APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

WEST VALLEY CENTRAL 230KV CONNECTION PROJECT

PREPARED FOR

ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

SUBMITTED BY

ARIZONA PUBLIC SERVICE COMPANY

JANUARY 2022

Case No. _____

Application

for a

Certificate of Environmental Compatibility

West Valley Central
230kV Connection Project

Prepared for:
Arizona
Power Plant and Transmission Line Siting Committee

Submitted by:
Arizona Public Service Company

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Table of Contents

INTRODUCTION **1**
PROPOSED PROJECT DESCRIPTION 1
PROJECT PURPOSE AND NEED 1
ENVIRONMENTAL STUDIES 3
PUBLIC OUTREACH AND COMMUNICATIONS 5
CONCLUSION 5
APPLICATION FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY **1**
EXHIBIT A – LOCATION MAP AND LAND USE INFORMATION **1**
OVERVIEW 1
INVENTORY METHODS 15
INVENTORY RESULTS 15
IMPACT ASSESSMENT METHODOLOGY 18
MITIGATION MEASURES 19
IMPACT ASSESSMENT RESULTS 19
CONCLUSIONS 24
REFERENCES 25
EXHIBIT B – ENVIRONMENTAL STUDIES **1**
SITING STUDY 1
EXHIBIT C – BIOLOGICAL WEALTH SPECIAL STATUS SPECIES AND SPECIES OF CONCERN **1**
OVERVIEW 1
LAWS AND POLICIES 1
INVENTORY METHODS 2
INVENTORY RESULTS 2
IMPACT ASSESSMENT RESULTS 6
MITIGATION MEASURES 7
CONCLUSIONS 7
REFERENCES 16
EXHIBIT D – BIOLOGICAL RESOURCES **1**
OVERVIEW 1
INVENTORY RESULTS 1
IMPACT ASSESSMENT RESULTS 3
MITIGATION MEASURES 5

CONCLUSION 5
REFERENCES 16
EXHIBIT E – SCENIC AREAS, HISTORIC SITES AND STRUCTURES, AND ARCHEOLOGICAL SITES 1
SCENIC AREAS AND VISUAL RESOURCES 1
OVERVIEW 1
INVENTORY METHODS 1
INVENTORY RESULTS 1
MITIGATION MEASURES 12
CONCLUSIONS 25
REFERENCES 26
HISTORIC SITES AND STRUCTURES AND ARCHAEOLOGICAL SITES 27
OVERVIEW 27
INVENTORY METHODS 28
CONCLUSIONS 31
REFERENCES 32
EXHIBIT F – RECREATIONAL PURPOSES AND ASPECTS 1
OVERVIEW 1
REFERENCES 2
EXHIBIT G – CONCEPTUAL DRAWINGS OF TYPICAL FACILITIES 1
EXHIBIT H – EXISTING PLANS 1
EXISTING PLANS 1
REFERENCES 4
EXHIBIT I – ANTICIPATED NOISE/INTERFERENCE WITH 1
CORONA 1
TRANSMISSION LINE AUDIBLE NOISE 1
RADIO INTERFERENCE 3
TELEVISION INTERFERENCE 5
ELECTRIC AND MAGNETIC FIELD EFFECTS 5
REFERENCES 8
EXHIBIT J – SPECIAL FACTORS 1
PUBLIC INVOLVEMENT 1
INTRODUCTION 1
THE IMPORTANCE OF PUBLIC INVOLVEMENT 1
FALL 2020 PUBLIC COMMENT PERIOD 2

SURVEY RESPONSES 4
SUMMER 2021 COMMENT PERIOD 7
SURVEY RESPONSES 9
SPRING 2022 PUBLIC COMMENT PERIOD 18

INTRODUCTION

Pursuant to Arizona Revised Statutes (A.R.S.) 40-360, *et seq.*, Arizona Public Service Company (APS or Applicant) is seeking a Certificate of Environmental Compatibility (CEC) granting authority to construct the West Valley Central 230-kilovolt (kV) Transmission Line Connection Project (Project).

