative effects on endangered or threatened species.

#### **4.10 Cultural Resources**

The proposed project is compatible with the uses and architecture of the existing AFP4. No modifications to historic buildings (Bldgs. 4, 5, or 7) are proposed. The Proposed Project would

have no effects on these buildings; therefore, there would be no potential for current or future cumulative effects.

#### **4.11 Geology and Soils**

The area surrounding AFP4 contains well-established development that has impacted soils in the past and converted many soils to Urban Land. Construction has generally not been deep enough to affect geological resources. There are no reasonably foreseeable projects within or outside of AFP4 involving large areas of greenfield construction; thus, there is little potential for cumulative effects on soil or geological resources. The only reasonably foreseeable future action with the potential to cumulatively affect geology or soils, in combination with the proposed project, would be the ongoing cleanup actions within the groundwater plume and IRP Sites, including soil. LMAC would monitor and coordinate construction activities to avoid impacts on soils related to this cleanup action.

#### **4.12 Traffic and Parking**

The proposed project would be a temporary increase in construction-related traffic during construction. The surrounding area is stable and already built up, with few large-scale residential, commercial, or industrial developments occurring in the immediate area. There are no reasonably foreseeable projects that would add to increases in the transportation system at AFP4.

The proposed project would result in the temporary displacement of some parking spaces during construction. The number of parking spaces impacted would be minimal and temporary. The proposed project, combined with the past, present, and reasonably foreseeable future projects at AFP4, would not result in parking shortages or significant congestion to the road network.

#### **4.13 Socioeconomics**

AFP4 is located within the Fort Worth-Arlington Metropolitan Statistical Area, which includes Johnson, Parker, and Tarrant Counties. The area is characterized as a highly urbanized area with a diverse economic base concentrated in the manufacturing, service, and retail industries, with a large number of defense industries and their associated supply and service businesses. Other past, present, and reasonably foreseeable future actions have been the development of Lake Worth for residential and recreational development, commercial development near NAS JRB FW, and residential and commercial development in the city of White Settlement. This service industry, residential, and retail development has benefited from the defense activities at NAS JRB FW as well as aircraft manufacturing at AFP4.

Implementation of the project would result in an immediate short-term positive socioeconomic effect on the local economy and on individual citizens. Initial construction activities would result in substantial economic activity from the increase of construction workers in the area during the construction period. Most of the construction labor would be drawn from the neighboring communities in Texas. Given the diversity of workers in a large metropolitan area like Dallas-Fort Worth, it is likely that many qualified workers would be

available in the local area. Thus, the majority of construction workers and new workers would come from within the metropolitan area.

Together with other ongoing activities in the surrounding communities, the proposed project would provide positive cumulative socioeconomic effects to the Fort Worth area.

#### **4.14 Summary Impact and Mitigation Tables**

Table 4-1 provides a summary by resource area of the impacts described in this EA. Table 4-2 lists the mitigation measures that are proposed as conditions of approval for the proposed project and the no action alternative. For the purposes of this EA, the term "mitigation" has been applied in a generic manner to include standard management measures such as standard construction practices, normal tie-ins to existing utility resources, or normal operational methods (such as hearing protection in a flight line environment). These measures are standard practices that are not necessarily required to achieve a FONSI. Non-standard measures that are required to achieve a level of a FONSI have been specifically noted within Table 4-2.

**Table 4-1: Summary Impact Table**

| <b>Environmental Topic</b> | <b>Storm Drain System Improvements Project</b>                                                                                                            | <b>No Action Alternative</b>   |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Land Use (Section 3.1)     | Compatible with existing uses at AFP4, no new impervious areas will be constructed; land use will remain the same.                                        | No impact on land use.         |
| Noise (Section 3.2)        | All operations related to the Proposed Project are expected to be below the OSHA 8-hour TWA threshold of 85 dBA.                                          | No increases in sound levels.  |
| Air Quality (Section 3.3)  | Emissions from the proposed project would not exceed the de minimis threshold of 25 tpy for either NO <sub>x</sub> or VOC of the General Conformity Rule. | No increases in air emissions. |

| Environmental Topic                         | Storm Drain System Improvements Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No Action                                  |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Water Supply and Wastewater (Section 3.4.1) | No increase in water and wastewater usage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | No increase in water and wastewater usage. |
| Storm Water (Section 3.4.2)                 | No change in impervious surface. Outfalls 1 and 2, and 6 will cause an increase in storm water discharge. Increases in discharge from these outfalls will not result in adverse impacts downstream of the project area. Outfalls 2 and 6 will discharge into Lake Worth does not result in a significant increase in surface volumes in the lake. An increased flow from Outfall 1 will cause a 0.25-inch rise in floodplain elevation; however, it will be contained in a retention area and will dissipate before reaching the larger downstream system. Improvements to the system will resolve ponding and flooding on-site. | No increase in storm water runoff.         |

| Environmental Topic               | Storm Drain System Improvements Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | No Action                                   |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Groundwater (Section 3.4.3)       | <p>Shallow contaminated groundwater could be encountered within Areas 2, 3, 4, 5, and 7. Any groundwater encountered in these areas will be properly contained, inspected, and tested. Contaminated groundwater will be disposed of appropriately as determined by the LMAC environmental compliance engineer. Any chemical spills during construction would be reported to the LMAC hazardous waste cleanup team.</p> <p>IRP Site will not be disturbed. IRP Sites will be located on construction plans, and the contractor will be advised that IRP Sites cannot be disturbed.</p> | No impacts to groundwater.                  |
| Wetlands (Section 3.4.4)          | No impacts to wetlands or streams.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No impacts to wetlands or streams.          |
| Floodplains (Section 3.4.5)       | No impact to floodplains.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | No impacts to floodplains.                  |
| Safety and Health (Section 3.5)   | No impacts to health and safety.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | No impacts to health and safety.            |
| Hazardous Materials (Section 3.6) | No increases in hazardous waste generation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No increases in hazardous waste generation. |

| <b>Environmental Topic</b>         | <b>Storm Drain System Improvements Project</b>                     | <b>No Action</b>                                                |
|------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------|
| Biological Resources (Section 3.7) | No effect on federally listed or state-protected species.          | No effect on federally listed or state-protected species.       |
| Cultural Resources (Section 3.8)   | No historic properties were affected.                              | No historic properties were affected.                           |
| Geology and Soils (Section 3.9)    | No impacts to soils or geology. No impact to IRP sites will occur. | No impacts to soils or geology.                                 |
| Traffic and Parking (Section 3.10) | No additional parking spaces are needed or increase in traffic.    | No additional parking spaces are needed or increase in traffic. |
| Socioeconomics (Section 3.11)      | Short-term increase in jobs due to construction activities.        | No increase in investment or jobs.                              |

