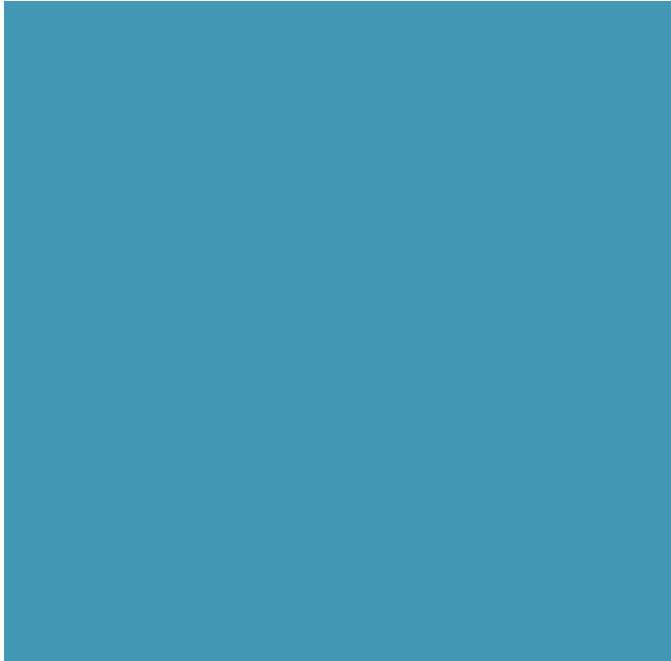




Environmental Assessment Addressing the Master Plan Update

Defense Distribution Depot, San Joaquin,
California

February 2021



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Finding of No Significant Impact

Environmental Assessment Addressing the Master Plan Update Defense Distribution Depot, San Joaquin, California

SUMMARY: Defense Logistics Agency (DLA) developed an Environmental Assessment (EA) to address the potential environmental consequences associated with its Proposed Action to implement the 2020 Master Plan, 2018 Integrated Pest Management Plan (IPMP), and 2018 Integrated Natural Resources Management Plan (INRMP) for Defense Distribution Depot, San Joaquin. The EA was prepared as required under the National Environmental Policy Act (NEPA) of 1969. In addition, the EA complied with DLA Regulation 1000.22.

DLA published a notice in English in *The Stockton Record* on December 16, 2020, and *Tracy Press* on December 18, 2020, and in Spanish in *Vida en el Valle* on December 23, 2020, announcing the availability of the EA for a 30-day public comment period that ended on January 22, 2021. Due to the COVID-19 pandemic, the EA was not placed in a local repository but was made available on DLA's website at <https://www.dla.mil/Distribution/Locations/SanJoaquin.aspx>. Individuals without internet access could request a hardcopy be sent to them. No comments were received during the 30-day EA public comment period.

SUPPLEMENTARY INFORMATION: The Proposed Action does not qualify as an undertaking under the National Historic Preservation Act or an action under the Endangered Species Act because it is limited to the implementation of the Master Plan, IPMP, and INRMP and only considers the location, timing, and design of the projects in these plans. As such, consultation with the California State Historical Preservation Officer and Native American tribes under Section 106 of the National Historic Preservation Act and with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act is unnecessary for the Proposed Action. Section 106 and

Section 7 consultation will be conducted on a project-by-project basis, as needed, when the projects become further defined and ready for consultation.

This Finding of No Significant Impact (FONSI) documents the decision of DLA to implement the Master Plan, IPMP, and INRMP for Defense Distribution Depot, San Joaquin. DLA has determined the Proposed Action is not a major federal action significantly affecting the quality of the human environment within the context of NEPA and no significant impacts on the human environment are associated with this decision. This FONSI incorporates the EA by reference and summarizes the results of the analyses in the EA.

Purpose of and Need for Action: The purpose of the Proposed Action is to enable orderly and comprehensive installation development in a manner that is sustainable, meets current mission requirements, and is flexible enough to meet future mission changes. The Proposed Action is needed to ensure the installation is able to meet current and future mission requirements efficiently and effectively while ensuring sustainability, protecting natural resources, and improving safety.

Proposed Action and Alternatives: The Proposed Action is implementation of the Master Plan, IPMP, and INRMP for Defense Distribution Depot, San Joaquin. The Master Plan includes a Future Development Plan, which is an implementation tool that considers the condition of the facilities, land uses, environmental and operational constraints, sustainability practices, prioritization guidelines, and cost and efficiency strategies to identify potential projects that would enable the installation to meet its current and future mission requirements during the next 20 years. The IPMP and INRMP are component plans of the Master Plan. The IPMP is the installation's plan for its pest management program. The INRMP is the installation's plan for managing its natural resources while ensuring the success of the military mission. Under the Proposed Action, DLA would implement the projects of the Future Development Plan, IPMP, and

INRMP to replace undersized, outdated buildings and infrastructure with appropriately-sized, modern, energy-efficient, sustainable buildings and infrastructure; relocate functions and renovate buildings to improve facility sitings with respect to applicable planning constraints; reduce non-renewable energy and fossil fuel use; reduce reliance on pesticides; and continue conservation and enhancement of existing ecosystems on the installation.

Description of the No Action Alternative: Under the No Action Alternative, DLA would not implement the Master Plan, IPMP, or INRMP. DLA would continue to use and maintain existing outdated, undersized, and inefficient buildings and infrastructure, and would not implement the Future Development Plan, pest management, and natural resources projects in these plans. Implementation of the No Action Alternative may hinder the installation's ability to meet its current and future mission requirements and would not meet the purpose of and need for the Proposed Action.

Potential Environmental Impacts: No significant effects on environmental resources would occur from the Proposed Action. Insignificant, adverse effects on noise, air quality, geological resources, water resources, biological resources, infrastructure and transportation, and hazardous materials and wastes would occur. However, insignificant, beneficial effects on land use and recreation, noise, air quality, geological resources, water resources, biological resources, infrastructure and transportation, and hazardous materials and wastes also would occur. Details of the environmental consequences are discussed in the EA, which is hereby incorporated by reference.

Determination: DLA has determined that implementation of the Proposed Action will not have a significant effect on the human environment. Human environment was interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. Specifically, no highly uncertain or controversial impacts, unique or

unknown risks, or cumulatively significant effects were identified. Implementation of the Proposed Action will not violate any federal, state, or local laws. Based on the results of the analyses performed during preparation of the EA and lack of comments received during the public comment period, I conclude that implementation of the Master Plan, IPMP, and INRMP for Defense Distribution Depot, San Joaquin does not constitute a major federal action significantly affecting the quality of the human environment within the context of NEPA. Therefore, an environmental impact statement for the Proposed Action is not required.



JONATHAN MATHEWS
DLA San Joaquin Site Director

03/26/2021
DATE

Attachment: *Environmental Assessment Addressing the Master Plan Update for Defense Distribution Depot, San Joaquin, California*

Environmental Assessment Addressing the Master Plan Update

Defense Distribution Depot, San Joaquin, California

Prepared for:



Defense Distribution Depot
25600 S. Chrisman Road
Tracy, CA 95304



HQ AFCEC/CFSD
2261 Hughes Avenue, Suite 163
JBSA Lackland, TX 78236

Prepared by:



HDR
2650 Park Tower Drive
Vienna, VA 22180-7342

February 2021

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ENVIRONMENTAL ASSESSMENT ADDRESSING THE MASTER PLAN UPDATE FOR DEFENSE DISTRIBUTION DEPOT, SAN JOAQUIN, CALIFORNIA

Responsible Agency: Defense Logistics Agency (DLA).

Affected Location: Defense Distribution Depot, San Joaquin, California.

Report Designation: Environmental Assessment.

Abstract: To provide direction for future development of Defense Distribution Depot, San Joaquin, DLA has prepared the 2020 Master Plan. The Master Plan is an update to the installation's 2013 Real Property Master Plan. It includes a Future Development Plan, which is the implementation tool for the Master Plan and considers the condition of the facilities, land uses, environmental and operational constraints, sustainability practices, prioritization guidelines, and cost and efficiency strategies to identify potential projects that would enable the installation to meet its current and future mission requirements during the next 20 years. The Master Plan includes four component plans, which are the 2013 Net-Zero Energy Study, 2013 Sustainability Plan, 2018 Integrated Pest Management Plan (IPMP), and 2018 Integrated Natural Resources Management Plan (INRMP). The Net-Zero Energy Study balances the installation's future energy demand from buildings, industrial processes, fleet vehicles, and equipment with renewable energy production. The Sustainability Plan provides a pathway for the installation to move toward compliance with relevant federal mandates regarding sustainability. The IPMP is the installation's plan for its pest management program. The INRMP is the installation's plan for managing its natural resources while ensuring the success of the military mission.

This Environmental Assessment analyzes the potential for significant environmental impacts associated with the Proposed Action and No Action Alternative. The Proposed Action is implementation of the Master Plan, IPMP, and INRMP. The Proposed Action does not include implementation of the Net-Zero Energy Study and Sustainability Plan because these documents have not been updated since 2013 and their implementation was analyzed for potentially significant environmental impacts in the Environmental Assessment for the 2013 Real Property Master Plan, which resulted in a Finding of No Significant Impact. Under the Proposed Action, DLA would implement the projects of the Future Development Plan, IPMP, and INRMP to replace undersized, outdated buildings and infrastructure with appropriately-sized, modern, energy-efficient, sustainable buildings and infrastructure; relocate functions and renovate buildings to improve facility sitings with respect to applicable planning constraints; reduce non-renewable energy and fossil fuel use; reduce reliance on pesticides; and continue conservation and enhancement of existing ecosystems on the installation. Under the No Action Alternative, DLA would not implement the Master Plan, IPMP, or INRMP. Instead, DLA would continue to use and maintain existing outdated, undersized, and inefficient buildings and infrastructure and would not implement the projects in these plans. Implementation of the No Action Alternative may hinder the installation's ability to meet its current and future mission requirements.

The purpose of the Proposed Action is to enable orderly and comprehensive installation development in a manner that is sustainable, meets current mission requirements, and is flexible enough to meet future mission changes. The Proposed Action is needed to ensure the installation is able to meet its current and future mission requirements efficiently and effectively while ensuring its sustainability, protecting its natural resources, and improving safety. The No Action Alternative would not meet the purpose of and need for the Proposed Action.

No significant effects on environmental resources would occur from the Proposed Action. Insignificant, adverse effects on noise, air quality, geological resources, water resources, biological resources, infrastructure and transportation, and hazardous materials and wastes would occur. However, insignificant, beneficial effects on land use and recreation, noise, air quality, geological resources, water resources, biological resources, infrastructure and transportation, and hazardous materials and wastes also would occur.

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List of Acronyms

ACM	asbestos-containing material
ACP	access control point
BMP	best management practice
CEQ	Council on Environmental Quality
COA	Course of Action
DLA	Defense Logistics Agency
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
FONSI	Finding of No Significant Impact
FY	fiscal year
INRMP	Integrated Natural Resources Management Plan
IPMP	Integrated Pest Management Plan
LBP	lead-based paint
LID	low-impact development
LUC	land use control
MBTA	Migratory Bird Treaty Act
MILCON	Military Construction
NEPA	National Environmental Policy Act
NZES	Net-Zero Energy Study
PCB	polychlorinated biphenyl
PM ₁₀	particulate matter, measured as equal to or less than 10 microns in diameter
PM _{2.5}	particulate matter, measured as equal to or less than 2.5 microns in diameter
SP	Sustainability Plan
USFWS	U.S. Fish and Wildlife Service

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1 Proposed Action Purpose and Need

1.1 Introduction

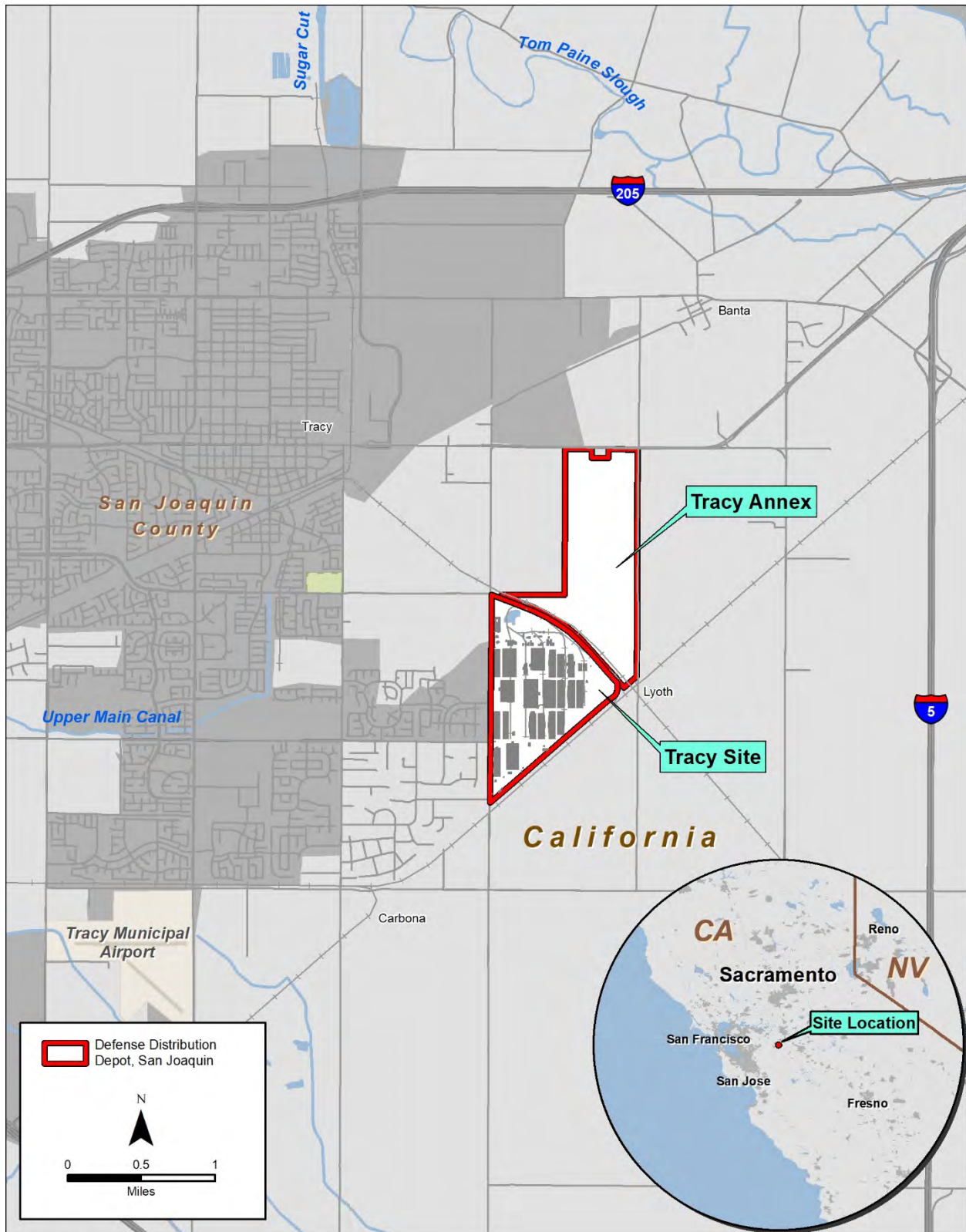
Defense Distribution Depot, San Joaquin is a Defense Logistics Agency (DLA) installation in Tracy, California, approximately 20 miles south of Stockton. It consists of approximately 908 acres on two sites: the Tracy Site and the Tracy Annex. The Tracy Site is 448 acres with 12 improved open storage lots and 62 buildings that include warehouses, administrative, support areas, and installation maintenance. The Tracy Annex is 460 acres of agricultural land to the north of the Tracy Site (DLA 2020). **Figure 1-1** shows the Tracy Site and Tracy Annex. The U.S. Army owns the land and all real property assets on the installation.

To provide direction for future development of Defense Distribution Depot, San Joaquin, DLA has prepared the 2020 Master Plan. The Master Plan is an update to the installation's 2013 Real Property Master Plan. It includes a Future Development Plan, which is the implementation tool for the Master Plan and considers the condition of the facilities, land uses, environmental and operational constraints, sustainability practices, prioritization guidelines, and cost and efficiency strategies to identify potential projects that would enable the installation to meet its current and future mission requirements during the next 20 years. The Master Plan includes four component plans, which are the 2013 Net-Zero Energy Study (NZES), 2013 Sustainability Plan (SP), 2018 Integrated Pest Management Plan (IPMP), and 2018 Integrated Natural Resources Management Plan (INRMP). The NZES balances the installation's future energy demand from buildings, industrial processes, fleet vehicles, and equipment with renewable energy production. The SP provides a pathway for the installation to move toward compliance with relevant federal mandates regarding sustainability. The IPMP is the installation's plan for its pest management program. The INRMP is the installation's plan for managing its natural resources while ensuring the success of the military mission. **Section 2.1** further describes the Master Plan and those component plans that are analyzed in this Environmental Assessment (EA).