PROPOSED PROJECT DESCRIPTION

The Project consists of the construction and operation of new double-circuit 230kV transmission lines to provide adequate and reliable power to the rapidly growing West Valley. The Proposed Routes (Figure 1) would consist of three separate new 230kV transmission line routes that would connect directly to the recently constructed Contrail 69kV Substation, which will be expanded to include 230kV substation facilities. The three Proposed Routes are as follows:

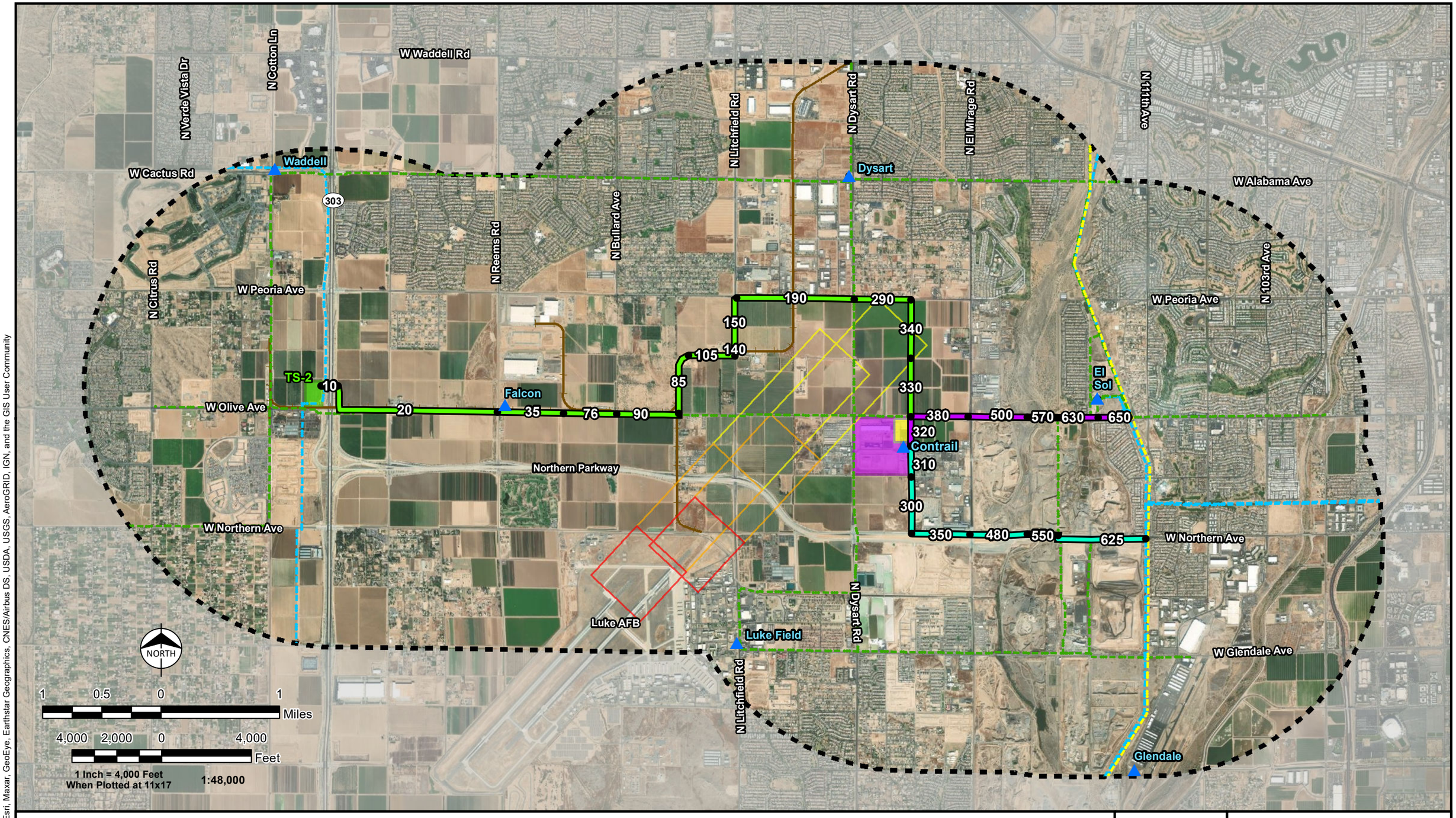
1. Route A connecting from the Future TS-2 Substation near the intersection of the Loop 303 Freeway and Olive Avenue.
2. Route E connecting from the existing El Sol-White Tanks 230kV transmission line near the intersection of Olive Avenue and North 111th Avenue.
3. Route G connecting from the existing El Sol-White Tanks 230kV transmission line near the intersection of Northern Avenue and North 111th Avenue.