**Table 4-2: Mitigation Summary**

| <b>Environmental Topic</b>                  | <b>Storm Drain System Improvements Project</b>                                                                                                                                      | <b>No Action</b> |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Land Use (Section 3.1)                      | None required                                                                                                                                                                       | None required    |
| Noise (Section 3.2)                         | Hearing protection would be required for personnel in the vicinity of the outfall construction zone, as is standard in a flight line environment.                                   | None required    |
| Air Quality (Section 3.3)                   | None required                                                                                                                                                                       | None required    |
| Water Supply and Wastewater (Section 3.4.1) | None required                                                                                                                                                                       | None required    |
| Storm Water (Section 3.4.2)                 | Use of standard construction storm water pollution prevention controls for erosion and sediment control; update industrial storm water standard construction practices as required. | None required    |

| Environmental Topic             | Storm Drain System Improvements Project                                                                                                                                                                                                                                                                                                                                                             | No Action                                                                                                |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Groundwater (Section 3.4.3)     | <p>Any groundwater encountered in Areas 2, 3, 4, 5, and 7 will be properly contained, inspected, and tested. Contaminated groundwater will be disposed of appropriately as determined by LMAC environmental compliance engineer.</p> <p>IRP Site will not be disturbed. IRP Sites will be located on construction plans, and the contractor will be advised that IRP Sites cannot be disturbed.</p> | None required                                                                                            |
| Wetlands (Section 3.4.4)        | None required                                                                                                                                                                                                                                                                                                                                                                                       | None required                                                                                            |
| Floodplains (Section 3.4.5)     | None required                                                                                                                                                                                                                                                                                                                                                                                       | None required                                                                                            |
| Safety and Health (Section 3.5) | Hearing protection is needed in outfall construction zones, as is standard in a flight line environment.                                                                                                                                                                                                                                                                                            | Hearing protection is needed in outfall construction zones, as is standard in a flight line environment. |

| <b>Environmental Topic</b>         | <b>Storm Drain System Improvements Project</b>                                                                                                                                                                                              | <b>No Action</b> |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Hazardous Materials (Section 3.6)  | Collect hazardous waste for delivery to LMAC hazardous waste control, who in turn provide the waste to an approved hazardous waste management facility.                                                                                     | None required    |
| Biological Resources (Section 3.7) | None required                                                                                                                                                                                                                               | None required    |
| Cultural Resources (Section 3.8)   | None required                                                                                                                                                                                                                               | None required    |
| Geology and Soils (Section 3.9)    | During construction, soil would be properly contained, inspected, and tested. Any contaminated soil found will be disposed of appropriately as determined by the LMAC environmental compliance engineer. No impact to IRP sites will occur. | None required    |
| Traffic and Parking (Section 3.10) | There are no traffic and parking impacts as the existing road network and parking lots are adequate to handle additional cars during construction.                                                                                          | None required    |
| Socioeconomics (Section 3.11)      | None required                                                                                                                                                                                                                               | None required    |

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## 5.0 REFERENCES

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Mr. Brad Bashore, Remedial Project Manager/COR, Wright Patterson Air Force Base, Ohio

Mr. Morris Dimitry, Deputy Branch Chief AFLCMC/EZVC, Wright Patterson Air Force Base, Ohio

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### **5.3 List of Preparers**

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## **APPENDIX A – GENERAL CONFORMITY AND GREENHOUSE GAS 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 a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

**a. Action Location:**

**Base:** AF PLANT 4  
**State:** Texas  
**County(s):** Tarrant  
**Regulatory Area(s):** Dallas-Fort Worth, TX

**b. Action Title:** ECTR Storm Drain Repairs

**c. Project Number/s (if applicable):** ACFJ260F07

**d. Projected Action Start Date:** 10 / 2025

**e. Action Description:**

Alternative 1 (Preferred Action)

The Proposed Action would provide funding for Emergency Capital Type Rehabilitation (Storm Drain Repairs) at Air Force Plant 4 (AFP4). At this time we suspect that underground roof drain connections have been compromised, as well as existing manholes below the floor. We plan to proceed with scoping the roof drain and storm drain lines to identify points of failure, and anticipate sawcutting the floor to expose existing connections and junction points, execute repairs on underground pipes, and then restore the floor. These repairs will be made in Buildings 1, 2 and 5. In addition, the surging stormwater damaged a rollup door on Building 138, which will be replaced.

Alternative 2 (No-Action Alternative)

If the Preferred Action is not implemented, there is risk of the Plant Operator being unable to properly operate and maintain infrastructure systems in buildings across AFP4. This will lead to continuing additional costs and operational risks to program operations on site.

**f. Point of Contact:**

**Name:** James Hoelke  
**Title:** Environmental Engineer Senior Staff  
**Organization:** Lockheed Martin Aeronautics  
**Email:** james.d.hoelke@lmco.com  
**Phone Number:** 817-584-6582

**2. Analysis:** Total reasonably foreseeable net change in direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" (highest annual emissions) and "steady state" (no net gain/loss in emission stabilized and the action is 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.

All emissions estimates were derived from various sources using the methods, algorithms, and emission factors from the most current *Air Emissions Guide for Air Force Stationary Sources*, *Air Emissions Guide for Air Force Mobile*

# AIR CONFORMITY APPLICABILITY MODEL REPORT

## RECORD OF CONFORMITY ANALYSIS (ROCA)

*Sources, and/or Air Emissions Guide for Air Force Transitory Sources.* For greater details of this analysis, refer to the Detail ACAM Report.

       applicable
  X   not applicable

### Conformity Analysis Summary:

**2025**

| Pollutant             | Action Emissions<br>(ton/yr) | GENERAL CONFORMITY |                        |
|-----------------------|------------------------------|--------------------|------------------------|
|                       |                              | Threshold (ton/yr) | Exceedance (Yes or No) |
| Dallas-Fort Worth, TX |                              |                    |                        |
| VOC                   | 0.014                        | 25                 | No                     |
| NOx                   | 0.089                        | 25                 | No                     |
| CO                    | 0.174                        |                    |                        |
| SOx                   | 0.000                        |                    |                        |
| PM 10                 | 0.030                        |                    |                        |
| PM 2.5                | 0.003                        |                    |                        |
| Pb                    | 0.000                        |                    |                        |
| NH3                   | 0.001                        |                    |                        |