This EA analyzes the potential for significant environmental impacts associated with the Proposed Action and alternatives, including the No Action Alternative. The Proposed Action is implementation of the Master Plan, IPMP, and INRMP. The Proposed Action does not include implementation of the NZES and SP because these documents have not been updated since 2013 and their implementation was analyzed for potentially significant environmental impacts in the EA for the 2013 Real Property Master Plan, which resulted in a Finding of No Significant Impact (FONSI).

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA); Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 Code of Federal Regulations §§ 1500–1508); DLA Regulation 1000.22, *Environmental Considerations in Defense Logistics Agency Actions*; and other applicable DLA issuances (e.g., regulations, directives, memorandums, instructions). Because the Proposed Action would occur entirely on the installation, which is federally owned property, there is no applicability driver for the California Environmental Quality Act, and this EA has not been prepared in compliance with such act.

Figure 1-1. Defense Distribution Depot, San Joaquin and Vicinity



Data Sources: DDSP GIS and ESRI Streetmap.

1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to enable orderly and comprehensive installation development in a manner that is sustainable, meets current mission requirements, and is flexible enough to meet future mission changes. The Proposed Action is needed to ensure the installation is able to meet its current and future mission requirements efficiently and effectively while ensuring its sustainability, protecting its natural resources, and improving safety.

1.3 Scope of the Environmental Assessment

The scope of this EA includes the actions proposed, alternatives considered, existing environment, and potential for direct, indirect, and cumulative impacts. The Proposed Action and alternatives considered in this EA are presented in **Section 2**. The No Action Alternative has been analyzed to provide a baseline against which the potential environmental impacts of implementing the Proposed Action can be compared.

This EA analyzes the potential impacts of implementing the Master Plan, IPMP, and INRMP. The Master Plan and its component plans guide the siting, design, and timing of future projects to meet current and future mission requirements and ensure development is conducted in a sustainable and environmentally conscious manner. Potential environmental impacts from construction, demolition, and operation of the analyzed projects will be addressed in separate NEPA documentation (e.g., categorical exclusions) when these projects are further defined and ready for NEPA analysis.

1.4 Summary of Key Environmental Compliance Requirements

1.4.1 National Environmental Policy Act

NEPA, codified in 42 United States Code § 4321 et seq., was signed into law on January 1, 1970. The Act established a national environmental policy and goals for the protection, maintenance, and enhancement of the environment and provides a process for implementing these goals within federal agencies. The Act also established the CEQ to coordinate federal environmental efforts. The process for implementing NEPA is outlined in 40 Code of Federal Regulations §§ 1500–1508. CEQ regulations specify that an EA serves to briefly provide evidence and analysis for determining whether to prepare a FONSI or an Environmental Impact Statement (EIS). As part of the EA process, DLA will determine whether the Proposed Action would have the potential to result in significant impacts. If the EA identifies potential significant impacts, DLA would decide whether to mitigate impacts below the level of significance, undertake preparation of an EIS, or select the No Action Alternative.

1.4.2 Applicable Environmental and Regulatory Compliance

The NEPA process does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decision maker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action.

1.5 Agency Coordination and Public Involvement

DLA Regulation 1000.22 requires DLA to facilitate coordination with federal, state, and local officials and organizations that could be affected by a proposed action. DLA invited agencies and members of the public with an interest in the Proposed Action and alternatives to participate in this NEPA process, which provides DLA with the opportunity to coordinate with and consider the views of other agencies and individuals. A premise of NEPA is that the quality of federal decisions is enhanced by involving the public in the planning process.

The Proposed Action does not qualify as an undertaking under the National Historic Preservation Act or an action under the Endangered Species Act because it is limited to the implementation of the Master Plan, IPMP, and INRMP and considers the location, timing, and design of the projects in these plans. As such, consultation with the California State Historical Preservation Officer and Native American tribes under Section 106 of the National Historic Preservation Act and with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act is unnecessary for the Proposed Action. Section 106 and Section 7 consultation will be conducted on a project-by-project basis, as needed, when the projects become further defined and ready for consultation.

DLA made the EA available for a 30-day public comment period. A notice of availability for the EA and public comment period was published in English in *The Stockton Record* on December 16, 2020, and *Tracy Press* on December 18, 2020, and in Spanish in *Vida en el Valle* on December 23, 2020. Due to the COVID-19 pandemic, the EA was not placed in a local repository but was made available on DLA's website at <https://www.dla.mil/Distribution/Locations/SanJoaquin.aspx>. Individuals without internet access could request a hardcopy be sent to them. No comments were received during the 30-day EA public comment period.

2 Proposed Action and Alternatives Description

2.1 Proposed Action

The Proposed Action is implementation of the Master Plan, IPMP, and INRMP. The Proposed Action does not include implementation of the NZES and SP because these documents have not been updated since 2013 and their implementation was analyzed for potentially significant environmental impacts in the EA for the 2013 Real Property Master Plan, which resulted in a FONSI.

2.1.1 Master Plan

The Master Plan provides direction for the future development of the installation over the next 20 years and identifies potential projects that would ensure the installation is able to meet its current and future mission requirements efficiently and effectively while ensuring its sustainability, protecting its natural resources, and improving safety. It includes a Sustainability Planning Framework, Capital Investment Strategy, and Future Development Plan, each of which is described below (DLA 2020).

Sustainability Planning Framework. The Sustainability Planning Framework is an 11-step process that considers the critical functions of the installation, sustainable practices, and areas suitable for renewable energy projects.

Capital Investment Strategy. The Capital Investment Strategy establishes the priorities for investing in the facilities development projects. It prioritizes needs to use time- and cost-effective means.

Future Development Plan. The Future Development Plan is the implementation tool for the Master Plan and identifies potential projects to be completed within the next 20 years. It contains three Courses of Action (COAs) that address Warehouse Optimization, Warehouse Expansion, and Warehouse Military Construction (MILCON). These COAs provide a variety of options for the installation to address mission requirements during different timeframes and at a variety of cost options. The COAs are described as follows:

- COA 1, Warehouse Optimization. This COA represents actions proposed in a recent warehouse optimization study, upgrades to existing warehouses, and projects to meet current installation requirements. **Table 2-1** describes and **Figure 2-1** shows the projects of COA 1.
- COA 2, Warehouse Expansion. This COA proposes warehouse expansions and connections between existing warehouses to establish a Western Distribution Center at the installation. **Table 2-2** describes and **Figure 2-2** shows the projects of COA 2.
- COA 3, Warehouse MILCON. This COA assumes an increase in missions at the installation and proposes to establish a Western Distribution Center at a newly constructed facility. Several existing warehouses would need to be demolished to make sufficient space available for new construction. **Table 2-3** describes and **Figure 2-3** shows the projects of COA 3.

Table 2-1. Projects of COA 1: Warehouse Optimization

Map Key	Project Description	Construction Timeframe		
		1-5 Years	6-10 Years	11+ Years
1	Retrofit Building 32 for a Fitness Center and Café		✓	
2	Renovate Building 100 Administration			✓
2	Retrofit Building 100 for Training and Auditorium	✓	✓	
2	Retrofit Building 100 to Expand Child Development Center Capacity	✓		
3	Pave 50-foot x 50-foot Police Training Area	✓		
4	Repurpose Building 6 for Vehicle Maintenance, Equipment Maintenance, Pharmacy, and Wood Pallet Recycling		✓	
5	Biomass (wood) Power Plant			✓
6	Microgrid Controls			✓
7	Installation-wide Emergency Backup Generator		✓	
8	Well 7 Replacement		✓	
9	Banta Road Secondary Emergency Access			✓
Installation-wide	Warehouse Retrofits (Buildings 15, 16A/B, 17, 20, 22, 29, 30, 56, 57, 58)	✓	✓	✓
Installation-wide	Utility Scale Solar Photovoltaic Array on top of warehouses			✓
Installation-wide	Miscellaneous Security Upgrades		✓	
Installation-wide	Exterior Light-emitting Diode Lighting Upgrades			✓
Installation-wide	Base and Building Signage and Wayfinding		✓	
Installation-wide	Expand Docks		✓	

Figure 2-1. Locations of COA 1 Projects



Service Layer Credits: Bing Maps Aerial: © 2020 Microsoft Corporation © 2019 DigitalGlobe
 ©CNES (2019) Distribution Airbus DS

Table 2-2. Projects of COA 2: Warehouse Expansion

Map Key	Project Description	Construction Timeframe		
		1-5 Years	6-10 Years	11+ Years
1	Expand Buildings 56 and 57; Connect Buildings 57 and 58; Establish Wood Pallet Recycling		✓	✓
2	Construct New Administration and Training Building			✓
3	Demolish Building 100	✓	✓	
4	Renovate Building 32 for Installation Restaurant	✓	✓	
5	Repurpose Building 6 for Auditorium, Indoor Recreation, Fitness Center, and Child Development Center		✓	
6	Pave 50-foot x 50-foot Police Training Area	✓		
7	Biomass (wood) Power Plant			✓
8	Microgrid Controls			✓
9	Installation-wide Emergency Backup Generator		✓	
10	Well 7 Replacement		✓	
11	Banta Road Secondary Emergency Access			✓
12	New Vehicle and Equipment Maintenance Building		✓	
Installation-wide	Demolish Buildings 13, 14, 17, and 20	✓		
Installation-wide	Base and Building Signage and Wayfinding		✓	
Installation-wide	Emergency Backup Generator Circuit Connections		✓	
Installation-wide	Miscellaneous Security Upgrades		✓	
Installation-wide	Exterior Light-emitting Diode Lighting Upgrades			✓
Installation-wide	Utility Scale Solar Photovoltaic Array on top of warehouses and open storage areas			✓
Installation-wide	Warehouse Retrofits (Buildings 15, 16A/B, 17, 20, 29, 30, 57, and 58)	✓	✓	✓
Installation-wide	Expand Docks		✓	

Figure 2-2. Locations of COA 2 Projects



Table 2-3. Projects of COA 3: Warehouse MILCON

Map Key	Project Description	Construction Timeframe		
		1-5 Years	6-10 Years	11+ Years
1	Construct Western Distribution Center with wood pallet recycling and pharmacy			✓
2	New Vehicle and Equipment Maintenance Building		✓	
3	Expand Building 32, Child Development Center		✓	
4	Construct New Administration Facility			✓
5	Demolish Building 100	✓	✓	
6	Construct New Fitness Center		✓	
7	Construct Multipurpose Auditorium and Training		✓	
8	Pave 50-foot x 50-foot Police Training Area	✓		
9	Biomass (wood) Power Plant			✓
10	Microgrid Controls			✓
11	Installation-wide Emergency Backup Generator		✓	
12	Well 7 Replacement		✓	
13	Banta Road Secondary Emergency Access			✓
Installation-wide	Demolish Buildings 6, 13, 14, 17, 18, and 20			✓
Installation-wide	Base and Building Signage and Wayfinding		✓	
Installation-wide	Miscellaneous Security Upgrades		✓	
Installation-wide	Exterior Light-emitting Diode Lighting Upgrades			✓
Installation-wide	Utility Scale Solar Photovoltaic Array on ground surface at Tracy Annex			✓
Installation-wide	Warehouse Retrofits (Buildings 15, 21, 22, 56, 57, 58)	✓	✓	✓
Installation-wide	Expand Docks		✓	

Figure 2-3. Locations of COA 3 Projects



The proposed projects of the three COAs are conceptual in nature; therefore, the scope of analysis for these projects in this EA is programmatic and addresses the location, timing, and design of the proposed projects.

The three COAs are not distinct alternatives. The COAs represent general directions that the installation could follow to meet potential future mission requirements. The Future Development Plan does not identify a preferred COA because it is impossible to predict future available funding, evolving mission requirements, political decisions, and Department of Defense and DLA policies for the next 20 years. As such, elements of each COA are likely to be implemented. The three COAs are addressed collectively as part of the Proposed Action in this EA.

Each project would be designed to meet necessary security and vehicle standoff requirements specified in Unified Facilities Criteria 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*, and Unified Facilities Criteria 1-200-02, *High Performance and Sustainable Building Requirements*. They also would meet regional seismic load, sustainable design and development, low-impact development, Energy Policy Act of 2005, and Energy Independence and Security Act (EISA) of 2007 requirements. The projects would be designed to meet applicable Leadership in Energy and Environmental Design standards and comply with the Installation Design Guide. All projects would be constructed consistent with the Master Plan and its component plans.

Implementing the projects of the Future Development Plan would result in the replacement of undersized, outdated buildings and infrastructure with appropriately-sized, modern, energy-efficient, sustainable buildings and infrastructure; relocation of functions and renovation of buildings to improve facility sitings with respect to applicable planning constraints; and a reduction in non-renewable energy and fossil fuel use. Construction may increase total impervious surface on the installation, but the increase in impervious surface cannot be estimated because the proposed projects are conceptual.

2.1.2 Integrated Pest Management Plan

The IPMP is the installation's plan for its pest management program. It provides a sustainable approach for managing pests by using a combination of biological, cultural, physical, and chemical tools. DLA would use these tools in a manner that minimizes economic, health, and environmental risks. Nonchemical pest-control efforts are proposed to be used to the maximum extent possible prior to the application of pesticides. The IPMP describes methods for detecting, monitoring, and controlling specific pests as well as administrative, safety, and environmental requirements (see **Appendix A**). Implementation of the IPMP would reduce reliance on pesticides; enhance environmental protection; and help ensure pests don't interfere with the military mission, lower morale, damage real property, increase maintenance costs, or expose personnel to disease (DLA 2018a).

The IPMP was last updated in October 2018, and implementation of the current version has not yet been analyzed for the potential for significant environmental impacts. As such, implementation of the IPMP is addressed in this EA.

2.1.3 Integrated Natural Resources Management Plan

The INRMP is the installation's plan for managing its natural resources while ensuring the success of the military mission. It uses adaptive management to maintain sustainable land use on the installation. The INRMP includes 71 proposed projects in the areas of ecosystem management,

threatened and endangered species and species of concern, wetlands and waters of the United States, watershed management, fish and wildlife management, habitat management, exotic and invasive species management, grounds maintenance, agricultural outleasing, outdoor recreation, and environmental awareness, education and outreach (see **Appendix A**). These projects are designed to ensure minimal impact on the military mission while providing for the management and stewardship of natural resources and the conservation and enhancement of existing ecosystems on the installation. Implementation of the INRMP supports DLA's continuing need to ensure the safety and efficiency of its mission while practicing sound natural resources stewardship and complying with environmental policies and regulations (DLA 2018b).

The INRMP was last updated in June 2018, and implementation of the current version has not yet been analyzed for the potential for significant environmental impacts. As such, implementation of the INRMP is addressed in this EA.

2.2 No Action Alternative

Under the No Action Alternative, DLA would not implement the Master Plan, IPMP, or INRMP. DLA would continue to use and maintain existing outdated, undersized, and inefficient buildings and infrastructure, and it would not implement the Future Development Plan, pest management, and natural resources projects in the Master Plan, IPMP, or INRMP. Implementation of the No Action Alternative may hinder the installation's ability to meet its current and future mission requirements and would not meet the purpose of and need for the Proposed Action, as described in **Section 1.2**.

2.3 Alternatives Considered but Eliminated from Detailed Analysis

No action alternatives have been identified for implementation of the Proposed Action. As noted in **Section 2.1.1**, the Future Development Plan includes three COAs. These COAs are not distinct alternatives. The COAs represent general directions that the installation could follow to meet potential future mission requirements. The Future Development Plan does not identify a preferred COA because it is impossible to predict future available funding, evolving mission requirements, political decisions, and Department of Defense and DLA policies for the next 20 years. As such, elements of each COA are likely to be implemented. Consequently, the three COAs are addressed collectively as part of the Proposed Action and are not analyzed as separate alternatives in this EA.

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3 Affected Environment and Environmental Consequences

All environmental resource areas were initially evaluated for potential consequences from implementation of the Proposed Action. The initial evaluation determined that some environmental resource areas would not be impacted or would have clearly insignificant effects. These environmental resource areas are not analyzed in detail in this EA and are described as follows:

Aesthetic and Visual Resources. The Proposed Action would not adversely affect the aesthetics or visual appeal of the installation. The proposed facilities would be constructed in appropriate planning districts (see **Section 3.1.1**) and would follow the design guidelines in the Installation Design Guide, which would ensure a consistent and coherent architectural character throughout the installation. Landscaping would be used to provide an attractive and professional looking installation using plants, shrubs, and trees to blend with the surrounding environment. Some of the proposed projects (e.g., new construction, building repair, demolition of older buildings) would enhance the existing aesthetics. Therefore, long-term, beneficial effects on aesthetics and visual resources would occur from the Proposed Action, and a detailed aesthetics and visual resources analysis is not included in this EA.

Airspace Management and Safety. The Proposed Action would not result in any obstruction to airspace or hazards to airspace management. The nearest airport to the installation is the Tracy Municipal Airport, which is more than 2 miles from the installation (see **Figure 1-1**).