The Project is anticipated to be constructed primarily with steel monopole structures approximately 115 to 195 feet in height with span lengths between 500 and 1,200 feet, within right-of-way up to 120 feet wide. The exact size and type of structures that will be used will depend on the final design.

The Project was included in APS's Ten-Year Plan filed with the Arizona Corporation Commission (Commission) on January 29, 2021 (revised from June 12, 2019, January 31, 2020). In the Ten-Year Plan, APS referred to this project as the Contrail 230kV Lines.

PROJECT PURPOSE AND NEED

The Project purpose and need is to connect new 230kV transmission lines to the Contrail Substation to provide adequate and reliable power to a new data center and the rapidly growing West Valley. APS intends to meet this need by constructing, operating, and maintaining the facilities associated with the Project by providing clean, reliable, and affordable electric services. The greater Phoenix region has emerged as one of the top markets in the western United States for attracting high tech companies, including data centers, which require a significant amount of electrical power and carry



Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation

Project Features
- Future TS-2 Substation
- Future Contrail Substation
- Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Proposed Routes
- Proposed Route A
- Proposed Route E
- Proposed Route G
- 100 Route Link Number
- Route Link Node

aps

Figure 1
Proposed Routes
West Valley Central
230kV Connection Project

January 2022

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Issued: 1/14/2022

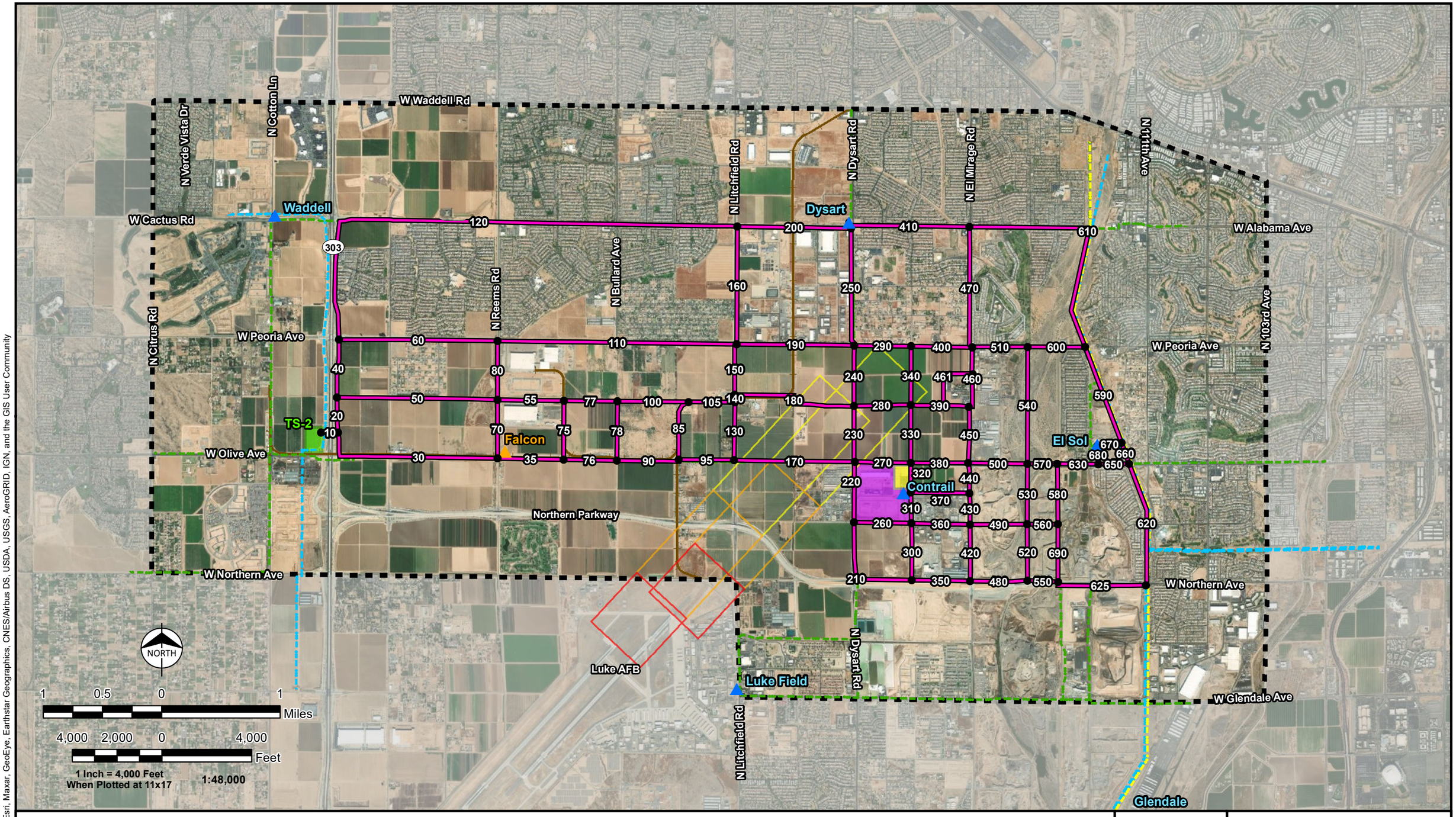
heightened reliability requirements. In addition to serving the regional area, the Project will help meet the long-term energy needs of this data center as it is expanded in the future.

