



Luke Air Force Base Targeted Growth Management Plan

June 2020

Luke Air Force Base Targeted Growth Management Plan

**PREPARED BY:
MARICOPA ASSOCIATION OF GOVERNMENTS**

June 2020

FUNDED BY THE DEPARTMENT OF DEFENSE OFFICE OF ECONOMIC ADJUSTMENT

This study was prepared under contract with the Maricopa Association of Governments, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the Maricopa Association of Governments and does not necessarily reflect the views of the Office of Economic Adjustment.

Title VI Notice to the Public Maricopa Association of Governments

The Maricopa Association of Governments (MAG) hereby gives public notice that it is the policy of the agency to assure full compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, Executive Order 12898 on Environmental Justice, and related statutes and regulations in all programs and activities. Title VI requires that no person in the United States of America shall, on the basis of actual or perceived race, color, or national origin, be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which MAG receives federal financial assistance. Additional protections are provided in other federal and state statutes for discrimination based on religion, sex, disability, age, gender identity (as defined in paragraph 249(c)(4) of title 18, United States Code) or sexual orientation.

Any person who believes they have experienced discrimination under Title VI has a right to file a formal complaint with MAG. Any such complaint must be filed with MAG's Title VI Coordinator within 180 days following the date of the alleged discriminatory occurrence.

[Complaints should, at a minimum, include the following information:

- Your name and address, and a number at which you can be reached during business hours
- A general description of the person(s) injured by the alleged discriminatory acts
- A description of the alleged discriminatory act(s) in sufficient detail to enable the Title VI Coordinator to understand what occurred, when it occurred, and the basis of the alleged discrimination complaint (race, color, national origin, etc.)
- The letter must be signed and dated by the person filing the complaint or by someone authorized to do so on his or her behalf.]

For more information, or to file a complaint, please contact the Title VI Coordinator at (602) 254-6300.

Copyright 2020, Maricopa Association of Governments



Table of Contents

Acronyms

Executive Summary	i
--------------------------------	---

Acknowledgments	viii
------------------------------	------

Introduction	1
---------------------------	---

Education	8
Overview	8
Existing Conditions	9
Future Needs	12
Assets	12
Challenges	13
Key Findings.....	14
Education Implementation Plan.....	16



Workforce and Economic Development	22
Overview.....	22
Existing Conditions	23
Future Needs	24
Assets.....	25
Challenges	26
Key Findings.....	26
Workforce and Economic Development Implementation Plan	27



Housing	32
Overview.....	32
Existing Conditions	34
Future Needs	39
Assets.....	40
Challenges	40
Key Findings.....	41
Housing Implementation Plan.....	43



Transportation	46
Overview.....	46
Existing Conditions	48
Future Needs	52
Assets.....	54
Challenges	55
Key Findings.....	56
Transportation Implementation Plan.....	57



Figures & Tables

Figure I-1: Targeted Growth Management Plan Study Area	6
Figure H-1: 2019 Average Housing Sale Prices in the Study Area	38
Figure T-1: Transportation Infrastructure and Proposed Residential Developments in the Study Area	49
Figure T-2: Analysis of Adjacent Intersections.....	50

Table H-1: Total Housing Demand 2020-2026 in the Study Area-Dwelling Units ..	39
---	----

Acronyms

#	2-1-1 AZ	2-1-1 Arizona Community Information and Referral Services
A	ACMF	Arizona Coalition for Military Families
	ADE	Arizona Department of Education
	ADES	Arizona Department of Economic Security
	AFB	Air Force Base
	A&FRC	Airman and Family Readiness Center
	AM	Ante meridiem (morning)
	APS	Arizona Public Service
	ASU	Arizona State University
	AWDT	Average Weekday Traffic
	AZDVS	Arizona Department of Veterans' Services
	AZ OEO	Arizona Office of Economic Opportunity
B	BAH	Basic Allowance for Housing
C	CDC	Child Development Center
	CTE	Career and Technical Education
D	DES	Arizona Department of Economic Security
	DoD	Department of Defense
	DoDEA	Department of Defense Education Activity
	DOE	Department of Education
E	EDO	Economic Development Organizations
	EFMP	Exceptional Family Member Program
	EMCC	Estrella Mountain Community College
F	FY	Fiscal Year
G	GCU	Grand Canyon University
H	HTF	Housing Task Force
	HTW	Housing Task Workgroup
	HURF	Highway User Revenue Fund
I	IT	Information Technology
K	K-12	Kindergarten-12th Grade
L	LAFB/Luke AFB	Luke Air Force Base
	LOS	Level of service
	LPN	Licensed Practical Nurse

M	MAG	Maricopa Association of Governments
	MCCCD	Maricopa County Community College District
	MCOR	Maricopa Corporate College
	MCWDB	Maricopa County Workforce Development Board
	MDEF	McCarthy Dressman Education Foundation
	MILCON	Military Construction
	MSA	Municipal Statistical Area
N	N/A	Not applicable
	NAU	Northern Arizona University
	NSF	National Science Foundation
P	PM	Post meridiem (afternoon)
	POV	Privately-owned vehicle
	PPH	Persons per household
	PS&T	Professional, scientific, and technical services
S	STEM	Science, Technology, Engineering, and Mathematics
	SWOT	Strengths, Weaknesses, Opportunities and Threats
	SWHD	Southwest Human Development
	SWSC	Southwest Skill Center
T	TAP	Transition Assistance Program
	TBD	To be determined
	TDM	Transit Demand Management
	TGMP	Targeted Growth Management Plan
U	USAA	United Services Automobile Association
	UTIA	Universal Technical Institute - Avondale
V	VA	U.S. Department of Veterans Affairs
W	WeSERV	West and SouthEast REALTORS™ of the Valley
	WESTMARC	Western Maricopa Coalition
	West-MEC	Western Maricopa Education Center

Executive Summary

In 2012, the Department of Defense (DoD) designated Luke Air Force Base (Luke AFB) as the training home of 144 new F-35A Lightning II fighter jets. This mission expansion is expected to grow base personnel by an additional 2,234 service members by 2026. They are expected to be joined by an additional 4,717 household members, growing the base-related population by 7,041 to a total of 23,704 by 2026.

The goals of the Luke AFB Targeted Growth Management Plan (TGMP) are to support the base and leverage the opportunities presented by the growth in base-related population. This TGMP focuses on four key areas: Education, Workforce and Economic Development, Housing, and Transportation. The TGMP consists of four chapters, each presenting independent analyses of resources in the area surrounding the military installation for each of the key areas. These areas were prioritized by the surrounding communities and the base because of their importance for the well-being of the residents and to avoid duplicating work already expended in other studies.



The objectives of the Targeted Growth Management Plan are to:

1. Identify and assess existing conditions within the targeted areas of education, workforce and economic development, housing, and transportation.
2. Determine future needs associated with increased military and veteran population.
3. Develop short-term and long-term priorities and potential funding sources to accommodate this growth.
4. Develop planning, coordination and implementation strategies that help achieve the long-term goals of the stakeholders during this period of growth and change.
5. Maintain a central point of coordination for all major stakeholders who are impacted by the expansion of Luke AFB.
6. Establish a clear set of action steps for local communities to manage future growth and demands for services.



The TGMP draws on the most recent data from the base and surrounding region, sophisticated modeling techniques, an outreach survey of local residents and current base personnel, and input from advisory group and focus group members.

All study parameters and outcomes are presented in detail in a series of related papers prepared by the Matrix Design Group. These include the *FY 2019 Luke Air Force Base Targeted Growth Management Plan Executive Summary, Implementation Plan, Transportation White Paper, Workforce & Economic Development White Paper, Education White Paper, Housing White Paper, and Survey Report*.

Community and stakeholder input was integral to the preparation of the TGMP and its associated documents. Each strategy and recommended course of action was vetted by a wide group of stakeholders and experts in the fields of education, housing, real estate, transportation, and economic development. This group includes representatives employed by the surrounding cities, Maricopa County, the offices of state and federal elected officials, as well as representatives from industry groups and the nonprofit sector. For a list of participants see the ***Acknowledgments***.

For each targeted sector, the TGMP identifies the existing conditions, future needs, assets, challenges, key findings, and implementation plan for leveraging opportunities and supporting the mission expansion. Each proposed strategy in the implementation plan identifies potential task leads and partners, estimated costs and funding sources, appropriate times to initiate each course of action, and other information to help guide implementation. A summary of the key findings and the goals addressed in each sector's implementation plan are presented below.

EDUCATION

Summary of Key Findings

The schools in the Study Area are well-positioned to absorb the anticipated growth in the student population related and unrelated to mission expansion. Primary and secondary schools are numerous, optimally located, and well-performing, including where the greatest densities of school-age children are expected to reside.

There is a need for reliable, updated and comprehensive information about home-based childcare and early learning opportunities in the Study Area for military families. Off-base early learning opportunities and home-based pre-K and childcare options are estimated to be sufficient to meet the increasing demand expected with mission expansion and population growth. However, the on-base childcare center is at capacity and cannot be expanded. The inability to meet increased demand can be expected to persist as more personnel is assigned to the base. Access to quality, on-base and affordable childcare that accommodates extended and nontraditional working shifts is a continuing concern for military families.



Education Implementation Plan Goals

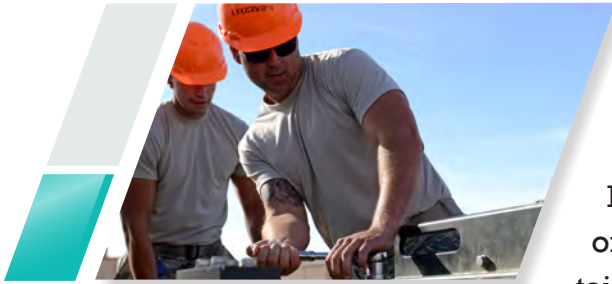
The Education Implementation Plan proposes a number of strategies to increase access to childcare, pre-school and K-12 educational opportunities so that childcare and educational needs of incoming personnel are met. Strategies E1-E6 and their associated sub-strategies address the following goals:

1. Improve the reliability and accessibility of information about home-based care and educational opportunities for young children.
2. Increase the number and accessibility of childcare providers in the Study Area who can accommodate the needs of military families.
3. Increase awareness of financial assistance programs that subsidize the primary care and education of young children and of childcare and early learning programs that serve qualifying, low-income families (e.g., Head Start).
4. Increase the capacity of the Child Development Center through building expansion and formal partnerships with civilian programs.
5. Improve the availability and quality of key programming at schools with lower Arizona Department of Education (ADE) ratings.
6. Increase school district administrators' and educators' awareness of the challenges military families face as they transition into new communities and schools; increase students' awareness of support available to them at their local schools.

WORKFORCE AND ECONOMIC DEVELOPMENT

Summary of Key Findings

Currently, the defense-related industry in Arizona is thriving and is anticipated to stay strong through the mission expansion at Luke AFB. The base is, and will continue to be, the backbone of this defense economy. The base impacts local, regional, and state economies, as well as the local workforce.



By 2026, 90 percent of all Luke AFB job impacts are projected to occur in the communities of Glendale, Surprise, Goodyear, and Avondale.

Nearby opportunities for military families, both in terms of jobs and training, will continue to be abundant in certain sectors. Other sectors are currently needed and will need coordination and partnerships in order for the region to stay competitive.

Workforce and Economic Development Implementation Plan Goals

The Workforce and Economic Development Implementation Plan presents a series of strategies to address the goals of capitalizing on the opportunities associated with the mission expansion for Luke Air Force Base personnel, their household members and the surrounding communities. Strategies W1, ED1 and ED2 and their associated sub-strategies are in alignment with Arizona's Be Connected program and Arizona Roadmap to Veteran Employment initiative, and they address the following goals:

1. Provide Luke AFB personnel who are separating from the service, military spouses, and community members the opportunity to obtain desired skills and quality employment.
2. Increase direct spending on military and DoD civilian personnel and private-sector defense procurement contracts (both awarded and performed) and increase the value of transfer payments throughout the Study Area.
3. Provide guidance and oversight of the implementation process through a centralized body that provides continuity in knowledge and decision-making regarding implementation.

HOUSING

Summary of Key Findings

The Study Area is projected to have an ample housing inventory at price points that should be attainable to incoming military personnel of all ranks, including those accompanied by a partner and/or family members. The projected ample housing supply applies to a variety of housing types. It is not restricted to price, size, or ownership versus rental housing options. Vacant residential units contribute the bulk of housing supply, annually contributing an average 83 percent of the overall housing supply in the Study Area. This abundant housing supply is forecasted to remain constant throughout the buildup. This large inventory should contribute to housing costs remaining relatively affordable.



Relative to affordability, housing that is affordable for ranks E-5 and above is projected to be available within the Study Area during the mission expansion. On average, 3,135 housing units are projected to be available within the Study Area and considered affordable to and attainable by personnel allowed to live off-base (Rank E-5 and above).

Housing Implementation Plan Goals

Although there is a large supply of housing in the Study Area, measures are still needed to ensure that Luke AFB personnel and their dependents are aware of and are able to capitalize on the variety of housing options that are affordable and that meet their needs. The proposed strategies in the Housing Implementation Plan work toward that goal while remaining actionable, attainable, and reasonable. Strategies H1-H4 and their associated sub-strategies address the following goals:

1. Ensure that all future Luke AFB personnel have access to adequate housing options.
2. Ensure that all future Luke AFB personnel have access to information regarding housing options in the area surrounding the base.
3. Ensure that future Luke AFB personnel have adequate housing options to live on base if they desire.
4. Provide guidance and oversight of the implementation process through a centralized body that provides continuity in knowledge and decision-making regarding implementation.

TRANSPORTATION

Summary of Key Findings

The West Valley will experience significant population growth over the next several years, causing the roadways to experience additional congestion. Impacts of additional Luke AFB employees on the larger transportation system will be minor compared to those caused by regional growth.



Thus, the increase in personnel at Luke AFB will not cause regional roadways to deteriorate from acceptable to unacceptable levels of service, except at one intersection adjacent to the base. Near the base, some areas are congested during peak hours. The congested intersections will be impacted further by additional personnel entering and leaving the base, but the strategies proposed in the Transportation Implementation Plan can mitigate this congestion.

Transportation Implementation Plan Goals

The proposed transportation implementation plan below presents a series of strategies to manage the anticipated growth in traffic around Luke Air Force Base. The recommendations below address the future transportation needs and provide actionable strategies to improve the existing transportation network at Luke AFB and its surrounding communities. The focus of the proposed strategies is to ensure that the increased congestion resulting from the population growth in the surrounding communities does not negatively impact the base and its mission. Strategies T1-T7 and their associated sub-strategies address the following goals:

1. Improve overall level of service for intersections at base entrances; reduce queue length (number of vehicles waiting) at the base exit turning movements.
2. Within Luke AFB's current resources and authority, improve transportation conditions on the base.
3. Improve key roadways throughout the Study Area that serve the Luke AFB population.
4. Improve the amount and convenience of service in a manner consistent with estimated demand and financial resources.
5. Expand options for Luke AFB employees and dependents who prefer not to rely on daily commuting by single-occupant vehicles.

6. Collaborate with the City of Glendale and other surrounding cities to improve access to Luke AFB for all bicyclists and pedestrians.
7. Provide guidance and oversight of the implementation process through a centralized body that provides continuity in knowledge and decision-making regarding implementation.

SUMMARY

The analysis of the four key sectors indicates the West Valley is well-positioned to absorb the growth generated by the mission expansion and by more people moving to the surrounding communities. Local jurisdictions and the base have support from numerous organizations and associated resources, including economic development organizations, real estate groups, education groups, and others that are actively engaged with each other and the base. Within the context of the TGMP, these existing relationships can be leveraged to provide a context in which Luke AFB personnel and local residents can thrive, and in which the military mission expansion and the surrounding communities' growth dovetail into a mutually-beneficial relationship.



