ENVIRONMENTAL ASSESSMENT

ADDRESSING IMPLEMENTATION OF THE REAL PROPERTY MASTER PLAN AT DEFENSE DISTRIBUTION DEPOT, SAN JOAQUIN

DEFENSE DISTRIBUTION DEPOT, SAN JOAQUIN

ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing material
ACP	access control point
AMHS	automated material handling system
AT/FP	anti-terrorism/force protection
BMP	best management practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
dB	decibel
DLA	Defense Logistics Agency
DLAR	Defense Logistics Agency Regulation
DOD	Department of Defense
EA	Environmental Assessment
ECM	energy conservation measure
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EO	Executive Order
FEDS	Facility Energy Decision System
FONSI	Finding of No Significant Impact
ft^2	square feet
FY	fiscal year
GHG	greenhouse gas
HCP	Hearing Conservation Program
HVAC	heating, ventilation, and air conditioning
INRMP	Integrated Natural Resources Management Plan
IPMP	Integrated Pest Management Plan
IRP	Installation Restoration Program
kW	kilowatt
kWh	kilowatt hour
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
LID	low-impact development
LUC	land use control
MBTA	Migratory Bird Treaty Act
MHE	material-handling equipment
MHS	material-handling system
MILCON	military construction
MMBtu	million British thermal units
MMBtu/yr	million British thermal units per year
MW	megawatt
MWh	megawatt hour
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
NZE	Net-Zero Energy
O&M	operations and maintenance
O_3	ozone
PCB	polychlorinated biphenyl
pCi/L	picoCuries per liter
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
PM_{10}	particulate matter equal to or less than 10 microns in diameter
RPMP	Real Property Master Plan
SP	Sustainability Plan
SRM	sustainment, restoration, and modernization
SWMU	Solid Waste Management Unit
SWRCB	State Water Resources Control Board
TCE	trichloroethylene
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
WWTP	wastewater treatment plant

ENVIRONMENTAL ASSESSMENT ADDRESSING IMPLEMENTATION OF THE REAL PROPERTY MASTER PLAN AT DEFENSE DISTRIBUTION DEPOT, SAN JOAQUIN

Responsible Agency: Defense Logistics Agency (DLA).

Affected Location: Defense Distribution Depot, San Joaquin.

Report Designation: Environmental Assessment.

Abstract: The DLA proposes to implement the Real Property Master Plan (RPMP) and its component plans for Defense Distribution Depot, San Joaquin. The RPMP provides the direction for future development of the installation over the next 20 years and identifies a series of building, infrastructure, and energy projects that would ensure the installation is able to meet its current and future logistics and warehousing mission requirements in a sustainable and environmentally conscious manner.

Implementing the projects in the RPMP would improve mission capability and installation efficiency by siting and designing new modern, energy-efficient, sustainable buildings and infrastructure to supplement existing facilities (and in the future replace outdated facilities) and by upgrading existing buildings and infrastructure to address life, safety, security, and mission deficiencies. The proposed projects include the construction of 2,170,100 square feet (ft^2) of new buildings and the demolition of 657,822 ft^2 of existing buildings. Additionally, the proposed projects include renewable energy and utility projects; improvements to buildings, roads and pavements, and other infrastructure; and implementation of measures to reduce consumption of energy and water and generation of waste. All projects would be sited to maximize functionality and encourage consolidation and reuse or redevelopment, and would be designed to incorporate net-zero energy (NZE) and other sustainable measures.

Component plans of the RPMP include the NZE Study, Sustainability Plan (SP), and Integrated Pest Management Plan (IPMP) for the installation. The NZE Study balances the installation's future energy demand from buildings, industrial processes, fleet vehicles, and equipment with onsite and offsite 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 annual plan for its pest management program. Implementation of the NZE Study, SP, and IPMP would enable the installation to reduce energy and fossil fuel use, increase alternative fuel use, achieve an NZE footprint, meet or exceed relevant Federal sustainability mandates, practice sound natural resources stewardship, comply with environmental policies and regulations, and reduce reliance on pesticides while reducing real property damage and maintenance costs.

Under the No Action Alternative, DLA would not implement the RPMP or its component plans. In general, implementation of the No Action Alternative would require that the DLA continue to use existing undersized and inefficient facilities and abandon the proposed facility expansion, infrastructure enhancement, sustainability improvement, and pest management actions of the RPMP and its component plans, which would hamper the ability of the installation to meet its current and future mission requirements. The No Action Alternative would not meet the purpose of and need for the Proposed Action.

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1.0 PROPOSED ACTION PURPOSE AND NEED

1.1 Introduction

Defense Distribution Depot, San Joaquin was formerly responsible for coordination of the tenants and installation-level support at the Sharpe Site, located 12 miles north of the Tracy Site and Tracy Annex in Lathrop, California. However, as of September 30, 2013, Defense Distribution Depot, San Joaquin phased out Defense Logistics Agency (DLA) operations at the Sharpe Site, and handed over command and control to the property owner, the U.S. Army. All DLA operations that occurred on the Sharpe Site have been transitioned to the Tracy Site (DLA 2013a).

Defense Distribution Depot, San Joaquin is a DLA installation in Tracy, California, approximately 20 miles south of Stockton (see **Figure 1.1**). It consists of approximately 908 acres of land on two adjacent sites (Tracy Site and Tracy Annex) with 62 buildings and 12 improved open storage lots. The 448-acre Tracy Site is developed with warehouses and administrative and installation maintenance and support areas, while the 460-acre Tracy Annex is leased for agricultural use. The installation employs approximately 1,375 military and civilian personnel (DLA 2013a).

This Environmental Assessment (EA) addresses DLA's proposal to implement the installation's Real Property Master Plan (RPMP) and its component plans, which include the Net-Zero Energy (NZE) Study, Sustainability Plan (SP), and Integrated Pest Management Plan (IPMP). All of the component plans affect the RPMP; however, the NZE Study and SP are the primary drivers of the plan. The RPMP provides the direction for future development of the installation over the next 20 years, and identifies a series of building, infrastructure, and energy projects that would ensure that the installation is able to meet its current and future logistics and warehousing mission requirements in a sustainable and environmentally conscious manner. The RPMP includes a Future Development Plan and Capital Investment Strategy.

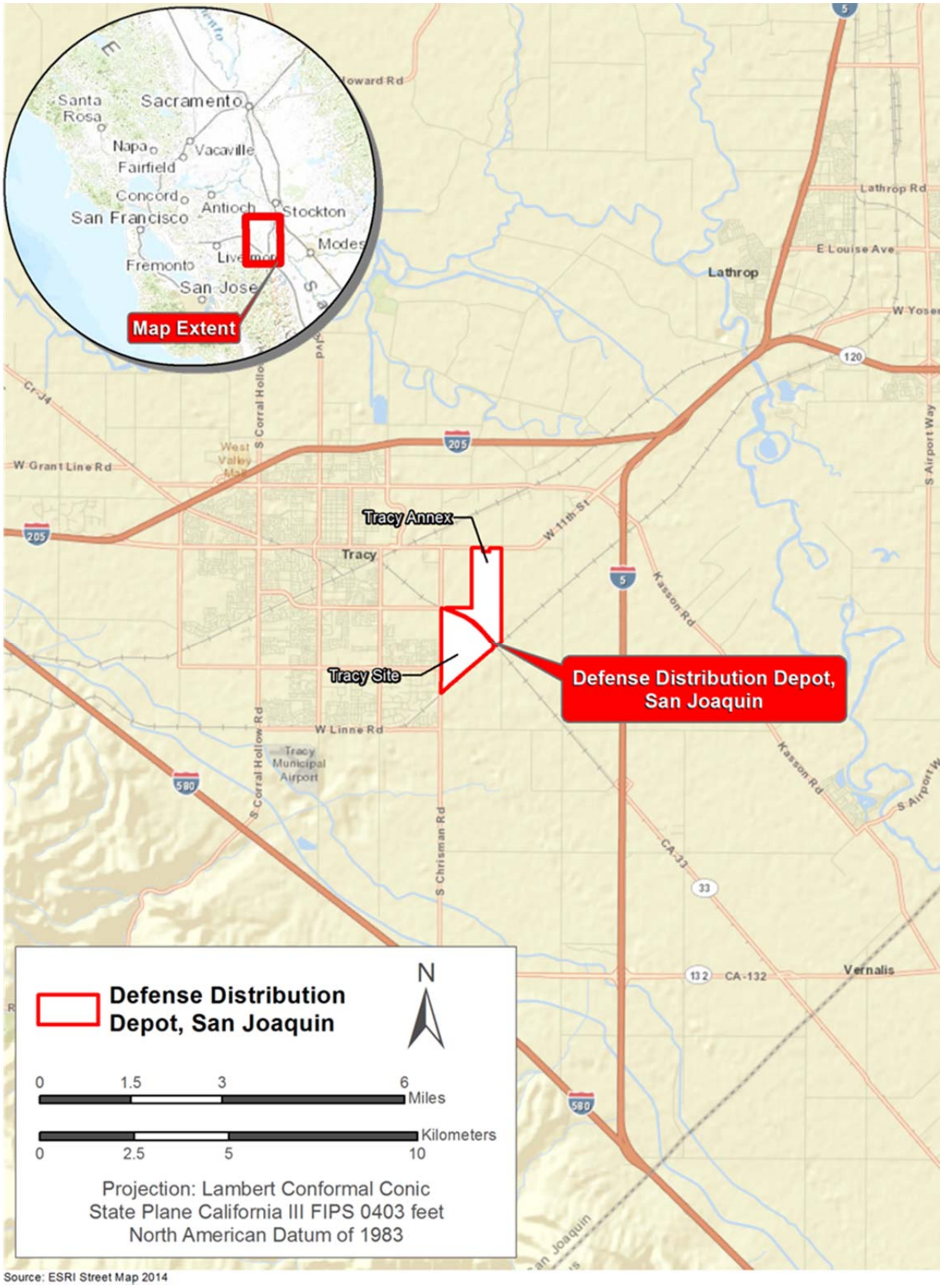
This EA analyzes the potential for significant environmental impacts associated with the Proposed Action and alternatives, including the No Action Alternative. It has been prepared in compliance with the National Environmental Policy Act (NEPA); Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 Code of Federal Regulations [CFR] Parts 1500–1508); U.S. Department of Defense (DOD) Directive 6050.1, *Environmental Considerations in DOD Actions*; DLA Regulation (DLAR) 1000.22, *Environmental Considerations in Defense Logistics Agency Actions*; and other applicable DLA issuances (e.g., regulations, directives, memorandums, instructions).

1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to implement Defense Distribution Depot, San Joaquin's RPMP and its component plans to establish a foundation that provides direction for future development of the facilities, infrastructure, land use, and environmental conditions at the installation. The Proposed Action is needed to ensure that the installation is able to meet its current and future mission logistics and warehousing requirements while ensuring the energy efficiency and sustainability of the installation.

1.3 Scope of the Analysis

The scope of the analysis includes the range of actions, alternatives, and potential impacts to be considered. The Proposed Action and alternatives considered in this EA are presented in **Section 2**. In accordance with CEQ regulations, the No Action Alternative has been analyzed to provide the baseline against which the potential environmental impacts of implementing the action alternatives can be compared.



Source: ESRI Street Map 2014

Figure 1.1 Defense Distribution Depot, San Joaquin and Vicinity

This EA analyzes the potential impacts of implementing the RPMP and its component plans, which would 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.

Environmental impacts associated with the construction, demolition, and operational activities of the individual projects in the RPMP and its component plans will be addressed in separate NEPA documentation as those projects are further defined. Additionally, this EA does not address personnel-level changes due to mission changes or installation consolidation (i.e., transfer of personnel from the Sharpe Site to the Tracy Site). The relinquishment of the permit for the use and occupancy of the Sharpe Site was analyzed under a previous NEPA document.

1.4 Summary of Key Environmental Compliance Requirements

1.4.1 National Environmental Policy Act

The NEPA, 42 United States Code (U.S.C.) 4321 et seq., was signed into law on January 1, 1970. The Act establishes a national environmental policy and goals for the protection, maintenance, and enhancement of the environment and provides a process for implementing these goals within the Federal agencies. The Act also establishes the CEQ to coordinate Federal environmental efforts. The process for implementing NEPA is outlined in 40 CFR Parts 1500–1508. The CEQ regulations specify that an EA serves to provide evidence and analysis for determining whether to prepare a Finding of No Significant Impact (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 such impacts are predicted, then DLA would decide whether to mitigate impacts below the level of significance, undertake the preparation of an EIS, or select the No Action Alternative. The DLA's implementing regulation for NEPA is DLAR 1000.22 (DLA 2011a).

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 decisionmaker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action.

1.5 Agency Coordination and Public Involvement

DLAR 1000.22 requires DLA to facilitate coordination with Federal, state, and local officials and organizations that could be affected by a proposed action. DLA invites all agencies and the public with an interest in the Proposed Action and alternatives to participate in this NEPA process, which will provide 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 will be enhanced if proponents provide information to the public and involve the public in the planning process.

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2.0 PROPOSED ACTION AND ALTERNATIVES DESCRIPTION

2.1 Proposed Action

DLA proposes to implement the Defense Distribution Depot, San Joaquin RPMP and its component plans.

2.1.1 Real Property Master Plan

The RPMP provides the direction for future development of the installation over the next 20 years, and identifies a series of potential building, infrastructure, and energy projects that would ensure the installation is able to meet its current and future mission logistics and warehousing requirements in a sustainable and environmentally conscious manner. It is intended to provide DLA and Defense Distribution Depot, San Joaquin with information to support capital investment decisions and effective use of real property that support the short-, mid-, and long-range needs of the installation. The RPMP provides a framework for analyzing resource allocations, and a decisionmaking management tool to ensure efficient assignment, utilization, and disposal of real property assets and to resolve real property deficiencies and excesses. The primary aspects of the RPMP include the vision, goals, constraints and opportunities, design considerations, Future Development Plan, and Capital Investment Strategy (DLA 2013a).