Coastal Zone Management. The Proposed Action would not be sited within a coastal zone nor would it impact a coastal zone.

Cultural Resources. The Proposed Action does not qualify as an undertaking under the National Historic Preservation Act because it is limited to the implementation of the Master Plan, IPMP, and INRMP and considers the location, timing, and design of the projects in these plans. Additionally, there are no archaeological or architectural resources at the installation that are listed or eligible for listing in the National Register of Historic Places (DLA 2015a). As such, the Proposed Action would have no effect on any archaeological or architectural resources listed in or eligible for listing in the National Register of Historic Places, and consultation with the California State Historical Preservation Officer and Native American tribes under Section 106 of the National Historic Preservation Act is unnecessary for the Proposed Action. Section 106 consultation will be conducted on a project-by-project basis, as needed, when the projects become further defined and ready for consultation.

Health and Safety. The Proposed Action would result in negligible beneficial effects on health and safety from replacing older infrastructure and incorporation of current design standards and antiterrorism/force protection criteria into the proposed structures. Health impacts from human exposure to the fungus *Coccidioides immitis* in soil and the associated Valley Fever respiratory infection is discussed in **Section 3.4**.

Socioeconomics. The Proposed Action would have no effects on regional demographics and no change in the demand for housing. No additional personnel would be employed at the installation to support the Proposed Action. Based on the timing of the proposed projects, construction would have

short-term, direct and indirect, negligible and beneficial effects on employment and the local economy through increased employment and the purchase of goods and services. No long-term effects on population, employment and economic activity, or demand for public services would occur from the Proposed Action. Therefore, a detailed socioeconomic analysis of demographics, employment and economic activity, and public services is not included in this EA.

Environmental Justice. The Proposed Action does not involve activities that would result in disproportionately high and adverse human health and environmental impacts on minority, low income, or child populations. Impacts from the Proposed Action would be limited to the installation and would not affect off-installation communities. Therefore, a detailed environmental justice analysis is not included in this EA.

The initial evaluation for potential consequences from the Proposed Action also determined that there is the potential for significant effects on other environmental resource areas; therefore, these environmental resource areas are analyzed in detail in this EA. The detailed analysis in this EA determined that no significant effects from the Proposed Action and No Action Alternative would occur. The following sections describe the non-significant effects that would result from the Proposed Action.

3.1 Land Use and Recreation

3.1.1 Existing Conditions

Defense Distribution Depot, San Joaquin is in unincorporated San Joaquin County, California, just outside the eastern city limits of Tracy, California (see **Figure 1-1**). The Tracy Site is zoned as Public Facilities by San Joaquin County (San Joaquin County 2020). Public Facilities zones are intended to provide for the establishment of major correctional, medical, and infrastructure facilities; publicly owned recreational facilities and areas; educational facilities; police and fire protection facilities; and other support uses likely to benefit the County's residents (San Joaquin County 2016). The Tracy Annex is zoned as General Agriculture by San Joaquin County (San Joaquin County 2020). General Agriculture zones are established to preserve agricultural lands for the continuation of commercial agriculture enterprises (San Joaquin County 2016). The Tracy Annex currently is leased for agricultural purposes (e.g., agricultural row crops and orchard operations) (DLA 2020).

Surrounding communities include the City of Tracy and unincorporated areas of San Joaquin County. Residential land uses, including those within the City of Tracy and rural unincorporated San Joaquin County, are adjacent to the west and southwest of the installation. The remaining properties adjacent to the installation are within unincorporated San Joaquin County and are designated as agricultural except for a small area of industrial land use east of the Tracy Site (San Joaquin County 2017). The Union Pacific Railroad marks the southeastern boundary of the Tracy Site, and the Tracy Site and Tracy Annex are separated from one another by the California Northern Railroad.

The installation is divided into four planning districts. These planning districts were established to guide future development on the installation and minimize incompatible siting of facilities with respect to the installation's five land use categories. The planning districts are shown in **Figure 3-1** and are described as follows:

- **Agricultural District.** The Agricultural District encompasses the entire Tracy Annex and does not include the Tracy Site. This planning district corresponds with the Agricultural land use category where land is devoted to agriculture and crop production.
- **Community/Administration District.** The Community/Administration District is in the northwest corner of the Tracy Site and is comprised of the Community and Administrative land use categories. The Community land use category serves family support, personnel services, medical, religious, commercial, housing, and recreation purposes. Community facilities include the fitness center at Building 103, a running track, and an outdoor basketball court. The Administrative land use category serves general purpose offices, professional services, community services, and technical support facilities. Most administrative facilities are in Building 100.
- **Utility District.** The Utility District is immediately east of the Community/Administration District in the northwest corner of the Tracy Site and contains public works-related buildings, the wastewater treatment plant, and the stormwater holding reservoir. This planning district corresponds with the Installation Maintenance and Support land use category where maintenance, fire, safety, and utility operations occur.
- **Warehouse District.** The Warehouse District encompasses the lower and eastern portions of the Tracy Site and includes warehouses and open storage areas. This planning district corresponds with the Industrial land use category where warehousing, transportation, and light industrial activities are allowed and represents approximately 75 percent of the Tracy Site. The Child Development Center and a fitness center are within the Warehousing District at Building 32 and Warehouse 18, respectively. These two facilities represent incompatible land use sitings (DLA 2020).

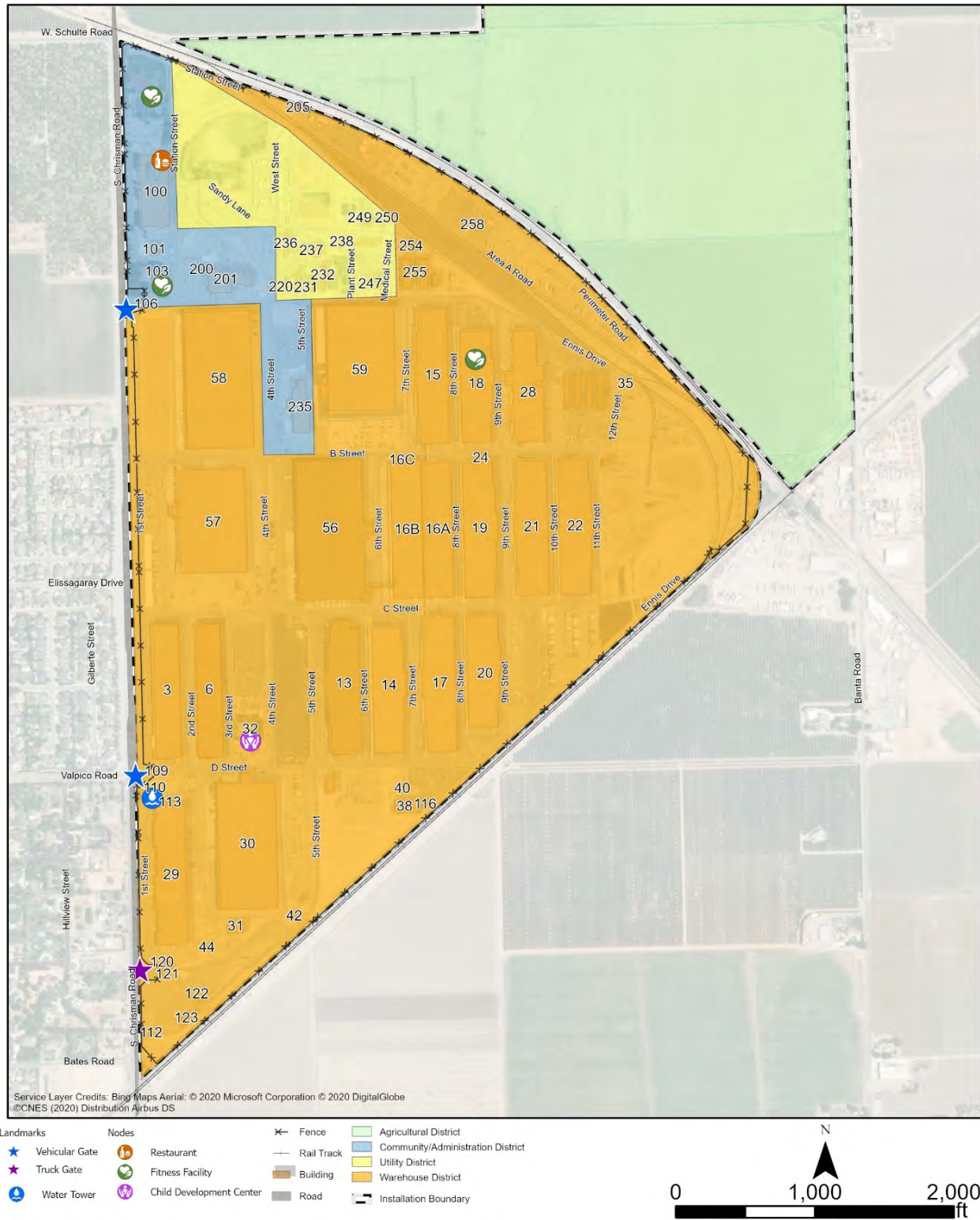
Land use controls (LUCs) have been implemented on portions of the installation to protect human health and the environment from soil and groundwater contamination caused by past activities. The LUCs are designed to prevent human exposure or consumption of contaminated groundwater, limit future development to industrial uses because concentrations of contaminants do not meet residential levels, minimize stormwater infiltration from interacting with contaminated soil and threatening groundwater quality, protect indoor air quality from the intrusion of trichloroethylene and tetrachloroethylene vapor in soil, and protect construction contractors from contamination that has been left in place. There are 18 contamination sites on the Tracy Site where one or more LUCs have been implemented. These sites are further discussed in **Section 3.8.1** and **Appendix B**. A detailed description of the LUCs for each site is provided in the installation's Land Use Control Implementation Plan (DLA 2018c).

3.1.2 Environmental Consequences

Proposed Action

Long-term, moderate, beneficial impacts on land use would occur from implementation of the Proposed Action. Because the Master Plan is a planning document, its implementation would result in the siting of facilities in a manner that fully considers the planning districts, land uses categories, and planning constraints such as applicable LUCs.

Figure 3-1. Planning Districts of Defense Distribution Depot, San Joaquin



The projects listed in the Future Development Plan would be sited so as not to result in incompatible land uses. Under COA 1, the Child Development Center would relocate from Building 32 in the Warehousing District to Building 100 in the Community/Administration District. This relocation would correct an incompatible siting. Under COAs 2 and 3, the Child Development Center would remain within the Warehousing District but other community/administration-type facilities would be sited nearby allowing for a potential future change of land use in the vicinity of Buildings 6 and 32 and compatible development. Other projects such as the installation-wide emergency generators and biomass power plant would be sited within the Utility District and would have no adverse effect on existing land uses or land use planning procedures.

Long-term, minor, beneficial impacts on recreation would occur. Projects such as retrofitting Building 32 into a fitness center and café (for COA 1) and repurposing Building 6 for an indoor fitness center (for COA 2) would benefit recreation at the installation by increasing the quality of fitness opportunities.

No Action Alternative

Land uses at Defense Distribution Depot, San Joaquin and in the surrounding area would remain unchanged from existing conditions. Existing incompatible land use sitings, such as the Child Development Center and a fitness center within the Warehousing District, would remain unchanged. No short- or long-term impacts on land use would occur.

3.2 Noise

3.2.1 Existing Conditions

Noise can be defined as unwanted sound and can result in impacts on humans. The standard unit of measure for sound is decibels, and the A-weighted decibel is a unit of measurement that represents how humans respond to sound.

The ambient noise environment at the installation is affected primarily by warehouse operations and rail traffic on nearby railroad tracks. Specific on-installation sources of noise consist of vehicles, semi-trailers, forklifts, and other cargo-moving machines at the Tracy Site and occasional agriculture equipment at the Tracy Annex. Given these sources of noise at the installation, the ambient noise environment on the installation resembles an industrial setting. Few noise sensitive receptors are on the installation. The Child Development Center at Building 32 and the recreational fields north of Building 100 are the only locations on the installation where noise sensitive receptor populations may exist.

The properties adjoining the installation on three sides (i.e., north, south, and east) are largely used for agriculture and noise from agriculture equipment is occasional. No noise sensitive receptors are present on these properties. The properties adjoining the installation to the west are mainly residential housing and represent noise sensitive receptors. The installation is separated from these properties by Chrisman Road, and the noise environment at these properties is largely dominated by automobile traffic and sounds consistent with a residential area (e.g., dogs barking, children playing). Noise from aircraft flyovers can be heard occasionally. The installation is more than 2 miles from Tracy Municipal Airport so noise from airport operations is negligible.

3.2.2 Environmental Consequences

Proposed Action

Long-term, minor, adverse and beneficial effects on the noise environment would occur from implementation of the Proposed Action. The projects identified in the Future Development Plan include design and siting features to reduce noise levels resulting in a long-term, beneficial effect on the noise environment. These projects would be designed to comply with the Installation Design Guide, which includes noise abatement techniques such as berms, sound barrier walls, and planting of trees and other vegetation as noise buffers in specific areas to screen traffic and industrial areas from surrounding sensitive land uses. Noise from most new facilities would be similar to that of the existing facilities on the installation and typical of an industrial environment. The distance between the installation boundary and off-installation noise sensitive receptors is great enough that noise from the proposed projects would not significantly impact the receptors.

Projects would be sited according to compatible land use for consolidation and separation of these higher noise generating uses from lesser noise areas. Some existing incompatible sitings would be corrected, including relocating the Child Development Center from the Warehouse District to the Community/Administration District under COA 1. Noise from industrial operations at the installation would be less apparent to children at this proposed siting.

The Future Development Plan include a biomass plant on the installation. Biomass plants burn biomass fuel to heat water and produce steam that turns an electricity-generating turbine. During this process, pressurized steam periodically vents, which creates noise. In accordance with Department of Defense Instruction 6055.12, *Hearing Conservation Program*, equipment considered for purchase should have the lowest sound emissions levels that are technologically and economically feasible, which would include installation of vent and blow-off silencers for the proposed biomass plant. The proposed biomass plant would be sited in the Utility District along the northern edge of the Tracy Site where sufficient space exists to site the biomass plant at a proper distance from off-installation noise sensitive receptors, such as residences, to ensure that there would be no significant noise effects on these receptors.

No Action Alternative

Existing conditions would remain the same as described in **Section 3.2.1**. Therefore, no effects on noise would occur.

3.3 Air Quality

3.3.1 Existing Conditions

National Ambient Air Quality Standards have been established for the six criteria pollutants: ozone, which is regulated through its precursors nitrogen oxides and volatile organic compounds; carbon monoxide; nitrogen dioxide; sulfur dioxide; particulate matter, measured as equal to or less than 2.5 microns in diameter (PM_{2.5}) and equal to or less than 10 microns in diameter (PM₁₀); and lead. The portion of San Joaquin County where the installation is located is designated by the U.S. Environmental Protection Agency as nonattainment for ozone (extreme) and PM_{2.5} (serious), maintenance for PM₁₀, and unclassified/attainment for all other criteria pollutants (USEPA 2020a). California has also established its own ambient air quality standards for these pollutants, which in

some cases are stricter than the National Ambient Air Quality Standards, and for sulfates, hydrogen sulfide, and visibility reducing particulates. San Joaquin County has been designated by the California Air Resources Board as nonattainment for ozone, PM₁₀, and PM_{2.5}, and unclassified/attainment for the remaining criteria pollutants and sulfates, hydrogen sulfide, and visibility reducing particulates (CARB 2020).

Defense Distribution Depot, San Joaquin is a synthetic minor source of stationary air emissions. The installation holds several air permits that limit air emissions from stationary sources so that the installation remains below the Title V major source thresholds. Most air emissions on the installation are produced from the operation of emergency generators, paint booths, and other industrial equipment (DLA 2014a).

Ongoing global climate change has the potential to increase average temperatures, alter precipitation patterns, and increase the frequency and severity of droughts in central California. As a result, the regional availability of water, agriculture patterns, wildfire potential, and health of populations could be adversely impacted from climate change (USGCRP 2018).

3.3.2 Environmental Consequences

Proposed Action

Short- and long-term, minor, adverse and beneficial effects on air quality would occur from implementation of the Proposed Action. Construction, demolition, and any type of land disturbance for the projects of the Future Development Plan as well as for the projects of the IPMP and INRMP would produce temporary air emissions from such activities. Based on the timing of these projects, these air emissions would be staggered over approximately 20 years as the various projects are implemented, which would minimize annual emissions. In general, the projects of COA 3 would produce the greatest air emissions because they entail the greatest land disturbance and intensity of activity, while the projects of COA 1 would produce the fewest air emissions because they entail the least land disturbance and intensity of activity. The project to construct a Western Distribution Center would likely produce the greatest air emissions based on the large footprint of the proposed building.