Acknowledgments

A number of talented stakeholders contributed their valuable time and expertise to this report. We thank Matrix Design Group for the extensive data gathering and analyses that formed the foundation of this report. We thank the Office of Economic Adjustment at the Department of Defense for sponsoring this project and for their support and guidance throughout. Our Advisory Group members brought unique knowledge and skills to this project and shared critical feedback throughout the endeavor. We thank our focus group participants for helpful feedback on the findings from the targeted sector analyses. Insights and recommendations generated at the tactical team meetings were invaluable in shaping the final strategies for each sector. We thank the participants in the meeting to operationalize the implementation plans for key input on embedding the strategies in the community and guidance on potential staffing needs. West Valley Mayors and Managers, Luke Air Force Base Community Partnerships, and many others on the Luke Air Force Base West Valley Council, gave generously of their time and insights. They are too numerous to thank individually, but this work could not have been done without their assistance and expertise.

For hosting various meetings and access to their facilities, we thank the City of Surprise, City of Peoria, City of Glendale, Credit Union West, Dysart Unified School District, Sun Health, West Point High School, Tolleson Unified School District, and WESTMARC.

That we received help and insights from those acknowledged above should not be taken to imply that they concur with the views expressed in this report. MAG alone is responsible for the content, including any errors or oversights.

Luke Air Force Base Targeted Growth Management Plan Advisory Group

Thomas Adkins	City of Peoria
Valerie Bèrubè	Army Corps of Engineers, formerly with Luke Air Force Base
Danny De Hoog	Maricopa County Department of Government Relations
Roxane Dietrich	Luke Air Force Base
Greg Donovan	Western Maricopa Education Center
Jenna Goad	City of Glendale
Shelley Hornback	Litchfield Elementary School District
Scott Isham	Maricopa County, Office of the Board of Supervisors for Dist. 4
Spencer A. Isom	Western Maricopa Education Center
Ryan Lee	City of Glendale
Bobbi Magdaleno	Arizona State University
Clark Princell	City of Phoenix
Kevin Shipman	Dysart Unified School District
Kristen Stephenson	Greater Phoenix Economic Council
Brent Stoddard	City of Glendale
Christopher Toale	Luke Air Force Base
Tauny Woo	Luke Air Force Base
Col. Wanda Wright	Arizona Department of Veterans' Services

Luke Air Force Base Targeted Growth Management Plan Stakeholders

Purab Adabala	City of Glendale
Jake Adams	Southwest Human Development
Debbie Albert	City of Glendale
Luke Albert	City of Goodyear
Irene Artigas	Valley of the Sun United Way
Jeanette Batchelor	Luke Air Force Base
Rob Bohr	City of Goodyear
Ed Boik	City of Buckeye
Melanie Burm	Arizona State University
Jeremy Calles	Tolleson Union High School District
Ginna Carico	City of Goodyear, formerly with City of Peoria
Stephen Chang	City of Surprise
Donna Davis	Expect More Arizona
Nisha Dorsey	Military & Veteran Success
Kevin Dumcum	ARIZONA@WORK Maricopa County
Jason Earp	City of Tolleson
Gabe Elias	City of Tolleson
Bryan Evans	Luke Air Force Base
Joseph Figueroa	Greater Phoenix Economic Council
Keith Forte	Office of Senator Martha McSally
Christine Gannon	Brightworks Consulting
Robert Garcia	Arizona Office of Economic Opportunity
Lori German	City of Glendale
Dawn Gerundo	Valley of the Sun United Way
Jaime Gonzalez	City of Peoria
Jim Grieshaber	Dysart Unified School District
Nora Gutierrez	Tolleson Union High School District
Rachel Hannah	State Board for Charter Schools
Brandi Haskins	West Point High School
Lauren Herman	Luke Family Homes
William Higgins	ADES Apprenticeship Office
Sintra Hoffman	WESTMARC
Matthew Holm	Maricopa County Department of Planning and Development
Mike Hoover	City of Surprise
Tom Huffman	Agua Fria Union High School District
Randy Huggins	City of Glendale
Jeanine Jerkovic	City of Surprise
Carol Ketcherside	Valley Metro
Lt. Col. Neal Kleinschmidt	Luke Air Force Base
John Kodlick	WeSERV
Rob Kuhfuss	City of Surprise
Denise Lacey	Maricopa County Department of Transportation
Shawn Larcher	Office of Economic Adjustment
Chris Lemka	City of Peoria
Kevin Link	City of Glendale

Luke Air Force Base Targeted Growth Management Plan Stakeholders (cont.)

Louis Littleton III	U.S. Department of Defense Office of Economic Adjustment
Edward Logan	Air Force Association; Military Affairs Committee, Peoria & Glendale Chambers of Commerce
Martin Lucero	City of Surprise
Lt. Col. Kevin L. Marzette	Luke Air Force Base
Jessica May	Maricopa County Department of Transportation
Jacqueline McGill	Luke Air Force Base
Jackson Moll	Home Builders Association of Central Arizona
Mike Neu	Buckeye Union High School District
Patti O'Brien	Maricopa Corporate College
Jay Otlewski	WeSERV
Michael Pangelinan	Luke Air Force Base
Debbie Pearson	City of Peoria
Barbara Plante	Luke Air Force Base (retired)
Randy Proch	City of Peoria
Liz Recchia	WeSERV
Thomas Ritz	City of Glendale
Karen Roch	Credit Union West
Jessica Roza	Office of Congresswoman Debbie Lesko (AZ-08)
Noel Schaus	City of Tolleson
Rick Solander	U.S. Department of Defense Office of Economic Adjustment
Ward Stanford	City of Avondale
Trevor Stokes	The Partnership for Workforce Innovation
Jodi Tas	City of Surprise
Zane Thomas	Luke Air Force Base
Aaron White	City of Avondale
Philip Wieser	Luke Air Force Base
John Willett	City of Buckeye
Kolu Wilson	Arizona Office of Economic Opportunity
Thomas Winkel	Arizona Coalition for Military Families
Aaron Xaevier	Valley Metro
Steve Yamamori	The Reveille Foundation
Sara Zappia	ARIZONA@WORK Maricopa County
Rebecca Zook	City of Goodyear

Introduction

Introduction



Source: U.S. Air Force photo by Senior Airman James Hensley, 2017

The Luke Air Force Base Targeted Growth Management Plan (TGMP) is a community-led, collaborative study and planning effort between Luke Air Force Base (Luke AFB), its surrounding jurisdictions and the Maricopa Association of Governments (MAG). The TGMP's goals are to support the base and leverage the opportunities presented by the growth in personnel at Luke AFB due to an expansion in its mission as a training ground for Air Force pilots.



In 2012, the Department of Defense (DoD) announced that Luke AFB would be the training home of 144 new F-35A Lightning II fighter jets. The F-35A program expansion will bring 2,324 new base personnel along with 4,717 partners and/or dependents, for a total base population increase related to the buildup of 7,041. As a consequence of the buildup, the base-related population living in nearby communities is expected to grow from nearly 16,700 to 23,700 by 2026, when the build-up is expected to be completed. This mission expansion is projected to fuel the economy, with the local defense economy projected to grow 25 percent by 2026.



In 2018, local jurisdictions and Luke AFB approached MAG to submit a grant proposal to the Department of Defense (DoD) Office of Economic Adjustment. The purpose of the proposal was to analyze the impact of this growth in base-related population on the local communities and to develop a plan

to address and capitalize on the opportunities for the base and the surrounding communities. In 2019, the grant was awarded and the project launched with extensive support from the base, the surrounding communities, local experts, and the Office of Economic Adjustment.

Luke AFB Mission Expansion



144

new F35A
Lightning II aircraft



2,324

new personnel



4,717

dependents

Total Population Increase

7,041

16,663

Existing Base Population

23,704

Total base population by 2026.

Typically, a TGMP addresses a wide variety of subject areas. This TGMP focuses on four key areas: Transportation, Workforce Development/Economic Development, Education, and Housing. The TGMP consists of four chapters, each presenting independent analyses of resources in the area surrounding the military installation in each of the key areas. These areas were prioritized by the surrounding communities and the base because of their importance for the well-being of the residents and to avoid duplicating work already expended in other studies.

The objectives of the Targeted Growth Management Plan are to:

1. Identify and assess existing conditions within the targeted areas of transportation, economic development/workforce development, education, and housing.
2. Determine future needs associated with increased military population.
3. Develop short-term and long-term priorities and potential funding sources to accommodate this growth.
4. Develop planning, coordination and implementation strategies that help achieve the long-term goals of the stakeholders during this period of growth and change.
5. Maintain a central point of coordination for all major stakeholders who are impacted by the expansion of Luke AFB.
6. Establish a clear set of action steps for local communities to manage future growth and demands for services.

More specifically, this TGMP is a conduit for leveraging existing infrastructure and resources at Luke AFB and in the surrounding communities to ensure that the basic needs of both military and civilian residents are met.



Source: U.S. Air Force photo by Master Sgt. Donald R. Allen

F-35A Lightning II fighter jet.

The TGMP is a blueprint for ensuring and enhancing the connectivity of people, places, and partnerships. It also is designed to ensure that new residents can transition into the area easily and build new lives. Furthermore, it will help guide investment decisions regarding compatible growth, public services, facilities, infrastructure, and programming. Equally important, the TGMP constitutes a vital tool for improving quality of life for all existing and future Luke AFB personnel and all area residents.

The TGMP draws on the most recent data from the base and surrounding region, sophisticated modeling techniques, an outreach survey of local residents and current base personnel, and input from advisory group and focus group members. All study parameters and outcomes are presented in detail in a series of related papers. These include the *FY 2019 Luke Air Force Base Targeted Growth Management Plan Executive Summary*, *Implementation Plan*, *Transportation White Paper*, *Workforce & Economic Development White Paper*, *Education White Paper*, *Housing White Paper*, and *Survey Report*.



The analyses consider existing infrastructure and services, anticipated levels of demand, and potential gaps in resources and other challenges in meeting projected needs. Also integral to each analysis is the identification of existing opportunities and potential courses of action—strategies—for mitigating those challenges in tangible, practical, and affordable ways. Each strategy is based on a collaborative approach between Luke AFB and the surrounding communities to manage and ultimately benefit from the opportunities presented by this growth.

A key component of the strategies proposed in the TGMP is the importance of sharing up-to-date information between the base and a variety of key stakeholders and partners such as local child care centers, school districts, post-secondary institutions, real estate organizations, developers and the city governments in the communities surrounding the base.

To make this information-sharing as easy and accessible as possible, the TGMP is supplemented by the Mission Critical Portal, an online planning tool that provides up-to-date information on housing costs, location and ratings of public and charter schools, socioeconomic indicators and information on recreational assets in the West Valley. This tool will be invaluable for incoming personnel in determining where to live and where to educate their children. It also will be a key resource that will support the continuing collaboration between Luke AFB, local stakeholders, developers and planning organizations.

The Proposed Implementation Strategies at the end of each chapter identify opportunities for leveraging opportunities and supporting the mission expansion. Each proposed strategy identifies potential task leads and partners, estimated costs and funding sources, appropriate times to initiate each course of action, and other information to help guide implementation.



Meeting of the Advisory Group.

Community and stakeholder input was integral to the preparation of the TGMP and its associated documents. Each strategy and recommended course of action was vetted by a wide group of stakeholders and experts in the fields of education, housing and real estate, transportation and economic development. This group includes representatives employed by the surrounding cities, Maricopa County, the offices of state and federal elected officials, as well as representatives from industry groups and the nonprofit sector.

LUKE AFB TARGETED GROWTH MANAGEMENT PLAN STUDY AREA

Introduction

Luke AFB is located approximately seven miles west of the City of Glendale and 15 miles west of downtown Phoenix in Maricopa County, Arizona. The military installation was built in 1940 and quickly became a major contributor to Arizona's defense economy, as well as a significant employer, economic generator, and cultural influence in surrounding communities, known collectively as the West Valley.

The West Valley is currently home to approximately 869,000 people living in 14 municipalities and several unincorporated areas in Maricopa County. It is generally defined as the area west of Interstate 17. It is one of the fastest growing regions in the United States, now attracting a range of industries and out-of-state residents with more than 300 days of sunshine a year, open space, and mountain vistas.

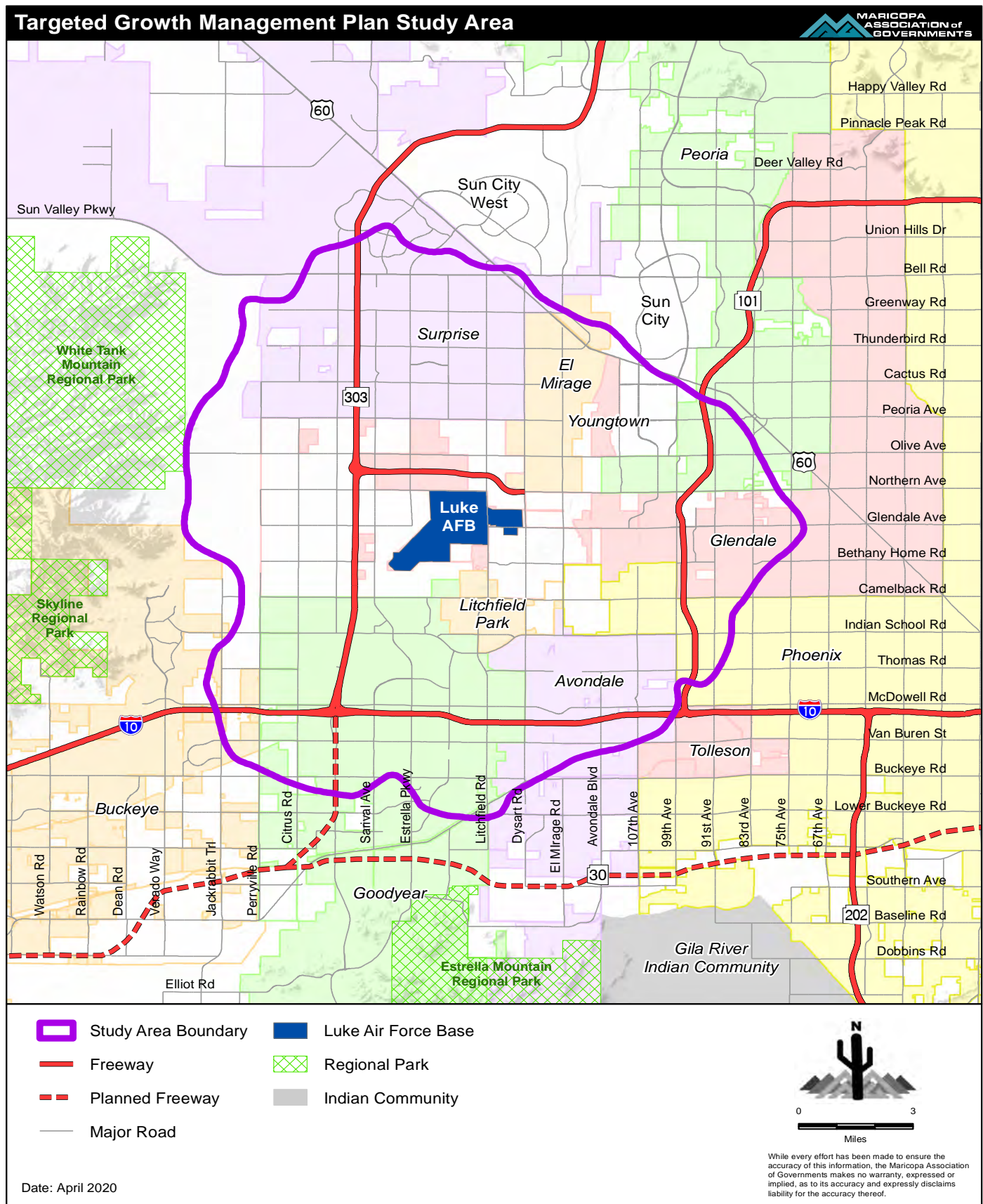
The analyses in the TGMP focus on the part of the West Valley around the base that are within a current 20-minute commute from the base, referred to as the Study Area. The TGMP Study Area is based on a number of variables, including an Air Force policy that authorizes base commanders to require certain personnel to live within a 20-minute drive of their duty stations. MAG defined the spatial extent of the 20-minute commute shed around Luke AFB based on peak periods of inbound traffic congestion from 6:00 a.m. to 9:00 a.m. in 2018.