Vision: To confirm Defense Distribution Depot, San Joaquin's position as the Western Strategic Distribution Platform for DLA by striving to meet energy efficiencies and enhance mission capabilities while maintaining the strength of the logistics mission through redevelopment and requirement modifications.

Goals: The following seven goals were developed from the planning vision: (1) close DLA activities at the Sharpe Site and transfer the missions to the Tracy Site, then shift DLA installation management and facilities responsibilities at the Sharpe Site to the U.S. Army; (2) construct new and repurpose existing facilities at the Tracy Site to respond to adjustments in the DLA Distribution mission assignments; (3) improve the material-handling system (MHS); (4) dispose of warehouses committed for demolition; (5) ensure compliance with anti-terrorism/force protection (AT/FP) requirements; (6) meet energy-efficiency mandates; and (7) ensure effective cleanup and mitigation of environmental contamination.

Constraints and Opportunities: Environmental constraints at Defense Distribution Depot, San Joaquin include air quality, noise, and water quality issues. The installation also has development constraints associated with surrounding land uses (i.e., road and railroad public rights-of-way and residential communities) and AT/FP setbacks. Planning opportunities include use of in-fill development with additional buildings to increase capacity or upgrade facilities. Additionally, development of the Tracy Annex would also be used to expand the installation.

Design Considerations: The visual environment of a military installation is affected by the design, location, and maintenance of individual elements (e.g., buildings, roads, parking lots, signs, and landscaping). There are two major visual zones at Defense Distribution Depot, San Joaquin. Visual zone one, located in the northwest corner of the Tracy Site, is the administrative area consisting of general purpose offices, professional and community services, and technical support facilities. This zone includes buff-colored facilities and pleasing landscaping. Visual zone two is the depot operations, which encompass the remainder of the Tracy Site and includes large warehouses, open storage areas, and smaller support facilities. This zone follows a consistent color palette with visible building and door numbers. Design considerations do not apply to the Tracy Annex because it is currently used for agricultural purposes.

Future Development Plan: The Future Development Plan is the culmination of the vision, goals, and strategies, prioritized into a series of action plans (i.e., projects). The Future Development Plan is the implementation tool for the RPMP, identifying projects to be completed over the next 20 years. It identifies 17 military construction (MILCON) projects and 50 sustainment, restoration, and modernization (SRM) projects necessary to support the installation's mission and goals. Other projects integrated into the Future Development Plan include the removal and paving of the former railroad yard in the northern portion of the Tracy Site; siting of a hazardous materials storage building; demolition of Buildings 1, 3, 6, 27, 36, 100, 231, 232, 234, 236, 237, and 238; siting new open storage and parking areas; and redesignation of secondary traffic routes. Energy and sustainability projects identified in the NZE Study and SP, such as solar, wind, and biomass projects; a microgrid; and energy conservation measures, are also included in the Future Development Plan. These projects include those that have been vetted and those that are still in the conceptual stage. **Tables 2.1** and **2.2** identify the MILCON and SRM projects, respectively, in the Future Development Plan. **Figure 2.1** illustrates the locations of the MILCON and select SRM and energy projects. Some proposed projects are not depicted on **Figure 2-1** due to security concerns.

Defense Distribution Depot, San Joaquin offers DLA a variety of options for further development of existing facilities on the Tracy Site and a model for expansion onto the Tracy Annex. The Tracy Site is nearly fully developed. While there are "open spaces" at the Tracy Site, they are mission-essential commercial trailer parking or laydown yards for outside storage, parking for Government and employee vehicles, or utility areas. The primary developable acreage at Defense Distribution Depot, San Joaquin is the 460 acres at the Tracy Annex.

Implementing the projects in the RPMP would improve mission capability and installation efficiency by siting and designing new modern, energy-efficient, sustainable buildings and infrastructure to supplement existing facilities (and in the future, replace outdated facilities) and by upgrading existing buildings and infrastructure to address life, safety, security, and mission deficiencies. The proposed projects include the construction of 2,170,100 square feet (ft^2) of new buildings and the demolition of 657,822 ft^2 of existing buildings. The top planning needs that would be addressed through implementation of the RPMP are siting Warehouse 59 (completed in accordance with the RPMP) and replacing the outside storage area, siting the proposed redesigned access control point (ACP), and siting the programmed MILCON projects (DLA 2013a). Additionally, the proposed projects would include renewable energy and utility projects; improvements to buildings, roads and pavements, and other infrastructure; and implementation of measures to reduce consumption of energy and water and generation of waste. All projects would be sited to maximize functionality and encourage consolidation and reuse or redevelopment, and be designed to incorporate NZE and other sustainable measures.

The proposed construction projects would increase the number of buildings on the installation that comply with Leadership in Energy and Environmental Design (LEED) and Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings, and would be designed to use sustainable design concepts and other strategies to reduce energy demand, increase water efficiency, and improve indoor environmental quality. Energy conservation efforts and sustainable principles such as life-cycle cost-effective practices, green infrastructure/low-impact development (LID), and Energy Policy Act of 2005 features would be integrated into the design of the proposed construction projects.

Capital Investment Strategy: The Capital Investment Strategy establishes the priorities for investing in the installation's real property through the identification, analysis, and selection of development alternatives. It weighs the options for achieving a balance between existing and required facilities against a variety of criteria to establish a prioritized list of projects, including those identified in **Tables 2.1** and **2.2**.

Table 2.1 MILCON Projects in the Future Development Plan

Fiscal Year	Project Name and Proposed Building Construction Actions	Total Square Feet (Construction)	Proposed Building Demolition Actions	Total Square Feet (Demolition)
2012	Public Safety Center	56,000	None	–
2014	General Purpose Warehouse 59	365,500	None	–
2019	Access Control Point	5,000	None	–
2020+	Information Systems Facility	88,000	None	–
2020+	General Purpose Warehouse 60	180,000	None	–
2020+	General Purpose Warehouse	TBD (360,000 if 3 bays)	None	–
2020+	General Purpose Warehouse	TBD (360,000 if 3 bays)	None	–
2020+	General Purpose Warehouse	TBD (360,000 if 3 bays)	None	–
2020+	Mail Processing Facility	10,000	None	–
2020+	Training Center	28,000	None	–
2020+	Recycling Center	12,000	None	–
2020+	Elevated Water Tank	250,000 gallons	None	–
2020+	Replace Box/Crate Shop	39,600	None	–
2020+	Replace Material Handling Equipment (MHE)-Automated Material Handling System (AMHS) Maintenance Facility	44,000	Building 231	7,760
			Building 232	3,996
			Building 234	4,392
			Building 236	5,847
			Building 238	2,000
2020+	Facility Operations	22,000	Building 100	94,339
2020+	Overpass from Tracy Site to Tracy Annex	TBD	None	–
2020+	Add bay 4, including second floor offices, to General Purpose Warehouse 57	240,000	None	–
Total New Construction		**2,170,100**	**Total Demolition**	**118,334 ***

Key: TBD = to be determined

*Note: * Includes total square feet of demolition associated with MILCON projects only.*

Table 2.2 SRM Projects in the Future Development Plan

Fiscal Year	Project Name	Fiscal Year	Project Name
2014	Facility 13 upgrades	2014	Roofing: repairs and replacement
2014	Facility 14 upgrades	2014	Replace sewage piping system
2014	Facility 15 upgrades	2014	Install automatic sprinkler system
2014	Facility 16 upgrades and window replacement	2014	Replace storm piping system
2014	Facility 17 upgrades	2014	Upgrade fire pumps/controls
2014	Facility 18 upgrades	2014	Replace fire doors
2014	Facility 19 upgrades	2014	Replace evaporative coolers
2014	Facility 20 upgrades	2014	Replace well pumps/motors
2014	Facility 21 upgrades	2014	Flooring: repairs and replacement
2014	Facility 22 upgrades	2014	Remove existing jersey barriers at the south end of Building 100 and replace with more effective bollards
2014	Replace perimeter fencing, Tracy Site	2015	Provide second primary electric feeder line
2014	Construct hardwall offices in Building 100	2015	Renovate the male and female locker rooms
2014	Replace unit heaters and boilers - Warehouses	2015	Pave open area on the south side of Warehouse 57
2014	Replace water piping system, Tracy Site	2015	Maintain and repair asphalt concrete pavement for roadways with patching, overlays, and replacement
2014	Replace the two 5-ton and two 12.5-ton heating, ventilation, and air conditioning (HVAC) units in Building 30	2015	Paving: repairs and replacement
2014	Repave wood recycling area	2015	Painting: interior and exterior
2014	Convert existing Child Development Center into a Fitness Center	2015	Roofing: repairs and replacement
2014	Convert Building 101 into a Training Center	2015	Flooring: repairs and replacement
2014	Paving: open storage area east of Warehouse 30	2015	Construct emergency ingress/egress entrance to Tracy Site (fence)
2014	Relocate propane station on east side of Warehouse 58 to northwest corner of Warehouse 56	2015	Miscellaneous security upgrades
2014	Repair/replace overhead doors	2016	Paving: repairs and replacement
2014	Miscellaneous security upgrades	2016	Painting: interior and exterior
2014	Paving: repairs and replacement	2016	Roofing: repairs and replacement
2014	Painting: interior and exterior	2016	Flooring: repairs and replacement
2014	Roofing: repairs and replacement	2016	Miscellaneous security upgrades

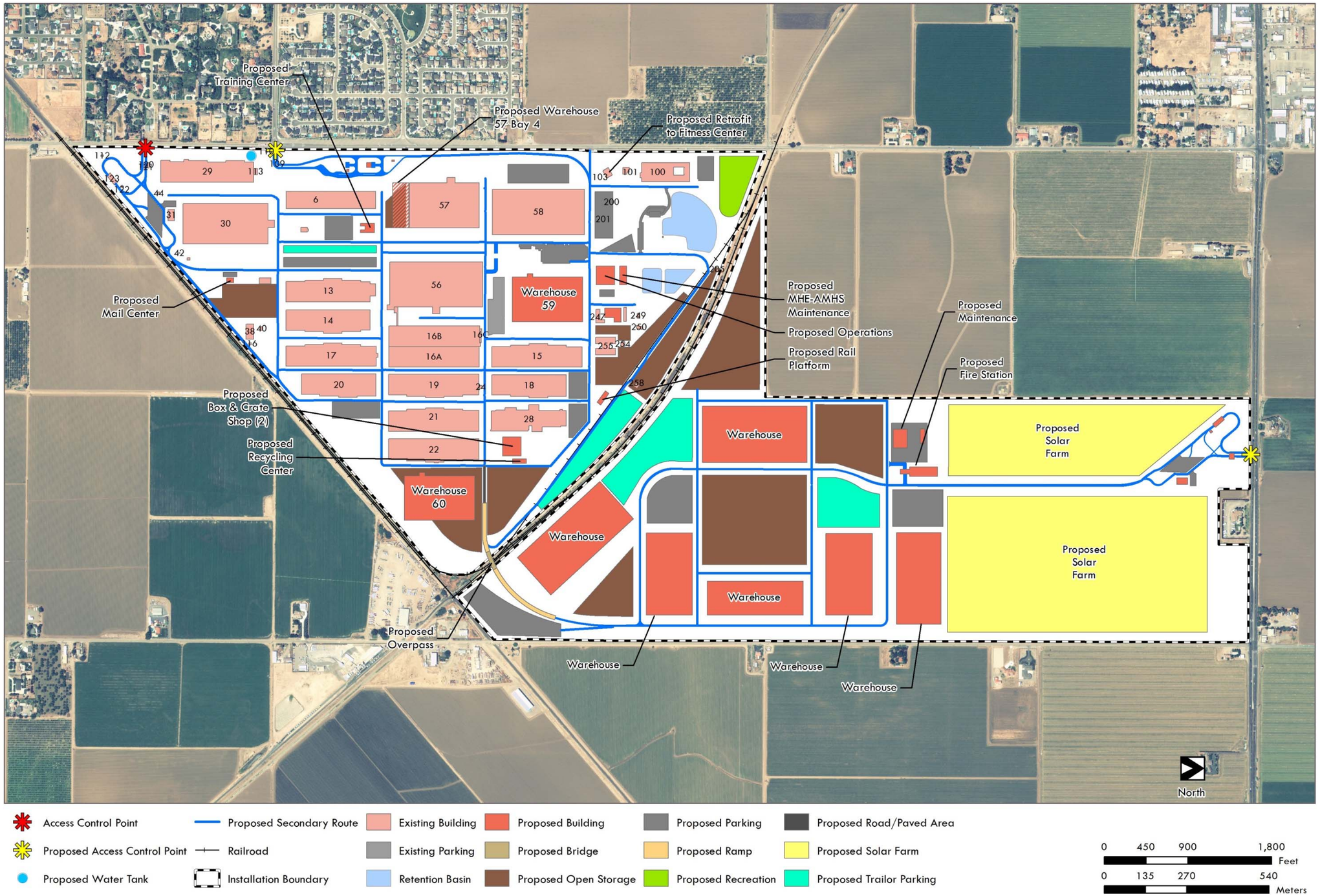

Figure 2.1 MILCON Projects and Select SRM and Energy Projects in the Future Development Plan

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2.1.2 Net-Zero Energy Study

The NZE Study balances the installation's future energy demand from buildings, industrial processes, fleet vehicles, and equipment with onsite and offsite renewable energy production. It provides a framework for the installation to develop a strategy to meet the applicable Federal mandates for sustainability, energy reduction, alternative energy and fuels, and systems integration. The NZE Study includes energy reduction and fleet management recommendations and renewable energy projects through fiscal year (FY) 2040. Currently, there is only one planned renewable energy project, a 1-megawatt (MW), single-turbine wind project that would produce approximately 2,200 megawatt hours (MWh) of electricity per year, which is equivalent to 7,509 million British thermal units per year (MMBtu/yr). This represents 6.5 percent of the NZE installation requirements. Conceptual proposed renewable energy projects include 26 MWs of solar photovoltaic system projects and a 3-MW biomass power plant. The proposed projects also include building energy conservation and efficiency measures, fleet vehicle and equipment reductions and replacements, development of a microgrid, and an energy measurement and verification (i.e., metering) program (see **Appendix A**). DLA requested that NZE installation requirements for Defense Distribution Depot, San Joaquin and Defense Distribution Center, Susquehanna (New Cumberland site) in Pennsylvania be considered together; therefore, the NZE Study also addresses projects at Defense Distribution Center, Susquehanna. Implementation of the NZE Study recommendations would result in energy reduction, fossil fuel reduction, and an increase in alternative fuel use; and would enable the installation to achieve an NZE footprint (DLA 2013b).