**2026**

| Pollutant             | Action Emissions<br>(ton/yr) | GENERAL CONFORMITY |                        |
|-----------------------|------------------------------|--------------------|------------------------|
|                       |                              | Threshold (ton/yr) | Exceedance (Yes or No) |
| Dallas-Fort Worth, TX |                              |                    |                        |
| VOC                   | 0.006                        | 25                 | No                     |
| NOx                   | 0.031                        | 25                 | No                     |
| CO                    | 0.079                        |                    |                        |
| SOx                   | 0.000                        |                    |                        |
| PM 10                 | 0.010                        |                    |                        |
| PM 2.5                | 0.001                        |                    |                        |
| Pb                    | 0.000                        |                    |                        |
| NH3                   | 0.000                        |                    |                        |

**2027 - (Steady State)**

| Pollutant             | Action Emissions<br>(ton/yr) | GENERAL CONFORMITY |                        |
|-----------------------|------------------------------|--------------------|------------------------|
|                       |                              | Threshold (ton/yr) | Exceedance (Yes or No) |
| Dallas-Fort Worth, TX |                              |                    |                        |
| VOC                   | 0.000                        | 25                 | No                     |
| NOx                   | 0.000                        | 25                 | No                     |
| CO                    | 0.000                        |                    |                        |
| SOx                   | 0.000                        |                    |                        |
| PM 10                 | 0.000                        |                    |                        |
| PM 2.5                | 0.000                        |                    |                        |
| Pb                    | 0.000                        |                    |                        |
| NH3                   | 0.000                        |                    |                        |

The Criteria Pollutants (or their precursors) with a General Conformity threshold listed in the table above are pollutants within one or more designated nonattainment or maintenance area/s for the associated National Ambient Air Quality Standard (NAAQS). These pollutants are driving this GCR Applicability Analysis. Pollutants exceeding the GCR thresholds must be further evaluated potentially through a GCR Determination.

# AIR CONFORMITY APPLICABILITY MODEL REPORT

## RECORD OF CONFORMITY ANALYSIS (ROCA)

The pollutants without a General Conformity threshold are pollutants only within areas designated attainment for the associated NAAQS. These pollutants have an insignificance indicator for VOC, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM 10, PM 2.5, and NH<sub>3</sub> of 250 ton/yr (Prevention of Significant Deterioration major source threshold) and 25 ton/yr for Pb (GCR de minimis value). Pollutants below their insignificance indicators are at rates so insignificant that they will not cause or contribute to an exceedance of one or more NAAQSs. These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Refer to the *Level II, Air Quality Quantitative Assessment Insignificance Indicators* for further details.

None of the annual net change in estimated emissions associated with this action are above the GCR threshold values established at 40 CFR 93.153 (b); therefore, the proposed Action has an insignificant impact on Air Quality and a General Conformity Determination is not applicable.

James Hoelke, Environmental Engineer Senior Staff

Oct 29 2025

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**Name, Title**

**Date**

# AIR CONFORMITY APPLICABILITY MODEL REPORT

## GREENHOUSE GAS (GHG) EMISSIONS

typically quantified and regulated in units of CO<sub>2</sub> equivalents (CO<sub>2</sub>e). The CO<sub>2</sub>e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO<sub>2</sub>. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO<sub>2</sub>e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO<sub>2</sub>e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO<sub>2</sub>e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected steady state of the action.

| Action-Related Annual GHG Emissions (mton/yr) |                 |                 |                  |                   |           |            |
|-----------------------------------------------|-----------------|-----------------|------------------|-------------------|-----------|------------|
| YEAR                                          | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> e | Threshold | Exceedance |
| 2025                                          | 20              | 0.00083086      | 0.00023214       | 20                | 68,039    | No         |
| 2026                                          | 8               | 0.00035933      | 0.000107         | 9                 | 68,039    | No         |
| 2027 [SS Year]                                | 0               | 0               | 0                | 0                 | 68,039    | No         |

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. <https://statesummaries.ncics.org/downloads/>).

| State's Annual GHG Emissions (mton/yr) |                 |                 |                  |                   |
|----------------------------------------|-----------------|-----------------|------------------|-------------------|
| YEAR                                   | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> e |
| 2025                                   | 700,652,689     | 3,554,625       | 135,896          | 836,194,567       |
| 2026                                   | 700,652,689     | 3,554,625       | 135,896          | 836,194,567       |
| 2027 [SS Year]                         | 0               | 0               | 0                | 0                 |

| U.S. Annual GHG Emissions (mton/yr) |                 |                 |                  |                   |
|-------------------------------------|-----------------|-----------------|------------------|-------------------|
| YEAR                                | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> e |
| 2025                                | 5,136,454,179   | 25,626,912      | 1,500,708        | 6,251,695,230     |
| 2026                                | 5,136,454,179   | 25,626,912      | 1,500,708        | 6,251,695,230     |
| 2027 [SS Year]                      | 0               | 0               | 0                | 0                 |

### GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (Rtba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

# AIR CONFORMITY APPLICABILITY MODEL REPORT

## GREENHOUSE GAS (GHG) EMISSIONS

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where the action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

| Total GHG Relative Significance (mton) |             |                |             |             |                |
|----------------------------------------|-------------|----------------|-------------|-------------|----------------|
|                                        |             | CO2            | CH4         | N2O         | CO2e           |
| 2025-2027                              | State Total | 2,101,958,068  | 10,663,874  | 407,687     | 2,508,583,701  |
| 2025-2027                              | U.S. Total  | 15,409,362,537 | 76,880,735  | 4,502,123   | 18,755,085,689 |
| 2025-2027                              | Action      | 29             | 0.00119     | 0.000339    | 29             |
|                                        |             |                |             |             |                |
| Percent of State Totals                |             | 0.00000136%    | 0.00000001% | 0.00000008% | 0.00000115%    |
| Percent of U.S. Totals                 |             | 0.00000019%    | 0.00000000% | 0.00000001% | 0.00000015%    |

From a global context, the action's total GHG percentage of total global GHG for the same time period is: 0.00000002%.\*

\* Global value based on the U.S. emitting 13.4% of all global GHG annual emissions (2018 Emissions Data, Center for Climate and Energy Solutions, accessed 7-6-2023, <https://www.c2es.org/content/international-emissions>).

# AIR CONFORMITY APPLICABILITY MODEL REPORT

## GREENHOUSE GAS (GHG) EMISSIONS

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to estimate GHG emissions and assess the theoretical Social Cost of Greenhouse Gases (SC GHG) associated with the action. The analysis was performed 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 USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide. This report provides a summary of GHG emissions and SC GHG analysis.