Aerial photo of Luke Air Force Base.

The outer perimeter of this commute shed delimits the Study Area. It covers 182.35 square miles in the West Valley and is centered on the entrance to Luke AFB at the intersection of Litchfield Road and Glendale Avenue. It is irregularly shaped and roughly bounded by Grand Avenue on the north, Lower Buckeye Road on the south, 83rd Avenue on the east, and Verrado Way. The boundary of the Study Area includes portions of Avondale, Buckeye, El Mirage, Glendale, Goodyear, all of Litchfield Park, Youngtown, Peoria, Phoenix, Surprise, Tolleson, and unincorporated Maricopa County. The Study Area is shown in *Figure I-1* on the next page.

Figure I-1: Targeted Growth Management Plan Study Area





F-16 Fighting Falcon
at Luke Air Force
Base, Arizona.

The analysis of the four key sectors indicates the West Valley is well-positioned to absorb the growth generated by the mission expansion and by more people moving to the surrounding communities. Local jurisdictions and the base have numerous organizations and associated resources, including economic development organizations, real estate groups, education groups, and others that are actively engaged with each other and the base.

As the following chapters indicate, these existing relationships can be leveraged to provide a context in which Luke AFB personnel and local residents can thrive, and in which the military mission expansion and the surrounding communities' growth dovetail into a mutually-beneficial relationship.



Education



Workforce
and Economic
Development



Housing



Transportation



OVERVIEW

Quality education is fundamental to intellectual and social development, economic opportunities and success, and responsible and effective citizenship. Strong schools are a high priority for many parents. For military families, each relocation requires them to conduct a new, often complex search for childcare and schools while evaluating their quality. As military families move from state to state, they and their school-age children have to adjust and transition to new sets of education standards, teaching philosophies and curricula.

According to Blue Star Families' annual Military Family Lifestyle Survey, 34% of all service members and 42% of their spouses identified education as among their top three lifestyle concerns in 2018.

In addition to the critical role that schools play in the healthy development and futures of the nation's children, education facilities provide gathering places that link families to neighborhoods and create a sense of community. They are the source of social networks that can increase parents' and children's access to important resources. The social benefits that schools provide can be especially important to military families that are new to an area and seek ways to connect, engage with, and contribute to their new environment. Moreover, the types, location, and affordability of child care, pre-K learning programs, schools, and after-school activities can determine whether military spouses are able to work outside the home and whether service members are mission-ready.

Summary of Key Findings



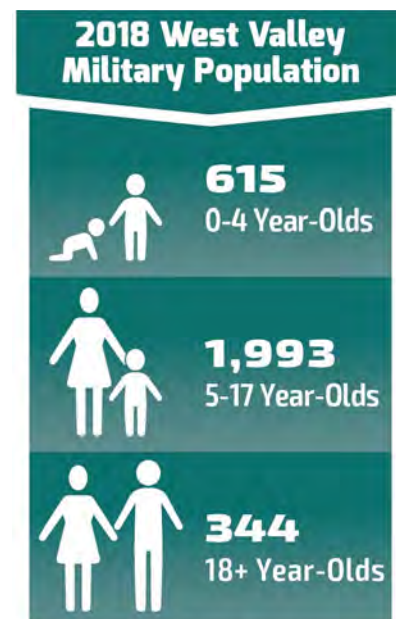
The schools in the Study Area are well-positioned to absorb the anticipated growth in the student population related and unrelated to mission expansion. Primary and secondary schools are numerous, optimally located, and well-performing, including where the greatest densities of school-age children are expected to reside.

Center-based early learning opportunities are widespread and the number of home-based pre-K and childcare options are also estimated to be sufficient to meet the increasing demand expected with mission expansion and population growth. However, the on-base childcare center is at capacity and cannot be expanded. Access to quality, affordable childcare that accommodates extended and non-traditional working shifts is a continuing concern for military families. There is a need for reliable, updated and comprehensive information about home-based childcare and early learning opportunities in the Study Area for military families.

EXISTING CONDITIONS

There is a high demand for affordable, high-quality early childhood care for military families (as is the case for civilian families). Furthermore for military families, there is a continuing need for childcare providers who are available during non-traditional, extended shifts and who can accommodate military-specific needs. On base, the Child Development Center (CDC) is nearing capacity, with some children already wait-listed because the capacity for their specific age cohort has already been met. The program is unable to expand in the near future, and the inability to meet increased demand can be expected to persist as more personnel is assigned to the base.

The Study Area encompasses all or part of 15 regular public school districts, including seven elementary school districts, four high school districts, two unified school districts, and two “unorganized” districts. There are 112 public schools in the Study Area, including standard public schools, magnet schools, and charter schools that offer diverse programming at all grade levels. Out of the 112 public schools, 36 are charter schools. The region has a strong public school system and charter and private schools offer additional quality choices.



Source: Luke Air Force Base, Dec. 2017; Maricopa Association of Governments, 2019



Source: U.S. Air Force photo by Senior Airman Jacob Wongwai

Dysart Unified School
District students
attend Luke Youth
Center fair.

Of all 104 schools evaluated, 68 percent received a B or A grade and are classified as Highly Performing or better. Schools in the region offer a variety of high-quality programming in science, technology, engineering and math (STEM) subjects and in Career and Technical Education (CTE) courses. CTE courses are offered on high school campuses and on the campus of West-MEC, a CTE-focused district that serves high schools in the West Valley.

K-12 Education Accessibility

The inventory of K-12 schools and education programming evidences highly accessible educational resources for school-age children living in the Study Area. When evaluating proximity to schools using block groups within the Study Area—a block group is the geographical unit used by the U.S. Census Bureau to assess population—209 of 215 groups are within 1.5 miles of a school or schools.

In terms of individual students, 96 percent of the 86,486 school-age children currently living in the Study Area live within the optimal travel distance between home and school, resulting in unfettered access to a wide range of learning opportunities.

Information on specific schools and school programming such as alternative learning opportunities is also highly accessible through school and school district websites. Arizona's voucher program, the Empowerment Scholarship

Application, further increases the range of opportunities available to both military and civilian residents while offsetting costs associated with charter and private institutions.



Post-secondary Facilities and Programming

Post-secondary education and career training opportunities in and adjacent to the Study Area are numerous, notably diverse, and high-quality. Within the base, there are seven post-secondary colleges and universities that offer courses and educational services. In the communities surrounding the base, Maricopa Community Colleges are found throughout the West Valley, and Rio Salado has campuses in Surprise and Avondale, as well as 10 other campuses in the Phoenix Metropolitan Area. Both the Maricopa County Community College System and the state university system are nationally recognized and collectively provide access to the full range of studies available in modern academic institutions. The tailoring of academic and CTE programming both on and off the base to meet active duty, veteran, and civilian training needs for career advancement in either a military or civilian context has the additional advantage of supporting the mission at Luke AFB, as well as the state's aviation industry.

Post-secondary opportunities near the installation are also affordable through scholarships, the GI Bill, and discounted in-state tuition, for which all military personnel and veterans are eligible.



Source: U.S. Air Force photo by Senior Airman Monet Villacorte

Tina Clicquot Mack, Education Service Specialist, talks to Staff Sgt. Tyler Collins, education office formal training manager, about the SkillsBridge program.

FUTURE NEEDS

The projected population growth in the Study Area along with the additional personnel expected at Luke AFB will increase demand for more childcare and educational options, including the anticipated needs listed below.

- Continued and growing need for affordable, quality childcare that accommodates military families' need for care during unusual and extended hours.
- As the population in the region grows, increased demand for a wide range of educational resources and curriculum is expected from district public schools, charter public schools, and CTE programs at the K-12 and post-secondary level.
- Tailoring of academic and CTE programming both on and off the base to meet active duty, veteran, and civilian training needs for career advancement in either a military or civilian context.

ASSETS

The Study Area offers a variety of options for K-12 as well as post-secondary educational options. School choice in Grades K-12 and partnerships between institutions such as West-MEC, the Career and Technical Education School District serving western Maricopa County, and local schools and colleges constitute local assets that can be leveraged to provide the broadest range of educational programming, including career and technical education. West-MEC also offers adult education classes, with four campuses located throughout the West Valley with facilities, equipment, and instruction of the highest quality. Additional assets include the following below:

- There are numerous and optimally-located schools that serve the educational, social, and cultural needs of the community.
- School choice, open enrollment in grades K-12 and partnerships between institutions such as West-MEC and local schools and colleges provide options for families, enhancing the educational quality of K-12 and post-secondary learning. For example, West-MEC offers adult education programs in critically aligned program areas to Luke AFB such as Aviation Maintenance and Avionics.



West-MEC offers adult education programs in critically aligned program areas to Luke AFB such as Aviation Maintenance and Avionics.

- Post-secondary education and career training opportunities in and adjacent to the Study Area are numerous, notably diverse, and high-quality.
- There are several two- and four-year schools on base with courses and services tailored to mission demands. These opportunities are specifically geared toward the local mission and are typically open to Luke AFB personnel, their dependents, and veterans. Some programs are also open to community members. The institutions include Embry-Riddle Aeronautical University, Park University, Wayland Baptist University, Webster University, and two community colleges.
- The regional community college system and the state university system are nationally recognized and offer instructions in modern facilities.

CHALLENGES

The Study Area offers a range of educational and childcare options. Nonetheless, the following challenges will need to be addressed so that the future needs of Luke AFB personnel and their families are met.

- The Child Development Center (CDC) at Luke AFB is at capacity and cannot accommodate current demand.

Mrs. Joni Kwast, spouse of U.S. Air Force Lt. Gen. Steve Kwast, waves at a baby in the Child Development Center during a base tour at Luke Air Force Base.



- Reliable, comprehensive information about home-based childcare and early learning opportunities in the Study Area can be difficult to find.
- There is a continuing need for childcare providers who are available during non-traditional, extended shifts and who can accommodate military-specific needs.
- Quality childcare and pre-K programs in the Study Area can be unaffordable for military families.

KEY FINDINGS

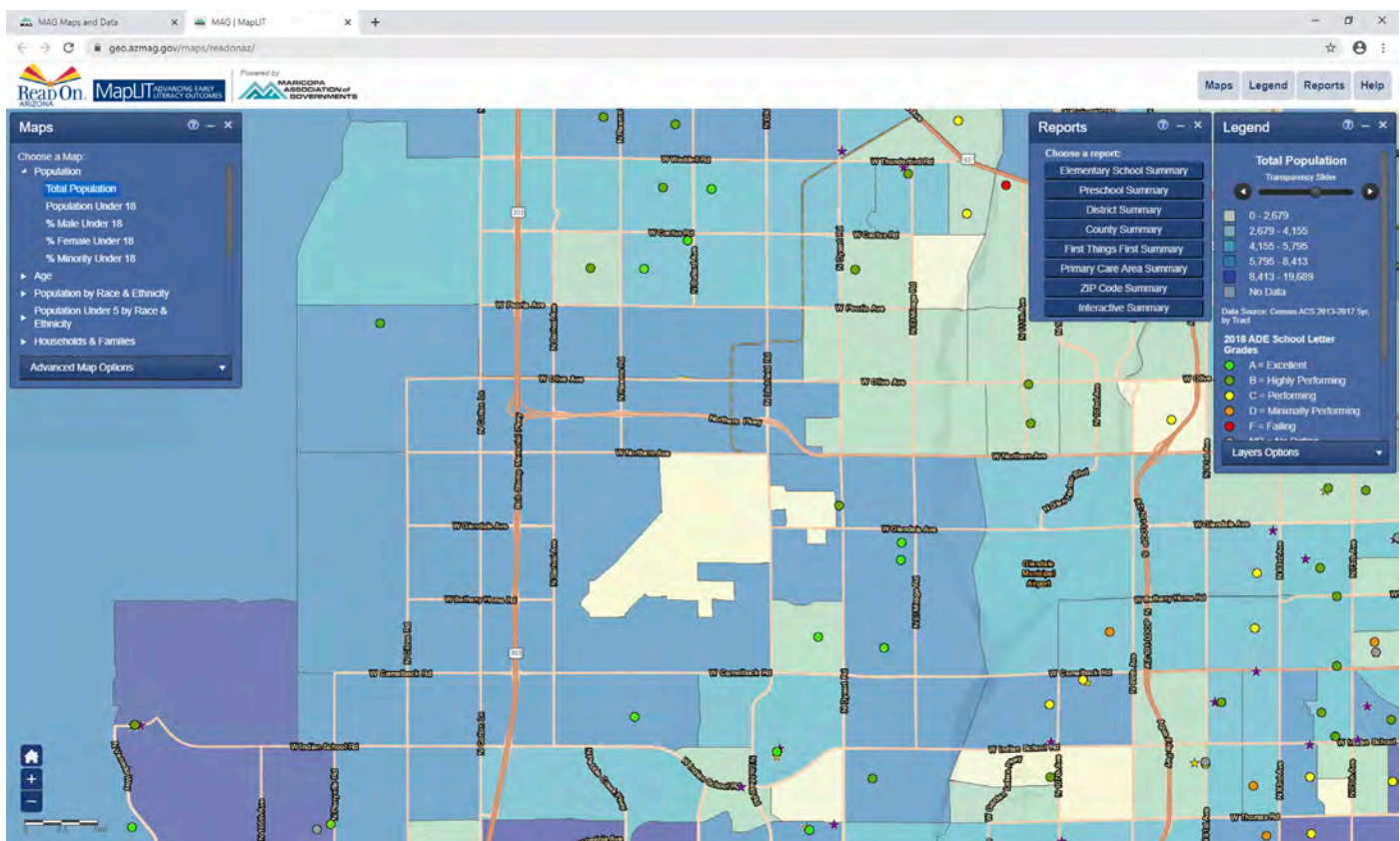
Early Childhood

- The review of existing resources for infants and toddlers in the Study Area shows that outside the base, center-based early learning opportunities are widespread and that the number of home-based pre-K and child care options are also likely sufficient to meet the increasing demand expected with mission expansion and population growth.
- Information on child care opportunities can be difficult to find and appears to be either out of date or unreliable, effectively making needed resources inaccessible to families living in the Study Area. This inaccessibility is likely to be exacerbated for military families who

relocate to the West Valley with minimal knowledge on where to find information not directly provided by Luke AFB.



- Affordability of quality child care poses an additional challenge given the high costs documented across the state and military families' need for care during unusual and extended hours.
- The Child Development Center (CDC) is at capacity, with over 100 children already wait-listed. The program is unable to expand in the near future due to lack of military construction (MILCON) funding, and the inability to meet increased demand is likely to persist and pose difficulties for an increasing number of families stationed at the base.
- Adding primary care facilities to existing web-based databanks and mapping tools, such as [MapLIT](#), establishing a register on base, and incentivizing participation in accreditation and training programs would allow providers to meet military family needs. These measures can serve short-term needs and foster long-term partnerships that effectively expand the CDC and Family Childcare Program.



Maricopa Association of Governments is part of Read On Arizona's collaborative partnership that created MapLIT, an interactive mapping tool as a "one stop" resource to identify key data sets (census, school, health, family engagement) that impact early literacy outcomes in communities.

Kindergarten-12th Grade

- Study Area schools are well-positioned to absorb growth, related and unrelated to mission expansion. Primary and secondary schools are numerous, optimally located, and well-performing, including where the greatest densities of school-age children are expected to reside.
- The vast majority of children in the Study Area are located within optimal distance of a school or schools, allowing families the greatest number of choices for getting to and from facilities that best meet their children's needs.

Post-Secondary

- Post-secondary schools and programs in the Study Area offer diverse and nationally recognized academic and career training opportunities. Several two- and four-year schools currently offer educational services and courses tailored to mission demands at the 56th Mission Support Center on Luke AFB.
- Post-secondary education and credentials in courses ranging from liberal arts to business courses of study are available through inexpensive community colleges, reduced in-state tuition, federal loans and grants, scholarships, and GI Bill subsidies.
- In addition to adult education programs offered through West-MEC in critically aligned program areas to Luke AFB such as Aviation Maintenance and Avionics, West-MEC also offers an Airframe and Power Plant Prep Oral and Practical Course. This course is ideal for air force personnel preparing for life after military service.