While full implementation of the projects, particularly for COAs 2 and 3, is likely to increase net indoor building space at the installation, many of the projects would replace older and inefficient buildings with modern, energy-efficient, sustainable buildings, which could result in a potential reduction in air emissions from heating these structures. The Future Development Plan also proposes a biomass power plant, microgrid controls, upgrades to backup electric generators and exterior lighting throughout the installation, and a utility scale solar photovoltaic array. Greater use of energy efficient infrastructure as well as renewable energy by the installation would lessen its dependence on fossil fuel-based energy and result in beneficial effects on air quality and a reduction in greenhouse gas emissions from the operational activities of the installation. Such a reduction would negligibly reduce the installation's contribution to the global greenhouse gas inventory and the ongoing effects of global climate change.

While the installation-wide emergency generator project would produce new air emissions, the project also would remove older, more emissive generators located at various buildings across the installation. The installation-wide emergency generator project would use newer, less emissive technology than the current generators, which would result in beneficial effects on air quality. The installation's potential to emit would be updated each time an existing stationary air emissions

source is deactivated or a new stationary emissions source is activated. New stationary emissions sources would be permitted by the San Joaquin Valley Air Pollution Control District. Depending on the projects that are ultimately implemented, it is possible the installation would need to revise its air permits to ensure it remains a synthetic minor source of emissions.

The use of chemical pesticides would result in the emission of negligible quantities of volatile organic compounds. Pesticide emissions are a function of the vapor pressure of the active ingredients of the pesticide and the application method. Emissions would occur during the pesticide application process and within 30 days of application (AFCEC 2018). The IPMP's use of non-chemical control efforts, to the extent possible, prior to using chemical pesticides would minimize volatile organic compound emissions from such activities.

As discussed in **Section 3.5.1**, the installation is not in a floodplain, so no impacts on installation infrastructure are expected should frequency and severity of flooding increase from climate change. No climate change adaptation or mitigation options would be needed. The installation has limited natural ecosystems (see **Section 3.6.1**); therefore, impacts on these resources from the Proposed Action in concert with global climate change is anticipated to be negligible.

No Action Alternative

Existing conditions would remain the same as described in **Section 3.3.1**. Therefore, no effects on air quality would occur.

3.4 Geological Resources

3.4.1 Existing Conditions

Geology. The installation is located along the western border of the San Joaquin Valley, which is in the southern region of the Great Valley Geomorphic Province. The San Joaquin Valley is a structural and topographic basin that gently slopes to the north with an offset western axis. It is bound to the east by the Sierra Nevada Range, which is comprised of metamorphic and igneous rocks covered by sedimentary deposits thousands of feet deep; the Coast Ranges to the west, which are comprised of Cenozoic and Mesozoic aged sedimentary rocks that have been folded and faulted and are covered by metamorphic rocks; and the Sacramento River-San Joaquin River Delta to the north. The upper 10 to 50 feet of the San Joaquin Valley are made up of soils that are being depleted south of the Sacramento River-San Joaquin River Delta (Scheirer and Magoon 2007, USGS 2020a).

The installation is comprised of the Tertiary- and Quaternary-age Tulare formation that has clay, sand, gravel, and silt embedded at depths from 35 to 220 feet. Between 220 and 430 feet, the Corcoran Clay Member (Tulare subunit)—known for lower permeability from the silty sandy clay, clay, and silt embedded—is found. The Lower Tulare Member is found at 430 to 500 feet and consists of gravel, silt, and lenticular deposits of clay (USGS 1983, USGS 2020b).

Topography. The installation is in an upland valley south of the Sacramento River-San Joaquin River Delta. Elevations on the installation range from 47 feet above mean sea level at the northeast corner of Tracy Annex to 114 feet above mean sea level at the southernmost portion of the Tracy Site near Chrisman Road. The topography is gently sloping (USGS 1954). The natural drainage is north-northeast towards a tributary of the Old River.

Soils. With the exception of the northwest area, the Tracy Site is almost exclusively covered by either pavement or buildings. Grading and site construction from previous development has disturbed soils. This disturbed soil unit is Capay-Urban land complex, 0 to 1 percent slopes. The natural soil structure of this unit has been mostly removed, and it is moderately well-drained and while it rarely floods, it may pond. The primary soil at the Tracy Annex is well-drained Capay clay, 0 to 1 percent slopes. El Solyo clay and Stomar clay loams, both with 0 to 2 percent slopes, cover a small area north of the Tracy Site within the southern portion of the Tracy Annex (SCS 1992, NRCS 2019).

Installation soil units are characterized as having “moderately low to moderately high” limiting layers and may indicate the soil has features unfavorable for a specific use, especially when the shrink-swell nature of the soils is taken into account. Additionally, the soils are moderately alkaline, which may create a corrosive effect on ferrous construction materials (SCS 1992, USDA 2018, NRCS 2019).

Valley Fever (coccidioidomycosis) is a respiratory infection caused by a fungus (*Coccidioides immitis*) that lives in the top 2 to 12 inches of soil. The fungus is present in soils within San Joaquin County, and the highest rates are found in the City of Tracy. Disturbance of the soils can disperse the fungal spores, which can be inhaled by people to spread Valley Fever. Symptoms of Valley Fever include cough, fever, chest pain, muscle aches, fatigue, and skin rash. Valley Fever cannot be transmitted from person-to-person, and workers in construction, agriculture, and other professions that entail soil disturbance are at highest risk for exposure. Approximately 60 percent of infections are mild; however, approximately five percent result in hospitalization (SJC PHS 2020, CDPH 2013).

Farmland. The Natural Resources Conservation Service classifies irrigated soils at the installation as prime farmland (SCS 1992, NRCS 2019). The Tracy Annex is the only portion of the installation where soils are irrigated; therefore, prime farmland is not present on the Tracy Site but is present on the Tracy Annex. The California Department of Conservation classifies all soils at the Tracy Site as urban and built-up land and some soils at the Tracy Annex as prime farmland and others as farmland of local importance (California DOC 2016). The Tracy Annex is the only portion of the installation that is actively farmed. DLA leases the Tracy Annex to Philip Martin Farms for farming.

Geologic Hazards. The installation is in the immediate vicinity of four faults: the Black Butte, Midway, Vernalis, and San Joaquin. Other faults within 55 miles of the installation that have experienced historic displacement within the past 200 years include Marsh Creek, Las Positas, Calaveras, Hayward, and San Andreas (California DOC 2010). The U.S. Geological Survey estimates there is a 2 percent chance that an earthquake will occur in a 50-year period in the vicinity of the installation that would produce a peak horizontal acceleration between 0.4 and 1.6 acceleration of gravity (USGS 2019). The high organic alluvium within the county makes it vulnerable to earthquakes, and San Joaquin County has determined it is highly conceivable an earthquake of large magnitude may occur in northern California prior to 2036. With the known geologic and seismic conditions, the installation could expect a moderate to high potential for expansive soils and a moderate potential for liquefaction depending on the location and conditions (San Joaquin County 2017).

3.4.2 Environmental Consequences

Proposed Action

Geology. No effects on geology would occur. No unique geological features or regional stratigraphy, lithology, or geological structures would be impacted by the Proposed Action.

Topography. Long-term, negligible, adverse effects on topography would occur. The projects proposed at the Tracy Site are either renovations of existing buildings or new construction that would be sited on previously disturbed areas resulting in minimal topographical change. Siting the proposed solar photovoltaic array at the Tracy Annex under COA 3 would have negligible impacts on topography given the naturally flat land of the Annex. There is little to no ground disturbance associated with any project of the IPMP and INRMP; therefore, these projects would have no anticipated effect on topography.

Soils. Long-term, minor, adverse effects on soils would occur from the projects of the Future Development Plan. The majority of the projects identified for the Tracy Site would be sited in areas underlain by Capay soils that have already been disturbed and where little natural soil structure remains. Because Tracy Annex soils have only been disturbed by agricultural practices, natural soil structure may be disrupted if the proposed solar photovoltaic array is sited on the Tracy Annex under COA 3. However, the solar photovoltaic array would be designed for fitting onto piles, which would minimize the amount of soil disturbance during construction. The shrink-swell characteristics of the soils at the installation put limitations that generally cannot be overcome without soil reclamation, special design, or installation procedures (SCS 1992, NRCS 2019). Project-specific site plans would limit sedimentation and erosion by incorporating best management practices (BMPs), project timing, and incorporation of sediment-control and soil-erosion measures.

Personnel involved in soil disturbing activities would be at increased risk for exposure to *Coccidioides immitis* and infections of Valley Fever. Measures such as wetting soils prior to disturbance, using equipment with enclosed cabs, positioning workers upwind of soil disturbance activity, ceasing activities during windy conditions, using of respiratory protection, and cleaning equipment and vehicles prior to transport offsite would be implemented to minimize worker exposure and transport of fungal spores (CDPH 2013).

Long-term, minor, beneficial effects on soils would result from implementation of the IPMP and INRMP. The IPMP's use of non-chemical control efforts, to the extent possible, prior to using pesticides and the use of least-toxic pesticides would have beneficial effects on soils. Additionally, no scheduled spraying would occur until a survey confirms the necessity. The INRMP projects include soil erosion, compaction and sedimentation programs, and monitoring of soil conditions from construction activities.

Farmland. No adverse effects on farmland would occur on the Tracy Site portion of the installation because the Tracy Site is not classified as any type of farmland by the Natural Resources Conservation Service or California Department of Conservation.

Long-term, minor, adverse effects on farmland would occur on the Tracy Annex. Siting the proposed solar photovoltaic array on the Tracy Annex under COA 3 would result in the permanent conversion of up to approximately 170 acres of both prime farmland and farmland of local importance to nonagricultural use. Farmland is bountiful to the north, south, and east of the installation, and the loss of 170 acres would not adversely impact the region's ability to sustain farming. Additionally, the

Tracy Annex is leased to Philip Martin Farms for agriculture. The lessee farms large areas throughout the region, and the loss of a portion of the Tracy Annex for farming is unlikely to affect their business. DLA would consult with the U.S. Department of Agriculture regarding conversion of any portion of the Tracy Annex to non-farmland use when the solar photovoltaic array project is further defined and ready for consultation.

Geologic Hazards. Long-term, minor, adverse effects on humans and property could occur from the geologic hazards inherent to the region. To reduce the potential for damage during future earthquake events, new buildings and infrastructure would be designed to meet the regional seismic load and applicable building code.

No Action Alternative

Existing conditions would remain the same as described in **Section 3.4.1**. Therefore, no effects on geological resources would occur with implementation of the No Action Alternative.

3.5 Water Resources

3.5.1 Existing Conditions

Surface Water. The installation has no natural surface water bodies. Natural drainage flows towards Tom Paine Slough, which is approximately 1.25 miles north-northeast of the installation (see **Figure 1-1**). Tracy Site stormwater runoff flows to the north via an underground conveyance system and concrete-lined ditches. It drains to an evaporation/percolation holding reservoir in the northwestern portion of the Tracy Site. Water from high-intensity storm events is pumped off-site to the West Side District canal and is ultimately discharged into the San Joaquin River (DLA 2020). See **Section 3.7.1** for additional information on stormwater systems at the Tracy Site. Tracy Annex stormwater runoff flows to the north following natural topography features. Water that does not evaporate recharges the shallow aquifer when it infiltrates the near-surface sediments.

Groundwater. Groundwater-bearing units beneath the installation are comprised of unconsolidated and interbedded layers of coarse and fine-grained sediments attributed to the Central Valley Aquifer System, which can extend thousands of feet below ground surface (Planert and Williams 1995). The water table depth at the Tracy Site ranges between 20 and 50 feet below ground surface and at the Tracy Annex ranges between 10 and 20 feet below ground surface. Sediment texture changes may cause perched groundwater conditions within 4 feet of the ground surface. The water-bearing sediments of the area are comprised of three hydrologic units. The hydrologic units include a lower confined system extending to deeper saline groundwater, a semi-confined upper unit, and a Corcoran Clay Unit in-between that acts as an aquitard beneath the installation. The upper unit has received past releases of solvents and pesticides, and several plumes have been documented in the groundwater that extended from the Tracy Site to the Tracy Annex (DLA 2020). See **Section 3.8.1** for more information on groundwater contamination.

The Lower Tulare formation is moderately permeable. It can accommodate most industrial, municipal, and agricultural production with groundwater wells producing up to 3,000 gallons per minute (California DWR 2006). The installation's potable water is provided from three on-site groundwater wells (DLA 2013a). See **Section 3.7.1** for details on the potable water system.

Floodplains. The installation is not in a floodplain (San Joaquin County 2009, FEMA 2020). The closest floodplain is associated with the Tom Paine Slough, approximately 1.25 miles north-northeast of the installation.

3.5.2 Environmental Consequences

Proposed Action

Surface Water. Long-term, minor, adverse effects on surface water would occur. The Future Development Plan may increase the amount of impervious surface on the installation, but the increase cannot be estimated because the proposed projects are conceptual. Such an increase in impervious surfaces may result in increased stormwater runoff, which could adversely affect surface water. The installation would implement BMPs and low-impact development (LID) practices in accordance with Section 438 of the EISA (USEPA 2009). Thus, post-development hydrology would be equal to or less than pre-development hydrology to the extent technically feasible using LID approach design techniques to detain, infiltrate, store, filter and evaporate runoff at the source.

Groundwater. Long-term, minor, adverse effects on groundwater would occur. An increase in the amount of impervious surface at the installation may result in less area for surface water to infiltrate to recharge groundwater. Adverse effects would be minimized through long-term stormwater-control measures and LID design applications for groundwater recharge in accordance with Section 438 of EISA. Groundwater quality and natural hydrologic function would be maintained or restored with the implementation of these measures.

There is the potential that a release of hazardous materials, petroleum products, or hazardous wastes could occur and contaminate groundwater. Implementation of applicable federal, state, local, and installation regulations and plans, as described in **Section 3.8.2**, would minimize the potential for releases to reach groundwater.

Floodplains. No effects on floodplains would occur. No projects would be sited in floodplains given that the installation is approximately 1.25 miles from the nearest floodplain.

No Action Alternative

Existing conditions would remain the same as described in **Section 3.5.1**. No new impervious surface would be added to the installation. Therefore, no effects on water resources would occur.

3.6 Biological Resources

3.6.1 Existing Conditions

Vegetation. On the Tracy Site, 401 of the 448 acres are developed for industrial land uses and contain minimal vegetation. The remaining acreage is in the northern and eastern portions of the Tracy Site and contain primarily annual grasslands. Vegetation observed on the installation during biological surveys included nonnative grasses, forbs, and ornamental shrubs and trees. The Tracy Annex is 460 acres of agricultural land and includes row crops such as safflower (*Carthamus tinctoris*) and alfalfa (*Medicago sativa*). A 2012 survey concluded 31 invasive species had been observed at the installation (DLA 2013b).

Wildlife. Fifty-six wildlife species (i.e., 44 birds, eight mammals, two reptiles, and two amphibians) have been observed on the installation during various biological surveys. In the northwestern portion of the Tracy Site, a stormwater evaporation/percolation holding reservoir and two lagoons for the wastewater treatment plant provide foraging and resting habitats for various waterfowl and shorebirds like American coots (*Fulica americana*) and red-winged blackbird (*Agelaius phoeniceus*). This area also provides foraging habitat and water for bats including Yuma myotis (*Myotis yumanensis*), Mexican free-tailed bats (*Tadarida brasiliensis*), pallid bats (*Antrozous pallidus*) and big brown bats (*Eptesicus fuscus*), all of which have been observed on the installation. Additionally, common amphibians such as the bullfrog (*Lithobates catesbeianus*) and Pacific treefrog (*Pseudacris regilla*) are likely to occur in these areas. Wildlife species commonly observed in the landscaped park/ball field area in the northwestern corner of the Tracy Site include great horned owls (*Bubo virginianus*) nesting in trees; Pacific treefrogs throughout the landscaped area using cones, wood pallets, and other objects as cover; and other birds and mammals using the area for foraging, cover, and nesting. There is no suitable habitat for, and no incidental observations of, fish on the installation (DLA 2013b).

The Tracy Annex's agriculture land provides suitable resting and foraging habitat for a range of wildlife species including birds (e.g., red-tailed hawk [*Buteo jamaicensis*], Swainson's hawk [*Buteo swainsoni*], American kestrel [*Falco sparverius*], California horned lark [*Eremophila alpestris actia*], and western meadowlark [*Sturnella neglecta*]), reptiles (e.g., gopher snake [*Pitouphis catenifer catenifer*]), and mammals (e.g., coyote [*Canis latrans*]) (DLA 2013b).