Report generated with ACAM version: 5.0.24a

**a. Action Location:**

**Base:** AF PLANT 4  
**State:** Texas  
**County(s):** Tarrant  
**Regulatory Area(s):** Dallas-Fort Worth, TX

**b. Action Title:** ECTR Storm Drain Repairs

**c. Project Number/s (if applicable):** ACFJ260F07

**d. Projected Action Start Date:** 10 / 2025

**e. Action Description:**

Alternative 1 (Preferred Action)

The Proposed Action would provide funding for Emergency Capital Type Rehabilitation (Storm Drain Repairs) at Air Force Plant 4 (AFP4). At this time we suspect that underground roof drain connections have been compromised, as well as existing manholes below the floor. We plan to proceed with scoping the roof drain and storm drain lines to identify points of failure, and anticipate sawcutting the floor to expose existing connections and junction points, execute repairs on underground pipes, and then restore the floor. These repairs will be made in Buildings 1, 2 and 5. In addition, the surging stormwater damaged a rollup door on Building 138, which will be replaced.

Alternative 2 (No-Action Alternative)

If the Preferred Action is not implemented, there is risk of the Plant Operator being unable to properly operate and maintain infrastructure systems in buildings across AFP4. This will lead to continuing additional costs and operational risks to program operations on site.

**f. Point of Contact:**

**Name:** James Hoelke  
**Title:** Environmental Engineer Senior Staff  
**Organization:** Lockheed Martin Aeronautics  
**Email:** james.d.hoelke@lmco.com  
**Phone Number:** 817-584-6582

**2. Analysis:** Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year or 20 years beyond SS emissions year for aircraft operations related actions.

**GHG Emissions Analysis Summary:**

# AIR CONFORMITY APPLICABILITY MODEL REPORT

## GREENHOUSE GAS (GHG) EMISSIONS

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO<sub>2</sub> equivalents (CO<sub>2</sub>e). The CO<sub>2</sub>e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO<sub>2</sub>. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO<sub>2</sub>e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO<sub>2</sub>e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO<sub>2</sub>e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected life cycle of the action.

| Action-Related Annual GHG Emissions (mton/yr) |                 |                 |                  |                   |           |            |
|-----------------------------------------------|-----------------|-----------------|------------------|-------------------|-----------|------------|
| YEAR                                          | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> e | Threshold | Exceedance |
| 2025                                          | 20              | 0.00083086      | 0.00023214       | 20                | 68,039    | No         |
| 2026                                          | 8               | 0.00035933      | 0.000107         | 9                 | 68,039    | No         |
| 2027 [SS Year]                                | 0               | 0               | 0                | 0                 | 68,039    | No         |

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. <https://statesummaries.ncics.org/downloads/>).

| State's Annual GHG Emissions (mton/yr) |                 |                 |                  |                   |
|----------------------------------------|-----------------|-----------------|------------------|-------------------|
| YEAR                                   | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> e |
| 2025                                   | 700,652,689     | 3,554,625       | 135,896          | 836,194,567       |
| 2026                                   | 700,652,689     | 3,554,625       | 135,896          | 836,194,567       |
| 2027 [SS Year]                         | 0               | 0               | 0                | 0                 |

| U.S. Annual GHG Emissions (mton/yr) |                 |                 |                  |                   |
|-------------------------------------|-----------------|-----------------|------------------|-------------------|
| YEAR                                | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> e |
| 2025                                | 5,136,454,179   | 25,626,912      | 1,500,708        | 6,251,695,230     |
| 2026                                | 5,136,454,179   | 25,626,912      | 1,500,708        | 6,251,695,230     |
| 2027 [SS Year]                      | 0               | 0               | 0                | 0                 |

### GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (tQba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned

# AIR CONFORMITY APPLICABILITY MODEL REPORT

## GREENHOUSE GAS (GHG) EMISSIONS

choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

James Hoelke, Environmental Engineer Senior Staff  
**Name, Title**

Oct 29 2025  
**Date**

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## 1. General Information

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### - Action Location

**Base:** AF PLANT 4  
**State:** Texas  
**County(s):** Tarrant  
**Regulatory Area(s):** Dallas-Fort Worth, TX

**- Action Title:** ECTR Storm Drain Repairs

**- Project Number/s (if applicable):** ACFJ260F07

**- Projected Action Start Date:** 10 / 2025

### - Action Purpose and Need:

#### Purpose:

This project is required to provide funding for an Emergency Capital Type Rehabilitation (ECTR) project for storm drain repairs at Air Force Plant 4 (AFP4). Implementation of the project is expected to improve the ability of the plant operator to restore proper functioning of the plant to support site operations.

#### Need:

Air Force Plant 4 experienced a 100-year storm event on October 24, 2025, with torrential rains over a 12 hour period. During the peak of the storm, recorded rainfall was in excess of 10 inches per hour, accumulating an estimated 7.3 million gallons of rainwater in the vicinity of the main factory. Estimated pooling depths of rainwater exceeded 1', putting excessive pressure on the roof drain and storm drain system serving Building 5 and resulting in widespread flooding inside office and production areas. Area of impact is approximately 45,000 square feet inside Building 5, and an additional 72,000 square feet in other buildings across the reservation. Need date is 4Q 2025 (November 2025).

### - Action Description:

#### Alternative 1 (Preferred Action)

The Proposed Action would provide funding for Emergency Capital Type Rehabilitation (Storm Drain Repairs) at Air Force Plant 4 (AFP4). At this time we suspect that underground roof drain connections have been compromised, as well as existing manholes below the floor. We plan to proceed with scoping the roof drain and storm drain lines to identify points of failure, and anticipate sawcutting the floor to expose existing connections and junction points, execute repairs on underground pipes, and then restore the floor. These repairs will be made in Buildings 1, 2 and 5. In addition, the surging stormwater damaged a rollup door on Building 138, which will be replaced.

#### Alternative 2 (No-Action Alternative)

If the Preferred Action is not implemented, there is risk of the Plant Operator being unable to properly operate and maintain infrastructure systems in buildings across AFP4. This will lead to continuing additional costs and operational risks to program operations on site.

### - Point of Contact

**Name:** James Hoelke  
**Title:** Environmental Engineer Senior Staff  
**Organization:** Lockheed Martin Aeronautics  
**Email:** james.d.hoelke@lmco.com  
**Phone Number:** 817-584-6582

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## - Activity List:

|    | Activity Type             | Activity Title           |
|----|---------------------------|--------------------------|
| 2. | Construction / Demolition | ECTR Storm Drain Repairs |
| 3. | Personnel                 | ECTR Storm Drain Repairs |

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

## 2. Construction / Demolition

### 2.1 General Information & Timeline Assumptions

#### - Activity Location

County: Tarrant

Regulatory Area(s): Dallas-Fort Worth, TX

- Activity Title: ECTR Storm Drain Repairs

#### - Activity Description:

The Proposed Action would provide funding for Emergency Capital Type Rehabilitation (Storm Drain Repairs) at Air Force Plant 4 (AFP4). At this time we suspect that underground roof drain connections have been compromised, as well as existing manholes below the floor. We plan to proceed with scoping the roof drain and storm drain lines to identify points of failure, and anticipate sawcutting the floor to expose existing connections and junction points, execute repairs on underground pipes, and then restore the floor. These repairs will be made in Buildings 1, 2 and 5. In addition, the surging stormwater damaged a rollup door on Building 138, which will be replaced.