EDUCATION IMPLEMENTATION PLAN

The proposed implementation plan below addresses the anticipated needs of incoming Luke AFB personnel, their families and that of residents in the surrounding communities. It proposes a number of strategies to increase access to childcare, pre-school and K-12 educational opportunities so that childcare and educational needs of incoming personnel are met.

Education Implementation Plan							
Ref ¹ Code	Issues and Strategies	Timeframe ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
Child Care and Early Learning Facilities and Resources							
E1	Issue: <i>Reliable, comprehensive information about home-based childcare and early learning opportunities in the Study Area can be difficult to find.</i>						
	Goal: Improve the reliability and accessibility of information about home-based care and educational opportunities for young children.						
E1.1	Strategy: Collect data regarding the availability and quality of home-based childcare and make this available through MapLIT. Also include information about drop-in care, respite care, EFMP care and continuous care. (Related strategies: E1.2, E2.2).	Ongoing	High	No cost	N/A	MAG	Read On Arizona/ Read On Arizona partners
E1.2	Strategy: Encourage local providers to update their listing annually; establish protocols for updating the register and sharing information through the Luke AFB School Liaison, the A&FRC, base orientation packets and with MapLIT and other established web-based education tools and databanks (related strategies: E1.1, E2.2).	Ongoing	High	No cost	N/A	Luke AFB School Liaison	Luke AFB Child and Youth Services; Read On (MapLIT), First Things First, DES;
E1.3	Strategy: Work with DoD and Luke AFB officials to receive information about incoming families earlier in the relocation process to ensure families are receiving information on early learning opportunities as soon as possible.	Immediate	High	No cost	N/A	Luke AFB School Liaison	DoD
E1.4	Strategy: Initiate a follow-up program that surveys recently relocated personnel regarding the timeliness, thoroughness, and general effectiveness of information provided on home-based childcare programs in the area; modify orientation information and dissemination protocols as needed.	Near-term	High	TBD	DoDEA grants and other DoD funding streams	Luke AFB School Liaison	Luke AFB Child and Youth Services
E1.5	Strategy: Increase the support and assistance available to military families concerning their childcare needs, for example, by distributing information about the Southwest Human Development Birth to Five help line and childcare facility compliance reports available through the DES.	Near-term	Medium	N/A	N/A	Luke AFB	2-1-1 AZ, Southwest Human Development and DES
E1.6	Strategy: Ensure compliance with the requirement to include information about military identification on student enrollment forms for schools. Collect and analyze these data to identify areas with high concentrations of military students that might qualify for federal funding.	Medium-term	Medium	TBD	TBD	School districts	Luke AFB

¹Reference Code

² Immediate: 2020; Near-term: 2020-2023 Medium-term: 2020-2026; Long-term: 2026 and beyond; Ongoing

Education Implementation Plan							
Ref ¹ Code	Issues and Strategies	Timeframe ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
Child Care and Early Learning Facilities and Resources (cont.)							
E2	Issue: <i>Childcare providers who are available during unusual hours and who can accommodate other military-specific needs can be difficult to find.</i>						
	Goal: Increase the number and accessibility of childcare providers in the Study Area who can accommodate the needs of military families.						
E2.1	Strategy: Conduct regular public awareness campaigns regarding the childcare needs of military families and the benefits of meeting those needs, including increased visibility in <i>MapLIT</i> and other provider databanks, a permanent customer base, specialized training, support for accreditation/quality improvement efforts, and increased earning power due to specialized experience, training, etc. (related strategies: E2.2, E2.3, E2.4).	Ongoing	High	TBD	Luke AFB, DoDEA grants and other DoD funding streams	Luke AFB School Liaison	Luke AFB Child and Youth Services, childcare provider groups / non-profits; WESTMARC
E2.2	Strategy: Use provider listings, registries, databanks, and orientation packets to highlight providers who can accommodate military-specific childcare needs (related strategies: E1.1, E1.2).	Ongoing	High	No cost	N/A	Luke AFB school Liaison	Luke AFB Child and Youth Services, Read On (MapLIT), First Things First, DES
E2.3	Strategy: Provide local childcare providers specialized training in the needs of military families and issues they face relating to relocation, deployment, etc. Incentivize participation by reducing or waiving costs for providers who meet or are working to meet DoD/Air Force standards and who will commit to caring for a certain number of military children or families during off-peak hours over the course of a year (related strategies: E2.1, E2.2).	Ongoing	High	Under \$10,000 annually	DoDEA grants and other DoD funding streams	Luke AFB school Liaison, Southwest Human Development	Luke AFB Child and Youth Services, childcare provider groups / non-profit, SWHD
E2.4	Strategy: Provide support with application materials and processes for providers seeking accreditation and/or to meet other DoD/Air Force standards for childcare providers and facilities in exchange for commitments to care for a certain number of military children or families during off-peak hours over the course of a year (related strategies: E2.1, E2.2, E2.3).	Ongoing	High	No cost	N/A	Luke AFB staff	DoD staff / non-profits
E2.5	Strategy: Initiate a research program to identify strategies that are used by other installations to increase the number and accessibility of childcare providers able to accommodate the needs of military families.	Immediate	High	TBD	DoDEA grants and other DoD funding streams	Luke AFB School Liaison	DoDEA
E2.6	Strategy: Research and identify tax incentives for childcare providers who serve military families.	Medium- to long-term	High	TBD	DoDEA grants and other DoD funding streams	Luke AFB staff	DoDEA, non-profit agencies, Congressional research teams

Education Implementation Plan

Ref ¹ Code	Issues and Strategies	Timeframe ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
Child Care and Early Learning Facilities and Resources (cont.)							
E3	Issue: <i>Quality childcare and pre-K programs in the Study Area can be too expensive for military families.</i>						
	Goal: Increase awareness of financial assistance programs that subsidize the primary care and education of young children and of childcare and early learning programs that serve qualifying, low-income families (e.g., Head Start).						
E3.1	Strategy: Use orientation packets, relocation guides, and similar materials to highlight the ADE website, MapLIT, and other databanks that identify Head Start and Early Head Start facilities and similar programs (related strategies: E2.2, E3.2).	Immediate	High	No cost	N/A	Luke AFB School Liaison	Luke AFB Child and Youth Services, Read On (MapLIT), First Things First, ADES
E3.2	Strategy: Include information on financial assistance programs that subsidize the cost of childcare and early childhood education in orientation packets, relocation guides, and similar materials; provide assistance with application materials and processes (related strategies: E2.2, E3.1).	Immediate	High	No cost	N/A	Luke AFB School Liaison	Luke AFB Child and Youth Services
E3.3	Strategy: Work with organizations like Head Start and SWHD to develop a “home base program” to bring certified home visitors to Luke AFB to work with military children in an affordable setting; work with stakeholders to develop a training program for local staff to increase awareness of military-specific challenges and needs; and increase accessibility of early learning opportunities for low-income families that meet DoD/Air Force standards (related strategies: E2.3).	Medium-term	Medium	TBD	N/A	Luke AFB School Liaison or DoDEA staff	Head Start, SWHD
E4	Issue: <i>The Child Development Center at Luke AFB is nearing capacity and cannot accommodate current demand.</i>						
	Goal: Increase the capacity of the CDC through building expansion and formal partnerships with civilian programs.						
E4.1	Strategy: Initiate a research program to identify potential funding sources, viable fundraising initiatives, and potential private donors to cover costs associated with expanding the Luke AFB CDC.	Long-term	High	No cost	N/A	Luke AFB School Liaison	DoDEA
E4.2	Strategy: Work with the DoD to identify and take actions that could improve the probability of receiving funding to expand the Luke AFB CDC.	Long-term	High	TBD	DoD	Luke AFB School Liaison	DoD
E4.3	Strategy: Expand formal partnerships with civilian early learning programs that meet or are willing to meet CDC program requirements; provide training, incentives, and other support to facilitate eligibility (related strategies: E2.3).	Near- to medium-term	Medium	TBD	N/A	Luke AFB School Liaison	DoDEA / CDC program, DES, local providers, SWHD, school districts

Education Implementation Plan							
Ref ¹ Code	Issues and Strategies	Timeframe ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
K-12 Facilities and Resources							
E5	Issue: Enhance the quality of schools in the Study Area.						
	Goal: Improve the availability and quality of key programming at schools with lower ADE ratings.						
E5.1	Strategy: Collect data on military student enrollment to improve eligibility for Impact Aid funds.	Immediate	High	TBD	N/A	Schools/ school districts	Luke AFB School Liaison
E5.2	Strategy: Support research conducted by ADE on high-performing Title I schools in order to identify teaching approaches and resources that can serve as model programs to be adopted and tailored to local needs. Provide information on open enrollment deadlines for public and charter schools.	Ongoing	High	TBD	ADE, DOE, DoDEA grants, Helios Founda- tion	School districts	School districts, MAG, WESTMARC, AZ K-12 Center
E5.3	Strategy: Support and promote programs, lessons, and resources for which development costs and benefits can be shared among schools and/or districts, such as mobile STEM labs, digital resources, and using retired experts as shared-hires to teach specialized subjects on a rotational or virtual basis, etc. (related strategies: E5.1).	Ongoing	High	TBD	ADE, DOE, DoDEA grants, Lockheed Martin, MDEF, NSF	Schools/ school districts	School districts, Air Force Association STEM labs
E6	Issue: Provide information on school quality so military families can make informed decisions about their children's educational options and opportunities.						
	Goal: Connect families to the right school for their children that is appropriate to their child's needs.						
E6.1	Strategy: Provide military families moving to the area "authoritative information" on schools through the development of district and school profiles that can be shared.	Near-term	High	TBD	TBD	Luke AFB School Liaison and districts	
Other							
E7	Issue: Educators may be unaware of the unique situations and needs military students have when transitioning into new schools, including challenges with missed lessons, lost credits, meeting graduation requirements, and fully integrating into their new communities. Students may be unaware of the support and opportunities available to them at their local schools and school districts.						
	Goal: Increase school district administrators' and educators' awareness of the challenges military families face as they transition into new communities and schools; increase students' awareness of support available to them at their local schools.						
E7.1	Strategy: Highlight, expand and support programs and events at local schools to celebrate students affiliated with Luke AFB. Provide opportunities for administrators and educators to better understand the transitioning experience and specific challenges and benefits shared by military children in their programs.	Ongoing	High	Under \$1,000, annually, per school	School district discretion- ary funds, DoDEA grants	School districts/ schools, Litchfield Elementa- ry School District	Luke AFB School Liaison, Luke AFB Child and Youth Services

Education Implementation Plan

Ref ¹ Code	Issues and Strategies	Timeframe ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
Other (cont.)							
E7.2	Create a scholarship for dependents of foreign families so that they can pay the tuition required by public schools. Another option is to remove the requirement that families of foreign military personnel pay tuition at public schools.	Near-term	Medium	TBD	TBD	Luke AFB	TBD
E8	Issue: <i>There is a need for guidance and oversight of the implementation process.</i>						
	Goal: Provide guidance and oversight of the implementation process through a centralized body that provides continuity in knowledge and decision-making regarding implementation.						
E8.1	Strategy: Create an education work group to address and monitor implementation of all education-related recommendations.	Immediate to near-term	High	No Cost	None required	Luke AFB	MAG, City of Glendale, Maricopa County



Workforce and Economic Development



OVERVIEW

Luke Air Force Base, the largest employer in the West Valley, is an important component of the local economy, employing six percent of the area's labor force. The impact of spending by the base, along with spending by personnel and their family, make the base the economic engine of the West Valley. This importance will only grow as the mission expansion brings more personnel and their families to the base and the surrounding communities. This chapter identifies the economic impact and opportunities presented by the growth in base-related spending and by the growth in population in the Study Area. It also includes a workforce supply/demand gap analysis.

By 2026, the defense spending in support of Luke AFB is expected to support approximately 13,900 total jobs, \$820 million in total compensation, and \$1.5 billion in value-added impacts to the Study Area's gross regional product.¹ The number of base-supported jobs are projected to generate an average annual compensation of \$59,400 per job. This is 13 percent greater than the regional average.

¹ As mentioned in the introduction, the analyses and findings were based on full buildup being completed in 2023. The full buildup at Luke Air Force Base is now expected to be completed by 2026. However, the original findings remain valid for 2026 because the extension has minimal to no impact on demand data.

Summary of Key Findings



Currently, the defense-related industry in Arizona is thriving and is anticipated to stay strong through the mission expansion at Luke AFB. The base is, and will continue to be, the backbone of this defense economy. The base impacts local, regional, and state economies, as well as the local workforce. By 2026, 90 percent of all Luke AFB job impacts are projected to occur in the communities of Glendale, Surprise, Goodyear, and Avondale.

Nearby opportunities for military families, both in terms of jobs and training, will continue to be abundant in certain sectors. Other sectors are currently needed and will need coordination and partnerships in order for the region to stay competitive.

EXISTING CONDITIONS

The population in the West Valley and in the Study Area is growing significantly—independently of the additional personnel that is being added at Luke AFB due to the mission expansion. This growth has created a demand for a skilled workforce and a demand for housing and retail development.

- Five percent of Arizona zip codes have a higher concentration of defense contracts than the national average. Within the Study Area, the 85338 zip code in Goodyear has a 32 percent higher location quotient compared with the national average.
- Construction spending in support of the F-35A mission expansion increased significantly in FY 2014 and FY 2015 to \$500 million and nearly \$600 million, respectively. By FY 2017, construction spending at Luke AFB had fallen below pre-buildout levels. Professional, scientific, and technical services (PS&T) represents the architectural, engineering, planning/design, and IT-type contracts performed throughout the Study Area. These contracts equated to nearly \$100 million in FY 2012 and have slowly decreased since.
- Although the final composition of defense contracts at full buildout remains unknown, given the decline in the construction and PS&T contracts in preparation for the F-35A, it is anticipated that by 2026,



A 63rd Aircraft
Maintenance Unit
crew chief performs
a systems evaluation
on an F-35A
Lightning II March
10, 2020, at Luke Air
Force Base.



Source: U.S. Air Force photo by Senior Airman Leala Marquez

defense contracts performed in the Study Area will equate to roughly \$220 million annually, or the approximate 2012 baseline. Given recent trends in the region, defense contracts at full buildout are expected to remain on par with 2012 levels.

- There are job opportunities for military spouses in a variety of fields, including accounting and finance, bookkeeper/clerical, paralegals, nursing/LPN, pharmacy technicians, clinical laboratory technicians, aircraft maintenance, electricians, elementary school teachers, and teaching assistants.

FUTURE NEEDS

As the West Valley continues to grow, the demand for talent in certain sectors and demand for services will grow as well.

- The Department of Veterans Affairs projects the veteran population for Maricopa County to decrease from 276,000 in 2012 to 217,000 by 2026. Nonetheless, for three years in a row, Maricopa County has seen the highest overall population growth in the country. This is expected to continue into the future, particularly in the West Valley. This regional characteristic may result in an increase in the number of veterans in the Valley, reversing the national trend.

- The anticipated population growth in the West Valley will create a demand for training programs focused on trade skills in industrial mechanics, fire safety, and teaching. Local employers will need to work with Luke AFB's Spouse Education, Training, and Careers office to inform military spouses of in-demand occupations.
- The Phoenix/West Valley region and the regional economic development organizations will need to continue promoting themselves as communities where defense contractors can grow their market.

ASSETS

Population growth in the Study Area and in the West Valley is expected to provide a range of workforce and economic development prospects as well as additional demands for talent. The following assets will help the region grow its talent pool and local economy.

- The F-35A mission at Luke Air Force Base (AFB) is projected to grow the local defense economy by 25 percent and constitute approximately six percent of the Study Area's labor force, with 90 percent of all Luke AFB job impacts projected to occur in the communities of Glendale, Surprise, Goodyear, and Avondale.
- The average defense-related job earns approximately 23 percent more than the region's average – \$64,800 versus \$52,800.
- The average defense-supported job earns approximately 13 percent more than the region's average – \$59,400 versus \$52,800.
- Wages in the West Valley appear to be competitive with the Phoenix-Mesa-Scottsdale Area (Phoenix MSA) and the state. This will typically help from a recruiting perspective as the area experiences economic and population growth.
- Growth in population in the West Valley as a whole presents opportunities for growing retail development in the Study Area.
- West Valley cities, economic development organizations and the education and business community have collaborated on the West Valley Pipeline Action Plan, a regional workforce plan that provides strategies to develop the workforce in targeted industries such as Healthcare, Aviation/Aerospace, Information Technology/Cybersecurity, Advanced Manufacturing, Advanced Business Services, and Logistics/Supply Chain.