ENVIRONMENTAL STUDIES

APS and its consultant, Burns & McDonnell, Inc. (BMcD), developed a public planning and outreach process to identify environmentally compatible routes for the Project. This planning process included examining an approximate 41.5-square-mile area to identify possible routes for the Project. More specifically, the process of identifying and evaluating transmission line routes was conducted in sequential phases, which included the following:

1. Defining the study area
2. Conducting comprehensive inventories of land uses and visual resources
3. Researching existing data on cultural and biological resources in the study area
4. Determining environmental and engineering opportunities and constraints
5. Developing preliminary transmission line link segments
6. Evaluating the transmission line link segments for potential environmental impacts
7. Compiling transmission line routes to avoid or minimize environmental impacts
8. Ranking transmission line routes based on environmental data, public input, and electrical system requirements
9. Examining right-of-way considerations, costs, and permitting requirements
10. Gathering input from agencies and stakeholders throughout the siting process

This process included identifying opportunities to co-locate the transmission lines along existing transmission lines, distribution lines, railroads, or roadways and within industrial or agricultural areas to avoid environmentally sensitive areas and minimize impacts on residences and landowners, as well as Luke Air Force Base. The siting process resulted in the identification of more than 50.5 miles of preliminary route segments, referred to as links (Figure 2). A more detailed review of these links identified limitations in some areas. To the north of the Project area, a lack of sufficient right-of-way in residential communities eliminated some links from further consideration. In the central and southern portion of the Project area, Luke Air Force Base (AFB) and associated air space and Accident Potential Zones (APZs) eliminated other links from further consideration.



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- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future Contrail Substation
- Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Preliminary Route Segments
- Route Link
- Route Link Node
- 100 Route Link Number

Figure 2
Preliminary Route Segments
West Valley Central 230kV Connection Project

January 2022

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BMcD then completed detailed environmental data collection and analysis for lands within the Project area and determined the overall level of potential impact the Project's route alternatives would have on the various environmental resources. This research included field visits to confirm existing site conditions and reviews of future planning documents and data, including communications with government agencies and landowners.