#### - Activity Start Date

Start Month: 10

Start Month: 2025

#### - Activity End Date

Indefinite: False

End Month: 1

End Month: 2026

#### - Activity Emissions:

| Pollutant       | Total Emissions (TONs) |
|-----------------|------------------------|
| VOC             | 0.015124               |
| SO <sub>x</sub> | 0.000231               |
| NO <sub>x</sub> | 0.117111               |
| CO              | 0.189242               |

| Pollutant       | Total Emissions (TONs) |
|-----------------|------------------------|
| PM 10           | 0.040009               |
| PM 2.5          | 0.003746               |
| Pb              | 0.000000               |
| NH <sub>3</sub> | 0.000360               |

#### - Global Scale Activity Emissions of Greenhouse Gases:

| Pollutant        | Total Emissions (TONs) |
|------------------|------------------------|
| CH <sub>4</sub>  | 0.001040               |
| N <sub>2</sub> O | 0.000276               |

| Pollutant         | Total Emissions (TONs) |
|-------------------|------------------------|
| CO <sub>2</sub>   | 25.723082              |
| CO <sub>2</sub> e | 25.825299              |

### 2.1 Trenching/Excavating Phase

#### 2.1.1 Trenching / Excavating Phase Timeline Assumptions

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## - Phase Start Date

Start Month: 10  
Start Quarter: 4  
Start Year: 2025

## - Phase Duration

Number of Month: 3  
Number of Days: 0

## 2.1.2 Trenching / Excavating Phase Assumptions

### - General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft<sup>2</sup>): 1200  
Amount of Material to be Hauled On-Site (yd<sup>3</sup>): 133  
Amount of Material to be Hauled Off-Site (yd<sup>3</sup>): 133

### - Trenching Default Settings

Default Settings Used: Yes  
Average Day(s) worked per week: 5 (default)

### - Construction Exhaust (default)

| Equipment Name                              | Number Of Equipment | Hours Per Day |
|---------------------------------------------|---------------------|---------------|
| Excavators Composite                        | 2                   | 8             |
| Other General Industrial Equipmen Composite | 1                   | 8             |
| Tractors/Loaders/Backhoes Composite         | 1                   | 8             |

### - Vehicle Exhaust

Average Hauling Truck Capacity (yd<sup>3</sup>): 20 (default)  
Average Hauling Truck Round Trip Commute (mile): 20 (default)

### - Vehicle Exhaust Vehicle Mixture (%)

|      | LDGV | LDGT | HDGV | LDDV | LDDT | HDDV   | MC |
|------|------|------|------|------|------|--------|----|
| POVs | 0    | 0    | 0    | 0    | 0    | 100.00 | 0  |

### - Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

### - Worker Trips Vehicle Mixture (%)

|      | LDGV  | LDGT  | HDGV | LDDV | LDDT | HDDV | MC |
|------|-------|-------|------|------|------|------|----|
| POVs | 50.00 | 50.00 | 0    | 0    | 0    | 0    | 0  |

## 2.1.3 Trenching / Excavating Phase Emission Factor(s)

### - Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

| Excavators Composite [HP: 36] [LF: 0.38]                        |         |                 |                 |         |         |         |
|-----------------------------------------------------------------|---------|-----------------|-----------------|---------|---------|---------|
|                                                                 | VOC     | SO <sub>x</sub> | NO <sub>x</sub> | CO      | PM 10   | PM 2.5  |
| Emission Factors                                                | 0.40191 | 0.00542         | 3.44643         | 4.21104 | 0.10704 | 0.09848 |
| Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34] |         |                 |                 |         |         |         |
|                                                                 | VOC     | SO <sub>x</sub> | NO <sub>x</sub> | CO      | PM 10   | PM 2.5  |
| Emission Factors                                                | 0.49122 | 0.00542         | 3.71341         | 4.67487 | 0.13603 | 0.12515 |
| Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]         |         |                 |                 |         |         |         |
|                                                                 | VOC     | SO <sub>x</sub> | NO <sub>x</sub> | CO      | PM 10   | PM 2.5  |
| Emission Factors                                                | 0.19600 | 0.00489         | 2.00960         | 3.48168 | 0.07738 | 0.07119 |

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## - Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

| Excavators Composite [HP: 36] [LF: 0.38]                        |                 |                  |                 |                   |
|-----------------------------------------------------------------|-----------------|------------------|-----------------|-------------------|
|                                                                 | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> | CO <sub>2</sub> e |
| Emission Factors                                                | 0.02382         | 0.00476          | 587.13772       | 589.15263         |
| Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34] |                 |                  |                 |                   |
|                                                                 | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> | CO <sub>2</sub> e |
| Emission Factors                                                | 0.02385         | 0.00477          | 588.02637       | 590.04433         |
| Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]         |                 |                  |                 |                   |
|                                                                 | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> | CO <sub>2</sub> e |
| Emission Factors                                                | 0.02149         | 0.00430          | 529.86270       | 531.68105         |

## - Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

|      | VOC     | SO <sub>x</sub> | NO <sub>x</sub> | CO       | PM 10   | PM 2.5  | NH <sub>3</sub> |
|------|---------|-----------------|-----------------|----------|---------|---------|-----------------|
| LDGV | 0.29139 | 0.00260         | 0.12615         | 4.05071  | 0.02228 | 0.00706 | 0.05136         |
| LDGT | 0.24985 | 0.00327         | 0.18736         | 3.98229  | 0.02278 | 0.00794 | 0.04385         |
| HDGV | 0.79155 | 0.00692         | 0.65065         | 10.02835 | 0.04893 | 0.02366 | 0.08886         |
| LDDV | 0.17729 | 0.00126         | 0.24332         | 7.00633  | 0.02433 | 0.00868 | 0.01576         |
| LDDT | 0.26201 | 0.00134         | 0.39571         | 6.07501  | 0.02332 | 0.00931 | 0.01634         |
| HDDV | 0.12718 | 0.00437         | 2.68516         | 1.62463  | 0.16624 | 0.08542 | 0.06545         |
| MC   | 2.66946 | 0.00304         | 0.61427         | 11.90990 | 0.03167 | 0.02162 | 0.05436         |

## - Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

|      | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> | CO <sub>2</sub> e |
|------|-----------------|------------------|-----------------|-------------------|
| LDGV | 0.01505         | 0.00514          | 331.15298       | 332.93687         |
| LDGT | 0.01665         | 0.00733          | 416.78010       | 419.18826         |
| HDGV | 0.04905         | 0.02540          | 881.54615       | 889.64953         |
| LDDV | 0.04595         | 0.00067          | 374.22640       | 375.69145         |
| LDDT | 0.02640         | 0.00098          | 396.39245       | 397.39082         |
| HDDV | 0.02282         | 0.16156          | 1298.30674      | 1341.75960        |
| MC   | 0.10835         | 0.00285          | 393.76300       | 397.55257         |

## 2.1.4 Trenching / Excavating Phase Formula(s)

### - Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10<sub>FD</sub>: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

### - Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$$

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

HP: Equipment Horsepower

LF: Equipment Load Factor

EF<sub>POL</sub>: Emission Factor for Pollutant (g/hp-hour)

0.002205: Conversion Factor grams to pounds

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2000: Conversion Factor pounds to tons

## - Vehicle Exhaust Emissions per Phase

$$\text{VMT}_{\text{VE}} = (\text{HA}_{\text{OnSite}} + \text{HA}_{\text{OffSite}}) * (1 / \text{HC}) * \text{HT}$$

$\text{VMT}_{\text{VE}}$ : Vehicle Exhaust Vehicle Miles Travel (miles)

$\text{HA}_{\text{OnSite}}$ : Amount of Material to be Hauled On-Site (yd<sup>3</sup>)

$\text{HA}_{\text{OffSite}}$ : Amount of Material to be Hauled Off-Site (yd<sup>3</sup>)

HC: Average Hauling Truck Capacity (yd<sup>3</sup>)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$\text{V}_{\text{POL}} = (\text{VMT}_{\text{VE}} * 0.002205 * \text{EF}_{\text{POL}} * \text{VM}) / 2000$$

$\text{V}_{\text{POL}}$ : Vehicle Emissions (TONs)

$\text{VMT}_{\text{VE}}$ : Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

$\text{EF}_{\text{POL}}$ : Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

## - Worker Trips Emissions per Phase

$$\text{VMT}_{\text{WT}} = \text{WD} * \text{WT} * 1.25 * \text{NE}$$

$\text{VMT}_{\text{WT}}$ : Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$$\text{V}_{\text{POL}} = (\text{VMT}_{\text{WT}} * 0.002205 * \text{EF}_{\text{POL}} * \text{VM}) / 2000$$

$\text{V}_{\text{POL}}$ : Vehicle Emissions (TONs)

$\text{VMT}_{\text{WT}}$ : Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

$\text{EF}_{\text{POL}}$ : Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

## 3. Personnel

---

### 3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline?     Add

#### - Activity Location

County:     Tarrant

Regulatory Area(s):     Dallas-Fort Worth, TX

- Activity Title:     ECTR Storm Drain Repairs

#### - Activity Description:

The Proposed Action would provide funding for Emergency Capital Type Rehabilitation (Storm Drain Repairs) at Air Force Plant 4 (AFP4). At this time we suspect that underground roof drain connections have been

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

compromised, as well as existing manholes below the floor. We plan to proceed with scoping the roof drain and storm drain lines to identify points of failure, and anticipate sawcutting the floor to expose existing connections and junction points, execute repairs on underground pipes, and then restore the floor. These repairs will be made in Buildings 1, 2 and 5. In addition, the surging stormwater damaged a rollup door on Building 138, which will be replaced.

## - Activity Start Date

Start Month: 11  
Start Year: 2025

## - Activity End Date

Indefinite: No  
End Month: 2  
End Year: 2026

## - Activity Emissions of Criteria Pollutants:

| Pollutant       | Total Emissions (TONs) |
|-----------------|------------------------|
| VOC             | 0.004761               |
| SO <sub>x</sub> | 0.000046               |
| NO <sub>x</sub> | 0.002644               |
| CO              | 0.063655               |

| Pollutant       | Total Emissions (TONs) |
|-----------------|------------------------|
| PM 10           | 0.000348               |
| PM 2.5          | 0.000120               |
| Pb              | 0.000000               |
| NH <sub>3</sub> | 0.000716               |

## - Global Scale Activity Emissions of Greenhouse Gasses:

| Pollutant        | Total Emissions (TONs) |
|------------------|------------------------|
| CH <sub>4</sub>  | 0.000272               |
| N <sub>2</sub> O | 0.000098               |

| Pollutant         | Total Emissions (TONs) |
|-------------------|------------------------|
| CO <sub>2</sub>   | 5.872675               |
| CO <sub>2</sub> e | 5.906261               |

## 3.2 Personnel Assumptions

### - Number of Personnel

Active Duty Personnel: 0  
Civilian Personnel: 0  
Support Contractor Personnel: 8  
Air National Guard (ANG) Personnel: 0  
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

### - Personnel Work Schedule

Active Duty Personnel: 5 Days Per Week (default)  
Civilian Personnel: 5 Days Per Week (default)  
Support Contractor Personnel: 5 Days Per Week (default)  
Air National Guard (ANG) Personnel: 4 Days Per Week (default)  
Reserve Personnel: 4 Days Per Month (default)

## 3.3 Personnel On Road Vehicle Mixture

### - On Road Vehicle Mixture (%)

|      | LDGV  | LDGT  | HDGV | LDDV | LDDT | HDDV | MC  |
|------|-------|-------|------|------|------|------|-----|
| POVs | 37.55 | 60.32 | 0    | 0.03 | 0.2  | 0    | 1.9 |
| GOVs | 54.49 | 37.73 | 4.67 | 0    | 0    | 3.11 | 0   |

## 3.4 Personnel Emission Factor(s)

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## - On Road Vehicle Criteria Pollutant Emission Factors (grams/mile)

|      | VOC     | SO <sub>x</sub> | NO <sub>x</sub> | CO       | PM 10   | PM 2.5  | NH <sub>3</sub> |
|------|---------|-----------------|-----------------|----------|---------|---------|-----------------|
| LDGV | 0.29139 | 0.00260         | 0.12615         | 4.05071  | 0.02228 | 0.00706 | 0.05136         |
| LDGT | 0.24985 | 0.00327         | 0.18736         | 3.98229  | 0.02278 | 0.00794 | 0.04385         |
| HDGV | 0.79155 | 0.00692         | 0.65065         | 10.02835 | 0.04893 | 0.02366 | 0.08886         |
| LDDV | 0.17729 | 0.00126         | 0.24332         | 7.00633  | 0.02433 | 0.00868 | 0.01576         |
| LDDT | 0.26201 | 0.00134         | 0.39571         | 6.07501  | 0.02332 | 0.00931 | 0.01634         |
| HDDV | 0.12718 | 0.00437         | 2.68516         | 1.62463  | 0.16624 | 0.08542 | 0.06545         |
| MC   | 2.66946 | 0.00304         | 0.61427         | 11.90990 | 0.03167 | 0.02162 | 0.05436         |