CHALLENGES

The following challenges will need to be addressed in order to capitalize on these anticipated opportunities.

- Maintaining channels of communication and coordination between employers, the local post-secondary institutions and Luke AFB regarding what types of credentials and skills are needed in the region. This is particularly important for spouses of base personnel and for personnel separating from military service.
- There is a shortage of finance occupations throughout the Study Area, as well as employment opportunities in bookkeeping and clerical work to support this industry.
- Due to the national projections of the numbers of veterans decreasing, per veteran spending is expected to remain flat. This could lead to an overall decline in veterans' compensation and pensions through 2026. However, the other component of transfer payments--military retiree pensions--is assumed to grow at its historic rate of 1.6 percent annually.

KEY FINDINGS

- The F-35A mission at Luke Air Force Base (AFB) is projected to grow the local defense economy by 25 percent and constitutes approximately six percent of the Study Area's labor force, with 90 percent

Senior Airman Ian Cuban, 63rd Aircraft Maintenance Unit crew chief, pulls chocks from an F-35A Lightning II.



Source: U.S. Air Force photo by Airman 1st Class Brooke Moeder

of all Luke AFB job impacts projected to occur in the communities of Glendale, Surprise, Goodyear, and Avondale. In all, direct defense spending is anticipated to increase by nearly \$220 million.



- The average defense-related job earns approximately 23 percent more than the region's average – \$64,800 versus \$52,800. The average defense-supported job earns approximately 13 percent more than the region's average – \$59,400 versus \$52,800.
- There is significant demand for gasoline stations, electronics and appliance stores, sporting goods, hobby, books and music stores (with an emphasis in sporting goods), furniture and home furnishings, and food and beverage places (bars, craft breweries, and distilleries).
- There is a demand for skilled talent in the following job industries, which is particularly relevant for military spouses and personnel separating or retiring from service:
 - Trade occupations, such as industrial mechanics, aircraft maintenance, electricians, truck and bus drivers, and welding.
 - Healthcare Industry Occupations, such as pharmacy techs, lab techs, and licensed practical nurses (LPN).
 - Public Safety and Administration Occupations, such as teaching assistants and fire safety.
 - Finance Related Occupations, such as bookkeeping and clerical work.



WORKFORCE AND ECONOMIC DEVELOPMENT IMPLEMENTATION PLAN

The Workforce and Economic Development Implementation Plan presents a series of strategies for addressing and capitalizing on the opportunities associated with the mission expansion identified in this chapter. The strategies are in alignment with Arizona's Be Connected program and Arizona Roadmap to Veteran Employment initiative. The implementation plan further identifies potential task leads and partners, estimated costs and funding sources, appropriate times to initiate each course of action, and other information to help guide implementation.

Ultimately, the plan leverages existing assets and partnerships to enhance the mutually beneficial relationship among Luke AFB and surrounding communities and the quality of life of both military and civilian residents. The proposed strategies below work toward that goal while remaining actionable, attainable, and reasonable.

Workforce and Economic Development Implementation Plan							
Ref Code ¹	Issues and Strategies	Time-frame ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
W1	Issue: Military spouses and dependents may benefit from training opportunities that align with the skills in demand by local businesses.						
	Goal: Provide Luke AFB personnel who are separating from the service, military spouses, and community members the opportunity to obtain desired skills.						
W1.1	Strategy: Support employers in becoming more veteran friendly.	Medium-term	Medium	N/A	N/A	Arizona Coalition for Military Families (ACMF), AZDVS	Luke AFB, AZ OEO
W1.2	Strategy: Help veterans and their families start their own businesses.	Medium-term	Medium	TBD	TBD	Small Business Association, Arizona State University, Bunker Labs	Local Southwest Chambers of Commerce, AZ OEO
W1.3	Strategy: Support the ongoing efforts of the Maricopa County Workforce Development Board (MCWDB), business leaders, Economic Development Organizations including WESTMARC, and training institutions to identify, market, and provide actions regarding talent needs in the Study Area and gaps in the local labor market.	Ongoing	Medium	N/A	MCWDB, Workforce Arizona Council (WAC)	MCWDB and WESTMARC	Estrella Mountain Community College-Southwest Skill Center, West-MEC, Universal Technical Institute of Arizona
W1.4	Strategy: Support and enhance the Depart of Defense Skill Bridge Program at the base.	Ongoing	Medium	N/A	Luke AFB	ACMF, Luke AFB/AZDVS	AZ OEO, WAC
W1.5	Strategy: Increase coordination and opportunities for a successful transition from service by having Luke AFB share information with WESTMARC about the skill sets of military separating from service, their spouses and dependents. This also will help market the area surrounding the base to employers looking for transferable skill sets. As new airmen are being assigned to Luke AFB, share a list of skills and credentials of military spouses and dependents to assist proactively with job placement and promotion of available training opportunities.	Near-term	Medium	N/A	N/A	Luke AFB, WESTMARC, AZ Legislative District 13	West Valley Veterans Success Center, AZDVS/ACMF, AZ OEO

¹Reference Code

² Immediate: 2020; Near-term: 2020-2023 Medium-term: 2020-2026; Long-term: 2026 and beyond; Ongoing

Workforce and Economic Development Implementation Plan

Ref Code ¹	Issues and Strategies	Time-frame ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
W1.6	Strategy: Promote and support training programs that are focused on trade skills in the community to help military separating from service and military spouses and dependents connect with them.	Near-term	High	N/A	MCWDB (TBD)	MCWDB, EMCC, SSC, UTIA, WESTMARC, Helmets to Hard Hats, Troops to Teachers, Arizona Teachers Academy, MCOR, Military Spouses Professional Network, ACMF	EMCC, SSC, UTIA middle schools and high schools, adult education institutions, Airmen Readiness Center, ADES Arizona Apprenticeship Office
W1.7	Strategy: Research growth industries in the area and research apprenticeship opportunities in these sectors with local businesses. Determine if the Office of Economic Opportunity can provide a tailored study on industry trends. The programs could be listed at AZapprenticeship.com and promoted among high schools and other targeted audiences as an alternative career path. (Related strategy: W1.2)	Near- to medium-term	Medium	N/A	TBD	MCWDB, EMCC, SSC, UTIA, ACMF	Government, businesses in associated industries, WeSERV, Veteran Success Center, Pipeline AZ, Arizona State University, ADES Arizona Apprenticeship Office, AZ OEO
ED1	Issue: Enhance the defense economy within the Study Area						
	Goal: Increase direct spending on military and DoD civilian personnel and private-sector defense procurement contracts (both awarded and performed) and increase the value of transfer payments throughout the Study Area.						
ED1.1	Strategy: Increase the number and military value of missions performed at Luke AFB. A concerted effort should be made at the state level to advocate in Washington, D.C. for additional, high-value missions that increase the number and ranks of personnel and the number of private-sector contracts performed throughout the Study Area. Although options for Luke AFB to attract additional military assets may be limited to operational capacity and nearby assets, the state should consider conducting a SWOT (strengths, weaknesses, opportunities and threats) analysis of the installation to better understand future potential.	Long-term	Low	N/A	State of Arizona	Arizona Governor's office, Arizona Military Affairs Commission	Fighter Country Partnership and Foundation, Luke Forward, MAG

Workforce and Economic Development Implementation Plan

Ref Code ¹	Issues and Strategies	Time-frame ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
ED1.2	Strategy: Assess the viability of the undeveloped land surrounding the base within the parameters established by state statute to protect the mission of the base. If viable opportunities exist within these parameters, connect with partners to develop the land.	Long-term	Medium	TBD	TBD	Luke AFB and WeSERV	Local government planning departments
ED1.3	Strategy: Clarify and increase a better understanding of the noise contours surrounding the base. This will support appropriate development in the area surrounding the base. Per Arizona statute, compatible use restrictions apply to certain parcels immediately surrounding Luke AFB. As such, work with commercial developers to identify target parcels for potential development.	Near-term	High to Medium	N/A	Local commercial developers	Luke AFB; Local EDOs, and planning departments	Local commercial developers, Local First Arizona, Peoria Forward, business incubators, commercial real estate companies & appraisers
ED1.4	Strategy: Construct new buildings and tear down older buildings as needed to co-locate other federal agencies on the base grounds.	Long-term	Low	TBD	TBD	Luke AFB	Luke AFB
ED1.5	Strategy: Continue to support efforts to retain a greater number of Luke AFB personnel who are separating from the service in order to develop the local workforce and attract additional transfer payments to the region; establish formal community partnerships with Luke AFB (Transition Assistance Program) to survey, track, and connect separating personnel with local jobs to help retain them in the area.	Near-term	High	N/A	Volunteer time from TAP and local workforce development boards	Local workforce development boards	Local EDOs, WESTMARC, Luke AFB
ED1.6	Strategy: Conduct targeted support to help grow companies that are already present in the community to connect local contractors (both defense and non-defense) with federal defense contracting opportunities.	Near-term	High	\$20,000	Local economic development funds	WESTMARC	Local Chambers of Commerce
ED1.7	Strategy: Further develop the local supply chains of high value defense contractors across the state (Raytheon, Boeing, Lockheed Martin, etc.) in order to retain a greater percentage of defense spending in the West Valley region. (Related strategies: ED1.3, ED1.4)	Long-term	Low	TBD	TBD	Local EDOs	WESTMARC, West Valley Defense Alliance, Aerospace Industries Association

Workforce and Economic Development Implementation Plan							
Ref Code ¹	Issues and Strategies	Time-frame ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
ED2	<i>Issue: There is a need for guidance and oversight of the implementation process.</i>						
	Goal: Provide guidance and oversight of the implementation process through a centralized body that provides continuity in knowledge and decision-making regarding implementation.						
ED2.1	Strategy: Create a workforce and economic development work group to address and monitor implementation of all recommendations.	Immediate to near-term	High	TBD	None required	Luke AFB, WESTMARC in partnership with MCWDB	AZ OEO, ACMF



Housing



OVERVIEW

Access to decent, affordable housing is a basic human need. Affordable and well-maintained housing affects every aspect of one's personal and professional life as well as overall well-being. Having access to affordable housing also helps strengthen families and communities and retain employees. This chapter addresses Luke AFB and the surrounding communities' capacity to meet the increase in demand for housing by Luke personnel during mission expansion. The addition of 7,041 personnel and their family members over six years will spur additional demand for housing at Luke AFB.¹ During this period, demand for housing from the civilian population in the surrounding communities also is projected to grow significantly as the region's suburban edge moves farther west. This chapter proposes a series of actionable strategies to ensure the continuing availability of housing in the area for incoming personnel and their families.

The results of a survey of military personnel and residents of nearby communities gives a snapshot of their current housing preferences. The survey

1. As mentioned in the introduction, the analyses and findings were based on full buildup being completed in 2023. The full buildup at Luke Air Force Base is now expected to be completed by 2026. However, the original findings remain valid for 2026 because the extension has minimal to no impact on demand data.

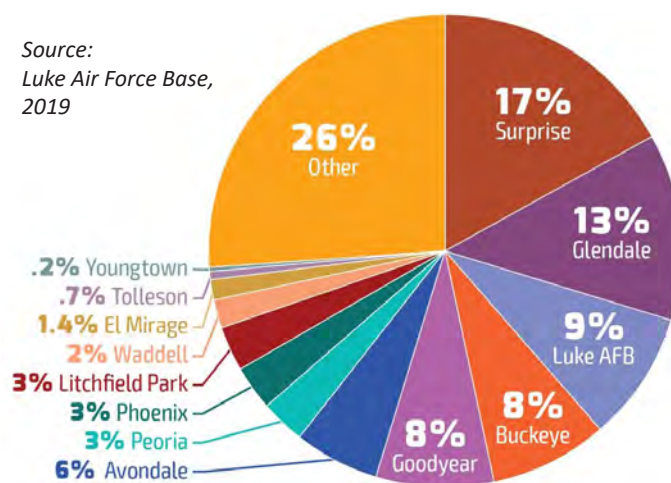
included questions relative to housing choice factors, such as affordability, type (single-family or multi-family), renting versus owning, availability, condition, and proximity to the base. While the results cannot be extrapolated to the entire base and surrounding communities, they provide insights into the current housing preferences of military personnel and residents in the surrounding communities. These insights were helpful in determining respondents' housing preferences and housing needs at the time the survey was conducted.

Of the current military personnel at Luke AFB, an estimated 83 percent live off base. Of that percentage, 46 percent generally choose to live in four communities in the Study Area: Surprise (17 percent), Glendale (13 percent), Goodyear (8 percent), and Buckeye (8 percent). Sixty six percent of respondents indicated no plans to move in the next 12-18 months.

According to the survey results, 93 percent of Luke AFB survey respondents indicated a preference to live off base. The primary factors influencing where Luke AFB respondents choose to live include:

- Cost of home, mortgage and rent.
- Commute time.
- School quality and school choice.

Source:
Luke Air Force Base,
2019



Luke AFB personnel field many questions from prospective personnel asking about schools and identifying that as a key priority for housing selection. Housing demand in the Study Area and the larger West Valley is projected to remain strong through the military buildup. The population of the West Valley continues to experience significant growth and is projected to grow by 44 percent between 2019 and 2040. This anticipated growth has spurred strong development activity as the urban edge continues to move west.²

2. The impact of COVID-19 on regional housing demand was uncertain at the time the TGMP was drafted, with some estimates indicating housing demand could remain strong. Hence, projections are based on pre-COVID-19 conditions.



Summary of Key Findings

The Study Area is projected to have ample housing inventory at price points that should be attainable to incoming military personnel of all ranks, including those accompanied by a partner and/or family members. The estimated ample housing supply includes apartments, townhouses, single-family homes, rentals as well as homes for sale. This abundance of housing options is forecasted to remain constant throughout the build-up. This large inventory may contribute to housing costs remaining relatively affordable.



Key Takeaway

Housing Affordability

- A housing inventory of over 8,500 vacant units is estimated for each year of the mission expansion at an affordable rate to all ranking military personnel at Luke AFB who are permitted to live off base (Ranks E-5 and above).
- The median gross rent within the Study Area is \$1,178, which is affordable for personnel with dependents ranked E-5 when applying a 30 percent cost burden of \$1,225 to combined income and BAH rates.

More than 50 percent of housing within the Study Area was built in 2000 or later. Additional residential construction is projected to add an average of 2,818 housing units each year of the mission expansion. Vacant residential units contribute the bulk of housing supply, annually contributing an average 83 percent of the overall housing supply in the Study Area.

Relative to affordability, housing that is affordable for ranks E-5 and above is projected to be available within the Study Area during the mission expansion. On average, 3,135 housing units are projected to be available within the Study Area and are considered affordable for and attainable by personnel allowed to live off-base (Rank E-5 and above).

EXISTING CONDITIONS

On-Base Housing Supply

On-base housing at Luke AFB includes dormitory housing as well as two residential communities of single-family homes. There are 905 dormitory housing units with a vacancy rate of five percent. This vacancy rate is assumed to remain constant for each year of the buildup. Due to this low vacancy rate, only about 45 dormitory units are estimated to be available in each of the four years of the mission expansion.

Luke AFB has contracted with Balfour Beatty Communities to privatize its housing in two residential communities: Saguaro Manor and Ocotillo Manor. These 550 single-family homes and townhomes provide move-in-ready, two-, three-, and four-bedroom homes for base personnel and their families. The



There are 905 dormitory housing units on base.

vacancy rate for privatized housing was 10 percent in 2014 and it is assumed to remain constant through each year of the buildup. Given this vacancy rate, privatized housing contributes only 55 housing units each year.