2.1.3 Sustainability Plan

The SP is intended to assist with the installation's current efforts to meet or exceed relevant Federal mandates regarding sustainability. The SP identifies goals, objectives, and action plans that provide a strategy to meet the installation's sustainability goals within the constraints of available staff and funding. The action plans cover the following sustainability components: energy use (including renewable energy), water quality and supply, waste minimization, alternative fuels and infrastructure, resource-efficient buildings, infrastructure investment, enterprise support, indoor air quality, greenhouse gas (GHG) mitigation, comprehensive planning, and others (including invasive species and biodiversity, procurement, electronics stewardship, food access and nutrition, and measurement and verification) (see **Appendix A**). Each action plan is tied to at least one of the goals or objectives and provides a quantifiable step in the overall sustainability program. The action plans are prioritized via a Capital Investment Strategy that leads to an Implementation Plan. The SP has a 20- to 25-year outlook that is driven by the sustainability vision, which looks 35 to 50 years into the future (DLA 2013c).

2.1.4 Integrated Pest Management Plan

The IPMP is Defense Distribution Depot, San Joaquin's annual plan for its pest management program. It provides a sustainable approach to managing pests on the installation by using a combination of biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks. The IPMP describes past and anticipated pests and outlines the resources necessary for surveillance and control of these pests, including any administrative, safety, or environmental requirements. Nonchemical pest-control efforts are proposed to the maximum extent possible prior to the application of chemical pesticides. The IPMP includes pest management outlines that provide methodologies for implementation of the appropriate pest-control procedures for each identified pest type, and a pesticide-use proposal that identifies each pesticide proposed (see **Appendix A**). Implementation of the IPMP would reduce reliance on pesticides; enhance environmental protection; and help ensure pests do not interfere with the military mission, lower morale, damage real property, increase maintenance costs, or expose personnel to diseases (DLA 2013d). The lessee of the Tracy Annex is

responsible for pest management controls on the leased agricultural land, which include appropriate state certification and reporting of pesticide use.

2.2 No Action Alternative

Under the No Action Alternative, DLA would not implement the RPMP or its component plans. In general, implementation of the No Action Alternative would require that DLA continue to use the existing outdated, undersized, and inefficient facilities and abandon the proposed siting of new facilities, infrastructure enhancements, sustainability improvement, and pest management actions of the RPMP and its component plans. This would hamper the ability of the installation to meet its current and future mission requirements. The No Action Alternative would not meet the purpose of and need for the action, as described in **Section 1.2**.

2.3 Alternatives Considered for the Proposed Action

The RPMP includes an evaluation of three development plan alternatives (i.e., Alternatives 1, 2, and 3) for consideration. Alternative 1 addresses development based on the changes from the short-range plan and limits further development to infrastructure projects that would improve the installation's conditions and address Federal mandates. Alternative 2 represents a more extensive development option that is not as constrained by fiscal limits or near-term (i.e., 10- to 15-year) development goals. Alternative 3 provides a grander perspective, depicting development if additional funding becomes available. Appendix I of the RPMP provides descriptions and associated figures of Alternatives 1, 2, and 3 (DLA 2013a). A redacted version of Appendix I of the RPMP has been included in this EA as **Appendix B**.

A combination of Alternative 2 and Alternative 3 (i.e., the plan for the Tracy Site from Alternative 2 and the plan for the Tracy Annex from Alternative 3) is the preferred development plan alternative, which is the Proposed Action detailed in **Section 2.1**. The preferred alternative was selected because it would allow phased build-out, while maintaining the flexibility to incorporate different kinds of funding streams and shovel-ready projects. It would also combine the development need on the Tracy Site with the potential development opportunity on the Tracy Annex. Strategies for facilities, infrastructure, and land use were applied against the preferred alternative to create the Future Development Plan, which is the basis for the project locations presented in the RPMP.

Alternative 1 does not consider long-term planning needs; therefore, it was eliminated from further analysis in this EA. Individual implementation of Alternatives 2 and 3 (i.e., not using the combined, phased approach of the preferred alternative) would require major initial investments in infrastructure, new buildings, and associated demolition of older structures. These alternatives would not be feasible because the planning assumption states there would be no significant change in management or budget and the operations and maintenance (O&M)/SRM budget would continue to decline to approximately 80 percent of current level. Therefore, Alternative 2 and Alternative 3 were eliminated from further analyses in this EA.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

All environmental resource areas were initially evaluated for potential consequences. The initial evaluation determined that some environmental resource areas would not be impacted or would have clearly insignificant impacts. These environmental resource areas were not analyzed in detail in this EA, and they are described as follows.

- ***Airspace Management and Safety.*** The Proposed Action would not result in any obstruction to airspace or hazards to airspace management. There are no active airports, runways, or airstrips located within 2 miles of Defense Distribution Depot, San Joaquin.
- ***Socioeconomics and Environmental Justice.*** The Proposed Action would not affect areas outside of DLA-permitted land. It would not include hiring workers in the local labor force, and would not result in any outside workers moving to the area. There would be no change in the number of installation personnel, area population, or demand for housing and public/social services. The Proposed Action would occur within the boundaries of the installation; therefore, it would not impact off-installation low-income or minority populations and would have no disproportionate impacts on low-income or minority populations.
- ***Cultural Resources.*** 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 (NRHP). There are no archaeological or architectural resources at the installation that are listed or eligible for listing in the NRHP.
- ***Health and Safety.*** The Proposed Action would result in beneficial effects on health and safety from siting of the new Public Safety Center, incorporation of current design standards and AT/FP criteria, and redesignation of secondary traffic routes.
- ***Coastal Zone Management.*** The Proposed Action would not be sited within a coastal zone, nor would it impact a coastal zone.
- ***Visual and Aesthetic Resources.*** The Proposed Action would not involve any activities that would result in long-term changes to the aesthetic qualities of the area or landscape. The new facilities would follow the design guidelines in the Installation Design Guide. This guidance would ensure a consistent and coherent architectural character throughout the installation.

The initial evaluation also determined that there was the potential for significant effects on other environmental resource areas; therefore, these environmental resource areas were analyzed in detail in this EA. The detailed analysis in this EA determined that significant effects from the Proposed Action and No Action Alternative would not occur. The following sections break down by resource area the non-significant effects that would result from implementation of the Proposed Action.

3.1 Land Use and Recreation

3.1.1 Existing Conditions

Land Use. Land use categories at the installation include Industrial, Administrative, and Installation Maintenance and Support at the Tracy Site and Agricultural at the Tracy Annex (DLA 2013a). Industrial land use consists of warehousing, transportation, and light industrial activities and encompasses most of the Tracy Site except for the northwestern corner (i.e., generally northwest of the intersection of Ennis Drive [A Street] and Medical Street). Administrative land use (e.g., general purpose offices, professional services, community services, and technical support facilities) is located primarily at the northwestern corner of the Tracy Site between Chrisman Road and Station Street, and at several small areas

interspersed throughout the Industrial land uses in the remainder of the Tracy Site. The Installation Maintenance and Support land use (e.g., facilities such as maintenance, fire, safety, and utility operations) is at the northwestern corner of the Tracy Site adjacent to the east of the Administrative land uses. The Tracy Site is substantially built out with open spaces used for trailer storage, parking, and utility laydown yards.

The Tracy Annex is used for agriculture (e.g., agricultural row crops and orchard operations) and, with the exception of an environmental remediation system, does not have any development (DLA 2013a).

Areas outside of and adjacent to the Tracy Site include those within the City of Tracy and the unincorporated area of San Joaquin County, while the Tracy Annex is surrounded by unincorporated areas of the county. Railroad tracks divide the Tracy Site from the Tracy Annex and form the southeastern boundary of the Tracy Site. Residential land uses, including Residential Low (i.e., low density at 2.1 to 5.8 residential units per gross acre) in the City of Tracy and Rural Residential in unincorporated San Joaquin County, are adjacent to the west and southwest, respectively, of the Tracy Site, across Chrisman Road (City of Tracy 2011, San Joaquin County 2010). The remaining properties adjacent to the Tracy Site and Tracy Annex are in unincorporated areas of San Joaquin County and are designated primarily as agricultural (General Agriculture and Agricultural-Urban Reserve land use categories), except for a small area of Limited Industrial land use immediately east of the Tracy Site at the crossroads of the Union Pacific and California Northern railroads (City of Tracy 2011, San Joaquin County 2014).

Recreation. Recreational land uses are limited to a fitness center and a ball field that is located at the northwestern corner of the Tracy Site. Sidewalks exist in some areas of the Tracy Site; however, their primary function is to provide access to facilities rather than for recreational purposes. The Tracy Annex has no designated recreational facilities.

3.1.2 Environmental Consequences

Proposed Action

Land Use. Long-term, moderate, beneficial effects on land use would be expected. Due to the nature of the RPMP as a master planning document, its implementation would result in the siting of land uses and specific facilities in a manner that fully considers the existing conditions and constraints to support the installation's missions effectively. Existing space and building capacities would be optimized and used more efficiently through specific facility siting, proposed changes to the secondary route network, design changes, and removal of the former railroad yard for use as storage space. The RPMP does not specifically assign new land use categories, but the projects in the RPMP and its component plans would be sited in appropriate land use areas in accordance with the RPMP and associated Future Development Plan. As identified in the SP, comprehensive site planning was completed using the sustainable facility siting methodology in which functionally similar buildings are sited in proximity to one another on the installation, and individual buildings are appropriately placed through consideration of building footprint, bulk and fenestration, orientation to the street (entrance), and AT/FP standards (DLA 2013c). None of the proposed projects would create land use incompatibilities on the installation.

Implementation of the RPMP would improve compatibility between the Tracy Site and the off-installation residential land uses west of Chrisman Road by siting and redesigning the main entrance ACP that would process vehicles accessing the installation in a more efficient and safe manner. Full implementation of the RPMP would result in the development of the Tracy Annex with various land uses, including warehouses, support and maintenance facilities, solar photovoltaic systems, and other renewable energy projects that would change the land use category from Agricultural to Administrative, Industrial, and Installation Maintenance and Support. Because the Tracy Annex is surrounded primarily by agricultural land, it is unlikely that siting of the proposed projects would result in incompatibilities with off-installation land uses. However, full implementation of the RPMP at the Tracy Annex would

permanently convert farmland to nonagricultural use. See **Section 3.4.2** for more information on impacts on farmland.

The siting of new facilities, removal of old facilities, and incorporation of energy-efficient and sustainable designs in new and existing facilities would enable implementation of measures proposed in the NZE Study and the SP. New construction techniques, retrofitting initiatives, and metering individual buildings would help curb energy usage, facilitate energy audits, support the creation of energy use baselines, and ultimately support the ability to meet Federal energy-reduction mandates. More efficient use of space on the installation would support the feasibility of establishing a micro-grid concept in future years.

Recreation. Long-term, minor, beneficial effects on recreation would be expected. Implementation of the RPMP would result in the conversion of an existing nonrecreational facility into a new Fitness Center and would reinforce the designation of the existing ball field and surrounding area at the northwest corner of the Tracy Site as recreational land use.

No Action Alternative

Existing conditions would remain the same as described in **Section 3.1.1**. Therefore, no effects on land use and recreation would occur.

3.2 Noise

3.2.1 Existing Conditions

The ambient noise environment at Defense Distribution Depot, San Joaquin is affected primarily by rail traffic on nearby railroad tracks and local vehicle traffic (DLA 2013a). Specific on-installation sources of noise consist of vehicular traffic, including personal vehicles, semi-trailers, forklifts, and other cargo-moving machines at the Tracy Site, and occasional agriculture equipment at the Tracy Annex. Other sources of noise at the installation could occur from aircraft using the Tracy Municipal Airport. The installation is approximately 2.25 miles from the 1996 and 2016 noise contours presented in the Tracy Municipal Airport Master Plan (City of Tracy and FAA 1998); however, noise from aircraft flyovers can be heard occasionally. Given these sources and the activities occurring at the Tracy Site, the ambient noise environment on the installation resembles an industrial setting.

The San Joaquin County General Plan identifies the following two policies associated with noise levels from stationary noise sources for outdoor activity areas at noise-sensitive land uses: the maximum sound level shall be 70 decibels (dB) during the daytime and 65 dB during the nighttime, and the hourly equivalent sound level shall be 50 dB during the daytime and 45 dB during the nighttime (San Joaquin County 2010). The installation is not in the City of Tracy; however, adjacent property to the west (i.e., across Chrisman Street) is within the city boundary. The City of Tracy Noise Control Ordinance establishes noise limits in the City of Tracy for the following districts in 1-hour average sound levels: residential 55 dB, commercial 65 dB, and industrial and agricultural 75 dB (City of Tracy 2014).