## - On Road Vehicle Greenhouse Gasses Emission Factors (grams/mile)

|      | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> | CO <sub>2e</sub> |
|------|-----------------|------------------|-----------------|------------------|
| LDGV | 0.01505         | 0.00514          | 331.15298       | 332.93687        |
| LDGT | 0.01665         | 0.00733          | 416.78010       | 419.18826        |
| HDGV | 0.04905         | 0.02540          | 881.54615       | 889.64953        |
| LDDV | 0.04595         | 0.00067          | 374.22640       | 375.69145        |
| LDDT | 0.02640         | 0.00098          | 396.39245       | 397.39082        |
| HDDV | 0.02282         | 0.16156          | 1298.30674      | 1341.75960       |
| MC   | 0.10835         | 0.00285          | 393.76300       | 397.55257        |

## 3.5 Personnel Formula(s)

### - Personnel Vehicle Miles Travel for Work Days per Year

$$VMT_P = NP * WD * AC$$

VMT<sub>P</sub>: Personnel Vehicle Miles Travel (miles/year)

NP: Number of Personnel

WD: Work Days per Year

AC: Average Commute (miles)

### - Total Vehicle Miles Travel per Year

$$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$$

VMT<sub>Total</sub>: Total Vehicle Miles Travel (miles)

VMT<sub>AD</sub>: Active Duty Personnel Vehicle Miles Travel (miles)

VMT<sub>C</sub>: Civilian Personnel Vehicle Miles Travel (miles)

VMT<sub>SC</sub>: Support Contractor Personnel Vehicle Miles Travel (miles)

VMT<sub>ANG</sub>: Air National Guard Personnel Vehicle Miles Travel (miles)

VMT<sub>AFRC</sub>: Reserve Personnel Vehicle Miles Travel (miles)

### - Vehicle Emissions per Year

$$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)

VMT<sub>Total</sub>: Total Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)

VM: Personnel On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

## **APPENDIX B – FLOOD HAZARD DELINEATION AND COMPLIANCE**

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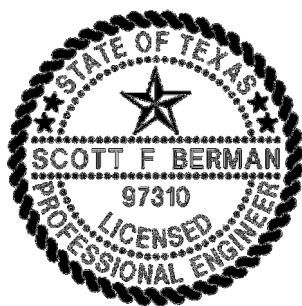
April 9, 2026  
Project No.: R0061046.00

Angela K. Pereira, PE  
Civil Engineer Senior Staff  
Aeronautics Facilities Engineering  
Lockheed Martin  
PO Box 748 MZ 6445  
Fort Worth, Texas 76101

Re: Lockheed Martin Storm Drain System Improvements Environmental Assessment Flood Hazard Delineation and Compliance

Dear Ms. Pereira:

This letter is to notify you that in support of the Lockheed Martin Storm Drain System Improvements Environmental Assessment for Air Force Plant No. 4 (AFP4) Westwood has investigated and assessed the potential Federal Emergency Management Agency (FEMA) flood hazard delineation and compliance for our proposed storm drain system improvements project for AFP4. Our findings are that the impact to the effective FEMA floodplain will be irrelevant because the floodplain is open space and any changes to the floodplain will have no impact to insurable structures or pose a threat to products at AFP4. There will also be no changes required to the effective FEMA floodplain mapping as a result of this project being constructed. Please accept this letter as due diligence in meeting the FEMA guidelines and requirements for the Lockheed Martin Storm Drain System Improvements Environmental Assessment for AFP4. Please let us know if you need any further information.



4/9/2026

Sincerely,

A handwritten signature in black ink that reads "Scott Berman".

Scott F. Berman, PE, CFM  
**Westwood**  
4060 Bryant Irvin Road  
Fort Worth, TX 76109  
**direct** (817) 412-7155  
[scott.berman@westwoodps.com](mailto:scott.berman@westwoodps.com)

SFB/LW  
R0061046.00\_2026-04-09

## Pereira, Angela K (US)

---

**From:** Scott Berman <Scott.Berman@westwoodps.com>  
**Sent:** Tuesday, June 9, 2026 11:36 AM  
**To:** Pereira, Angela K (US)  
**Cc:** Trey Holmes; Chris Frerich  
**Subject:** EXTERNAL: RE: Question about Area 4 Storm Drain Design - Response  
**Attachments:** LOCKHEED MARTIN AREA 4 STORM DRAIN IMPROVEMENTS HYDRAULIC WORKMAP.pdf; LM Design Analysis Discharge Table.pdf

**Importance:** High

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

**Categories:** Air Force

Angela,

Again, sorry for the delay on this, but we think we found a technically supported response to Morris' last floodplain comment. We created a HEC-RAS hydraulic model for the open area downstream of our Culvert Outfall #1 to Farmers Branch and ran the Farmers Branch effective FEMA 100-year 15,900 cfs and the proposed improved Lockheed 100-year adding 330 cfs which would be 16,230 cfs. The high point downstream is the runway and backs water up at the 100-year FEMA floodplain elevation of 634.0'. We used this known 100-year FEMA effective WSEL of 634.0' as our downstream flow boundary condition. We made a surface based on 2019 LiDAR. We cut 4 cross sections from the runway upstream to our Culvert Outfall #1. We ran the FEMA effective 100-year 15,900 cfs and our proposed increased 100-year discharge of 16,230 cfs and the 330 cfs increase to Outfall 1 for 100-year proposed discharge results in maximum 0.02' rise in proposed 100-year computed water surface elevation at Outfall #1. We created a hydraulic workmap showing our cross section locations and a table comparing discharges and existing vs. proposed 100-year WSELs and also showed the existing vs proposed floodplain differences (attached). Also, attached is the original discharge comparison from the Environmental Assessment where this floodplain impact comment came from. While this is not "zero" rise, it is very minimal and there are no downstream structures impacted as we suspected. Please let us know if this may address Morris' final comment or if we need to provide additional hydraulic model or a technical memorandum summarizing these results. Thanks!