Based on the low vacancy rates for both the on-base dormitories and the privatized housing, the analysis estimates only 100 units each year are available at the base throughout the buildup. Due to the low vacancy rates of these units, the unpredictability of the availability for on-base housing and the strong preferences by base personnel for off-base housing, these units are not included in the overall supply of housing in the Study Area.

Off-Base Housing Supply

The vast majority of Luke AFB personnel, currently estimated at 83 percent, reside outside the base. Luke AFB is surrounded by a number of suburban communities that are predominantly residential in character. Within the Study Area, there are approximately 252,000 existing residential units. Approximately 227,000 of them are single-family units and 25,000 are multi-family units.

The total community housing supply combines vacant residential units and new construction permits. The average number of vacant single-family units that become available for rent or purchase at some point during the year in the Study Area is approximately 12,000. The average number of vacant multi-family units per year in the Study Area is approximately 1,500 for a total of 13,500 housing units in the Study Area that become part of the available housing inventory at some point during the year. This number is based on a projected average vacancy rate of 6 percent for multi-family units and 5.3 percent for single-family units at all price points.



Key Takeaway

Total Housing Supply

- Vacant existing residential units comprise an estimated 82 percent of the available housing unit supply.
- New construction permits account for 17 percent of the total available housing supply.
- On average, 1,499 multi-family units are projected to be built annually in the Study Area.



Airman 1st Class Abigail Bieber, 56th Security Forces Squadron team member, makes a house call.



Source: U.S. Air Force photo by Airman 1st Class Zoie Co

Housing Costs in the Study Area

Among Luke AFB survey respondents who live off base, the home ownership rate is 73 percent, compared to a national average of 35 percent for U.S. Air Force personnel. Housing affordability is one of the most critical factors influencing housing decisions for individuals and families. In fact, 52 percent of survey respondents indicated that rental and mortgage costs were one of the top priorities in determining housing location.

The Basic Allowance for Housing (BAH) is a housing stipend for military personnel living off-base. This stipend provides military personnel equitable housing compensation according to geographic location, pay grade, and dependency status and may be used to pay rent or mortgage, insurance, utilities, and other housing costs. As such, housing affordability for Luke AFB personnel is based on 30 percent of the combination of their monthly pay rate and BAH.

Relative to housing affordability, affordable housing for all ranks is projected to be available within the Study Area during the mission expansion. It should be noted that personnel ranked E-1 through E-3 and personnel ranked E-4 with less than three years of experience are required to live on base.

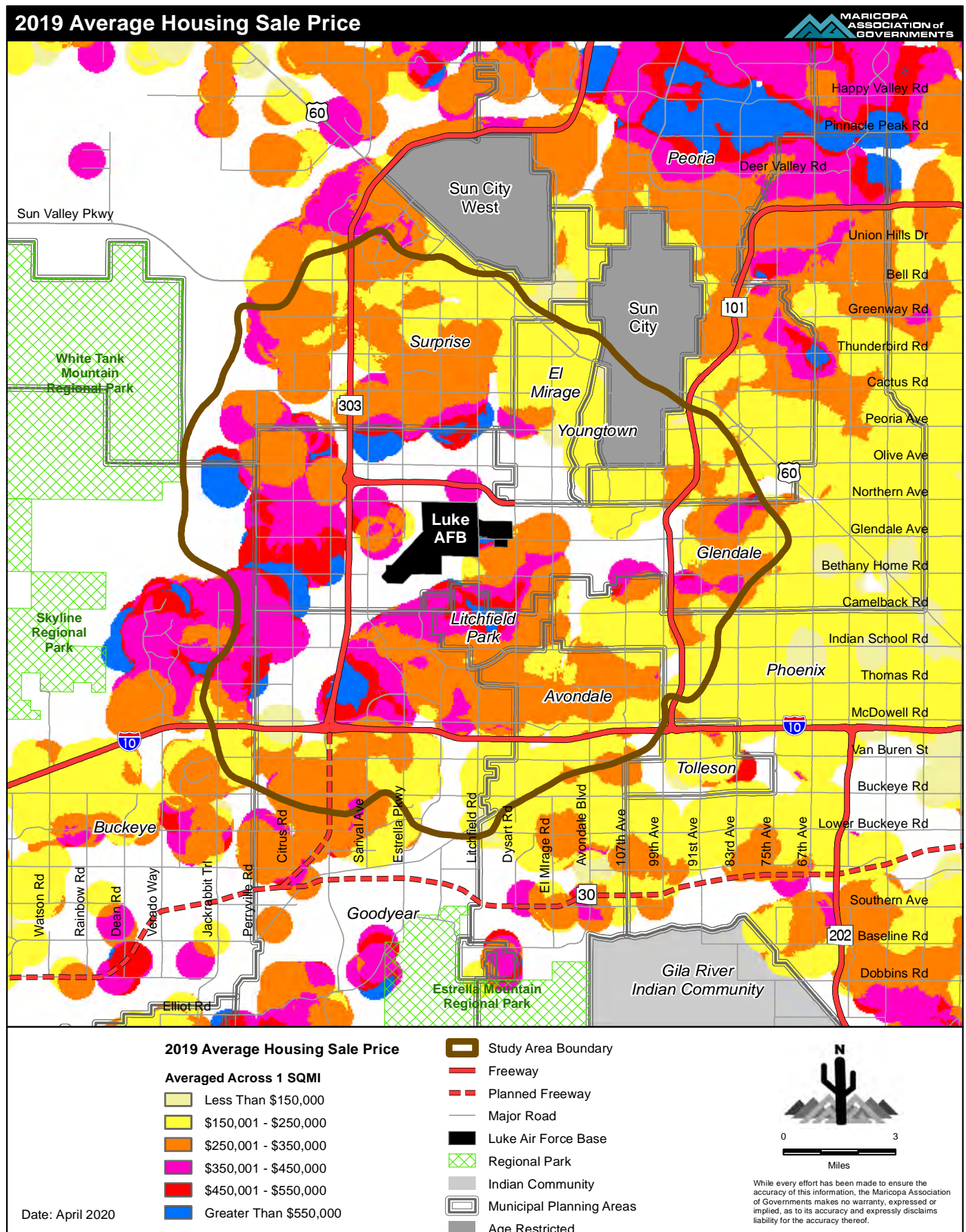
The median home sales price in the Study Area is \$233,200. Between 2020 and 2023, more than 7,000 homes are estimated to be available within the range of \$125,000 to \$250,000, which is considered affordable for Luke AFB military personnel with lower ranks. On average, 3,135 housing units per year are projected to be considered affordable to and attainable by personnel with the lowest ranking. Personnel with the starting-level rank of E-1, without dependents, could afford a mortgage of \$188,400 with a monthly payment of \$849. An additional 4,000 homes will be available within the \$250,000 to \$375,000 range, which is attainable by higher-ranking personnel.



A more affordable housing option for military personnel who choose to live off base is renting. The median gross rent in the Study Area is \$1,178 and is affordable to all ranks above E-5 with dependents after applying a 30 percent cost-burden assumption to combined income and BAH rates, or \$1,225. Two-bedroom rentals in the Study Area average \$1,054, per month. Average monthly rent varies by community, ranging from \$836 in Youngtown to \$1,254 in Goodyear. Three- and four-bedroom homes average \$1,217 and \$1,451, per month, respectively. Four-bedroom rental costs are lowest in El Mirage (\$1,275 per month), Peoria (\$1,300 per month), and Phoenix (\$1,365 per month) in the study area. The map below shows the housing availability and costs in the Study Area. *(See Figure H-1.)*



Figure H-1: 2019 Average Housing Sale Prices in the Study Area



FUTURE NEEDS



Housing Demand in Study Area

The population in the Study Area is estimated to grow by 57,207 from 2020 through 2026. Assuming a housing-industry average of 3.11 persons per household (pph), demand for housing in the Study Area by new civilian residents unaffiliated with Luke AFB (“Community Demand”) will fluctuate slightly from year to year, ranging from about 2,300 to almost 2,800 housing units, with an average demand for 2,600 units per year.

Housing Demand for Luke AFB Personnel

The 7,041 additional base personnel and their dependents are projected to increase demand for housing in the study area by a total of 1,713 housing units over the entire buildup period. Spreading this additional demand of 1,713 housing units evenly over seven years results in an annual housing demand of 245 units of housing per year until 2026. Luke AFB housing demand is approximately nine percent of the overall projected growth in housing demand in the Study Area during the mission expansion.

Total Housing Demand

Total demand in the Study Area is composed of the new Luke personnel demand and the community demand combined. *Table H-1* reflects the projected total housing demand in the



Key Takeaway

Housing demand in the Study Area and the larger West Valley is strong and projected to remain so through the buildup.

Methodology

New Personnel Demand

Incoming military personnel accounted for based on status:

- Accompanied Personnel
- Unaccompanied Personnel
- Living Out of State
- Personnel Married to Another Person in the Military

Total new personnel demand of 1,713 units divided evenly between each of the four years of the buildup.

- Assumption: Approximately 10 percent of incoming Luke AFB personnel are expected to be married to other military personnel.

Table H-1 : Total Housing Demand 2020-2026 in the Study Area – Dwelling Units

	2019	2020	2021	2022	2023	2024	2025	2026
Estimated Population in the Study Area	397,696	404,803	412,162	420,109	428,370	437,574	446,269	454,903
Estimated Added Population in Study Area		7,107	7,359	7,947	8,261	9,204	8,695	8,634
		3.11 pph						
Estimated Community Housing Demand		2,285	2,366	2,555	2,656	2,959	2,796	2,776
Luke AFB Housing Demand		245	245	245	245	245	245	245
Total Housing Demand		2,530	2,611	2,800	2,901	3,204	3,041	3,021

Source: Matrix Design Group, 2019; Luke Air Force Base, 2019; Maricopa Association of Governments



Study Area, with the fluctuations in total demand due to variations in growth projections over the six years of mission expansion.

The average estimated community housing demand in the study area is an estimated 2,628 homes, for a total average annual demand of 2,873 homes in the Study Area after including Luke AFB demand.

ASSETS

The West Valley's population growth has attracted homebuilders, and the housing market in the Study Area is projected to be affordable for home buyers and renters. An estimated 2,508 new single-family homes and 310 new

multi-family units are projected to be built in the Study Area each year, for a total of 2,818 new housing units for each year of the mission expansion. In addition, because 50 percent of the housing units in the Study Area were built after 2000, they offer modern fixtures and better insulation than older units. As a result, incoming military personnel and their dependents should have access to a large inventory of housing at many price points during the mission buildup.



Key Takeaway

The housing analysis projects a large inventory of housing that should be affordable for military personnel and their dependents during the six years of mission buildup.

The estimated housing demand of 245 units by incoming Luke AFB personnel is a low percentage of the estimated housing units available for rent or purchase. This small demand relative to an abundant supply should result in a favorable housing market for military personnel in terms of housing cost and housing choice.

CHALLENGES

The Study Area has a range of housing options for incoming personnel. Nonetheless, the population of the West Valley is projected to keep growing significantly over the next two decades. Possible challenges include:

- Ready access to up-to-date information about off-base housing options for incoming personnel.
- Availability and adequacy of on-base housing options.
- An ongoing focus on informing new residents about the base's value to the surrounding community and its place within it.

- The transition to market housing for base personnel separating from service who are accustomed to living on base and who no longer receive the BAH to subsidize housing costs.



KEY FINDINGS

- A projected abundant annual housing supply provides opportunities for more choices when it comes to housing type, price, ownership, rental, and other housing preferences of new personnel and their dependents. The current ample supply of housing is forecasted to remain constant throughout the buildup.
- Vacant existing residential units contribute the bulk of housing supply, annually contributing an average 83 percent of the overall housing supply in the Study Area. The balance of supply is projected to be provided by additional residential construction at a rate of 2,818 housing units each year of the mission expansion.
- More than 50 percent of housing within the Study Area was built in 2000 or later. These homes are desirable, benefit from modern construction methods and are generally of good quality.
- Ninety-three percent of military personnel who responded to the survey indicated they prefer to live off-base. Of current Luke AFB



More than 50 percent of housing within the Study Area was built in 2000 or later.



personnel, 46 percent live in four communities: Surprise (17 percent), Glendale (13 percent), Goodyear (8 percent) and Buckeye (8 percent).

- Relative to housing affordability, affordable housing for all ranks is projected to be available within the Study Area during the mission expansion. On average, 3,135 housing units considered affordable to and attainable by the lowest ranking personnel are projected to be available within the Study Area.
- On average, 8,512 units are projected to be available for purchase or rent in the study area in a range considered affordable to and attainable by all Luke AFB personnel of ranks E-5 and above.
- The median home sales price in the Study Area is \$233,200. Applying a 30 percent cost-burdened assumption to the combined income and BAH rates, an E-5 ranking Luke AFB military personnel can afford to spend \$1,136 per month on housing, or a mortgage of \$251,900, which is more than the Study Area median home sales price.
- Median rent in the Study Area is \$1,178, which is below the lowest BAH rate (\$1,215) for the lowest ranking military personnel. Two-bedroom rentals in the Study Area average \$1,054, per month, in rent. Average



monthly rent varies by community, ranging from \$836 in Youngtown to \$1,254 in Goodyear. Three- and four-bedroom homes average \$1,217 and \$1,451, per month, respectively. Four-bedroom rental costs are lowest in El Mirage (\$1,275 per month), Peoria (\$1,300 per month), and Phoenix (\$1,365 per month).

- The U.S. Census Bureau's American Community Survey indicates that more than 100,000 new residents per year have moved to the Phoenix region in the last two years, with many settling in the West Valley. Newcomers moving into the Study Area will need to be informed and educated about the importance of the base to the West Valley.



HOUSING IMPLEMENTATION PLAN

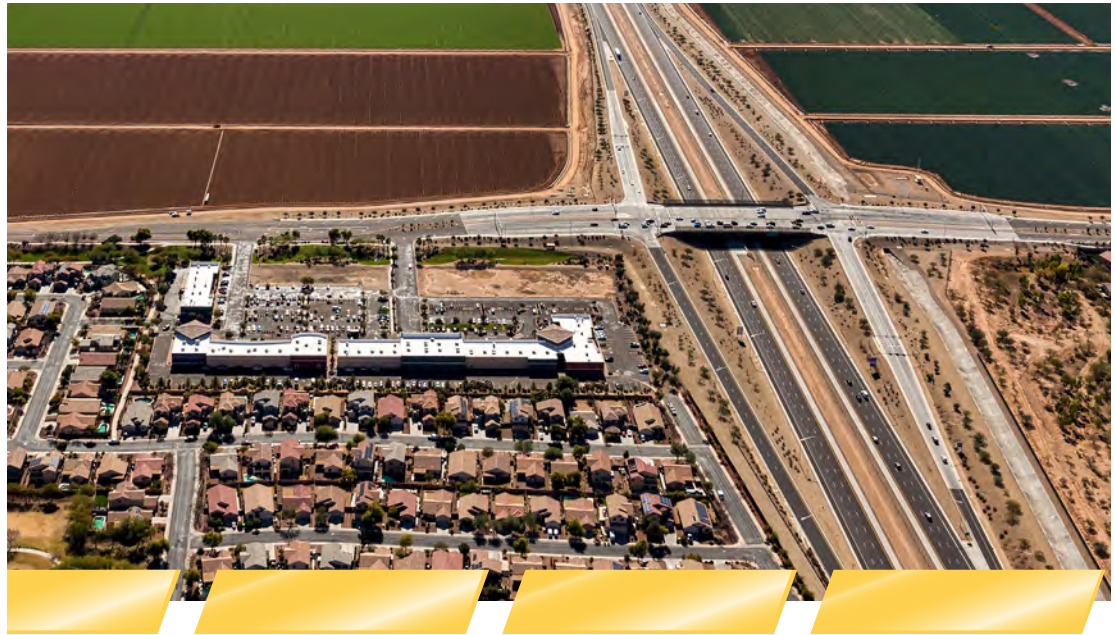
Although there is a large supply of housing in the Study Area, measures are still needed to ensure that Luke AFB personnel and their dependents are aware of and are able to capitalize on the variety of housing options that are affordable and that meet their needs. The proposed strategies in the Housing Implementation Plan work toward that goal while remaining actionable, attainable, and reasonable.