PUBLIC OUTREACH AND COMMUNICATIONS

APS and BMcD initiated multiple public participation activities, including a project website (**www.apswestvalleycentral.com**), two live virtual public open house meetings, jurisdictional meetings, agency briefings, landowner contacts, newsletters, emails, a telephone information line, newspaper advertisements, and social media posts. Through these activities, APS requested and received public and agency feedback on the transmission line route alternatives. Using this information, APS and BMcD examined the overall compatibility of the routes, incorporated feedback from agencies and the public, and identified Proposed Routes A, E, and G (refer to Figure 1) to be presented to the Arizona Power Plant and Transmission Line Siting Committee (Siting Committee) and the Commission to consider in this application.

CONCLUSIONS

The planning process conducted for this Project initially allowed for consideration of a broad range of reasonable alternative transmission line locations, and then focused on specific details and construction feasibility to assist APS in identifying final transmission line routes. APS' decision to carry forward Proposed Routes A, E, and G (refer to Figure 1) in this CEC application was based on more than 18 months of detailed environmental and engineering analysis and communications with stakeholders throughout the Project area. Once the detailed environmental and engineering studies were completed, APS identified Proposed Routes A, E, and G to construct, operate, and maintain the new 230kV transmission lines.

This application includes the environmental evaluation and documentation relevant to the Project as specified by Arizona Administrative Code R14-3-219. The CEC requested in this application balances, in the broad public interest, the need for an adequate, economical, and reliable supply of electric power with the desire to minimize impacts on the environment and ecology. The Project is environmentally compatible, as it complies with land use plans and results in minimal adverse impacts on wildlife and vegetation, scenic areas, historic sites and structures, archaeological sites, and other factors to be considered by the Siting Committee. Moreover, the Project is broadly supported by agencies, landowners,

and residences within the communities. Proposed Routes A, E, and G presented in this CEC application are also considered environmentally compatible. As such, APS respectfully requests the Siting Committee grant the requested CEC for the Project and the Commission approve the CEC.

APPLICATION FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

1) "Name and address of the applicant, or in the case of a joint project, the applicants."

Arizona Public Service Company
P.O. Box 53933
Phoenix, Arizona 85072-3933

2) "Name, address and telephone number of a representative of an applicant who has access to technical knowledge and background information concerning the application in question and who will be available to answer questions or furnish additional information."

Kevin C. Duncan, MBA
Senior Siting Consultant
Transmission and Facility Siting
Arizona Public Service Company
P.O. Box 53933, MS 3293
Phoenix, Arizona 85072-3933
(602) 493-4200

3) "State each date on which applicant has filed a ten-year plan in compliance with A.R.S. § 40-360.02 and designate each such filing in which the facilities for which this application is made were described. If they have not been previously described in a ten-year plan, state the reasons therefore."

The Project is included in Arizona Public Service's Ten-Year Plan that was filed with the Arizona Corporation Commission on January 29, 2021 (revised from June 12, 2019, January 31, 2020).

4) "Description of the proposed facility, including:"

a) "With respect to an electric generating plant:"

There are no electrical generating plants included in the Project.

b) "With respect to proposed transmission line:"

i) "Nominal voltage for which the line is designed; description of the proposed structures and switchyards or substations associated therewith; and purpose for constructing said transmission line."

(1) Nominal Voltage:

The normal voltage of the proposed Project's transmission lines is 230kV.

(2) Description of proposed structures:

The proposed 230kV transmission lines are anticipated to be constructed using steel monopole structures. The majority of the 230kV structures will be capable of

accommodating 69kV underbuild. The structures would be 115 to 195 feet in height. The average span length between structures will range between approximately 500 and 1,200 feet apart, depending on final design. The structures will have a dull gray or weatherized finish, and conductors will have a non-specular finish to reduce visibility. Variations may be required to achieve site-specific mitigation objectives or meet site-specific engineering requirements.

Conceptual drawings showing the typical structures that may be used are provided in Exhibit G.

(3) Description of proposed substations:

The Contrail Substation will contain typical substation equipment, including dead-end structures, bus work, switches, transformers, breakers, communication equipment, and a control structure.

A photograph representative of an existing APS 230kV substation is provided in Exhibit G.