### Scott Berman

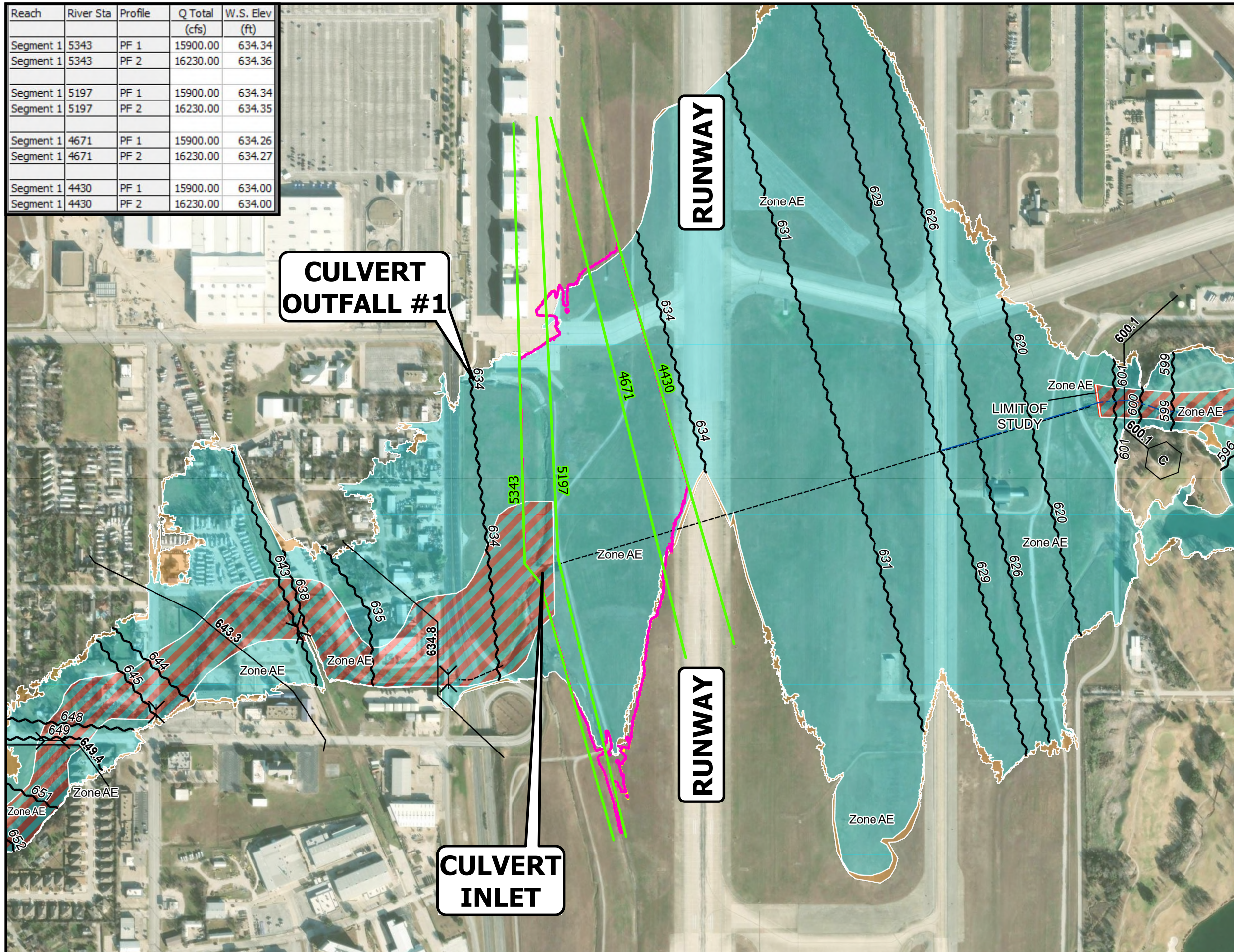
Water Resources Senior Manager  
scott.berman@westwoodps.com

**direct** (817) 412-7155  
**main** (817) 412-7155  
**cell** (817) 881-6473

**Westwood**  
4060 Bryant Irvin Road  
Fort Worth, TX 76109

**westwoodps.com**  
(888) 937-5150

| Reach     | River Sta | Profile | Q Total<br>(cfs) | W.S. Elev<br>(ft) |
|-----------|-----------|---------|------------------|-------------------|
| Segment 1 | 5343      | PF 1    | 15900.00         | 634.34            |
| Segment 1 | 5343      | PF 2    | 16230.00         | 634.36            |
|           |           |         |                  |                   |
| Segment 1 | 5197      | PF 1    | 15900.00         | 634.34            |
| Segment 1 | 5197      | PF 2    | 16230.00         | 634.35            |
|           |           |         |                  |                   |
| Segment 1 | 4671      | PF 1    | 15900.00         | 634.26            |
| Segment 1 | 4671      | PF 2    | 16230.00         | 634.27            |
|           |           |         |                  |                   |
| Segment 1 | 4430      | PF 1    | 15900.00         | 634.00            |
| Segment 1 | 4430      | PF 2    | 16230.00         | 634.00            |



# LOCKHEED MARTIN AREA 4 STORM DRAIN IMPROVEMENTS

## HYDRAULIC WORKMAP

FORT WORTH, TX

## KEY TO FEATURES

-  CROSS SECTIONS  
 EFFECTIVE FEMA FLOWS  
 PROPOSED FLOWS

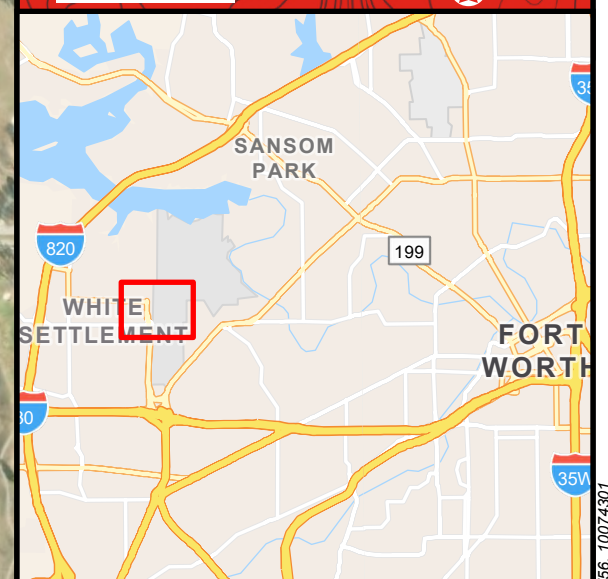
**DATUM**

NAD 1983 2011 StatePlane Texas  
North Central FIPS 4202 FtUS

NAVD88 1988 North American  
Vertical Datum

0                      250                      500  
 Feet  
*1 inch = 500 feet*

## VICINITY MAP



**June 9, 2026**

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