Protected Species. Protected species include federally and state-listed species (California state-listed endangered, threatened, candidate, or species of special concern), birds on the federal Birds of Conservation Concern list, and plants identified by the California Native Plant Society as rare or threatened. Raptors are protected under state law (California Fish and Game Code, Sections 3503, 3503.5, 3505 and 3513, and California Code of Regulations, Title 14, §§ 251.1, 652 and 783 to 786.6) and are considered special-status animals. Federally listed species are protected under the Endangered Species Act, migratory birds are protected under the Migratory Bird Treaty Act (MBTA), and bald eagles are protected under the Bald and Golden Eagle Protection Act. All other listed species are not provided species-specific management but are taken into consideration in developing land management actions and priorities.

Based on the USFWS Information for Planning and Consultation Report, nine federally listed species could occur on or near the installation. These species are the San Joaquin Kit Fox (*Vulpes macrotis mutica*), Giant Garter Snake (*Thamnophis gigas*), California Red-legged Frog (*Rana draytonii*), California Tiger Salamander (*Ambystoma californiense*), Delta Smelt (*Hypomesus transpacificus*), San Bruno Elfin Butterfly (*Callophrys mossii bayensis*), Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*), Vernal Pool Fairy Shrimp (*Branchinecta lynchi*), and Vernal Pool Tadpole Shrimp (*Lepidurus packardii*) (USFWS 2020). No federally listed plant or animal species have been observed at the installation (DLA 2018b).

No state-listed plant species or other special-status plant species classified as rare, threatened, or endangered by the California Native Plant Society have been observed on the installation. One state-listed bird species—the state threatened Swainson's hawk (*Buteo swainsoni*)—and two state-listed species of special concern—the loggerhead shrike (*Lanius ludovicianus*) and the burrowing owl (*Athene cunicularia*)—have been observed on the Tracy Annex (DLA 2013b). Burrowing owls have not been documented during surveys, but this species is incidentally observed on the Tracy Annex a few times each year with the last reported in July 2019 (Paslak 2020). Four other state-listed bird

species (i.e., bald eagle [*Haliaeetus leucocephalus*], bank swallow [*Riparia riparia*], California black rail [*Laterallus jamaicensis coturniculus*], and greater sandhill crane [*Grus Canadensis tabida*]) could infrequently use the installation for foraging or migration. In addition to Swainson's hawk, three other raptor species have been observed on the Tracy Annex: American kestrel (*Falco sparverius*), great horned owl (*Bubo virginianus*), and red-tailed hawk (*Buteo jamaicensis*). Although these species are not protected by state regulations, they are protected under the MBTA. Those species and other migratory birds might use the area for nesting, foraging, or resting during migration (DLA 2013b).

The installation falls within the USFWS designated Delta Smelt critical habitat; however, there are no perennial water sources or suitable fish habitat on the installation to support this species. There are no known proposed critical habitats for listed species on the installation (USFWS 2020, DLA 2018b).

Wetlands. Wetlands include marshes, swamps, bogs, and other similar areas considered high resource value aquatic sites. The U.S. Army Corps of Engineers conducted a jurisdictional determination at the installation in 1996. There are no known Section 404 of the Clean Water Act regulated wetlands on the installation; however, there is a stormwater evaporation/percolation holding reservoir that supports the function and structure of a wetland (DLA 2018b). While there are vernal pools and seasonal wetlands that support listed species outside the installation, none were observed on the installation during site surveys (DLA 2013b).

3.6.2 Environmental Consequences

Proposed Action

Vegetation. Long-term, minor, adverse and beneficial effects on vegetation would occur. Most projects of the Future Development Plan would be sited in developed or previously disturbed areas on the Tracy Site where little vegetation currently exists. The proposed solar photovoltaic array would be sited on the Tracy Annex under COA 3; therefore, crop vegetation would be lost at that location. The siting of projects is not expected to result in a loss of native vegetation given the lack of native vegetation on the installation. The IPMP addresses weed control and identifies sensitive areas that would be considered before implementing pest controls. Additionally, the INRMP projects include strategies to enhance and protect wildlife habitats (i.e., riparian, terrestrial, aquatic, wetlands) for beneficial effects on vegetation.

Wildlife. Long-term, minor, adverse and beneficial effects on wildlife species and their habitats would occur. There is no documented native wildlife or suitable habitat on the portions of the Tracy Site where the projects would be sited. The Tracy Annex provides resting and foraging for various migratory and native bird species and cover and foraging area for mammals, which would be reduced if the proposed solar photovoltaic array is sited on the Tracy Annex under COA 3. However, similar agricultural habitat occurs elsewhere at the Tracy Annex and in the surrounding area. Where possible, riparian vegetation, marsh, and large trees at the stormwater holding reservoir, two lagoons for the wastewater treatment plant, and undisturbed open space would be maintained as habitat for wildlife species. The INRMP includes programs and measures to enhance and protect wildlife habitats (i.e., riparian, terrestrial, aquatic, wetlands) and routine habitat assessments and monitoring would have beneficial effects on wildlife. Several projects would be implemented to survey or inventory wildlife on the installation. Information obtained from these efforts would help installation personnel manage wildlife resources.

Protected Species. Long-term, minor, adverse and beneficial effects on protected species would occur. No federally listed endangered or threatened species are known to occur on the installation; therefore, the Proposed Action would have no effect on federally listed species. The installation does fall within USFWS designated Delta Smelt critical habitat; however, there are no perennial water sources or suitable fish habitat on the installation (USFWS 2020, DLA 2018b). Therefore, the Proposed Action would have no effect on designated critical habitat.

Three state-protected bird species have been documented at the Tracy Annex. If the proposed solar photovoltaic array is sited on the Tracy Annex under COA 3, an adverse effect from the reduction in habitat used by these state-protected bird species would occur. However, similar habitat occurs widely in the area. The California Burrowing Owl Consortium survey protocols would be conducted prior to constructing the proposed solar photovoltaic array in any area with suitable burrowing owl habitat and applicable mitigation and protective measures would be implemented. A 500-foot buffer and a pedestrian survey of the project area would be conducted prior to any activities within suitable burrowing owl habitat. If burrows or burrowing owls are detected, a breeding season survey and census would be conducted. A preconstruction survey might be required no more than 30 days prior to any ground-disturbing activity. If activities must occur within 164 feet of an occupied burrow during the non-breeding season (September 1 through January 31), then on-site passive relocation would be implemented. No ground-disturbing activities would occur within 246 feet of an occupied burrow during the breeding season (February 1 through August 31) (CBOC 1993).

Long-term, minor, adverse effects on migratory birds would occur. MBTA-listed bird species occur on the installation year-round and nest there from February 15 through August 31 annually. Due to the lack of natural surface waters and natural vegetation at the installation, significant long-term impacts on bird species would not occur from the siting, timing, and design of the projects. With respect to project timing, it is recommended that construction be performed outside the nesting season (i.e., February 15 through August 31). Implementation of a seasonal restriction would avoid take of most breeding birds, their nests, and their young (i.e., eggs, hatchlings, fledglings).

To ensure compliance with the Endangered Species Act, the IPMP periodically evaluates on-going and proposed pest-control operations. Implementation of formal INRMP management plans and routine assessments and monitoring of these special status species would provide a method for protecting these species and a baseline of data that can be used to prioritize projects and identify efficient allocation of resources.

The Proposed Action does not qualify as an action under the Endangered Species Act because it is limited to the implementation of the Master Plan, IPMP, and INRMP and considers the location, timing, and design of the projects in these plans. Therefore, consultation with the USFWS under Section 7 of the Endangered Species Act is unnecessary for the Proposed Action. Section 7 consultation will be conducted on a project-by-project basis, as needed, when the projects become further defined and ready for consultation.

Wetlands. No effects on U.S. Army Corps of Engineers jurisdictional wetlands would occur because the installation does not contain any such wetlands. When possible, operational impacts to wetland vegetation at the stormwater holding reservoir would be minimized (DLA 2018b).

No Action Alternative

Existing conditions would remain the same as described in **Section 3.6.1**. Therefore, no effects on biological resources would occur. The No Action Alternative does not provide for the formal

implementation of a routine habitat assessment and monitoring program that would occur if the INRMP were implemented. As a result, the health and condition of the wildlife populations would not improve, and management measures to increase the abundance and biodiversity of wildlife would not be implemented. Although the management measures proposed in the INRMP would not be implemented, the management measures currently employed by the installation would continue to ensure the installation remains in compliance with applicable federal and state natural resources regulations.

3.7 Infrastructure and Transportation

3.7.1 Existing Conditions

Electrical System. The electrical system at the installation is owned and managed by DLA and consists of overhead and underground lines. Electrical service is provided by Pacific Gas and Electric, which owns and maintains the incoming transmission line and main circuit breakers. Backup power is available through several emergency generators throughout the installation and are used to power mission-critical functions, emergency lighting, and alarm systems. The installation's annual electrical peak demand for fiscal year (FY) 2011 was approximately 21.5 million kilowatt hours (DLA 2013c).

Natural Gas System. Defense Distribution Depot, San Joaquin owns and operates the natural gas distribution system at the Tracy Site. Natural gas at the installation is provided by Pacific Gas and Electric via a single point of entry. The annual natural gas usage for FY2011 was approximately 51,000 million British thermal units. The existing natural gas capacity at the Tracy Site meets mission needs and is expected to accommodate planned development (DLA 2013c).

Liquid Fuel System. Gasoline and diesel are used as vehicle fuels at the installation, while propane is primarily used to fuel forklifts (DLA 2020). Propane is also used at some facilities for space and water heating and cooking. The annual gasoline usage for FY2011 was approximately 10,700 gallons, while the annual diesel usage was approximately 47,000 gallons. The annual propane usage was approximately 150,000 gallons. All liquid fuels at the installation are stored in aboveground storage tanks. No underground tanks are used for fuels storage (DLA 2013c).

Potable Water System. Potable (i.e., drinking) water at the Tracy Site is provided by three on-site groundwater wells (Wells 7, 8, and 9) that are owned and managed by Defense Distribution Depot, San Joaquin. The installation also owns and maintains two water storage tanks and 19 miles of distribution piping. Wells 8 and 9 pump groundwater to a water treatment plant that disinfects the water with chlorine before discharging it to a 500,000-gallon ground-level storage tank. The water is delivered via booster pumps to the water distribution system. System pressure is maintained by an elevated 250,000-gallon storage tank, which also accepts and treats water from Well 7. The installation uses water for domestic purposes (e.g., faucets and toilets), landscape irrigation, and fire suppression. The installation's fire-suppression system is served by dedicated fire pumps that draw water directly from the 500,000-gallon storage tank and provide water to the sprinkler systems in newer buildings. The annual water use for FY2011 was approximately 34,600,000 gallons (DLA 2013a).

Sanitary Sewer and Wastewater System. Wastewater is collected through a sewer system and conveyed to an on-installation wastewater treatment plant. Following treatment, wastewater is discharged to two on-site lagoons and either infiltrates into underlying groundwater or evaporates.

No wastewater is discharged to surface water (DLA 2013a). Average discharge into the lagoons is 30,000 gallons per day with peak flows of 70,000 gallons per day and a total discharge capacity of 350,000 gallons per day. The installation also maintains a Sewer System Management Plan that was last updated in 2012 (DLA 2020).

Stormwater System. Stormwater at Defense Distribution Depot, San Joaquin is managed through a system of drain inlets, pipes, open channels, and pumping stations. Stormwater is conveyed to a holding reservoir in the northwest corner of the Tracy Site. The reservoir has a capacity of 24.4 acre-feet, and water naturally percolates or evaporates. Water from high-intensity storm events is pumped off-site to the West Side District canal and is ultimately discharged into the San Joaquin River (DLA 2020). The Tracy Annex does not have a stormwater management system.

Defense Distribution Depot, San Joaquin does not perform activities that are regulated by a National Pollutant Discharge Elimination System industrial stormwater permit. A Notice of Termination for the installation's industrial stormwater permit was filed effective November 2015. The installation maintains a Stormwater Pollution Prevention Plan for the Tracy Site as a BMP. The Stormwater Pollution Prevention Plan identifies sources of pollutants that may affect the quality of stormwater discharges and identifies and implements site-specific BMPs to reduce or prevent polluted stormwater discharges (DLA 2012).

Communications System. A telephone switch at the installation with a 3,000-port capacity is currently operating at less than 70 percent capacity and is managed through a service contract with a communications contractor. Communications lines at the installation are both underground and pole-mounted (DLA 2020).

Solid Waste Management. Defense Distribution Depot, San Joaquin manages discarded materials through contracts with local service providers for collection, processing, and disposal. Recyclables are collected, marketed, and sold to a private contractor (DLA 2020). The installation recycles cardboard, paper, plastic, and metal through various service providers. Reusable pallets, scrap wood, and broken pallets are managed on-site. Yard trimmings, food scraps, and compostable paper (e.g., napkins and paper food wares) are composted at the discretion of the waste contractor. More than 3,000 tons of waste was disposed of and recycled in 2011 (DLA 2013a). The installation operates in accordance with a Solid Waste Management Plan (DLA 2020). No solid waste is generated at the Tracy Annex.

Transportation. Defense Distribution Depot, San Joaquin is bounded by Chrisman Road at the western perimeter, 11th Street at the northern perimeter, Banta Road at the eastern perimeter, and a railroad at the southern perimeter. Interstate Highway 205 is north of the installation. This highway becomes Interstate Highway 580 west of Tracy and connects the city with the San Francisco Bay Area.

The Tracy Site can be accessed via three access control points (ACPs) along Chrisman Road (DLA 2019). The Main Gate is on D Street (Valpico Road off-installation). The Truck Gate is on an unnamed roadway and provides access for large commercial vehicles. The Employee Gate is on Ennis Drive at the northwest corner of the installation and provides access to administrative buildings and other personnel facilities. There are designated left-turning lanes for vehicles travelling south on Chrisman Road to the installation and right merge lanes on Chrisman Road for vehicles exiting the installation to accommodate traffic flow. The ACPs have experienced queueing issues resulting in traffic backups on Chrisman Road during peak travel times. DLA is planning a project

separate from the Master Plan to upgrade the Main Gate ACP with new entry control infrastructure and a traffic signal (DLA 2018d). Further details on the Main Gate ACP project are provided in **Section 4.1**.

The Tracy Site roadway network was originally designed on a grid; however, as the installation expanded and warehouses were replaced with larger ones, the grid was shifted and thoroughfares were disconnected. The primary north-south roadways include 4th, 8th, and 9th Streets, and the primary east-west roadways include Ennis Drive, B Street, C Street, and D Street. All other roads on the installation are connected to these primary roads. The traffic level of service at the Tracy Site is below optimal. Currently, 9th Street is the only continuous north-south thoroughfare across the installation and cannot effectively carry the installation's traffic because of its location, condition, and narrow gaps between warehouses. The Tracy Annex does not have ACPs or an established roadway network. Dirt roads within the Tracy Annex can be accessed from 11th Street, Chrisman Road, and Banta Road (DLA 2020).

Parking at the Tracy Site is in designated lots, striped parking, and along streets in high-traffic areas. Pedestrian facilities at the Tracy Site are limited and focused near ACPs for walk-in functions. Pedestrian crossings are marked throughout the industrial areas, but many link areas that do not have an associated walkway system. Personnel at the installation use the outdoor recreation complex in the northwest portion of the installation and roadway networks for biking and jogging purposes (DLA 2020). Public transportation is provided by San Joaquin Regional Transit, which offers bus service connecting Stockton, Lodi, Tracy, Manteca, Ripon, and Lathrop. However, there are no bus stops with direct access to Defense Distribution Depot, San Joaquin (San Joaquin RTD 2020).

The Union Pacific Railroad, adjacent to the southern boundary of the installation, is a major freight carrier in the San Joaquin Valley. The railroad covers two-thirds of the country and is focused on transporting food, agricultural products, and stone. The California Northern Railroad, which separates the Tracy Site from the Tracy Annex, runs local trains approximately 60 miles along the Interstate Highway 5 corridor from Tracy to Los Banos to the south. There is a former railroad yard and associated tracks on the installation; however, they are no longer used by Defense Distribution Depot, San Joaquin to transport materials. The installation uses over-the-road truck transport as a mode of moving and shipping supplies (DLA 2020).

3.7.2 Environmental Consequences

Proposed Action

All projects of the Future Development Plan are proposed to be sited in locations containing or adjacent to existing utility services and roadways. Therefore, only minor utility extensions would be needed to connect the project locations and additional roadways would not need to be constructed. The projects of the Future Development Plan would be initiated at different times over the next 20 years, which would minimize temporary utility interruptions as the project sites are disconnected and reconnected to the various utility systems.

Electrical System. Long-term, moderate, beneficial impacts on the electrical system would occur from the Proposed Action. Although electrical demand would increase because of the overall increase in interior space, all new facilities would incorporate energy efficiency into their design to minimize electrical demand and meet future electrical needs. As a result, the increase in electricity

demand from the new facilities would be offset through improved efficiency and greater use of renewable sources. The Future Development Plan includes renewable energy projects such as a 3-megawatt biomass power plant; microgrid controls; and a 26-megawatt, utility scale solar photovoltaic array. These projects would allow the installation to improve electrical system reliability, increase energy self-sufficiency, and reduce reliance on non-renewable energy sources.