3.2.2 Environmental Consequences

Proposed Action

Long-term, minor, adverse effects on the noise environment would be expected. Implementation of the RPMP would site two new, different, permanent sources of noise on the installation, the 3-MW biomass plant and the 1-MW wind turbine. A common noise concern from wind turbines is low-frequency noise and infrasound. At distances greater than 1,000 feet, low-frequency noise and infrasound from wind turbine models greater than 1 MW did not noticeably impact populations (O'Neal et al. 2009). Typical noise separation or setback for wind turbines in residential areas is 750 to 1,500 feet (DLA 2013b). To minimize potential noise impacts, the proposed wind turbine should be constructed at least 1,000 feet

from residential areas or other sensitive receptors. Biomass plants burn biomass fuel to heat water and produce steam that turns an electricity-generating turbine. During this process, pressurized steam would vent periodically, creating noise. In accordance with DOD Instruction 6055.12, *Hearing Conservation Program (HCP)*, equipment being 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.

Sufficient space exists on the Tracy Annex to site both proposed projects at proper distances from off-installation receptors, such as residences and schools, to ensure that there would be no significant noise impacts on these uses. Siting and design of proposed projects would also adhere to the noise limits in the City of Tracy.

Additionally, implementation of the RPMP and SP would maximize tree planting, which would buffer noise pollution (DLA 2013a). No significant noise impacts are expected.

No Action Alternative

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

3.3 Air Quality

3.3.1 Existing Conditions

San Joaquin County has been designated by the U.S. Environmental Protection Agency (USEPA) as unclassified/attainment for the following criteria pollutants: nitrogen dioxide, sulfur dioxide, lead, and carbon monoxide; maintenance for particulate matter equal to or less than 10 microns in diameter (PM_{10}) (previously serious nonattainment); nonattainment for particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$); and extreme nonattainment for 8-hour ozone (O_3) (USEPA 2013). San Joaquin County has been designated by the California Air Resources Board as unclassified/attainment for all state and Federal criteria pollutants except $PM_{2.5}$, PM_{10}, and O_3, which are designated as nonattainment (CARB 2014).

The San Joaquin Valley Air Pollution Control District has established permit limits for the individual air emissions sources at Defense Distribution Depot, San Joaquin. The collective potential to emit from all air emissions sources on the installation does not exceed major source threshold limits and, hence, a Title V Major Source permit is not required for the installation. Most air emissions on the installation are produced from the operation of emergency generators, paint booths, and other industrial equipment (DLA 2011b).

3.3.2 Environmental Consequences

Proposed Action

Long-term, minor, beneficial effects on air quality would occur. While full implementation of the RPMP would result in a net increase in building space at the installation, the RPMP would upgrade or replace older and outdated buildings with modern, energy-efficient, sustainable buildings, which would translate into a potential reduction in air emissions.

The NZE Study and SP aim to reduce the amount of fossil fuel-based energy consumed at the installation and to achieve an NZE footprint. The NZE Study and SP identify numerous actions such as energy-reduction projects, energy-efficiency projects (e.g., replacement of existing boilers and heaters with more efficient units), fleet-management strategies, and increased reliance on alternative and renewable energy sources (i.e., solar, wind, and biomass projects) to accomplish these goals. Therefore, implementation of the NZE Study and SP would reduce fossil fuel energy consumption, which would

reduce the amount of air emissions produced by the installation. Other action plans in the SP focus on improving indoor air quality and reducing GHGs.

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 near the west-central border of the San Joaquin Valley, which composes the southern region of the Great Valley Geomorphic Province. The San Joaquin Valley is a topographic and structural basin with the axis offset to the west and gently sloping to the north. It is bounded by the Sierra Nevada Range to the east, the Coast Ranges to the west, and the Sacramento River-San Joaquin River Delta to the north. The Sierra Nevada Range consists of igneous and metamorphic rocks; overlying the basement rocks are thousands of feet of sedimentary deposits. The Coast Ranges contain folded and faulted sedimentary rocks of Mesozoic and Cenozoic age overlain by metamorphic rocks. Cretaceous bedrock was thrust over younger Cenozoic marine sedimentary units. Soils make up the upper 10 to 50 feet of the San Joaquin Valley; however, the soils are becoming depleted south of the Sacramento River-San Joaquin River Delta. At the installation, the Upper Tulare Member of the Quaternary- and Tertiary-age Tulare Formation (interbedded gravel, sand, silt, and clay) extends from a depth of 35 to 220 feet. The Corcoran Clay member (a subunit of the Tulare, with a lower permeability lacustrine deposit consisting of sandy and silty clay, silt, and clay interbedded with fine sand) is encountered from 220 to 430 feet below ground surface, while the Lower Tulare Member (lenticular deposits of clay, silt, and gravel) exists from 430 to 500 feet (USGS 2014, Scheirer and Magoon 2007).

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

Soils. Seventy-five percent of the Tracy Site is covered by buildings or pavement. Site construction and grading from previous development has resulted in disturbed soils. This disturbed soil unit is Capay-Urban land complex, 0 to 2 percent slopes, which indicates that the natural soil structure at the Tracy Site has been largely eliminated. The Capay-Urban land complex soil unit is moderately well-drained and does not pond or flood. The primary soil at the Tracy Annex, which is irrigated for agricultural use, is Capay clay, 0 to 2 percent slopes, which is moderately well-drained. El Solyo clay loam, 0 to 2 percent slopes and Stomar clay loam, 0 to 2 percent slopes cover a small area in southern portion of the Tracy Annex, directly north of the Tracy Site (SCS 1992, NRCS 2014).

All soil units on the installation are characterized as having "very limited" use with respect to construction of dwellings, small commercial buildings, and streets, due to the shrink-swell characteristics of the soils. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. Additionally, the soils are alkaline, indicating a corrosive effect on ferrous construction materials. Shallow excavations and even landscaping are rated "Somewhat limited" to "Limited" due to the clayey, dusty, shrink-swell nature of the soils (NRCS 2014).

Prime Farmland. The Natural Resources Conservation Service classifies all soils at the installation as prime farmland, if irrigated (SCS 1992, NRCS 2014), and the California Department of Conservation classifies the soils at the Tracy Site as Prime Farmland and the soils at the Tracy Annex as Prime Farmland and Farmland of Local Importance (California DOC 2012). However, prime farmland also

requires that an area be available for farming purposes. Therefore, the Tracy Site, which is committed to urban development and unavailable for farming, is not considered prime farmland. The Tracy Annex is considered prime farmland because irrigated farming is currently occurring there.

Geologic Hazards. Faults within the immediate vicinity of the installation include the Midway, Black Butte, San Joaquin, and Vernalis. Other faults within 55 miles of the installation that have experienced historic displacement (i.e., within the past 200 years) include the Las Positas, Marsh Creek, Calaveras, Hayward, and San Andreas (California DOC 2010). According to the U.S. Geological Survey, 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 ground acceleration of 16 to 32 percent of the force of gravity. In the event of an earthquake, a rolling ground motion would be expected in the San Joaquin Valley with little to moderate structural damage (USGS 2009). Due to its seismic and geologic conditions, the installation is subject to a moderate potential for liquefaction and a moderate to high potential for expansive soils depending on the specific soil conditions and location. However, the soils near the City of Tracy, such as those at the installation, are not considered to be as susceptible to liquefaction because the near surface soils are predominantly clays or sands with high silt and clay content (San Joaquin County 2010).

3.4.2 Environmental Consequences

Proposed Action

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

Topography. Long-term, negligible, adverse effects on topography would occur. The proposed projects identified in the RPMP, NZE Study, and SP for the Tracy Site would be in developed or previously disturbed areas; therefore, minimal change in topography would be expected. Siting of proposed projects at the Tracy Annex would also have negligible impacts because the land is flat. Implementation of the IPMP would occur throughout the installation, including the Tracy Annex after agriculture has ceased, but would have no effect on topography because these projects would have little to no ground disturbance.

Soils. Long-term, minor, adverse effects on soils would be expected from implementation of the RPMP, NZE Study, SP, and IPMP at the Tracy Site. The projects identified in these plans would be sited in areas underlain by Capay Urban land complex soils that have already been disturbed. Because the Tracy Annex soils have not been disturbed except by farming, long-term, adverse impacts on soils would be expected. The timing of the proposed projects, use of best management practices (BMPs), and incorporation of soil-erosion and sediment-control measures into site plans would assist in limiting erosion and sedimentation. Limitations due to the shrink-swell characteristics of all soils at the installation generally cannot be overcome without soil reclamation, special design, or installation procedures (NRCS 2014).

Prime Farmland. No adverse effects on prime farmland would occur at the Tracy Site because it is not considered prime farmland. The soils at the Tracy Annex are considered prime farmland, if irrigated. Full implementation of the RPMP would result in the permanent conversion of 460 acres of prime farmland soils as defined by NRCS, and approximately 190 acres of Prime Farmland and 270 acres of Farmland of Local Importance soils as defined by the California DOC to nonagricultural use, which would be a long-term, minor, adverse effect.

Geologic Hazards. Long-term, minor, adverse effects on humans and property could occur from geologic hazards. All proposed buildings and infrastructure would be designed and constructed in accordance with Unified Facilities Criteria 3-310-03, *Seismic Design for Buildings*, Executive Order (EO) 12699, *Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction*, and California Building Standards Code (Title 24, California Code of Regulations), which would reduce the potential for adverse effects associated with siting projects in areas with geologic hazards.

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 Proposed Action.

3.5 Water Resources

3.5.1 Existing Conditions

Surface Water. There are no natural surface water bodies at Defense Distribution Depot, San Joaquin. The natural drainage in the area is towards Tom Paine Slough, approximately 2 miles north-northeast of the installation. Storm water runoff at the Tracy Site flows to the north via concrete-lined ditches and an underground conveyance system and drains to an evaporation/percolation pond in the northwestern portion of the Tracy Site. Only during extremely wet years is the pond allowed to be discharged to the San Joaquin River (DLA 2012a). See **Section 3.8.1** for more information on storm water systems at the Tracy Site. Runoff at the Tracy Annex follows natural topography to the north. Water that is not lost to evaporation infiltrates the near surface sediments and recharges the shallow aquifer.

Groundwater. The central and northern San Joaquin Valley groundwater-bearing units beneath the installation are composed of interbedded and unconsolidated 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 ranges from 20 to 50 feet below ground surface at the Tracy Site, and 10 to 20 feet below ground surface at the Tracy Annex. Perched groundwater conditions might be encountered within 4 feet of the ground surface due to changes in sediment texture. The water-bearing sediments beneath the valley can be subdivided into three hydrologic units that include an upper unit and a lower unit (hydrostratigraphic equivalents of the Upper and Lower Members of the Tulare Formation) separated by the Corcoran Clay Unit, an aquitard that serves as the principal confining layer beneath the installation. The upper unit consists of a semi-confined aquifer system. The lower unit is a confined aquifer that extends to deeper saline groundwater-bearing units. Historic releases of solvents to the upper unit have occurred, and several chloroethene plumes in the groundwater extend from the Tracy Site into the Tracy Annex. See **Section 3.8.1** for more information on groundwater plumes.

The Lower Tulare formation is moderately permeable, and accommodates most agricultural, municipal, and industrial production with wells producing up to 3,000 gallons per minute. Groundwater is pumped from three wells at the Tracy Site, then chlorinated and stored in elevated and ground-level tanks for domestic and other site use. The installation operates a wastewater treatment plant (WWTP) and manages storm water and wastewater on site (DLA 2009a, DLA 2010b).

Floodplains. The installation is not in a floodplain (San Joaquin County 2009, FEMA 2014). 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, negligible, beneficial effects on surface water would be expected. At the Tracy Site, storm water is contained within the installation's boundary. At the Tracy Annex, runoff would be better managed through the implementation of storm water initiatives presented in the SP, such as green storm water infrastructure. Furthermore, LID practices would be implemented in accordance with Section 438 of the Energy Independence and Security Act (EISA) so that post-development hydrology would be equal to or less than pre-development hydrology to the extent technically feasible. Reduction in storm water volume and overland flow would result in offsetting effects for the installation and regional surface waters.

Groundwater. Long-term, negligible, adverse effects on groundwater would be expected. At full implementation of the RPMP, impervious surfaces on the installation would increase, resulting in less area for infiltration and recharge of groundwater. However, adverse effects would be minimized through use of designs with LID features and long-term storm water-control measures for groundwater recharge in accordance with Section 438 of EISA. Implementation of these measures would be expected to maintain or restore natural hydrologic functions and provide protection of groundwater quality.

The expansion of industrial activity on the installation has the potential for release of hazardous substances to groundwater; however, BMPs and implementation of the installation's Pollution Prevention Plan would prevent releases having negative impacts on the environment (DLA 2010a).

Floodplains. No effects on floodplains would be expected. The installation is approximately 1.25 miles from the nearest floodplain; therefore, no projects would be sited in floodplains. Siting of projects would not be expected to divert flow or alter floodwater volume or velocity, and designs would include implementation of storm water BMPs.

No Action Alternative

Existing conditions would remain the same as described in **Section 3.5.1**. Therefore, no effects on water resources would occur.

3.6 Biological Resources

3.6.1 Existing Conditions

Vegetation. There are no natural lands at the Tracy Site; a majority of the land has been previously disturbed and is developed with industrial land uses with minimal native vegetation. The remaining vegetation consists primarily of annual grasslands in the northern and eastern portions of the Tracy Site. Vegetation observed during biological surveys included nonnative grasses, forbs, and ornamental shrubs and trees; and 31 invasive species. The Tracy Annex consists of 460 acres of agricultural land, including row crops such as alfalfa (*Medicago sativa*) and safflower (*Carthamus tinctoris*) (DLA 2013e).