Housing Implementation Plan							
Ref Code ¹	Issues & Strategies	Time-frame ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
H1	Issue: <i>There is a need to ensure future housing development continues to meet the housing demand of Luke AFB personnel.</i>						
	Goal: Ensure that all future Luke AFB personnel have access to adequate housing options.						
H1.1	Strategy: Continue to support and promote existing relationships between Study Area communities and the base to ensure housing types meet military personnel needs, Luke AFB has an early voice in land use decision-making with the potential to impact the mission, and there is coordination and awareness between the base and Study Area communities on developments and plans that have a potential impact on housing supply and affordability to military families.	Near-term	High	N/A	N/A	HTF, Luke AFB	Surrounding Cities
H1.2	Strategy: Monitor planned and pending development activity, housing supply and affordability to ensure adequate and affordable housing is available to serve military personnel and their families. Update data on pending applications and analyze data on file on future development.	Near-term	Medium	N/A	N/A	Luke AFB	Surrounding cities, Home Builders Association of Central Arizona, private developers, MAG
H1.3	Strategy: Provide information and training to ensure developers, home owner associations, and landlords do not include requirements that would create barriers for military personnel securing housing, such as precluding VA housing loans from being used to purchase homes or precluding short term leases or roommate leasing often needed by military personnel.	Near-term	Low	TBD	TBD	WeSERV	Luke AFB
H2	Issue: <i>Communication and coordination between Luke AFB and nearby communities regarding available housing options can be improved.</i>						
	Goal: Ensure that all future Luke AFB personnel have access to information regarding housing options in the area surrounding the base.						
H2.1	Strategy: Increase coordination between Luke AFB's Housing Management Office and WeSERV so that www.homes.mil , a website that lists available housing for Luke AFB personnel, is kept up to date about local housing options. Offer a workshop to support ongoing training, communication and coordination.	Near-term	High	N/A	N/A	HTF, Luke AFB	WeSERV, developers

¹Reference Code

² Immediate: 2020; Near-term: 2020-2023 Medium-term: 2020-2026; Long-term: 2026 and beyond; Ongoing

Housing Implementation Plan							
Ref Code ¹	Issues & Strategies	Time-frame ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead	Potential Partners
H3 <i>Issue: On-base housing options are aging and extremely limited.</i>							
Goal: Ensure that future Luke AFB personnel have adequate housing options to live on base if they desire.							
H3.1	Strategy: In conjunction with the next regularly scheduled update to the Luke AFB Dormitory Master Plan, assess the current condition of on-base housing and improvements necessary to address housing quality issues identified by survey respondents. Work with partners and explore privatized housing options.	Long-term	Medium	TBD	TBD	Luke AFB	NA
H3.3	Strategy: Explore options to develop housing such as building tiny homes on land in and near Luke AFB that would be leased to veterans transitioning in and out of rehabilitation and in need of housing.	Medium-term	Low	TBD	TBD	Veteran Organizations, Luke AFB	AZDVS, MAG, WeSERV, State Land Department
H3.4	Strategy: Provide shelter for veteran families and children experiencing homelessness and/or abuse. Former military women with children, particularly those who have been sexually assaulted while in the service, may be at higher risk for homelessness and suicide.	Immediate to near-term	High	TBD	VA	AZDVS	VA; Veteran Organization
H4 <i>Issue: There is a need for guidance and oversight of the implementation process.</i>							
Goal: Provide guidance and oversight of the implementation process through a centralized body that provides continuity in knowledge and decision-making regarding implementation.							
H4.1	Strategy: Create a housing workgroup (HTW) to identify and implement the priority housing-related recommendations in the Targeted Growth Management Plan housing paper. This workgroup should include decision-makers from surrounding communities in addition to Luke AFB Housing Department staff.	Immediate to near-term	High	N/A	Luke AFB	Luke AFB	MAG, Surrounding cities



OVERVIEW

The growth of base personnel due to the expansion of the F-35A Lightning II fighter jet program is anticipated to somewhat increase traffic circulation around the base. However, the concurrent strong population growth in the West Valley will have an even greater impact on roadway circulation and usage of the transportation infrastructure in the areas surrounding Luke AFB. This chapter identifies where the existing transportation infrastructure and services can be enhanced in anticipation of additional traffic and proposed strategies to support this growth.

The regional and Study Area transportation system include various types of roadways, public transportation, and active (non-motorized) transportation. This analysis examines all modes, with a focus on the roadway network that most Luke AFB personnel use and will continue to use to reach their jobs at the base.

The analysis includes adjacent intersections that provide immediate ingress to and egress from the base, as well as the freeways and arterials on which West Valley residents and employees rely.

The larger transportation system throughout the Study Area also was



Source: U.S. Air Force photo by Tech. Sgt. Louis Vega Jr.



944th Medical and Aeromedical Staging Squadron Reserve Citizen Airmen board a C-17 April 22, 2020 at Luke Air Force Base.

analyzed to determine impacts of the forthcoming buildup of base-related personnel and impacts of the increasing population on the base.¹

Synchro 10 Signal Timing Analysis Software was used to evaluate peak-period congestion at the three key signalized intersections that provide access to Luke AFB through the four secure entry gates, as well as at the intersection of two principal arterials adjacent to the base.

Summary of Key Findings

The West Valley will experience significant population growth over the next several years, causing the roadways to experience additional congestion. Impacts of additional Luke AFB employees on the larger transportation system will be minor compared to those caused by regional growth. Thus, the increase in personnel at Luke AFB will not cause regional roadways to deteriorate from acceptable to unacceptable levels of service, except at one intersection adjacent to the base.

Near the base, some areas are congested during peak hours. The congested intersections will be impacted further by additional personnel entering and leaving the base, but the strategies proposed in the Transportation Implementation Plan can mitigate this congestion. The focus of the proposed strategies is to ensure the increased congestion resulting from the population growth in the surrounding communities does not negatively impact the base and its mission.

1. As mentioned in the introduction, it is important to note that the full buildup is now expected to be completed by 2026. The analyses were originally based on buildup completion in 2023 but their findings remain valid because the extension has minimal to no impact on demand data.

EXISTING CONDITIONS

Luke AFB has four gates. The South Gate is the main gate and is open 24 hours, seven days a week. Cargo and shipments are only allowed through the South Gate. The North Gate is generally open Monday through Friday from 6:30 a.m. to 8:00 a.m. inbound/outbound and from 3:30 p.m. to 5:30 p.m. outbound only, though the hours are subject to change and often vary. This gate increases capacity for AM and PM peak hour traffic demands. The Lightning Gate is normally-open Monday through Sunday from 5:00 a.m. to 10:00 p.m., providing the quickest access to the medical facility and to the commissary/exchange.



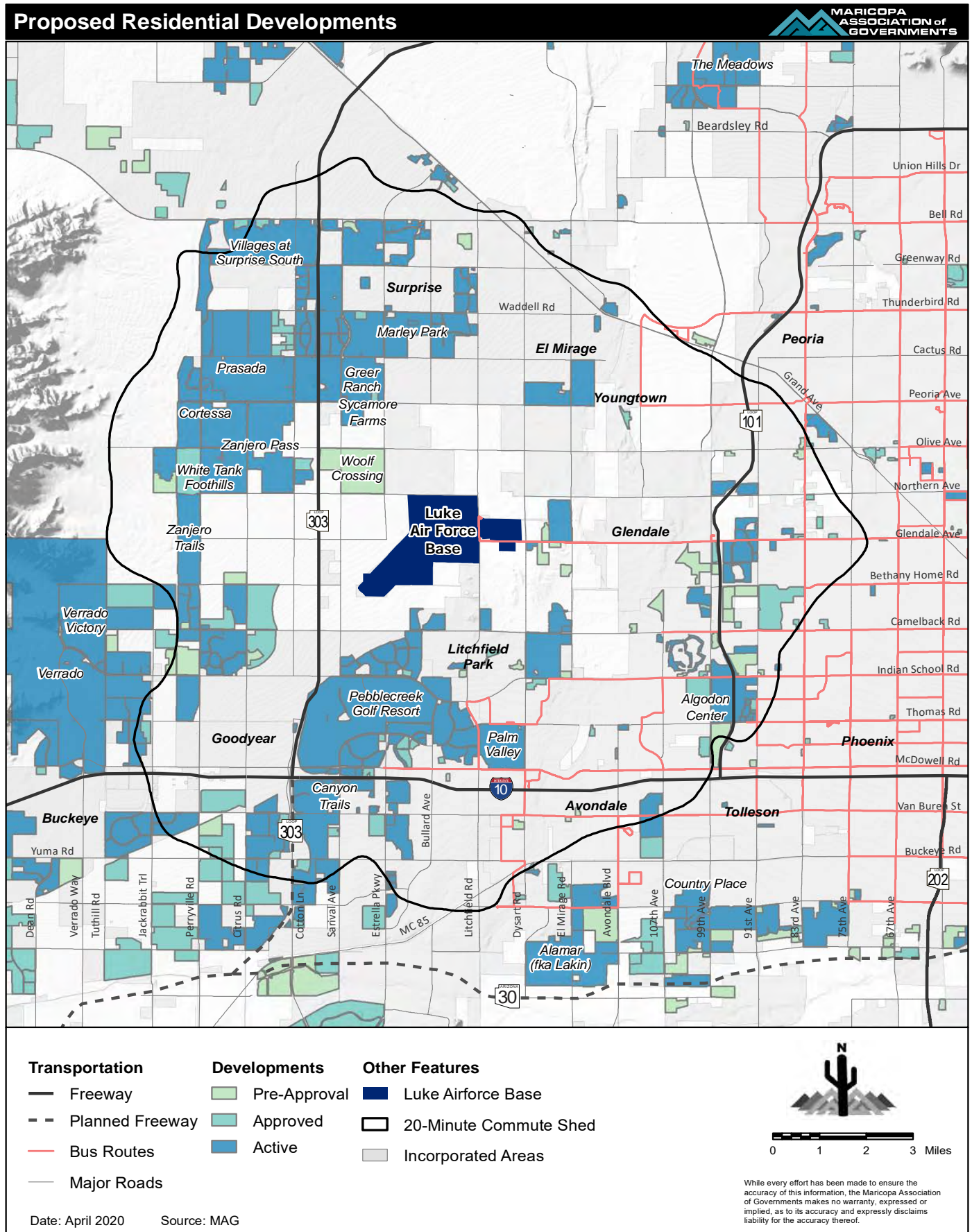
The Kachina Gate is open Monday through Sunday from 6:00 a.m. to 10:00 p.m. and provides the quickest access from the east to either residential areas or to the commissary. A typical work shift is from 7:00 a.m. until 4:00 p.m., with lunch generally from 11:00 a.m. until noon. While these hours are typical, work hours can differ between work centers, contributing to minute offsets in incoming and outgoing traffic behaviors.

Ninety-nine percent of Luke AFB personnel who responded to the survey drive a privately-owned vehicle (POV) to work at least some of the time. Only four percent of respondents mentioned bicycling, walking, and/or rideshare as a mode of commuting. In contrast, the concurrent survey of permanent residents found that 85 percent of survey respondents regularly drive a POV, with nine percent telecommuting. (The total is more than 100 percent because respondents could mention more than one mode.)

The commuting pattern for Luke AFB personnel is generally an inverse response to the Greater Phoenix Metropolitan Area pattern, which directs toward Downtown Phoenix. In the PM peak hour, about 75 percent of the trips are exiting the base. The TGMP survey of Luke AFB personnel showed that 72 percent of survey respondents have a morning commute ranging from 11 minutes to 30 minutes. Only 13 percent of the respondents require more than 30 minutes to get to work in the morning. The proportions are similar for the journey from work in the afternoon peak hour.

See [Figure T-1](#) for the surrounding transportation infrastructure and proposed residential developments.

Figure T-1: Transportation Infrastructure and Proposed Residential Developments in the Study Area



To determine how efficiently and effectively the perimeter street system accommodates the existing traffic volumes, key intersections adjacent to Luke AFB were analyzed using industry standard Synchro 10 software. Counts of traffic turning movements (left, through, right) were taken at the four signalized intersections immediately adjacent to the base, as these will be the

most directly affected. These intersections are: Litchfield Road/Glendale Avenue, Litchfield Road/South Gate (Super Sabre Road), Litchfield Road/Lightning Gate/North Gate, and Kachina Gate/Glendale Avenue.

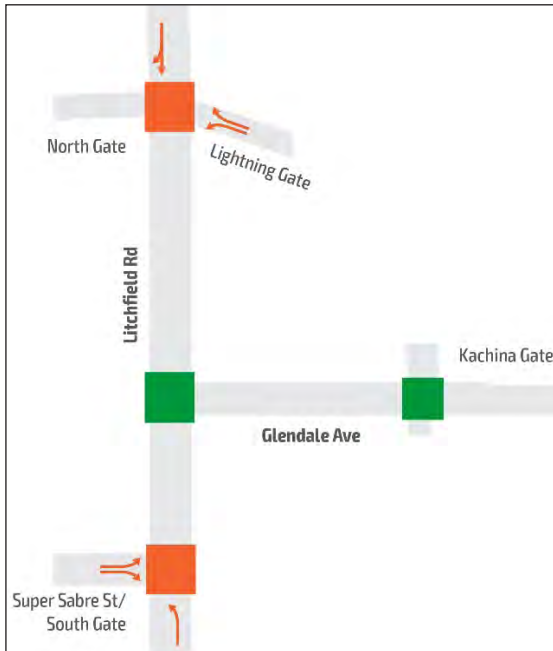


Figure T-2: Analysis of Adjacent Intersections

Public Transit

Effective and efficient transit service is challenging to provide in areas with low population densities. The most productive routes (in boardings per revenue mile or per revenue hour) are usually those that connect densely populated neighborhoods with each other and with large activity centers.

Local Bus Service

One public bus route serves Luke AFB: Route 70, which terminates at the base. Due to the low population density, it has less frequent service during commute periods than other Valley Metro bus routes serving major employers and less frequent service than several other routes in the Study Area. The frequency of service to and from Luke AFB is approximately hourly, seven days a week. The City of Glendale financially supports service to the base.

2. Level of Service (LOS) is a performance measure representing quality of service. Level of service varies from LOS A, which represents free flow, to LOS F, stop and go conditions. Level of service A through LOS D are generally considered acceptable in urban traffic, while LOS E and LOS F are considered unacceptable and in need of mitigation.

Bus riders to Luke AFB can reach their jobs by entering through the Lightning Gate and then, if necessary, crossing Litchfield Road on the overpass provided for vehicles and pedestrians. For a more direct route to the west side of the base, they can cross Litchfield Road at the Lightning Gate/North Gate intersection and proceed to the secure area through the North Gate.



Travel Demand Management

Widely used demand management methods in Maricopa County include flexible work hours and telecommuting. Employers of 50 or more workers in the county are required to submit and annually update a travel reduction plan with specific goals to reduce single-occupant-vehicle commutes. The base's plan currently includes a monthly subsidy of \$130 for vanpool riders, reserved parking spaces for vanpools, a guaranteed ride home in case of emergency, and free transit passes to ride Valley Metro buses and light rail anywhere in the metropolitan area.

Active Transportation

Bicycle Lanes and Routes

Bicycle lanes, along with bicycle routes (signed routes without marked lanes), and multi-use paths are scattered through the Study Area, with a large concentration south and southeast of the base in Litchfield Park, Goodyear and Avondale. Many of the facilities follow local community streets rather than major arterials.



Source: U.S. Air Force photo

Benjamin Frisch, 56th Force Support Squadron recreation assistant, rides a bicycle with the proper daytime safety equipment.



Currently, there is no designated bicycle facility (paved shoulder, on-street lane, or off-street path) on a key segment of Litchfield Road that serves traffic to and from Luke AFB. Because Litchfield is the only north-south arterial directly serving the base and because such facilities do exist north of Glendale Avenue and south of Bethany Home Road, adding a designated bicycle facility would fill a gap.