Natural Gas System. Long-term, minor, adverse impacts on the natural gas system would occur from the Proposed Action. All new construction at the Tracy Site would be connected to natural gas for heating resulting in an increased demand for natural gas. However, as noted for the electrical system, all new facilities would incorporate energy efficiency into their design, which would help to reduce natural gas demand. The installation's natural gas system is anticipated to have sufficient capacity to accommodate planned development (DLA 2013c); therefore, impacts would be less than significant.

Liquid Fuel System. Long-term, minor, adverse and beneficial impacts on liquid fuel demand would occur from the Proposed Action. Most of the projects of the Future Development Plan would have no direct impacts on gasoline and diesel fuel consumption; however, the project to implement an installation-wide emergency generator would require additional petroleum products to be delivered and stored on the installation to fuel the generator. All new construction at the Tracy Site would be connected to natural gas for heating (DLA 2013c); therefore, a slight decrease in propane demand would occur if facilities that use propane for space and water heating are replaced.

Potable Water System. Long-term, minor, beneficial impacts on the potable water supply and delivery system would occur from the Proposed Action. The replacement of Well 7 is a project of the Future Development Plan that would improve the reliability of the installation's water supply system. Although an increase in the number of faucets may result from the projects of the Future Development Plan, implementation of water-efficiency measures and other water conservation efforts would improve the performance and efficiency of the potable water system at the installation. Overall, the Proposed Action would reduce water use at the installation and improve delivery for building uses, irrigation, and fire suppression.

Sanitary Sewer and Wastewater System. Long-term, minor, adverse impacts on the sanitary sewer and wastewater system would occur from the Proposed Action. Although an increase in the number of faucets may result from the projects of the Future Development Plan, incorporation of sustainable building practices would maximize water efficiency and minimize wastewater generation. The installation's wastewater treatment plant has sufficient capacity to handle additional volumes because it is operating at only 20 percent of capacity during peak demand.

Stormwater System. Long-term, minor, adverse impacts on the stormwater system would occur from the Proposed Action. The Future Development Plan may increase the amount of impervious surface on the installation, but the increase cannot be estimated because the proposed projects are conceptual. Such an increase in impervious surfaces could result in increased stormwater runoff and increased demand for the installation's stormwater systems. However, the proposed projects would incorporate stormwater management recommendations such as the use of green stormwater infrastructure (e.g., landscaped areas, cisterns, rain gardens) to reduce the amount of runoff thereby decreasing demand on the stormwater management system. Additionally, as noted in **Section 3.5.2**, the installation would implement BMPs and LID practices in accordance with Section 438 of the EISA (USEPA 2009). Thus, post-development hydrology would be equal to or less than pre-development hydrology to the extent technically feasible using LID approach design techniques to

detain, infiltrate, store, filter and evaporate runoff at the source. These measures would minimize the adverse impacts on the installation's stormwater system from additional impervious surface.

Communications System. Long-term, minor, beneficial impacts on the communications system would occur from the Proposed Action. Designs for new building construction and expansions would include new communications infrastructure. The installation's communications system has sufficient capacity to handle an increase in demand because the system is currently operating at less than 70 percent capacity.

Solid Waste Management. Long-term, minor, adverse and beneficial impacts on solid waste management would occur from the Proposed Action. Additional missions and personnel may increase the volume of solid waste generated on the installation. Recycling programs would continue to be implemented and solid waste would continue to be managed in accordance with the installation's Solid Waste Management Plan. The wood pallet recycling program listed in the Future Development Plan would facilitate the overall recycling program at the installation and increase solid waste diversion rates.

Transportation. Long-term, minor, adverse and beneficial impacts on the transportation system would occur from the Proposed Action. The projects of the Future Development Plan may require reconfiguration of the on-installation road network to accommodate the siting of buildings, parking, and access roads, which would further disrupt the original grid design. The establishment of a Western Distribution Center under COA 3 in a new large warehouse would require the most alteration to the road design. The Western Distribution Center and a potential increase in missions at the installation could increase the frequency of truck deliveries and daily personnel commutes to and from the installation, which would cause increased traffic volumes at the ACPs, increased vehicles on regional roadways, and increased demand for parking spaces. However, the projects of the Future Development Plan would be designed to include sufficient roadway and parking improvements to ensure that these projects do not significantly adversely impact traffic patterns and parking availability on the installation. The projects also would include sufficient pedestrian facilities to link complementary functions and encourage pedestrian and cyclist movement. The cumulative effects on transportation from the Proposed Action and upgrades to the Main Gate ACP are discussed in **Section 4.1**.

No impacts on the railroads or public transportation options in the region would occur. The Proposed Action would not restore railroad service to the installation nor would it provide public bus service.

No Action Alternative

Infrastructure and transportation would remain the same as described in **Section 3.7.1**. Utility demand and roadway configurations would not change. Inefficient buildings and infrastructure would not be replaced with modern, energy-efficient buildings and infrastructure. No effects on infrastructure and transportation would occur.

3.8 Hazardous Materials and Wastes

3.8.1 Existing Conditions

Hazardous Materials, Petroleum Products, and Hazardous Wastes. Hazardous materials and petroleum products are used and stored in various locations across the installation for everyday use and as mission stock. The use of hazardous materials and petroleum products results in the generation and storage of hazardous wastes and used petroleum products. Defense Distribution Depot, San Joaquin is a Resource Conservation and Recovery Act Large Quantity Generator of hazardous waste (i.e., generates more than 1,000 kilograms of hazardous waste in any one month) with facility identification number CA4971520834 (USEPA 2020b). Building 38 is the installation's hazardous materials pharmacy and hazardous waste accumulation area (DLA 2014b).

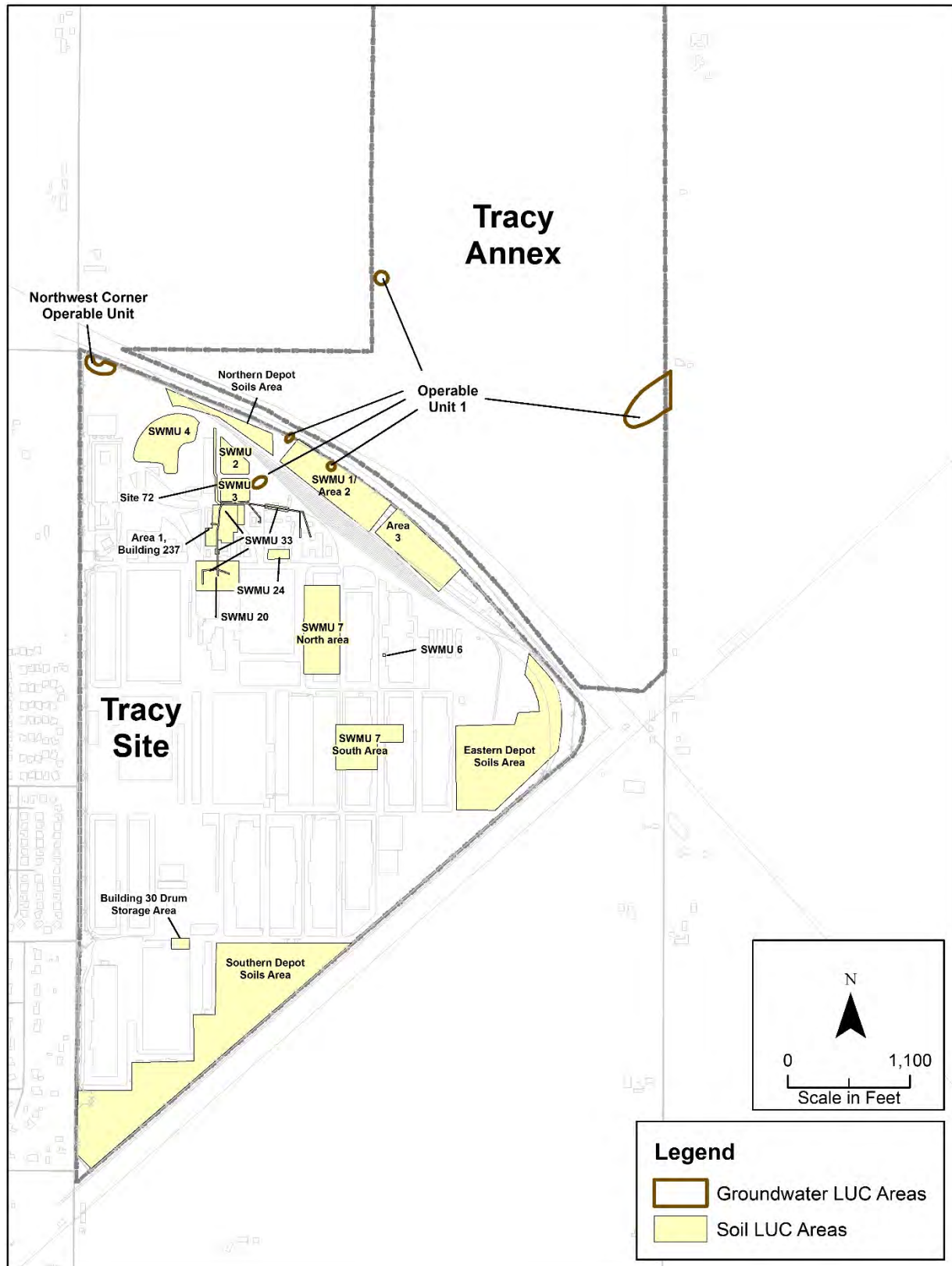
Defense Distribution Depot, San Joaquin has a Hazardous Waste Management Plan that identifies roles and responsibilities, record keeping requirements, and spill contingency and response requirements for hazardous waste management (DLA 2014b). The installation also has a Spill Contingency Plan and a Spill Prevention, Control, and Countermeasure Plan, which identify procedures and responsibilities for responding to spills of oils and hazardous substances (DLA 2014c, DLA 2015b).

Environmental Contamination. Soil and groundwater contamination has been documented at multiple locations on the Tracy Site and Tracy Annex. The installation currently manages 18 environmental contamination sites, and each site is subject to one or more LUC. **Figure 3-2** shows the location of these contamination sites, and **Appendix B** summarizes the sites. As described in **Section 3.1.1**, the LUCs imposed on the sites are designed to prevent human exposure or consumption of contaminated groundwater, limit future development to industrial uses because concentrations of contaminants do not meet residential levels, minimize stormwater infiltration from interacting with contaminated soil and threatening groundwater quality, protect indoor air quality from the intrusion of trichloroethylene and tetrachloroethylene vapor in soil, and protect construction contractors from contamination that has been left in place. A detailed description of the LUCs for each site is provided in the installation's Land Use Control Implementation Plan (DLA 2018c).

Several of the projects of the Future Development Plan would be sited within environmental contamination sites. Specific examples include the paved police training area, Well 7 replacement, and Banta Road secondary access within the Southern Depot Soil Area; a vehicle and equipment maintenance building within Solid Waste Management Unit 20; and the solar photovoltaic array under COA 2 within the Northern Depot Soils Area, Eastern Depot Soils Area, Solid Waste Management Unit 1/Area 2, Area 3, and Operable Unit 1. Other installation-wide projects such as building renovations; warehouse retrofits; and security, utility, lighting, and signage upgrades may coincide with numerous environmental contamination sites.

Toxic Substances. Toxic substances pose a risk to human health and are addressed separately from hazardous materials and hazardous wastes. They include asbestos-containing materials (ACMs), lead-based paint (LBP), and polychlorinated biphenyls (PCBs), all of which are typically found in buildings and utilities infrastructure.

Figure 3-2. Environmental Contamination Sites and Groundwater Plumes on Defense Distribution Depot, San Joaquin



ACMs are generally found in building materials such as floor tiles, mastic, roofing materials, pipe wrap, and wall plaster. USEPA has implemented several bans on various ACMs between 1973 and 1990, so ACMs are most likely in older buildings (i.e., constructed pre-1990). According to the installation's Asbestos Survey Report and Management Plan, many older buildings on the installation are known to contain ACMs. Of the buildings proposed for renovation or demolition in the Future Development Plan, Buildings 6, 13, 14, 17, 18, 20, 56, and 100 have been documented as containing ACMs (DLA 2009).

Lead was commonly used in paint for many years. The federal government banned the use of most LBP in 1978; therefore, it is assumed that all structures constructed prior to 1978 could contain LBP.

PCBs are man-made chemicals that persist in the environment and were widely used in construction materials and electrical products prior to 1979. All structures constructed prior to 1979 potentially include PCB-containing building materials. Older electrical infrastructure also might contain PCBs. All electrical infrastructure identified as containing PCBs have been removed from the installation; however, PCB-containing fluorescent light ballasts and other PCB-containing equipment might be present within some older buildings.

Radon. USEPA rates San Joaquin County, California, as radon zone 3. Counties in zone 3 have a predicted average indoor radon screening level less than 2 picoCuries per liter (USEPA 1993). Radon gas accumulations greater than 4 picoCuries per liter are considered to represent a health risk to occupants.

Pesticides. The installation uses an integrated pest management approach to minimize the types and quantities of pesticides used at the installation. The least-toxic chemical controls are used, where appropriate. Pesticides used on the installation are stored and mixed in Building 238. Spill cleanup kits are kept in the pesticide storage areas and on pest control vehicles. All pesticides are applied in accordance with manufacturer label instructions and the IPMP (DLA 2018a).

3.8.2 Environmental Consequences

Proposed Action

Hazardous Materials, Petroleum Products, and Hazardous Wastes. Long-term, minor, adverse and beneficial effects would occur. Most of the projects of the Future Development Plan would have no long-term effects on the overall use/generation, storage, and management of hazardous materials, petroleum products, and hazardous wastes at the installation; however, the project to implement an installation-wide emergency generator would require additional petroleum products to be stored on the installation to fuel the generator and the project to establish a new vehicle and equipment maintenance building would require changes to hazardous materials and hazardous wastes storage. New hazardous materials storage and hazardous waste collection points would be established in new or repurposed buildings and removed from demolished buildings, as needed. Hazardous materials, petroleum products, and hazardous wastes would be stored and managed in accordance with applicable federal, state, local, and installation regulations and plans. The installation's Hazardous Waste Management Plan, Spill Contingency Plan, and a Spill Prevention, Control, and Countermeasure Plan would be amended, as needed. The installation's status as a Resource Conservation and Recovery Act Large Quantity Generator would not be expected to change from implementation of the Proposed Action.

Environmental Contamination. No effects would occur from the installation's 18 environmental contamination sites. These sites would not affect the ability to implement the Master Plan or its component plans. While some projects of the Future Development Plan would coincide with environmental contamination sites, the Master Plan is a planning document and these projects were sited to be consistent with the applicable LUCs. The installation's Environmental Office would review all projects prior to implementation to determine if special design requirements or regulatory/contractor notification procedures are necessary. Where required, future buildings would be designed to prevent the migration of soil vapor to indoor air.

Some of the proposed projects would overlay groundwater plumes. The groundwater treatment processes and monitoring requirements for these plumes would continue, and project siting would avoid or replace groundwater monitoring wells. Groundwater from within the plumes would not be used for potable purposes. The proposed Well 7 replacement project would occur on the southern end of the Tracy Site, which is the farthest portion on the installation from the plumes and hydrologically upgradient.

Toxic Substances. Long-term, minor, beneficial effects would occur from the removal of ACMs, LBP, and PCBs. Implementation of the projects of the Future Development Plan would demolish older buildings, which are more likely to contain ACMs, LBP, and PCBs, from the installation and replace them with newer buildings, which would be designed to be free of ACMs, LBP, and PCBs. Building renovations also could remove ACMs, LBP, and PCBs depending on the scope of renovation. Removal of these toxic substances from the installation would be beneficial because of an overall decrease in the amount of these materials to maintain.

Radon. No effects from radon would occur. In accordance with Unified Facilities Criteria 3-490-04A, *Indoor Radon Prevention and Mitigation*, DLA would design (passive and active systems, as applicable) and test the newly constructed and renovated buildings to reduce indoor radon levels to less than 4 picoCuries per liter.

Pesticides. Long-term, minor, beneficial effects on pesticide management would occur. Implementation of the IPMP would reduce the reliance on chemical pesticides by requiring non-chemical control methods to be exhausted before the use of chemical pesticides. Additionally, implementation of the IPMP would minimize pesticide contamination by ensuring that only authorized pest control vehicles with lockable storage compartments and spill containment are used to transport pesticides from Building 238 to the application sites.

No Action Alternative

Conditions would remain the same as described in **Section 3.8.1**. Therefore, no effects on hazardous materials and wastes would occur.

4 Cumulative and Other Effects

4.1 Cumulative Effects

Cumulative effects are the incremental effects of a proposed action when added to the aggregate effects of other past, present, and reasonably foreseeable future actions. For this analysis, the temporal span of the Proposed Action is 20 years. The geographic boundaries of cumulative analysis vary depending on the resource and potential effects. For most resources, the spatial area of consideration for cumulative effects is the installation and adjacent properties; however, resources with farther-reaching effects, such as air quality, are analyzed with a regional perspective.