Wildlife. Fifty-six wildlife species (44 bird species, 8 mammals, 2 reptiles, and 2 amphibians) were observed on the installation during biological surveys. The ponds associated with the installation's storm water system and WWTP in the northwestern portion of the Tracy Site provide foraging and resting habitats for various waterfowl and shorebirds, and foraging habitat and water for bats. Additionally, common amphibians such as the Pacific treefrog (*Pseudacris regilla*) and bullfrog (*Lithobates catesbeianus*) 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 possibly for nesting. Additionally, several bat species have been observed on the installation, including Mexican free-tailed bats (*Tadarida brasiliensis*), Yuma myotis (*Myotis yumanensis*), big brown bats (*Eptesicus fuscus*), pallid bats (*Antrozous pallidus*), and a *Myotis* species (DLA 2013e).

The agriculture land at the Tracy Annex provides suitable foraging and resting habitat for a wide 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 2013e).

Protected Species. Protected species include federally listed species, state-listed species, migratory birds, and plant species of concern. No federally listed plant or animal species have been observed at the installation (DLA 2013a, DLA 2013e). 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 Species of Special Concern, the loggerhead shrike (*Lanius ludovicianus*) and the burrowing owl (*Athene cunicularia*), have been observed on the Tracy Annex (DLA 2013e, Benson 2014). Historically, burrowing owls have not been observed at the installation, but the species was observed on the Tracy Annex in 2014. Four other state-listed bird species (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 Migratory Bird Treaty Act (MBTA). Those species and other migratory birds might use the area for nesting, foraging, or resting during migration (DLA 2013e).

Wetlands. Wetlands are special aquatic sites that have a high resource value. The U.S. Army Corps of Engineers (USACE) conducted a jurisdictional determination at the installation. There are no known wetlands regulated under Section 404 of the Clean Water Act on the installation; however, there are three percolation/evaporation ponds associated with the installation's storm water system and WWTP at the Tracy Site that support wetland vegetation (DLA 2013e).

3.6.2 Environmental Consequences

Proposed Action

Vegetation. Long-term, minor, beneficial and adverse effects on vegetation would be expected. The proposed projects in the RPMP would be sited in the developed or previously disturbed areas of the Tracy Site and agricultural fields of the Tracy Annex. Crop vegetation at the Tracy Annex would be impacted by projects sited in that location; however, siting of the projects at the Tracy Site and Tracy Annex are not expected to result in a loss of native vegetation. The IPMP addresses weed control and identifies sensitive areas that would be considered before implementing pest controls (DLA 2013d). Additionally, the SP proposes development and implementation of an Integrated Natural Resources Management Plan (INRMP) that would help to protect and enhance wildlife habitats (i.e., aquatic, riparian, wetlands, terrestrial), which would have a beneficial effect on vegetation.

Wildlife. Long-term, minor, beneficial and adverse effects on wildlife species and their habitats would be expected. There is a lack of native wildlife and suitable habitat in the areas where the RPMP projects would be sited at the Tracy Site. Agricultural land at the Tracy Annex provides foraging and resting habitat for various migratory bird species, and would be affected by projects sited there. However, similar agricultural habitat occurs widely in the area. Where possible, large trees, marsh, and riparian vegetation at ponds associated with the installation storm water system and WWTP, and open undisturbed space should be maintained as habitat for wildlife species. The wind turbine should be designed and sited to minimize impacts on birds and bat species. Development and implementation of an INRMP, which would include routine habitat assessments and monitoring programs and measures to protect and enhance wildlife habitats (e.g., aquatic, riparian, wetlands, terrestrial), would have beneficial effects on wildlife.

Protected Species. Long-term, minor, adverse and beneficial effects on protected species would be expected. No federally listed threatened or endangered species are known to occur on the installation. Three California-protected bird species, including one species listed as state threatened (Swainson's hawk), have been documented at the Tracy Annex. Projects sited at the Tracy Annex would have an adverse effect on habitat used by these species. However, similar agricultural habitat occurs widely in the area. Surveys would be conducted for all projects sited in an area with suitable burrowing owl habitat using the California Burrowing Owl Consortium survey protocol and mitigation guidelines (CBOC 1993), and appropriate protective measures would be implemented. A pedestrian survey of the project area and

150-meter (500-foot) buffer would be conducted prior to 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 ground-disturbing activity. If activities must occur within 50 meters (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 75 meters (246 feet) of an occupied burrow during the breeding season (February 1 through August 31). The IPMP periodically evaluates ongoing and proposed pest-control operations to ensure compliance with the Endangered Species Act.

Minor, adverse effects on migratory birds, as previously described, would be expected. MBTA-listed bird species occur on the installation year-round and nest there from February 15 through August 31 annually. The wind turbine should be designed and sited to minimize impacts on sensitive bird species. Due to the lack of natural vegetation and surface waters at the installation, significant long-term impacts are not expected from siting and design of projects. Development and implementation of an INRMP, which would include routine habitat assessments and monitoring programs and measures to protect and enhance wildlife habitats (i.e., aquatic, riparian, wetlands, terrestrial), would have beneficial effects on protected species.

Wetlands. No effects on USACE jurisdictional wetlands would be expected. Where possible, marsh and riparian vegetation around ponds associated with the installation's storm water system and WWTP should be maintained to provide habitat for wildlife species.

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 an INRMP was developed and implemented. 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. In addition, management measures designed to protect and enhance wildlife habitats would not be implemented, thereby allowing for a continuing decline in the quality and complexity of the habitats. The No Action Alternative would not establish routine management measures to protect and enhance these habitats by preventing or minimizing potential impacts.

3.7 Transportation and Infrastructure

3.7.1 Existing Conditions

Transportation System. The Tracy Site has three ACPs, including one for trucks, one used as the main entrance gate, and one for employees. The ACPs have experienced queuing issues resulting in traffic backups during peak travel periods. The installation road network was originally design based on a grid; however, as the installation expanded and warehouses were replaced, the grid was shifted and thoroughfares were disconnected. The traffic level of service is below optimal (DLA 2013a). The Tracy Annex does not have ACPs or an established road network. Access to Tracy Annex is available from Banta Road and 11th Street, and dirt roads provide access to the existing remediation system and monitoring wells. The installation uses over-the-road truck transport as a mode of moving and shipping supplies. There is a former railroad yard and associated tracks on the Tracy Site, but the railroad yard and tracks are unserviceable and not used to transport materials. The Tracy Site and Tracy Annex are separated from each other by California Northern commercial railroad tracks that are outside of the installation boundary, and Union Pacific railroad tracks form the southeastern boundary of the Tracy Site (DLA 2013a).

Transportation options to the installation include privately owned vehicles, bus service, and ride-share programs. There are no contiguous bicycle/walking routes within the installation, and sidewalks are limited, serving only as access ways to buildings, and generally do not interconnect facilities.

Electrical System. The Tracy Site's electrical distribution system consists of overhead and underground lines. All power distribution infrastructure located between the main breaker and the terminus at each building is owned and maintained by DLA. Backup power is available through several emergency generators located throughout the installation (DLA 2013b). A small electrical grid has been established at the Tracy Annex in conjunction with the groundwater remediation system.

The total electrical consumption in FY 2011 was 21.5 million kilowatt hours (kWh), representing approximately 60 percent of energy use for facilities. Peak demand, estimated to be approximately 3,915 kilowatts (kW), is primarily due to the use of air conditioning during the summer months. As of 2013, the installation had one of the lowest energy use intensities in the DLA (DLA 2013b).

Natural Gas System. The installation owns, operates, and maintains its natural gas distribution system. In FY 2011, the installation used approximately 51,000 million British thermal units (MMBtu) of natural gas, which represented approximately 40 percent of the installation's energy use (DLA 2013b) and is expected to increase. Current system capacity is projected to remain adequate in spite of increased demand (DLA 2013a).

Liquid Fuel System. Propane, gasoline, and diesel fuel are all used for vehicle fuel at the installation. Propane is primarily used to fuel forklifts. Gasoline and diesel fuel are used to fuel the installation's vehicles. In FY 2011, the installation used 1,327 MMBtu of gasoline and 6,541 MMBtu of diesel fuel (DLA 2013b). Major bulk storage consists of aboveground storage tanks. No underground storage tanks are used for fuel storage (DLA 2011c).

Potable Water System. The installation owns and manages the potable water infrastructure, which consists of three groundwater wells (Wells 7, 8, and 9) located in the southern portion of the Tracy Site, two storage tanks (500,000-gallon ground-level tank and 250,000-gallon elevated tank), 19 miles of piping, and other associated equipment (DLA 2010b). The water is used to meet domestic and fire suppression demands. Daily water demand at the Tracy Site ranges from 51,000 gallons in December to 139,000 gallons in August (DLA 2009a). Current annual water use is 34,601,000 gallons (DLA 2013c).

Sanitary Sewer and Wastewater System. The installation owns, operates, and maintains its own WWTP at Building 246 in the northern portion of the Tracy Site. Treated effluent is discharged to one of two ponds where it percolates or evaporates. Average discharge to the ponds is 30,000 gallons per day with occasional peak flows of 70,000 gallons per day, with a total capacity of 350,000 gallons per day. Future demand is not expected to change substantially (DLA 2011d, DLA 2013a).

Communications System. One Lucent Definity G3R phone switch is located at the installation. The switch has a 3,000-port capacity; 2,000 are currently in use. The local area network infrastructure at the site has a 1-gigabit backbone with 100-megabyte connectivity to the desktop. Maintenance of the switches is handled through a service contract with Avaya Technologies (DLA 2013a).

Solid Waste Management. Solid waste is transported from the Tracy Site to an offsite municipal landfill by a private contractor. More than 530 tons of waste is generated annually at the Tracy Site; currently, no municipal waste is generated at the Tracy Annex. Recyclables are collected and marketed to a private contractor. The installation operates in accordance with its Integrated Solid Waste Management Plan (DLA 2013a).

Storm Water System. Storm water on the installation is managed through a system of drain inlets, pipes, open channels, and pumping stations. Storm water on the Tracy Site is either directed to a concrete-lined ditch parallel to 4th Street (western system) or into an underground conveyance system that flows parallel to 5th Street towards a lift station near Building 208 (eastern system), both of which discharge into a

retention pond in the northwest corner of the Tracy Site with a capacity of 24.5 acre-feet where the water naturally evaporates or percolates. The storm water system has proven adequate for the frequency and duration of most storms experienced in the area (DLA 2013c). The Tracy Annex does not have a storm water management system.

Storm water from high-intensity storm events is pumped off site to the West Side District canal that ultimately discharges into the San Joaquin River. The Tracy Site is permitted to discharge storm water associated with industrial activities under California State Water Resources Control Board (SWRCB) Permit Number CAS000001 Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities. The industrial storm water permit is issued by the California SWRCB under Water Quality Order Number 97-03-DWQ and lists the requirements for a Storm Water Pollution Prevention Plan for an industrial facility (DLA 2012a).

3.7.2 Environmental Consequences

Proposed Action

Transportation System. Long-term, minor, beneficial effects on the transportation system would be expected. Transportation infrastructure would be improved with the redesignation of secondary traffic routes at the Tracy Site and establishment of a new road network and ACP at the Tracy Annex, thereby providing a higher level of service throughout the installation. The proposed overpass would connect the Tracy Site and the Tracy Annex by providing access over the railroad tracks. The proposed redesigned ACP at the Tracy Site would alleviate the congestion on Chrisman Road due to slow processing of vehicles. The Proposed Action would preserve a single railroad track for rail shipments in the future.

Electrical System. Long-term, moderate, beneficial effects on the electrical system would be expected. Electrical demand is anticipated to increase due the siting of the proposed projects, including development of the Tracy Annex. Implementation of the RPMP, NZE Study, and SP would result in additional renewable energy systems and buildings and infrastructure being designed to maximize efficiency and minimize demand to meet future electrical demands, while also maintaining energy security and independence and meeting Federal mandates established in EO 13514. Renewable energy projects (e.g., solar photovoltaic, wind, and biomass projects) and establishment of a microgrid as identified in the NZE Study would require a larger investment; however, these efforts would allow the installation to attain goals set in EO 13514.

Natural Gas System. Long-term, minor, adverse effects on the natural gas system would be expected. Implementation of the RPMP would result in an increase in building space and natural gas energy requirements. The NZE Study indicates that implementation of its provisions would result in buildings designed and constructed to maximize efficiency and minimize demand, including the use of alternative fuels, partially offsetting any increase in demand for natural gas.

Liquid Fuel System. Long-term, minor, beneficial effects on liquid fuels system would be expected. Implementation of recommendations in the NZE Study would result in decreased demand for gasoline and diesel fuel, but an increased demand for propane (DLA 2013b). The NZE Study identifies decreased use of gasoline/diesel-powered vehicles, and a reduced and optimized fleet through increased use of propane/electrical-powered fleet vehicles and use of infrastructure supporting alternative fuel distribution.

Potable Water System. Long-term, minor beneficial effects on the potable water system would be expected. The efficiency and performance of the potable water system would improve with the addition of the proposed elevated water tank and the replacement of the piping system. Several proposed projects would assist the installation in attaining water conservation goals identified in EO 13514. Installing meters throughout the installation would assist in identifying areas in which water conservation efforts could be most valuable. The SP proposes distribution system audits aimed at leak detection and repair

(DLA 2013c). The RPMP proposes the replacement of boilers and heaters with more efficient units (DLA 2013a). Implementation of these projects would facilitate a reduction in water use.