Multi-Use Paths and Sidewalks

Many multi-use paths exist in the Study Area and are mostly paved, but there are a few unpaved sections. The longest multi-use paths are located along the New River, a tributary of the Agua Fria, and extend north and east from roughly Bethany Home Road to beyond the Study Area boundary. Avondale, Glendale, and Surprise have programmed multi-use path projects during fiscal years 2019 through 2022. On the two major arterials serving Luke AFB, there is a lack of connected facilities for pedestrians as sidewalks are discontinuous and often exist only in front of developments.

FUTURE NEEDS

Build-Up Completion Analysis

By 2026, all the additional personnel for the mission expansion will have arrived at Luke AFB. This will result in increased base-related traffic along adjacent roadways and the greater roadway network. Additionally, traffic in the area will have grown because of the general population increase forecasted for this region. Given the size of the base and the increase in personnel and base-related traffic, a few localized areas of improvement that were not already present are anticipated, but are not expected to significantly impact the larger transportation system.

Horizon Year (2040) Analysis

By the year 2040, the base-related population is expected to be constant, with no new trips due to base traffic increases forecast from 2026 onward. The regional population, however, will continue to grow, with corresponding increases in background traffic. The projected growth in population in the Study Area is expected to generate demand for more north-south public transit routes to and from Luke AFB. Like the 2026 traffic scenario, 2040 traffic is projected to experience poor LOS and excessive queue length only at the South Gate. All other queues that will exceed the storage length, or 300 feet, are located at two-way left turn lane areas.



Installation Entry Control Officer, Don Tirpak, checks an identification card at the South Gate.

Only one of the four intersections, Litchfield/South Gate, exhibits unacceptable LOS for a single direction of traffic in the PM peak, in 2019, 2026 (background condition), and 2040 (background). The LOS worsens from LOS E in the background condition to LOS F by 2026 with the planned Luke AFB personnel increase. It is recommended that an additional eastbound left turn lane be added at the South Gate to better accommodate this traffic and further reduce the queue length. A signal study is currently being conducted to improve circulation at the four intersections.

Macro (Higher-Level) Analysis

In addition to studying the direct impact that increased personnel will have on the intersections at the gates to the base, the impact to the regional roadway network was investigated. For this analysis, Average Weekday Traffic (AWDT) was used because the primary concern is determining the impact to the roadway during peak background, which occurs on weekdays.

The increase in AWDT due to base personnel will be about 900 vehicles per day on the south segment of Litchfield Road and approximately 1,000 north of Glendale Avenue. This increase will cause a 2018-2026 AWDT increase from 17,590 to 18,510 on the south segment and from 18,110 to 19,130 on the north segment. Some of the additional congestion is due to the movement of construction vehicles and material on the base. Construction-related traffic will continue to decrease as the buildings for the new mission are completed.



The projected 2040 AWDT will increase from 18,960 to 19,890 on the south segment and from 21,150 to 22,170 on the north segment.

As these additional roadway users disperse throughout the Study Area on their commutes from Luke AFB, their contribution to traffic growth on the more remote roadways will decrease until the effects wash out against the growth in background traffic. The opposite will occur during the morning commute to the base.

ASSETS

The communities surrounding Luke AFB and The West Valley are well-served by a system of highways connecting them to the Phoenix region and to the interstate highway system.³ The transportation-related assets listed below will make it easier for the area to absorb the additional circulation brought about by population growth and the additional personnel assigned to Luke AFB in the coming years.

- The roadway system is relatively new. Additional bike paths and sidewalks are included in the transportation plans of surrounding communities.
- The Study Area has a well-maintained arterial grid that provides movement through the area and access to its amenities, work, home, and the base.
- Luke AFB and the City of Glendale have a collaborative relationship and work together to address transportation infrastructure needs. For example, the city's transportation department was able to prioritize a signal timing study to address the congestion at the Litchfield Road/South Gate eastbound left turn lane. The study was completed and its findings implemented, with a demonstrated improvement in traffic flow.

3. A 20-year, half-cent sales tax funds regional transportation investments, including the region's freeway system, high-capacity transit investments, and contributions to a growing multimodal network, all of which have shaped the West Valley. This extension of the half-cent sales tax is set to expire December 31, 2025 and Maricopa County residents will have the opportunity to vote whether to extend this funding mechanism to expand, improve and optimize the region's transportation infrastructure.

CHALLENGES



As the Luke AFB-related population increases, along with the projected population growth in the surrounding communities in the West Valley, the roadways and transportation infrastructure will bear more traffic and will face the challenges below.

- With or without the growth of the base, many of the arterials and freeways in the Study Area will grow congested and experience unacceptable levels of service along many segments by 2040, unless new capacity is constructed.
- There are inefficient traffic operations at North Gate/Litchfield Road and Kachina Gate/Glendale Avenue.
- A single public transit option, Bus Route 70, serves Luke AFB. It has less frequent service during commute periods than other Valley Metro bus routes serving major employers, and less frequent service than several other routes in the Study Area.
- The current relatively low population density in the Study Area around the base presents challenges in providing conventional transit. The majority of Luke AFB personnel reside in this area. There are no transit centers in the Study Area. The nearest transit centers are located at Arrowhead Towne Center in Glendale and Westridge Mall in Phoenix.
- There is no designated bicycle facility (paved shoulder, on-street lane, or off-street path) on a key segment of Litchfield Road that serves traffic to and from Luke AFB.
- There is a need to improve circulation and parking on the base, as indicated by TGMP survey results.



KEY FINDINGS

- Numerous roadway segments, especially portions of the freeway system, will experience substantially increased congestion because of growth in regional background traffic. However, additional traffic generated by new Luke AFB personnel will not, by itself, cause deterioration from acceptable to unacceptable congestion on the freeway or arterial system.
- Under both near-term and 2040 conditions, several improvements to specific intersections will be necessary to avoid unacceptable levels of service and long queues for certain traffic movements during peak hours. These may include both modified signal operating plans and the provision of an additional turn lane. Such improvements will enable the adjacent intersections to operate with reasonable efficiency through 2040.
- The percentage of freeways performing at Level of Service (LOS) A through LOS D (LOS A-D are considered acceptable) in the afternoon peak period will decrease from 94 percent in 2018 to 60 percent in 2040. Freeways are the principal regional traffic carriers and their deteriorating service will result from growth throughout the metropolitan area and the state.
- 2040 traffic is projected to experience poor LOS and excessive queue length at the South Gate. It is recommended that an additional east-bound left turn lane be added at the South Gate to better accommodate this traffic and further reduce the queue length.
- Any roadways that experience unacceptable levels of service by 2040 would do so even without the increase in personnel working at Luke AFB. The roadway most heavily affected by the addition of base personnel (Litchfield Road) will not carry enough additional vehicles to reduce the LOS from LOS D or better to LOS E or worse.
- Survey respondents from Luke AFB revealed substantial interest in improved facilities for active transportation to and from the installation. Forty-four percent of the respondents mentioned sidewalks, 41 percent mentioned bicycle lanes or paths, and 29 percent wanted shaded benches, with 23 percent listing crosswalks and 14 percent mentioning bicycle parking. When other Study Area residents were asked the same question, the percentages were lower, with about 26

percent choosing each of the following: sidewalks, bicycle lanes, and lighting. Nine percent mentioned crosswalks and three percent bicycle parking.



TRANSPORTATION IMPLEMENTATION PLAN

The proposed transportation implementation plan below presents a series of strategies to manage the anticipated growth in traffic around Luke Air Force Base. The recommendations below address the future transportation needs and provide actionable strategies to improve the existing transportation network at Luke AFB and its surrounding communities.

Transportation Implementation Plan							
Ref Code ¹	Issues and Strategies	Timeframe ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead(s)	Potential Partners
Traffic Operations							
T1	Issue: <i>There is an unacceptable level of service at the Litchfield Road/South Gate eastbound left turn lane.</i>						
	Goal: Reduce driver delay (in seconds) and improve level of service for this intersection.						
T1.1	Strategy: Modify signal timing to reduce delay at this intersection. This will require a traffic signal study to be performed. The study needs to take into account new construction planned at the base.	Immediate to near-term [Note: this study has been completed and traffic flow improved after implementing the signal timing recommendations.]	High [Note: this study has been completed.]	\$30,000-\$40,000	Glendale and Luke AFB	Glendale	Goodyear, Litchfield Park, Surprise, MAG
T2	Issue: <i>There are inefficient traffic operations at North Gate/Litchfield Road and Kachina Gate/Glendale Avenue; there are long queue lengths at the Litchfield Road/South Gate eastbound left turn.</i>						
	Goal: Improve overall level of service for intersections at base entrances; reduce queue length (number of vehicles waiting) at the base exit turning movements.						
T2.1	Strategy: Conduct a traffic signal study at these two intersections with gates accessing the base; then consider modifying signal timing to improve LOS at these intersections.	Immediate to near-term	High	\$15,000-\$25,000	Glendale and Luke AFB	Glendale	Goodyear, Litchfield Park, Surprise
T2.2	Strategy: Evaluate multiple time periods to increase traffic operations during periods of significant base ingress (AM) and egress (PM) while maintaining a general timing plan for operations outside these peak hours.	Near- to medium-term	Medium	\$15,000-\$25,000	Glendale	Glendale	Goodyear, Litchfield Park, Surprise, Luke AFB
T2.3	Strategy: Widen the exit at the Litchfield Road/South Gate eastbound left turn intersection and add an eastbound left turn lane.	Near-term	High	\$200,000-\$300,000	Glendale, federal funding sources	Glendale	Goodyear, Litchfield Park, Surprise, Luke AFB, MAG

¹Reference Code

²Immediate: 2020; Near-term: 2020-2023 Medium-term: 2020-2026; Long-term: 2026 and beyond; Ongoing

Transportation Implementation Plan

Ref Code ¹	Issues and Strategies	Timeframe ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead(s)	Potential Partners
Traffic Operations (cont.)							
T3	Issue: <i>There may be a need to improve circulation and parking on the base.</i>						
	Goal: Within Luke AFB's current resources and authority, improve transportation conditions on the base.						
T3.1	Strategy: Consider updating the 2005 base transportation study to determine which, if any, traffic controls would improve flow and indirectly mitigate the impacts of mission expansion on the general transportation system by better channeling or metering traffic and possibly reducing some commute times.	Near-term (study) Long-term (improvements)	High (study) Low (improvements)	\$40,000-\$60,000	Luke AFB and MAG	Luke AFB	Glendale
T3.2	Strategy: Increase parking availability on the base.	Near- to medium-term	Medium	\$100,000-\$500,000	Luke AFB	Luke AFB	Glendale
T3.3	Strategy: Use the updated study to explore the utility of roundabouts for vehicular traffic and paths for active transportation on the base.	Medium-term	Medium	\$15,000-\$25,000	Luke AFB	Luke AFB and Glendale	N/A
Regional Roadway Capacity							
T4	Issue: <i>There will be future deterioration of peak period traffic conditions on some freeways and arterials, although additional Luke AFB-related traffic due to the buildup will not itself cause unacceptable levels of service.</i>						
	Goal: Improve key roadways throughout the Study Area that serve the Luke AFB population.						
T4.1	Strategy: Implement all transportation infrastructure improvements that will increase capacity and mobility for travelers to, from, and around Luke AFB. These should include, but not be limited to, heavily used roads such as El Mirage, Dysart, and Litchfield Roads (north-south), and Olive Avenue, Camelback Road, Glendale Avenue and Northern Parkway (east-west). Consider options such as shuttle service.	Immediate/Ongoing	High	Approx. \$1M per lane-mile of roadway improvement	Local communities, HURF, federal formula sources	Communities responsible for the infrastructure at that location	Luke AFB, MAG

Transportation Implementation Plan							
Ref Code ¹	Issues and Strategies	Timeframe ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead(s)	Potential Partners
Public Transit Availability							
T5	Issue: Public transit to Luke AFB during morning and afternoon commute periods is limited.						
	Goal: Improve the amount and convenience of service in a manner consistent with estimated demand and financial resources.						
T5.1	Strategy: Address the final mile issue that makes it difficult to use transit when it is difficult to travel on base with driving a vehicle. Consider options such as autonomous shuttles, particularly as a pilot project.	Medium-term	High	TBD	TBD	Luke AFB	Local Motors
T5.2	Strategy: As development along the Route 70 transit service areas increases and ridership increases, study the feasibility of increasing Route 70 service frequency to Luke AFB during peak periods.	Long-term	Medium	TBD	Valley Metro, Glendale and Phoenix	Valley Metro and Glendale	Valley Metro, Luke AFB
T5.3	Strategy: Study the feasibility of a new Litchfield Road bus route that would serve the base every 30 minutes during peak periods and every 30 to 60 minutes during off-peak periods, as recommended in the <i>Moving Glendale Ahead Transportation Plan</i> , <i>Surprise General Plan</i> , <i>Goodyear Transportation Master Plan</i> and <i>Northwest Valley Transit Plan</i> .	Medium- to long-term	Low	\$2million/yr.-\$3million/yr.	Valley Metro, Avondale, Goodyear, Litchfield Park, Glendale, Surprise	Valley Metro	Goodyear, Litchfield Park, Surprise, Luke AFB
T6	Issue: There is a need for continued attention to travel demand management services and incentives, as the Luke AFB-related population increases.						
	Goal: Expand options for Luke AFB employees and dependents who prefer not to rely on daily commuting by single-occupant vehicles.						
T6.1	Strategy: Support and continue ongoing efforts at Luke AFB, including survey of Luke AFB-related commuters that is specifically geared toward identifying their needs, preferences, and motivations relating to mode of transportation.	Ongoing	Medium	\$40,000-\$60,000	Luke AFB	Luke AFB, assisted by a professional public opinion firm	Glendale
T6.2	Strategy: Develop and implement refinements to Luke AFB's existing TDM program. Refinements could include program strategies that have been used successfully by other large employers.	Medium-term	Medium	\$40,000-\$100,000	Luke AFB	Luke AFB	Chambers of Commerce, MAG, Valley Metro

Transportation Implementation Plan

Ref Code ¹	Issues and Strategies	Timeframe ²	Priority Level	Estimated Cost	Potential Funding Sources	Task Lead(s)	Potential Partners
Public Transit Availability (cont.)							
T6.3	Strategy: Increase opportunities to carpool through increased park and ride locations, autonomous vehicle service at park and ride locations, and more van pool participants. For example, a dedicated van with only Luke AFB personnel could receive pre-clearance and have expedited entry onto base. The base or Fighter Country Partnership could subsidize the fees for the vanpool. This helps air quality goals, as well as the Trip Reduction Program underway at the base.	Near-term	Medium	TBD	Luke AFB, Fighter Country Partnership	Luke AFB	Fighter Country Partnership
T7 Issue: There are limited opportunities for the convenient use of active transportation modes to and from Luke AFB.							
Goal: Collaborate with City of Glendale and other surrounding cities to improve access to Luke AFB for all bicyclists and pedestrians.							
T7.1	Strategy: Incorporate findings of active transportation studies already underway in Glendale and Surprise for the development of a bikeway along Litchfield Road from Camelback Road to Olive Avenue; construct as appropriate.	Medium- to long-term	Low	\$40,000-\$60,000; \$400,000-\$1,000,000	Glendale with Luke AFB assistance	Glendale	Luke AFB, MAG
T7.2	Strategy: Improve linkages between areas where many Luke AFB personnel live and the regional path/trail system to enhance active transportation based on City of Glendale's Active Transportation Plan. For example, create a vanpool out of park & ride stations with a decal to enter the base to solve the last mile problem.	Long-term	Low	\$200,000-\$400,000	MAG with federal assistance	Glendale	Luke AFB, MAG
T8 Issue: There is a need for guidance and oversight of the implementation process.							
Goal: Provide guidance and oversight of the implementation process through a centralized body that provides continuity in knowledge and decision-making regarding implementation.							
T8.1	Strategy: Create a transportation workgroup to address and monitor implementation of all recommendations. Workgroup to meet semi-annually to touch base and for members of workgroup to report on progress.	Immediate to near-term	High	TBD	None required	Glendale	MAG, City of Glendale, Maricopa County; Fighter Country Partnership

Luke Air Force Base Targeted Growth Management Plan



Luke Air Force Base