For most resource areas, the effects of past actions are now part of the existing environment described in **Section 3**. Identification of actions occurring at and adjacent to the installation during the same time as the Proposed Action ensures that all present and reasonably foreseeable future actions that have the potential to result in cumulative effects are taken into consideration. The present and reasonably foreseeable future actions identified for this cumulative effects analysis are the following:

- Construction, demolition, renovation, and operations associated with the projects of the Future Development Plan. These projects would occur over 20 years.
- Upgrade the Main Gate ACP. The ACP at the intersection of D Street (Valpico Road off-installation) and Chrisman Road would be replaced with a modern facility. A new visitor center, identification check point, vehicle inspection area, overwatch building, active and passive vehicle barriers, security fencing, and asphalt pavement would be constructed. Building 3, Guard Booth 109, Guard Booth 106, Inspection Cover 119, and asphalt pavement would be demolished prior to construction. A traffic signal would be installed at the intersection of D Street/Valpico Road and Chrisman Road. Construction is anticipated for 2021 (DLA 2018d).

All environmental resource areas were initially evaluated for potential direct impacts from the Proposed Action. The initial evaluation determined that some environmental resource areas (i.e., aesthetic and visual resources, airspace management and safety, coastal zone management, cultural resources, health and safety, socioeconomics, and environmental justice) would not be directly impacted and were not analyzed in detail in this EA. As determined through the analyses provided in **Section 3**, beneficial effects on land use and recreation would be anticipated from the Proposed Action. Therefore, land use and recreation was not evaluated for potential cumulative effects.

The Proposed Action, when combined with past, present, and reasonably foreseeable future actions, would not result in cumulatively significant effects on any resource area. The resource areas that have the potential to be cumulatively affected by the Proposed Action are presented in the following paragraphs. These paragraphs describe the non-significant cumulative effects that would occur from the Proposed Action when combined with past, present, and reasonably foreseeable future actions.

Noise. Temporary increases in noise would occur from the use of equipment and vehicles to support construction, demolition, and renovation for the cumulative actions. Such noise would be limited to

areas in the vicinity of the actions. Selective siting and design of new construction would minimize long-term noise effects of future development. Noise sensitive receptors at the installation, such as the Child Development Center at Building 32 and recreational fields north of Building 100, would be most susceptible to these temporarily increased noise levels. Residences and schools would not be expected to be affected.

Air Quality. Temporary increases in air emissions would occur from the use of equipment and vehicles to support construction, demolition, and renovation for the cumulative actions. Permanent increases in air emissions would occur from new stationary sources (e.g., generators, furnaces, boilers, fuel tanks). However, the removal of existing stationary air emissions sources and implementation of energy efficient and renewable energy infrastructure would reduce air emissions. The installation's potential to emit would be updated each time an existing stationary air emissions source is deactivated or a new stationary emissions source is activated. New stationary emissions sources would be permitted by the San Joaquin Valley Air Pollution Control District. Depending on the projects that are ultimately implemented, it is possible the installation would need to revise its air permits to ensure it remains a synthetic minor source of emissions.

Geological Resources. Temporary increases in soil erosion and sedimentation from excavation, grading, and filling would occur during construction for the cumulative actions. Adverse effects would be minor because the majority of the installation is underlain by previously disturbed soils.

Water Resources. Added impervious surfaces from the cumulative actions may increase the amount of stormwater runoff and reduce the amount of surface area available for groundwater recharge. BMPs and LID practices would be implemented to minimize stormwater runoff and increase groundwater infiltration.

Biological Resources. Moderate, adverse, cumulative effects on vegetation, wildlife, and protected species would occur because past actions have highly developed the installation and surrounding area leaving only a minimal amount of native vegetation, wildlife habitat, and habitat capable of supporting protected species in and surrounding the installation.

Infrastructure and Transportation. Construction, demolition, and renovation associated with the cumulative actions could result in temporary disruptions of utilities and transportation services on the installation. Beneficial cumulative effects on transportation would occur from the Main Gate ACP upgrade, which would improve traffic circulation on and adjacent to the installation. The Main Gate ACP upgrade would help to alleviate the queueing issues that currently result in traffic backups on Chrisman Road during peak travel times and provide additional vehicle capacity to support future development under the Master Plan.

Hazardous Materials and Wastes. Construction, demolition, and renovation associated with the cumulative actions would temporarily increase the use of hazardous materials and petroleum products and the generation of hazardous wastes resulting in slightly increased potential for a release. Long-term, minor, beneficial cumulative effects would occur from removing older structures, which would reduce the amount ACMs, LBP, and PCBs to maintain on the installation.

4.2 Unavoidable Adverse Effects

Unavoidable adverse effects would occur from the Proposed Action and would be negligible to minor. Adverse effects that could not be avoided include siting proposed projects in undeveloped

areas of the installation, thereby increasing disturbance of topography and soils and stormwater runoff and reducing groundwater infiltration from the added impervious surface. Each of these effects is discussed in detail in **Sections 3.2** through **3.8**. Unavoidable adverse effects would not be significant. There would be no unavoidable adverse effects on land use and recreation from the Proposed Action.

4.3 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Implementation of the Proposed Action would not result in any significant or incompatible land use changes on- or off-installation. The Master Plan and its component plans consider the installation's existing conditions and constraints in the siting, design, and timing of projects. The Proposed Action would be implemented to comply with applicable federal, regional, state, and local land use ordinances.

4.4 Relationship Between Short-term Uses of the Environment and Maintenance and Enhancement of Long-term Productivity

The Proposed Action would site proposed facilities in accordance with the planning districts, land uses categories, and planning constraints outlined in the Master Plan; implement projects to reduce non-renewable energy consumption; and establish appropriate natural resources management processes. The long-term beneficial effects of the Proposed Action would ensure that the installation is able to meet its current and future mission requirements while ensuring energy efficiency and sustainability.

4.5 Irreversible and Irretrievable Commitment of Resource

The Proposed Action would not involve the irreversible and irretrievable commitment of energy resources and human resources. The Proposed Action would result in commitment of land for the siting of future proposed facilities. The effects of this commitment would be permanent but not significant.

4.6 Energy Requirements and Conservation Potential

The Proposed Action would not involve the direct consumption of energy. The Proposed Action indirectly would increase energy consumption from the overall increase in interior space, but it would also reduce energy consumption by upgrading and replacing older and outdated buildings with modern, energy-efficient, sustainable buildings. The Future Development Plan includes renewable energy projects—such as a biomass power plant, microgrid controls, and a utility scale solar photovoltaic array—that would help to offset non-renewable energy consumption.

4.7 Natural or Depletable Resource Requirements and Conservation Potential

The Proposed Action would require no significant use of natural or depletable resources.

5 Summary of Potential Environmental Effects

The introduction to **Section 3** provides information on which resource areas were selected to be analyzed in detail in this EA and the rationale behind each decision. **Table 5-1** summarizes the potential impacts of the Proposed Action and the No Action Alternative on the environmental resource areas analyzed in detail in **Section 3**. Implementation of the Proposed Action or No Action Alternative would not result in individual or cumulatively significant environmental effects. Therefore, preparation of an EIS is not warranted, and issuance of a FONSI would be appropriate.

Table 5-1. Potential Effects of the Proposed Action and No Action Alternative

Resource Area	Proposed Action Effects	No Action Alternative Effects
Land Use and Recreation	Long-term, moderate, beneficial effects (land use); long-term, minor, beneficial effects (recreation)	No effects
Noise	Long-term, minor, adverse and beneficial effects	No effects
Air Quality	Short- and long-term, minor, adverse and beneficial effects	No effects
Geological Resources	No effects (geology); long-term, negligible, adverse effects (topography); long-term, minor, adverse and beneficial effects (soils); and long-term, minor, adverse effects (farmland and geologic hazards)	No effects
Water Resources	Long-term, minor, adverse and beneficial effects (surface water); long-term, minor, adverse effects (groundwater); no effects (floodplains)	No effects
Biological Resources	Long-term, minor, adverse and beneficial effects (vegetation, wildlife, and protected species); no effects (wetlands)	No effects
Infrastructure and Transportation	Long-term, minor to moderate, beneficial effects; long-term, minor, adverse effects	No effects
Hazardous Materials and Wastes	Long-term, minor, adverse and beneficial effects	No effects

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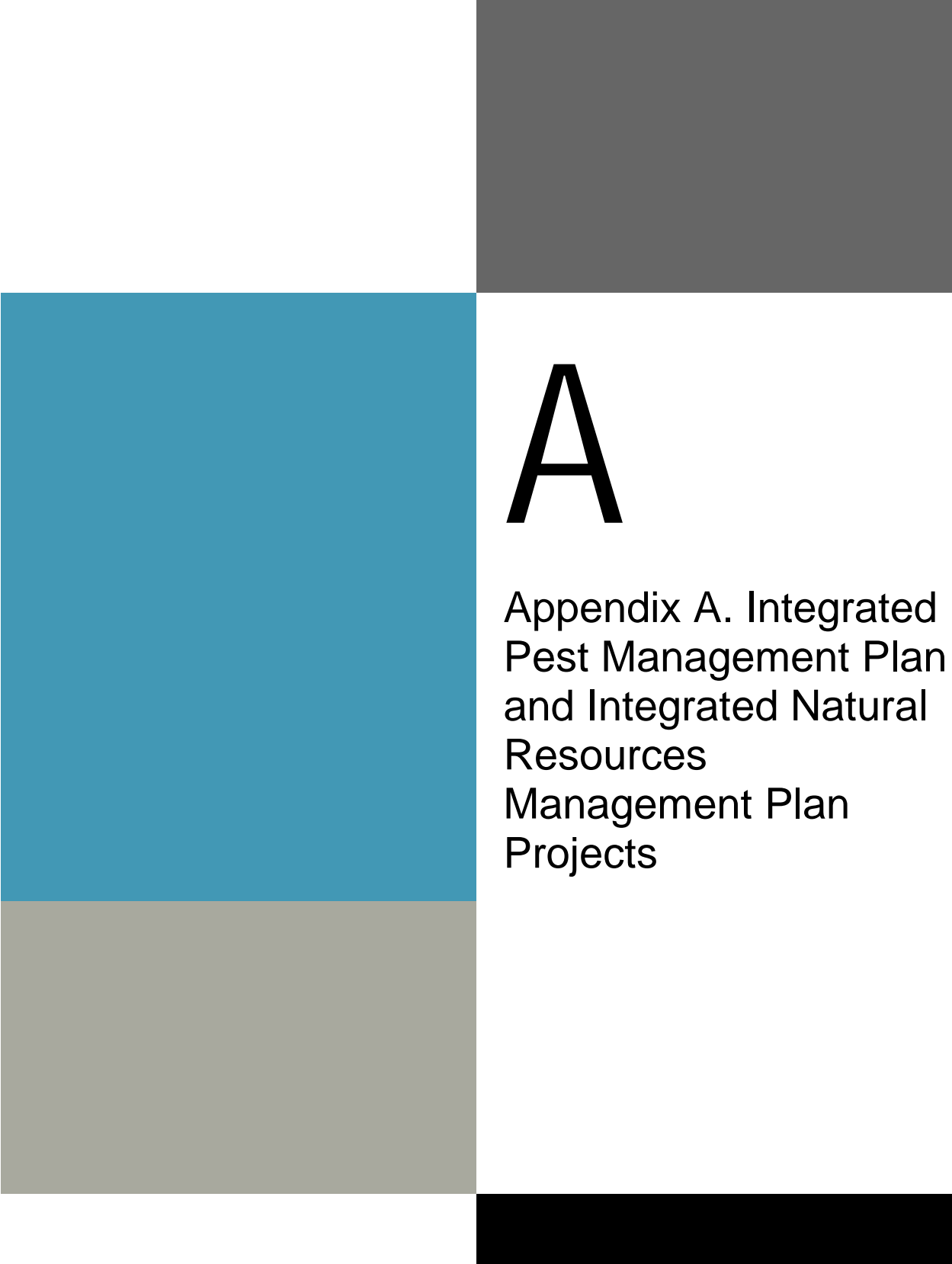
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7 Preparers

This EA has been prepared by HDR, Inc. under the direction of DLA personnel.

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A

Appendix A. Integrated
Pest Management Plan
and Integrated Natural
Resources
Management Plan
Projects

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Table A-1. Integrated Pest Management Plan Projects

Before any pesticides are applied, non-chemical control efforts will be used to the maximum extent possible.

When applying pesticides, use of the least toxic product required to achieve the desired control will be considered first. The use of “minimum risk pesticides” (i.e., those exempt from Federal registration requirements under the Federal Insecticide, Fungicide, and Rodenticide Act Section 25[b]) in accordance with their label should be promoted.

Use of integrated pest management techniques will be encouraged in all contracts. Pest problems threatening the health, safety, or welfare of installation personnel shall receive priority.

Ensure the contractor or full-time equivalent pest control worker is certified.

Ensure contractor or full-time equivalent doing the work reports pesticide usage on DD Form 1532-1 and maintains this document in a local file, and ensure data are reported through the Environmental Office to the DLA Pest Management Consultant on at least a quarterly basis.

When new buildings are planned, provisions are written in the design specifications for the inclusion of pre-slab treatment for termite control.

Sensitive areas listed on pesticide labels are considered before pest control operations are conducted. Herbicides will not be used to control weeds at the Child Development Center in areas where children play, and special care is given when pesticides are applied near the Child Development Center. The Pest Management Coordinator periodically evaluates ongoing pest control operations to ensure compliance with the Endangered Species Act.

Monthly or periodic spraying will be eliminated unless deemed necessary after surveying and monitoring pest population levels.

The lessee of the Tracy Annex is responsible for pest management controls on the leased land to include appropriate state certification and reporting of pesticide use.

Table A-2. Integrated Natural Resources Management Plan Projects

Complete this version of the INRMP and use it as a beginning point to develop an ecosystem management approach to natural resources management.
As needed, develop a process and schedule for coordinating with agencies to allow for agency comment on management plans.
Foster landscape-scale thinking among installation staff and provide them with appropriate training if needed.
Implement actions, once plans are developed or revised, identified in the INRMP.
Continue to conduct floristic and fauna surveys at established intervals (every 5 years) to determine any changes to the state of federally listed plants/animals on the installation.
Maintain a list of special status plant and animal species with the potential to occur at Defense Distribution Depot San Joaquin.
If listed species are found, or if species already known on the installation become listed, modify the INRMP for adequate management or protection of the species.
Consider conducting remote sensing (e.g., trail cameras) surveys for the San Joaquin kit fox. Coordinate with U.S. Fish and Wildlife Service (USFWS) to determine whether a reimbursable agreement for the surveys could be developed.
Continue monitoring special status species as described in this INRMP and adapt monitoring and management actions as needed. Use monitoring information and other information gleaned to guide adaptive management.
Initiate habitat improvement projects to conserve biodiversity and protect plant and animal habitats, as funding is available and when such projects will not adversely affect the military mission.
Periodically review the natural resources management program to ensure that management actions do not adversely impact species of concern habitat.
Implement species-specific and overall conservation and monitoring measures described in this INRMP and those developed in future biological opinions.
Develop special status species identification sheets for distribution to installation personnel. Provide information on how to avoid impacting these species.
Continue use of the established Environmental Review process to identify actions that result in adverse effects on special status species or habitats. Coordinate measures with the proponent to reduce adverse effects.
Provide an environmental coordination map, which includes the following information: (1) Regulated areas in which activity restrictions are in place, (2) Special status species locations where pre-planning efforts might be necessary.
Implement annual breeding season census surveys for burrowing owls throughout the installation.
Implement pre-construction mitigation measures within suitable burrowing owl habitat including: pre-activity surveys; passive relocation of burrowing owls from construction zones; mitigating impacts to occupied burrows; installing and maintaining artificial burrows; mitigating impacts to unoccupied burrows; and mitigating impacts to foraging habitat.

Avoid disturbing occupied burrows during the nesting period (1 February through 31 August) and avoid impacting burrows occupied during the non-breeding season by resident burrowing owls. Avoid direct destruction of burrows through chaining, disking, cultivation, and urban, industrial, or agricultural development. Place visible markers near burrows to ensure that farm equipment and other machinery do not collapse burrows.

Outside of the nesting period (1 February through 31 August), mow areas that support borrowing owls to prevent invasive plants from reaching a height of approximately 5 inches.

Develop and implement worker awareness program to increase the on-site worker's recognition and commitment to burrowing owl protection. Ensure agricultural outlease terms include these best management practices (BMPs) for protection of the species and maintenance of habitat as compatible with agricultural uses.