Sanitary Sewer and Wastewater System. Long-term, minor, adverse effects on the sanitary sewer and wastewater system would be expected. New buildings and infrastructure would increase demands placed on the system, but would incorporate sustainable building practices, maximizing efficiency and minimizing demand. Replacement of the sewage piping system would improve the reliability of the system. The installation's WWTP has sufficient capacity to service the increased demand; however, a new sanitary sewer collection system is required to support development on the Tracy Annex.

Communications System. Long-term, minor, beneficial effects on communications systems would be expected. The proposed Information Systems Facility would improve information technology services because it has better access control than the existing facilities, which would result in a more reliable, more secure, and more resilient system. The current communications backbone is sufficient to provide service to additional buildings because the current switch use is at less than 70 percent of capacity.

Solid Waste Management. Long-term, minor, beneficial effects on solid waste management would be expected. The proposed Recycling Center would facilitate the installation's recycling program. The SP includes additional action plans that would reduce and improve the management of solid waste.

Storm Water System. Long-term, minor, adverse effects on the storm water system would be expected. Full implementation of the RPMP would result in an increase in impervious surfaces, which would result in an increase in storm water runoff during high-intensity storms. However, implementation of storm water initiatives presented in the SP, such as green storm water infrastructure, including rainwater capture and rain gardens, and incorporation of LID practices into project design would reduce the amount of runoff, thereby reducing demand on the system. The proposed replacement of the storm piping system would also improve the reliability of the system.

No Action Alternative

Existing conditions would remain the same as described in **Section 3.7.1**. Therefore, no effects on transportation and infrastructure would occur.

3.8 Hazardous Materials and Wastes

3.8.1 Existing Conditions

Hazardous Materials, Hazardous Wastes, and Petroleum Products. The installation is a large-quantity generator of hazardous wastes, including a variety of paint wastes, solvents, acids, bases, and off-specification mission stock. These wastes are collected from several daily pickup areas throughout the installation (DLA 2011e). The Tracy Site operates a Resource Conservation and Recovery Act-permitted hazardous waste storage facility at Building 38 and the Recoup Area of Warehouse 28 (Permit No. CA4971520834) (California DTSC 2014). Both facilities are 90-day hazardous waste accumulation areas in which hazardous wastes generated on the installation can be stored for up to 90 days. Building 38 functions as the site of the Hazmat Pharmacy and is the primary 90-day hazardous waste accumulation area at the Tracy Site (DLA 2011e).

Environmental Restoration Program. There are 21 Installation Restoration Program (IRP) sites at the Tracy Site. Of the 21 IRP sites, 3 are areas with groundwater contamination that emanates from several contamination locations on the Tracy Site, 3 are soil vapor extraction sites, and 15 are areas with soil contamination. Contaminated groundwater plumes have been identified emanating from the Tracy Site, including Operable Unit 1 plumes (Area 3 trichloroethylene [TCE] plume, North Central TCE plume, and the Banta Road plume) and the Northwestern Corner Dieldrin plume. Contaminated groundwater is being remediated and land use controls (LUCs) such as prohibition on use of contaminated groundwater for

domestic use, appropriate signage, compliance with notification procedure for land use changes, and maintenance of administrative controls (i.e., RPMP addendum and notification procedures), are in place. LUCs also exist on the Tracy Site for contaminated soil left in place at Area 1/Building 237, Solid Waste Management Unit (SWMU) 2/3, SWMU 6, and Defense Site Environmental Reporting and Tracking System 67 where contaminant concentrations in subsurface soil could affect construction workers (DLA 2012b, DLA 2013a).

Asbestos-Containing Material. Facilities constructed prior to 1980 are assumed to contain asbestos-containing material (ACM). Most of the buildings associated with the projects in the RPMP were constructed prior to 1980. According to the installation's Final Asbestos Survey Report and Management Plan, which was completed in February 2009, there are several facilities at the Tracy Site that are known to contain ACMs. The most common ACMs found in these buildings include roofing and wall materials, fire doors, and molding. No suspected ACM disposal areas were identified within the installation (DLA 2009b).

Lead-Based Paint. The use of most lead-based paint (LBP) was banned in 1978; hence, all buildings constructed prior to 1978 are assumed to contain LBP. Most of the buildings associated with the projects in the RPMP were constructed prior to 1978.

Polychlorinated Biphenyls. Based on the age of many facilities at the Tracy Site (e.g., constructed prior to 1979), it is possible that some electrical equipment contains polychlorinated biphenyls (PCBs). However, all electrical equipment identified as containing PCBs has been removed and appropriately disposed. There might still be some fluorescent light ballasts that contain PCBs, although large-scale, energy-saving programs have replaced many of these PCB-containing fixtures.

Pesticides. The installation uses an integrated pest management approach to pest control to minimize the types and quantities of pesticides used at the installation. Least-toxic chemical controls are used, where appropriate. Pesticides are stored at Building 238. Pesticide application is conducted by Pest Management personnel who follow a general policy of evaluating the need for chemical application prior to spraying (DLA 2011e, DLA 2013d).

Radon. The USEPA has established a guidance radon level of 4 picoCuries per liter (pCi/L) in indoor air for residences. Radon gas accumulations greater than 4 pCi/L are considered a health risk to occupants. San Joaquin County is in Radon Zone 3, which has a low potential for radon levels above 4 pCi/L. Radon Zone 3 has a predicted average indoor radon screening level of less than 2 pCi/L (USEPA 2014).

3.8.2 Environmental Consequences

Proposed Action

Hazardous Materials, Hazardous Wastes, and Petroleum Products. Long-term, minor, beneficial effects would be expected. A new hazardous materials storage facility is proposed to supplement the existing Hazardous Material Storage Warehouse at Warehouse 28. Furthermore, actions identified in the NZE Study and SP, including compliance with Federal mandates, continuation or increase of incentives for waste diversion, and reduction of fossil fuel use, would reduce waste and disposal and consumption of petroleum products.

Environmental Restoration Program. No effects on the environmental restoration program would be expected in relation to potentially impacted soils or groundwater. The majority of facilities proposed for demolition and new construction coincide with or are proximal to sites with LUCs. These LUCs specifically restrict the land from being used for residential development, play areas, or daycare facilities. The uses and buildings proposed in the RPMP and its component plans are consistent with the LUCs. Additionally, the installation's Environmental Office would review all proposed construction projects, evaluate the proposed project with respect to the land use restriction and other LUCs such as notification procedures, and issue a record of environmental consideration with the findings of the evaluation. Where

LUCs are in place, future buildings are required to be designed and constructed with engineered controls specifically designed to prevent the migration of soil vapor to indoor air (DLA 2013a). Only proposed projects consistent with the LUC objective would be approved. Several RPMP projects would be sited within areas undergoing groundwater monitoring; however, all projects would avoid existing groundwater monitoring wells.

Asbestos-Containing Material. Short-term, minor, adverse and long-term, minor, beneficial effects would be expected. Implementation of the RPMP would remove older buildings, which are more likely to contain ACM. Demolition and upgrade of all buildings would be conducted under appropriate guidance for asbestos abatement. Proposed new buildings would be designed to be free of ACMs, to the extent feasible, resulting in an overall decrease in these materials at the installation.

Lead-Based Paint. Short-term, minor, adverse and long-term, minor, beneficial effects would be expected. Implementation of the RPMP would replace some buildings assumed to contain LBP (i.e., those constructed prior to 1978) with newer buildings that would not contain LBP. Removal of LBP would be conducted under appropriate guidance for LBP removal. Proposed new buildings would be free of LBP, resulting in an overall decrease in these materials at the installation.

Polychlorinated Biphenyls. Long-term, minor, beneficial effects would be expected. Implementation of the RPMP would replace buildings that might have PCB-containing equipment and site new buildings that would not contain PCB-containing equipment. The removal of PCBs would be beneficial by decreasing these materials on the installation.

Pesticides. Long-term, minor, beneficial effects would be expected. Implementation of the IPMP would reduce reliance on pesticides and ensure that pest management equipment is programmed for replacement.

Radon. No effects from radon would be expected. The installation would conduct radon testing to confirm the radon levels at the various project locations, as necessary. If the testing results were to confirm radon at concentrations above 4 pCi/L, the new buildings would be designed to include appropriate radon-control infrastructure to limit the potential for indoor radon accumulation.

No Action Alternative

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

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4.0 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 and the spatial area of consideration is the installation and surrounding region.

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

- Improve Chrisman Road from a rural road to an arterial-level traffic way.
- Modify 11th Street to provide access to the proposed Tracy Annex ACP.
- Construct a 113-acre multimodal transit center on the northeast corner of Chrisman Road and 11th Street, northwest of the Tracy Annex.

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

Land Use and Recreation. The Proposed Action would enhance land use compatibility on the installation because future development would be sited and designed according to the installation's RPMP. Future development off-installation would be sited and designed according to local zoning and planning regulations.

Noise. Selective siting and design of proposed projects identified in the RPMP would minimize long-term noise effects of future development. A temporary increase in noise would occur from off-installation construction, demolition, and land-disturbing activities, but would be limited to areas adjacent to work areas. Siting of the multimodal transit center would likely generate additional long-term noise. Sensitive noise receptors, such as residences and schools, are not expected to be affected.

Air Quality. The Proposed Action would result in a potential reduction in air emissions. Permanent increases in air emissions would occur from new stationary air emissions sources; however, the removal of existing stationary air emissions sources would permanently reduce air emissions.

Geological Resources. Increased erosion and sedimentation as a result of full implementation of the RPMP and during excavation, grading, and filling of off-installation projects would be possible. Adverse effects would be minimized by siting and design practices identified in the RPMP and component plans, and other standards.

Water Resources. Added impervious surfaces would increase the amount of storm water runoff and reduce the amount of surface area available for groundwater recharge. LID and storm water management techniques would be implemented to minimize storm water runoff.

Biological Resources. Cumulative effects on vegetation, wildlife, and protected species would be limited due to the developed area and minimal habitat capable of supporting protected species surrounding the installation. The Proposed Action is not expected to result in a loss of native vegetation, but agricultural vegetation used by migratory birds as habitat would be removed; however, similar agricultural habitat occurs widely in the area.

Transportation and Infrastructure. Improvement and modification of off-installation roads would improve traffic flow, alleviate traffic congestion, and improve transportation infrastructure in the vicinity of the installation and throughout the region. However, the multimodal transit center could increase traffic in the vicinity and become a congestion point. On-installation traffic service would be improved with the proposed redesigned ACP at the Tracy Site, redesignation of secondary traffic routes, and establishment of a new road network and ACP at the Tracy Annex.

Hazardous Materials and Wastes. Construction activities would result in a temporary increase in the use of hazardous materials and the generation of hazardous wastes.

4.2 Unavoidable Adverse Effects

Unavoidable adverse effects would occur if the Proposed Action was implemented. Adverse effects that could not be avoided include siting of proposed projects in undeveloped areas of the installation, thereby increasing disturbance of topography and soils, and storm water runoff and reduced groundwater infiltration from the added impervious surface. Each of these effects is discussed in detail in **Sections 3.1** through **3.8**. None of these effects would be significant.

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 installation's RPMP and its component plans would not result in any significant or incompatible land use changes on- or off-installation. The RPMP and its component plans consider the installation's existing conditions and constraints in the siting, design, and timing of the projects proposed within these plans.

4.4 Relationship Between Short-term Uses of Man's Environment and Maintenance and Enhancement of Long-term Productivity

The Proposed Action would include siting of proposed facilities in accordance with the RPMP, encouraging the use of alternative forms of transportation, implementing sustainability actions to reduce energy consumption, modernizing utility infrastructure, and establishing appropriate natural resources management processes. The long-term beneficial effects would ensure that the installation is able to meet its current and future mission requirements, while ensuring the energy efficiency and sustainability of the installation.

4.5 Irreversible and Irretrievable Commitment of Resources

The Proposed Action would not involve the irreversible and irretrievable commitment of energy resources and human resources. The Proposed Action would result in the commitment of land for the siting of the 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 would increase energy consumption from the net increase in building space, but it would also reduce energy consumption by upgrading and replacing older and outdated buildings with modern, energy-efficient, sustainable buildings. The installation's NZE Study and SP would reduce the amount of energy consumed at the installation and encourage the use of energy from renewable, non-fossil-fuel-based sources. The installation would achieve an NZE footprint after full implementation of the NZE Study in 20 to 30 years.

4.7 Natural or Depletable Resource Requirements and Conservation Potential

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

5.0 CONCLUSION

The introduction to **Section 3** provides information on which resource areas were selected to be analyzed in detail in the 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. Implementation of the Proposed Action or No Action Alternative would not result in any individual or cumulatively significant environmental impacts. Therefore, preparation of an EIS is not warranted and issuance of a FONSI would be appropriate.

Table 5.1 Potential Impacts of the Proposed Action and No Action Alternative

Resource Area	Proposed Action	No Action Alternative
Land Use and Recreation	Long-term, moderate, beneficial (land use); Long-term, minor, beneficial (recreation)	No impact
Noise	Long-term, minor, adverse	No impact
Air Quality	Long-term, minor, beneficial	No impact
Geological Resources	Long-term, negligible to minor, adverse	No impact
Water Resources	Long-term, negligible, beneficial and adverse	No impact
Biological Resources	Long-term, minor, beneficial and adverse	No impact
Transportation and Infrastructure	Long-term, minor to moderate, beneficial and adverse	No impact
Hazardous Materials and Wastes	Short-term, minor, adverse and long-term, minor, beneficial	No impact

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APPENDIX A. PROPOSED PROJECTS IN COMPONENT PLANS

Net-Zero Energy Plan

The Net-Zero Energy Plan includes the following proposed projects:

Energy Reduction Projects

- Survey energy conservation measures (ECMs), including lighting retrofits, installation of destratification fans, infrared radiant heaters, and retrocommissioning of heating, ventilation, and air conditioning (HVAC) systems.
- Solar walls.
- Fiscal year (FY) 2009 Audits ECMs
    - Install programmable or addressable thermostats in Buildings 13, 14, 17, 18, 19, 20, 21, 22, 29, 30, 56, 57, 100, and 201.
    - Use local occupancy-based heaters in Buildings 17 and 21.
    - Infrared radiant heaters in Building 56.
    - Retrocommissioning of existing window air conditioners.
    - Lighting retrofits.
- Facility Energy Decision System (FEDS) Model ECMs, including retrofits of lighting, hot water, and roof insulation.
- eQUEST Model ECMs, including implementing enhanced HVAC controls in areas that are both cooled and heated.
- Building demolition and construction projects identified in the Real Property Master Plan (RPMP).

Fleet Management Projects:

- An E85 alternative fuel gas station on the installation.
- Twenty electric charging stations, including 10 charging stations spread throughout the installation with the majority located within the confines of the transportation motor pool.
- Exchange 7 fossil-fueled light truck vehicles for alternative-fueled vehicles.
- Exchange 20 poor-performing vehicles in the current fleet.
- Exchange 7 fossil-fueled heavy truck vehicles and passenger vehicles for alternative-fueled vehicles.
- Ensure the right vehicle is used for the appropriate mission.
- Exchange the majority of sport utility vehicles for small-midsize sedans.
- Exchange the remaining gasoline material-handling equipment (MHE) for electric/propane MHE and endeavor to standardize all MHE to be electric/propane.
- Balance the overutilization and underutilization of equipment pieces.
- Exchange 17 gasoline forklifts for electric/propane-butane forklifts.
- Reduce equipment fleet size by the initial 105 pieces recommended for turn-in.
- Expand data collection information on equipment to the same degree of detail that is collected for vehicles.

Microgrid Projects

- Plan for connection to a grid-connected microgrid system and, if feasible, an islanded microgrid system.
    - PRC 1: Collect data (energy reduction, fleet management).
    - PRC 2: Establish metrics, baselines, and future projections of energy, fuel, and renewables.
    - PRC 3: Implement education and awareness (microgrid).
    - PRC 4: Perform Level 1 analysis of renewable energy.
    - PRC 5: Perform assessment of influencers to maximize energy conservation, energy controls, and energy efficiency (ECMs, energy-efficiency measures, controls, SMART technology [i.e., meters and appliances]).
    - PRC 6: Perform assessment of project implementation support (site location, permits, technology, team capital).
    - PRC 7: Develop characteristics of microgrid (architecture, technical requirements, operational requirements).
    - PRC 8: Develop management and implementation plans (action plans/projects, timelines, priorities, life cycle economics, contractual and financing options).
    - PRC 9: Develop measures and time periods to validate performance.
    - PRC 10: Continually evaluate and make modifications to program.
    - PRC 11: Conduct additional study for abnormalities in voltage regulation, protection and coordination, voltage stability, rotor angle stability, or frequency regulation.
    - MRV 1: Update data and perform measurement and validation.
    - MRV 2: Perform additional studies as required (feasibility of renewable energy alternatives, environmental requirements, and others).
    - MRV 3: Obtain permits.
    - MRV 4: Execute initial measurement and verification protocol/accept "project." Execute steady state measurement and verification protocol.
    - PPT 1: Obtain HOMER (microgrid software).
    - TRN 1: Train HOMER (microgrid software).
    - TRN 2: Provide operations and maintenance (O&M) training for technicians and O&M personnel on microgrid, controls, and SMART technology.
    - TRN 3: Provide supervisory training on microgrid, controls, and SMART technology.

Renewable Energy Projects

- Support of option that accommodates Defense Distribution Depot, San Joaquin and Defense Distribution Center, Susquehanna concurrently, and implement nine renewable energy projects that would accomplish the goal of net-zero energy for the two DLA installations.
    - Solar wall (i.e., transpired solar collectors) for Buildings 82, 732, 760, 765, and 2001 at Defense Distribution Center, Susquehanna
    - 1-megawatt (MW) utility-scale wind project (2,200 MWh/yr)
    - 26-MW utility-scale solar photovoltaic system (47,830 MWh/yr), including 8-MW and 18-MW projects
    - 10-MW biomass (wood) power plant (74,913 MWh/yr).

Sustainability Plan

The Sustainability Plan includes the following proposed projects. Major projects identified in Table 5.2 (Master Project List) of the RPMP are marked with an asterisk.

- INF 1: Develop a regular program of distribution system audits and leak detection studies.*
- INF 2: Perform a condition assessment of the sewer system to determine necessary upgrades.*
- INF 3: Replacement of sewer system elements with low-impact development (LID) improvements.*
- INF 4: Maintain and improve energy management system.*
- INF 5: Conduct formal study of basewide systems (surety, survivability, supply, sufficiency, and sustainability).
- INF 6: Use electrical and renewable energy (supply and sustainment).
- INF 7: Place critical systems underground (survivability).*
- INF 8: Monitor ingress/egress with cameras and motion detectors (survivability).*
- INF 9: Ensure utility adequacy (sufficiency).*
- MRV 1: Develop and maintain measurement and verification protocols.
- MRV 2: Procure and maintain meters.*
- MRV 3: Develop and maintain audit program.*
- MRV 4: Commission and re-commission buildings.
- MRV 5: Measure and verify building performance.
- MRV 6: Measure and verify recently installed ECMs, energy-efficiency measures, water conservation measures, water-efficiency measures, and aspects of sustainability component systems.
- ENG 1: Complete the metering project.*
- ENG 2: Train energy and facility personnel.*
- ENG 3: Implement the remaining Energy Conservation Programs identified in the FY 2009 Energy Audits.*
- ENG 4: Centralized access and control of direct digital control systems.*
- ENG 5: Energy awareness - Building energy bills.*
- ENG 6: Level 2 analysis for FEDS Model ECMs.*
- ENG 7: eQUEST Model ECMs.*
- ENG 8: Continue to implement the use of light-emitting diode and solar power public realm lighting.*
- PLN 1: Meet with regional transportation planning, renewable energy, watershed, and environmental management agencies.
- PLN 2: Reduce land, building, and infrastructure footprint.
- PLN 3: Follow best practices for land use planning.
- FUL 1: Increase alternative-fuel vehicles and electric cars for Government-owned vehicles.
- FUL 2: Evaluate alternative fuel/electric/fuel cell/hydrogen sources with provider.
- FUL 3: Evaluate long-term use of central heating to cogeneration dual-fuel plant.
- FUL 4: Review Vehicle Allocation Methodology.

- FUL 5: Develop and maintain measurement and verification protocols.
- FUL 6: Promote awareness of fuel conservation/efficiency and mission readiness.
- FUL 7: Form a Vehicle Allocation Methodology Board and develop policies.
- FUL 8: Develop/update fleet management plan.
- FUL 9: Develop and approve of Distribution and Allowances.
- FUL 10: Develop training and education program for mechanics and first line supervisors.*
- FUL 11: Determine effectiveness of scheduled services.
- FUL 12: Promote awareness of alternatively fueled vehicles.
- FUL 13: Turn-in excess vehicles (rate at 10 per year).
- FUL 14: Maintain good relations with General Services Administration.
- FUL 15: Replace aging fleet vehicles with newer fuel-efficient models (rate at two per year).
- FUL 16: Replace remaining fleet vehicles (5 gross trailer weight and under) with alternatively fueled models (rate at 10 per year).
- FUL 17: Replace remaining equipment with alternatively fueled models (rate at 15 per year).
- IAQ 1: Enhance awareness of indoor air quality, including green materials, green cleaning, and air infiltration. Continue the safety ambassador program to reinforce the current strong command support.
- IAQ 2: Capture the installation's current indoor air quality program.
- IAQ 3: Develop community health plan.*
- IAQ 4: Enhance awareness of indoor air quality, including green materials, green cleaning, and air infiltration.
- WTR 1: Install meters and communication system.*
- WTR 2: Isolate and evaluate outdoor water use.*
- WTR 3: Improvements from water quality modeling.*
- WST 1: Implement sustainable supply-chain management.
- WST 2: Start composting.*
- WST 3: Recycle rigid plastics, cans, bottles, and glass.*
- WST 4: Increase outreach and education efforts.*
- WST 5: Right-size recycling and trash containers.*
- WST 6: Invest in a recycling center.*
- GHG 1: Develop 2008 baseline and report annually.*
- GHG 2: Formulate Energy Management Plan (Scopes 1 and 2).*
- GHG 3: Formulate Energy Management Plan (Scope 3).*
- RNE 1: Install solar photovoltaic – utility scale (8 MW).
- RNE 2: Install biomass (wood) power plant (3 MW).
- RNE 3: Planned Projects – New Cumberland Site.*
- RNE 4: Planned Projects – Tracy Site.*
- RNE 5: Start permit process (air quality, environmental, building).*
- RNE 6: Environmental study/decision for photovoltaics and biomass.*
- RNE 7: Validate plan and develop initial measurement and verification protocol.

- RNE 8: Provide O&M training for technical personnel on controls/technology.*
- RNE 9: Provide O&M training for supervisory personnel on controls/technology.*
- RNE 10: Finalize measurement and verification protocol.
- RNE 11: Continually evaluate and make modifications to program.
- ENS 1: Survey workers and staff, and integrate best practices.*
- ENS 2: Website discussion board for Division Chiefs and encourage regular teleconferences.*
- ENS 3: Disseminate website discussion board that would allow questions and comments to flow between all levels of the agency.*
- ENS 4: Communication Study to determine effectiveness and efficiencies.*
- ENS 5: Training opportunities to understand how each system works.*
- ENS 6: Behavior Change Study.*
- MGD 1: Implement microgrid based on completed microgrid study recommendations.
- MGD 2: Update microgrid plans.*
- MGD 3: Obtain HOMER latest model.
- MGD 4: Train HOMER latest model.*
- MGD 5: Validate plan and develop initial measurement and verification protocol.
- MGD 6: Start permit process (air quality and environmental [grid-connected]).*
- MGD 7: Construct grid-connected microgrid.*
- MGD 8: Provide O&M training for technical personnel on controls/technology (grid-connected).*
- MGD 9: Provide O&M training for supervisory personnel on controls/technology (grid-connected).*
- MGD 10: Finalize measurement and verification grid-connected protocol.
- MGD 11: Continually evaluate and make modifications to program.
- MGD 12: Start permit process (environmental [islanded]).*
- MGD 13: Construct islanded microgrid.*
- MGD 14: Provide O&M training for technical personnel on controls/technology (islanded).*
- MGD 15: Provide O&M training for supervisory personnel on controls/technology (islanded).*
- MGD 16: Finalize measurement and verification islanded protocol.
- MGD 17: Continually evaluate and make modifications to program.
- REB 1: Inspect 10 buildings per year, starting FY 2013 (in accordance with Guiding Principles Memorandum of Understanding).*
- REB 2: Develop a standard set of energy- and water-efficient technologies to incorporate into each building type.
- REB 3: Develop and implement guidelines for comfort control for building interior.
- BIO 1: Program funding and develop an Integrated Natural Resources Management Plan.*
- BIO 2: Open communication with San Joaquin Council of Governments.
- BIO 3: Ensure the Installation Design Guide requires the use of native species.
- PRO 1: Continue to be the honest broker in requiring the rationale for procuring nongreen items.
- PRO 2: Continue to hire from within and choose strong, able, and caring personnel to become supervisors.

- PRO 3: As new missions are introduced at the Installation or as missions expand, continue to maintain a reasonable number of credit card holders.
- PRO 4: Train the workforce (with Defense Acquisition University).*
- PRO 5: Continue to support, update, and maintain DLA tracking.
- ELS 1: Consolidate data centers.*
- ELS 2: Reduce printers at personal work stations.
- ELS 3: Implement a pilot study for Thin Client.*
- ELS 4: Review shipping and receiving operations, and investigate companies with large shipping and receiving operations to glean best practices.*
- ELS 5: Continue compliance with mandates in terms of purchases, tracking, and disposal.
- FAN 1: Consolidate operations to one kitchen/cafeteria and a mobile truck.
- FAN 2: Develop pilot compost program.*
- FAN 3: Develop relationships with local food vendors to continue to promote possible partnerships.

Integrated Pest Management Plan

The Integrated Pest Management Plan includes the following proposed 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.

APPENDIX B. APPENDIX I OF THE DEFENSE DISTRIBUTION DEPOT, SAN JOAQUIN REAL PROPERTY MASTER PLAN (REDACTED)

I.1 DEVELOPMENT ALTERNATIVE 1

I.1.1 Summary of Alternative

Alternative 1 addresses development based on the changes from the short-range plan as noted in the assumptions and limits further development to infrastructure projects that will improve the installation conditions and address mandates. It sites the top three priorities and proposes a location for the energy farm on the Tracy Annex.

I.1.2 Concept Features

- Trailer parking and C Lot is located on the open area between Fourth and Fifth streets and C and D streets.
- A new ACP is proposed at the previous truck gate on D Street.
- New buildings are added for building 59 and the information systems facility.
- Demolish buildings 1, 3, 26, 27, 46, and 106.
- A portion of the Tracy Annex is used for a solar farm.

I.1.3 Development Plan

See Figure I.1, Tracy Alternative 1 Plan.

I.2 DEVELOPMENT ALTERNATIVE 2

I.2.1 Summary of Alternative

Alternative 2 represents a more extensive development option that is not as constrained by fiscal limits or a near-term (10- to 15-year) development goal. Projects that have been identified are shown with additional changes that need to be considered as part of advancing the installation's future capabilities. Another option is shown for a primary Tracy Site ACP and options for initial development and access between the Tracy Site and the Tracy Annex.