Avoid fumigation of any animal burrows. Do not use treated bait or other means of poisoning nuisance animals in areas where burrowing owls are known or suspected to occur (e.g., sites observed with nesting owls, foraging habitat). Restrict the use of treated grain to poison mammal to bait stations placed in areas outside of burrowing owl habitat, only apply during the month of January, and use only when integrated pest management options are not effective (e.g., mechanical). Broadcast baiting is not permitted.

Conduct a biological feasibility study to explore the potential for setting aside a portion of the agricultural annex for burrowing owl habitat. This study should include an assessment of current and past inhabited areas on the annex, short and long-term recommendations for managing or restoring those areas to suitable habitat conditions, and an analysis of the appropriate size and configuration of land that would be biologically meaningful for burrowing owl conservation.

Conduct a logistical and financial feasibility study to determine the potential for setting aside a portion of the agricultural annex for burrowing owl habitat conservation (e.g., agricultural lease renewal schedules, potential mission impacts, integration with the Installation Master Plan).

Ensure collaboration with California Department of Fish and Wildlife and USFWS regarding burrowing owl habitat management planning during the annual INRMP review.

In order to facilitate habitat for burrowing owls, proactively manage for the presence of ground squirrels when not in conflict with the military mission.

Conduct Environmental Review for activities that could affect percolation/evaporation ponds.

Plan development activities to avoid native wetland vegetation impacts to the maximum extent possible when conducting non-native and excess vegetation removal for pond effectiveness.

Maintain water quality to protect surface waters and ponds from excessive sediment laden runoff.

Maintain a "no mow" zone around the pond to maintain any native trees, shrubs, and herbaceous plants.

Implement provisions of the Stormwater Pollution Prevention Plan to include BMPs, monitoring, reporting, and modifying BMPs as needed.

To the maximum extent feasible, maintain buffers between percolation/evaporation ponds, riparian areas, or drainages and construction or other ground-disturbance areas.

Continue groundwater monitoring and remediation program and continue to prohibit the use of shallow groundwater from on-site wells within the contaminated zone.

Continue to do biotic surveys every 5 years, prior to the INRMP revision, to monitor significant changes in wildlife species or populations present on Defense Distribution Depot San Joaquin.

Continue documenting nongame species that are incidentally observed during species of concern surveys.

Maintain an updated inventory of plants and animals present on Defense Distribution Depot San Joaquin.

Ensure that the natural resources staff members responsible for wildlife management and conservation obtain focused training regarding management of these resources as related to conservation on a military installation.

Conduct surveys of activity sites as needed to determine if migratory bird nests are present and active. If necessary, Defense Distribution Depot San Joaquin will apply for an appropriate permit for intentional take of migratory birds.

Work with project proponents and Defense Distribution Depot San Joaquin directorates to develop effective management for minimizing the unintentional take of migratory birds.

Avoid and minimize impacts on migratory birds in and around the installation as individual projects are developed.

Follow management recommendations in the IPMP to discourage birds from entering or nesting on buildings.

Use state and federal agencies to assist with wildlife management.

Explore opportunities to conduct research through universities to assist with wildlife management.

Use contractors or other federal or state agencies to assist with fish and wildlife management.

Explore collaborative opportunities with local Boy Scout troops, Girl Scout troops, and other community organizations to complete specific tasks to benefit natural resources.

The USFWS has the potential to provide management assistance through a reimbursable agreement.

Monitor construction projects and coordinate with Roads and Grounds if heavy equipment work is needed.

Survey areas on post where soil erosion and compaction might occur from construction to ensure that BMPs within the erosion and sedimentation plan for that construction are implemented and effective.

Implement recommendations from erosion survey. Reseed with predominantly native seed mixtures or restore as needed. Use native pollinator species to the greatest extent possible per the Presidential Memorandum that directs DoD to use pollinator-friendly native landscaping and minimize use of pesticides harmful to pollinators.

Work with project proponents to identify potential erosion sites. Identify additional sites for land rehabilitation planning.

Require all earth-moving activities (including contractor operations) to comply with the erosion and sedimentation plan for that construction project.

Focus on the species and communities desired in place of the "weed" species, rather than on simply eliminating undesirable species. The species and communities desired will depend upon the management goals for a specific area. Use native pollinator species to the greatest extent possible per the Presidential Memorandum that directs DoD to use pollinator-friendly native landscaping and minimize use of pesticides harmful to pollinators.

Establish BMPs such as seed testing with the Rules for Testing Seed, published by the Association of Official Seed Analysts during landscaping projects to prevent new species from becoming established.

Include language in contracts with the construction companies to prevent the spread of invasive plant species on the installation.

Ensure compliance with environmental legislation, regulations, and guidelines.

Direct installation staff to cease feeding feral cats and educate them on the potential impacts to migratory bird populations. Coordinate with local animal control offices to remove feral cats from the installation.

Implement pest management controls from the IPMP and other pest-related guidance and plans.

Update the existing IPMP to ensure that the plan reflects changes in populations and current management issues.

During grounds maintenance activities, identify areas where invasive species occur and develop specific management actions to target the populations of these species.

Use integrated pest management methods that include non-chemical control to reduce the amount of herbicide applied on the installation in accordance with the DoD Pest Management Measures of Merit and the Presidential Memorandum, *Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators* (June 2014).

For landscaping, use plants that are native to the local region as much as possible, or those that are not known to be invasive. Use native pollinator species to the greatest extent possible per the Presidential Memorandum that directs DoD to use pollinator-friendly native landscaping and minimize use of pesticides harmful to pollinators.

If necessary, coordinate with state and local regulators to obtain appropriate permits for nonnative and nuisance plant species eradication in wetland areas.

Provide lessees with a copy of the INRMP and conduct periodic checks of the lease activity to ensure compliance with the INRMP.

Collect, review, and submit pesticide/herbicide application data from the lessee as required by the IPMP and Army regulations.

Create a public access protocol, if appropriate.

Improve the general natural resources program knowledge of all persons associated with Defense Distribution Depot San Joaquin, particularly those who come into regular contact with interested persons.

Use newspapers, the Web site, and special displays to inform the surrounding community of matters important to Defense Distribution Depot San Joaquin natural resources program.


Participate in Earth Day and other organized events, as appropriate, and evaluate other special events for their usefulness in promoting a stewardship image and conservation commitment.

Engage local community groups and educate the local community, installation personnel, and tenants about the installation natural resources program.

Encourage natural resources staff to join professional societies and their state/regional chapters and to be active in them.

Ensure that designated natural resources personnel obtain the one-time or occasional refresher training needed to fulfill job requirements (e.g., Geographic Information System user training, NEPA training, endangered species documentation/consultation training).

Evaluate other conferences/workshops, such as the National Military Fish and Wildlife Association annual workshop, for their usefulness as training tools and send personnel to those most justified, based on current training needs and those most related to Defense Distribution Depot San Joaquin activities.



B

Appendix B. Summary of Environmental Contamination Sites

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Table B-1. Summary of Environmental Contamination Sites on Defense Distribution Depot, San Joaquin

Site Name	Site Description	Applicable Land Use Controls (LUCs)
Operable Unit 1 and Northwest Corner Operable Unit Groundwater Plumes	<p>Operable Unit 1 and Northwest Corner Operable Unit are areas of contaminated groundwater. The contamination associated with Operable Unit 1 resulted from past waste disposal practices at several locations on the Tracy Site. As such, this site is comprised of multiple groundwater plumes, and some of these plumes extend beyond the Tracy Site onto the Tracy Annex. The contaminants of concern (COCs) for Operable Unit 1 are trichloroethylene (TCE), tetrachloroethylene (PCE), and dieldrin. Dieldrin is the COC associated with Northwest Corner Operable Unit and resulted from the injection of dieldrin-contaminated groundwater during the treatment of groundwater for Operable Unit 1. Two groundwater extract-and-treat systems were installed to address the TCE and PCE contamination at Operable Unit 1 and four liquid granular activated carbon well head treatment systems were installed to address the dieldrin contamination at both sites. The distribution of contaminates in groundwater is monitored each year.</p>	<ul style="list-style-type: none"> • Prevent domestic use of contaminated groundwater. • Protect infrastructure associated with groundwater monitoring, extraction, treatment, and disposal. • Prohibit construction of water supply wells on the northwest corner of the Tracy Site. • Post signs indicating restrictions on groundwater use and well construction. • Implement notification procedures for construction activities or land use changes. • Maintain administrative controls. • Perform annual reviews to ensure compliance with controls and to correct any deficiencies in the notification procedure. • Follow defined procedures in the event of a change in land use.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
Area 1, Building 237	<p>Area 1 is a region where soil and groundwater contamination resulted from past activities including operation of an industrial waste pipeline, cleaning asphalt pouring tools and equipment, and solvent storage. COCs are TCE, PCE, and pesticides. Soil vapor extraction was performed to address groundwater, and limited soil removal was performed to remove the highest concentrations of pesticide contamination. Residual contaminants pose a vapor intrusion threat to Building 237 and a health risk to construction workers.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Retain the existing ground cover. • Construct future buildings to mitigate the migration of volatile contaminants from soil vapor to indoor air. • Restore controls when construction activities are complete.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
Solid Waste Management Unit (SWMU) 1/Area 2	<p>SWMU 1 was a former sewage lagoon that received sanitary sewer effluent until 1942. The lagoon was backfilled in 1944, and a drum storage area (Area 2) was constructed on site in 1957. The drum storage area was operational until 1984 and held unknown chemicals. Soil and groundwater contamination resulted from these past operations. COCs are polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), TCE, and PCE. Soil vapor extraction has been performed, and the residual contaminants represent a human health risk if residential use is permitted. Groundwater contamination is being addressed under Operable Unit 1.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Retain the existing ground cover. • Construct future buildings to mitigate the migration of volatile contaminants from soil vapor to indoor air. • Restore controls when construction activities are complete.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
Area 3	<p>Area 3 was a former drum storage area where leaking drums contaminated soil and groundwater. COCs are semi-volatile organic compounds (VOCs), TCE, and PCE. Soil vapor extraction has been performed, and the residual contaminants pose a vapor intrusion threat to buildings. Groundwater contamination is being addressed under Operable Unit 1.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Retain the existing ground cover. • Construct future buildings to mitigate the migration of volatile contaminants from soil vapor to indoor air. • Restore controls when construction activities are complete.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
SWMUs 2 and 3	<p>SWMU 2 is two unlined, active sewage lagoons that receive treated sanitary sewer effluent. They have been operational since 1942 and previously received effluent from the motor pool wash rack. SWMU 3 is two lined industrial waste lagoons within the larger lagoons of SWMU 2. These lagoons were constructed in the 1970s and received wastewater from an industrial waste pipeline that originated from facilities that supported repackaging petroleum products and paint-stripping, degreasing, and steam-cleaning operations. Overflows from the lagoons of SWMU 3 into those of SWMU 2 were common during the 1970s. Pesticides were released into these lagoons on several occasions during the late 1970s. Soils, sediments, and surface water were contaminated, and COCs include semi-VOCs, aluminum, beryllium, and pesticides. Limited soil removal was performed. Residual soil contamination represents a human health risk and is still above industrial remediation goals. Contamination continues to represent a potential threat to groundwater quality.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Restore controls when construction activities are complete.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
SWMU 4	<p>SWMU 4 is the installation's evaporation/percolation holding reservoir for stormwater. The reservoir has been in operation since 1971 and formerly received rinse water from paint-stripping, degreasing, and steam-cleaning operations. The area was used for open storage prior to 1952, and a manganese ore stockpile was nearby from 1957 to 1968. Sediment within the reservoir is contaminated, and the contamination represents a human health risk if residential use is permitted. COCs include aluminum, arsenic, lead, manganese, PAHs, PCBs, and pesticides. Impacts to groundwater quality are possible but unlikely.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Restore controls when construction activities are complete.
SWMU 6	<p>SWMU 6 is a former 250-gallon concrete sump and underground storage tank. Wastewater from repackaging petroleum products was discharged into the sump from 1968 to 1977. The sump was removed in 1988. Soil contamination was identified, and COCs included PAHs, beryllium, PCBs, and pesticides. The pesticides contamination remains above industrial remediation goals. Groundwater contamination has occurred and is being addressed under Operable Unit 1.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Restore controls when construction activities are complete.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
SWMU 7, North and South Areas	SWMU 7 is seven pits that are now partially or completely beneath Buildings 15, 19, and 21. These pits were used from 1942 to 1954 for the disposal of medical supplies, mercury, phosphates, narcotics, radiological supplies, and electron tubes. Other substances may have been buried or burned inside of the pits. Soil and groundwater have been impacted by VOCs, semi-VOCs, PAHs, and pesticides. Soil contamination represents a human health risk, and groundwater quality has been impacted.	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Retain the existing ground cover. • Restore controls when construction activities are complete.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
SWMU 20	<p>SWMU 20 addresses Building 10, which was constructed in 1950 and supported several cleaning facilities until 1974. Building 10 housed a 500-gallon aboveground storage tank that held solvent for a degreasing unit. A 2,000-gallon, fuel oil underground storage tank was nearby. Soil and groundwater contamination was identified, and COCs include aluminum, PAHs, PCBs, TCE, and pesticides. Soil vapor extraction has been performed, and the residual contaminants pose a vapor intrusion threat to buildings. Groundwater contamination is being addressed under Operable Unit 1.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Retain the existing ground cover. • Construct future buildings to mitigate the migration of volatile contaminants from soil vapor to indoor air. • Restore controls when construction activities are complete.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
SWMU 24	<p>SWMU 24 is a former 500-gallon underground storage tank that held petroleum and hazardous wastes at Building 247 between 1961 and 1988. Pinholes were observed in the bottom of the tank during its removal. Soil contamination was identified, and COCs include acetone, aluminum, manganese, PCBs, and PAHs. Bioventing has been performed, and the residual contaminants still represent a human health risk for residential use. Groundwater has not been impacted, but soil contamination poses a future threat to groundwater.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Restore controls when construction activities are complete.
SWMU 33	<p>SWMU 33 is an industrial waste pipeline that was constructed in 1972 and buried approximately 2 to 4 feet below the ground surface. There are two branches to the pipeline that are approximately 1,200 feet in length. Wastes from various shops on the installation were routed through the pipeline to SWMU 3 for disposal. Soil contamination was identified along the route of the pipeline, and the COCs include PAHs and pesticides. Contaminated soils were excavated, and pavement and compacted gravel were placed over the pipeline to minimize stormwater infiltration. Groundwater was impacted, and contamination is being addressed under Operable Unit 1.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Retain the existing ground cover. • Restore controls when construction activities are complete.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
Site 72	<p>Site 72 is an area of pesticide contaminated soil that was identified during construction of stormwater drainage infrastructure. The source of the contamination has not been identified. Contaminated soils were excavated but residual contaminants still represent a human health risk for residential use. No groundwater contamination has been identified.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Restore controls when construction activities are complete.
Building 30 Drum Storage Area	<p>Solvents, metal-containing wastes, and petroleum wastes were formerly stored in drums at Building 30. Releases from these drums contaminated soils. Groundwater was not impacted, but the soil contamination poses a future threat to groundwater.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Retain the existing ground cover. • Restore controls when construction activities are complete.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
Northern Depot Soils Area	<p>The Northern Depot Soils Area was formerly used for metal storage. From the late 1940s until the 1980s, ferrous chromium ore and manganese ore were stored on the site. Lead ballast was stored on the site during the 1980s. Soil has been contaminated, and the COCs are arsenic and manganese. Gravel has been placed over the site to cover the soil. Groundwater has not been impacted, and the soil contamination does not represent a threat to groundwater.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Retain the existing ground cover. • Restore controls when construction activities are complete.
Eastern Depot Soils Area	<p>The Eastern Depot Soils Area is a large area formerly used for grader training exercises where soil contamination has been identified. The source of the contamination has not been determined. COCs are aluminum, arsenic, PCBs, and pesticides. The soil contamination represents a human health risk for residential use. Groundwater contamination has not occurred.</p>	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Restore controls when construction activities are complete.

Site Name	Site Description	Applicable Land Use Controls (LUCs)
Southern Depot Soils Area	The Southern Depot Soil Area is a large area formerly used for grader training exercises where soil contamination has been identified. The source of the contamination has not been determined. The COC is pesticides. The soil contamination represents a human health risk for residential use. Groundwater contamination has not occurred.	<ul style="list-style-type: none"> • Post signs indicating areas of restricted land use and listing contact information for the approval of construction or land use changes. • Review proposed construction projects for compatibility and prohibit housing, child-care facilities, playgrounds, and schools. • Implement notification procedures for construction or land use changes. • Follow procedures for a change in land use or property lease/transfer. • Perform annual monitoring and correct any deficiencies observed. • Restore controls when construction activities are complete.

Sources: DLA 2018c, DLA 2020

Key: LUC = land use control; COC = contaminant of concern; TCE = trichloroethylene; PCE = tetrachloroethylene; SWMU = Solid Waste Management Unit; PAH = polycyclic aromatic hydrocarbon; PCB = polychlorinated biphenyl; VOC = volatile organic compound.