I.2.2 Concept Features

- A new ACP is proposed at Gate 3 on C Street. While it is not contingent upon the demolition of a building, the opportunity to extend it would be advantageous with the demolition of building 1. It straightens the ACP concept presented by Gannett Fleming and feeds into B Street and Ennis Drive.
- The railroad yard is removed and surfaced for open storage along a single railroad track for potential rail shipments.
- New buildings are added for building 59, an information systems facility, facility operations, MHE-AMHS maintenance, box and crate shop, hazardous material storage, mail room, training center, and a 400,000 GSF warehouse in the area east of building 22.
- Demolish buildings 1, 3, 6, 27, 36, 100, 231, 232, 234, 236, and 237.
- The northern area of the Tracy Annex is used for a solar farm and an outside storage area with a support building, potentially for the DLA Disposition mission.
- A double-gated railroad crossing is shown for access between sites.

I.2.3 Concept Shortfalls

- Double-gated railroad crossing should only be used on an infrequent basis.
- Development of the Tracy Annex requires major initial investment in infrastructure.
- Full ACP required but not provided for DLA Disposition.

I.2.4 Development Plan

See Figure I.2, Tracy Alternative 2 Plan.

I.3 DEVELOPMENT ALTERNATIVE 3

I.3.1 Summary of Alternative

The Tracy Site mission expands significantly. Development of the Tracy Annex is also shown because of its opportunity to fulfill all of the Defense Distribution Depot San Joaquin known mission requirements and have additional space for new missions.

I.3.2 Concept Features

- Illustrates new mission capacity model for Tracy Annex.
- Bridge access over California Northern Railroad tracks to join Tracy Site and Tracy Annex
- New buildings are added for building 59, an information systems facility, facility operations, MHE-AMHS maintenance, box and crate shop, hazardous material storage, mail room, training center, and an additional warehouse.
- Starting with structures constructed in the 1940s and working through removal of 50 1940s and 1950s structures, major facility replacements are under way. This plan demolishes 2,135,447 SF of marginally sustainable buildings that exceed normal structural life expectancy in the long-term window.
- Tracy Annex expands to area build-out.

I.3.3 Concept Shortfalls

- Requires major investment in new buildings, supporting infrastructure, and demolition of older structures.

I.3.4 Development Plan

See Figure I.3, Tracy Alternative 3 Plan.

TRACY ALTERNATIVE 1 PLAN

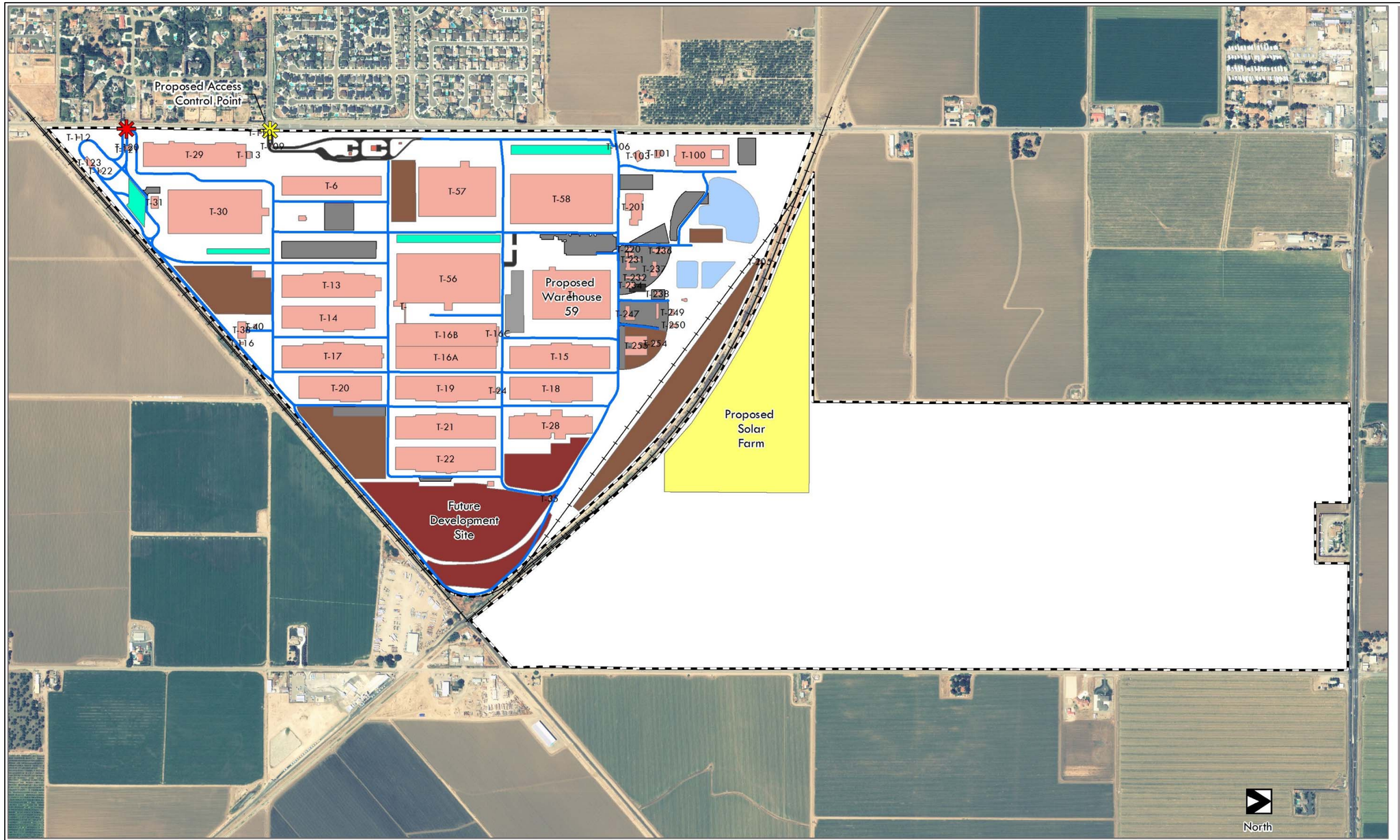

FIGURE I.1

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TRACY ALTERNATIVE 2 PLAN

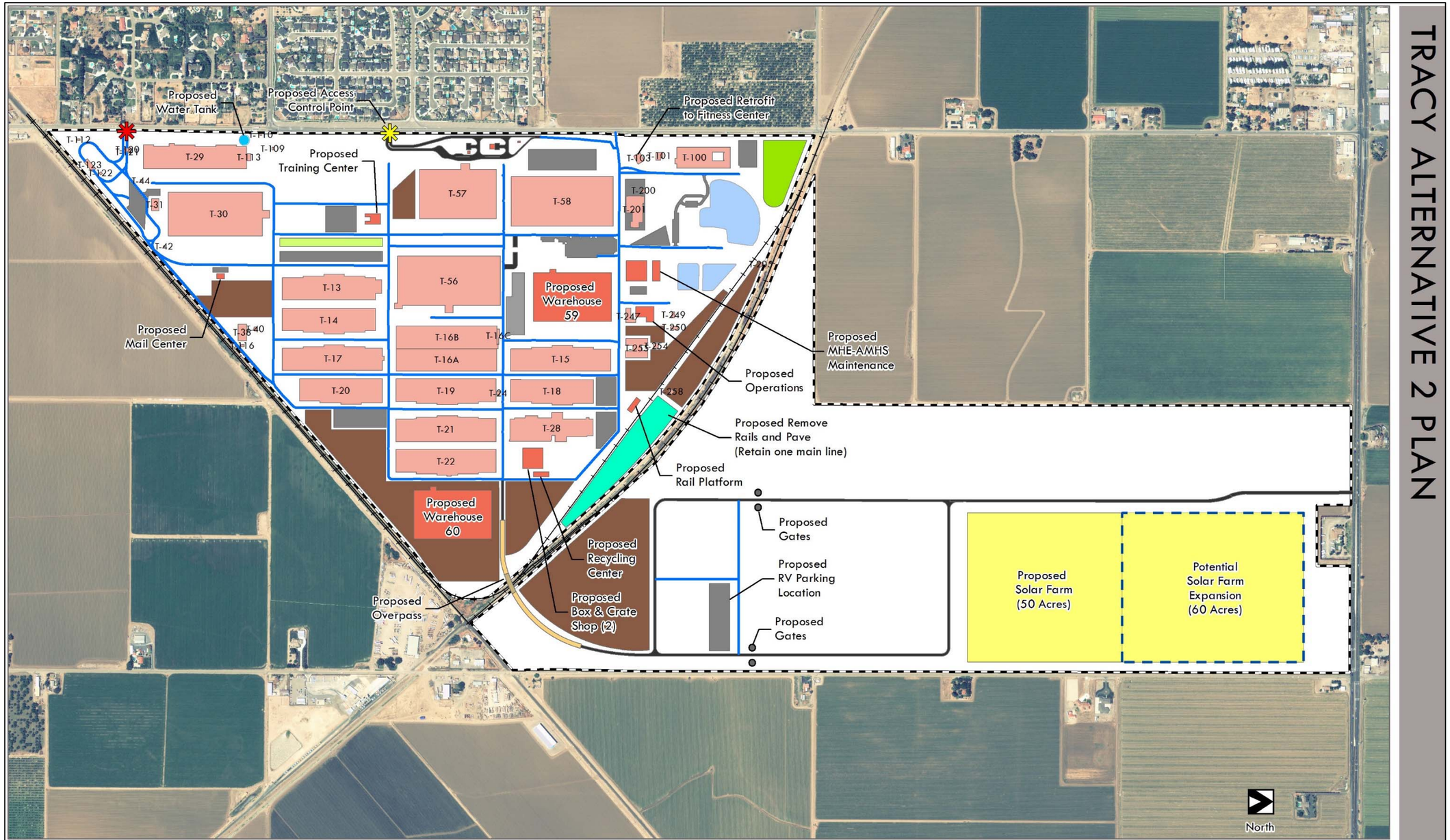

FIGURE I.2

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TRACY ALTERNATIVE 3 PLAN

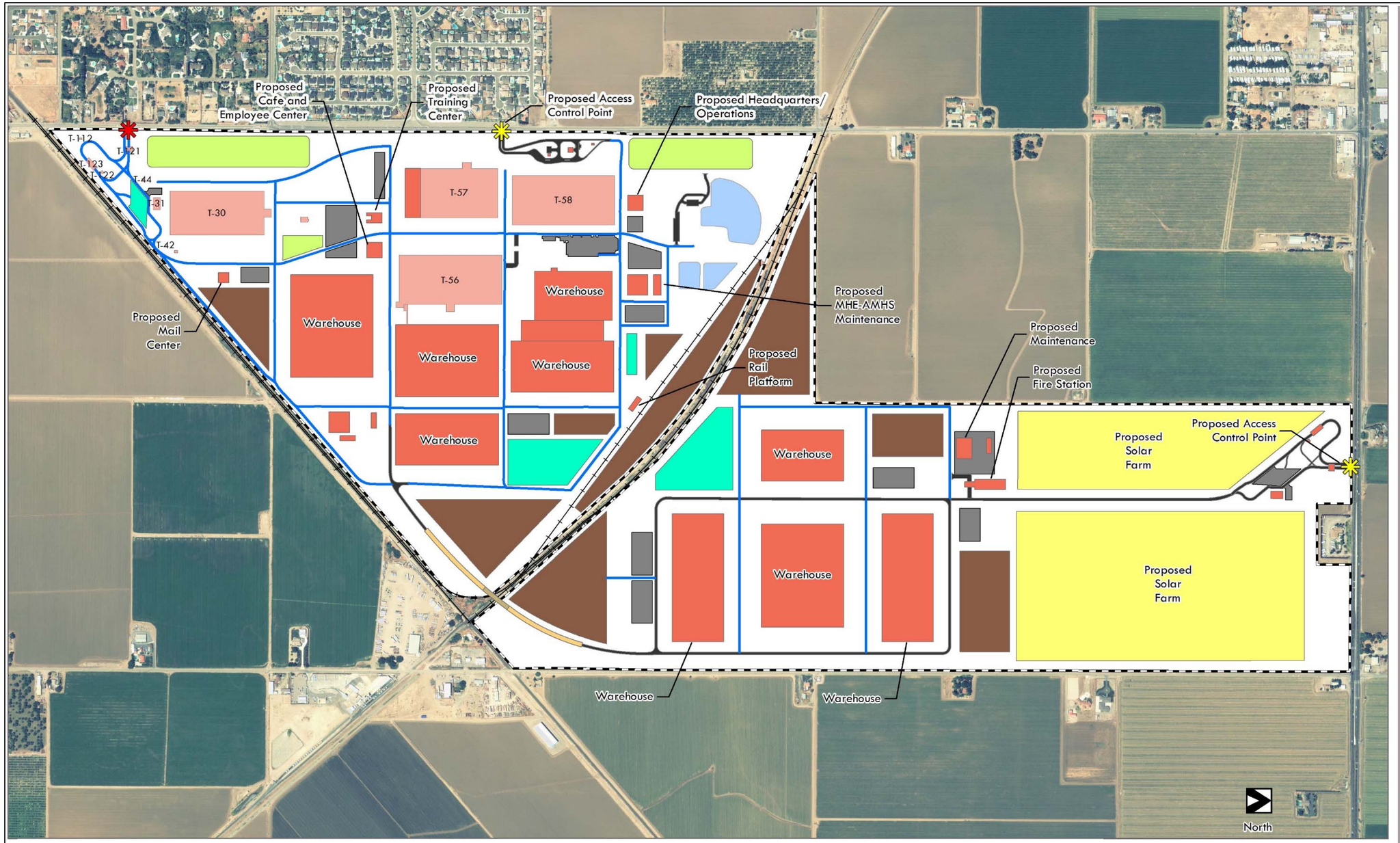

FIGURE I.3

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