(4) Purpose of constructing said transmission line:

The purpose of the Project is to deliver electrical power to a data center, as well as service existing and future customers in the West Valley.

ii) "Description of geographical points between which the transmission line will run the straight-line distance between such points and the length of the transmission line for each alternative route for which application is made."

(1) Description of geographical points between which the transmission line will run

The Project would include three separate 230kV transmission lines (Proposed Routes A, E, and G) connecting to the Contrail Substation.

Proposed Routes

The Proposed Route A 230kV transmission line will start at the future TS-2 230kV Substation at the northwest corner of the Loop 303 Freeway and West Olive Avenue and terminate at the Contrail 230kV Substation at the southwest corner of West Olive Avenue and North 127th Avenue alignment.

The Proposed Route E 230kV transmission line will start at the existing El Sol-White Tanks 230kV transmission line at the northwest corner of West Olive Avenue and 111th Avenue and terminate at the Contrail 230kV Substation.

The Proposed Route G 230kV transmission line will start at the existing El Sol-White Tanks 230kV transmission line at the southwest corner of West Northern Avenue and North 111th Avenue and terminate at the Contrail 230kV Substation.

(2) Straight-line distance between such points:

The straight-line distance for the Proposed Route A 230kV transmission line is approximately 5.0 miles.

The straight-line distance for the Proposed Route E 230kV transmission line is approximately 1.9 miles.

The straight-line distance for the Proposed Route G 230kV transmission line is approximately 2.2 miles.

(3) Length of transmission line for the alternative route:

The approximate lengths for Proposed Route A, E, and G are listed in the following table.

Table 1: Length of Transmission Line Routes

Transmission Line Routes	Total Length
Proposed Route A	7.10 miles
Proposed Route E	2.10 miles
Proposed Route G	2.75 miles
Total	**11.95 miles**

iii) "Nominal width of Right-of-Way required, nominal length of spans, maximum height of supporting structures and minimum height of conductor above ground."

(1) Nominal width of Right-of-Way required:

The right-of-way would be up to 120 feet wide within the requested corridor. The location of the alignment for the right-of-way within this corridor will be determined according to site-specific design and environmental factors.

(2) Nominal length of spans:

The typical span length between structures will be approximately 500 to 1,200 feet, with variations made to achieve site-specific mitigation objectives or meet site specific engineering requirements.

(3) Maximum height of structures above ground:

The height of the supporting structures will not exceed 195 feet above ground.

(4) Minimum height of conductor above ground:

The minimum height of the conductor above existing grade will be 24 feet above ground.

iv) To the extent available, the estimated costs of the proposed transmission line and route, stated separately. (If application contains alternative routes, furnish an estimate for each route and a brief description of the reasons for any variations in such estimates.)"

The estimated costs for the Proposed Route A, E, and G are listed in the following table.

Table 2: Cost of Transmission Line Alternatives

Transmission Line Route Alternative	Total Length	Right-of-Way Costs	Construction Costs	Total Costs
Proposed Route A	7.10 miles	$8 million	$23.8 million	$31.8 million
Proposed Route E	2.10 miles	$1.5 million	$6.4 million	$7.9 million
Proposed Route G	2.75 miles	$2.3 million	$9.5 million	$11.8 million
Total	**11.95 miles**	**$11.8 million**	**$39.7 million**	**$51.5 million**

v) "Description of proposed route and switchyard locations. (If application contains alternative routes, list routes in order of applicant's preference with a summary of reasons for such order of preference and any changes such alternative routes would require in the plans reflected in (i) through (iv) hereof)."

Description of proposed route and switchyard locations:

Proposed Routes

The Proposed Route A 230kV transmission line will start at the future TS-2 230kV Substation at the northwest corner of the Loop 303 Freeway and West Olive Avenue. The route will cross over top of the State Route 303 (Loop 303), then follow along the south side of Olive Avenue for 3 miles. Route A will then turn north 0.5 mile along the eastern side of the Burlington Northern Railroad following it easterly 0.5 mile to North Litchfield Road. Route A will follow North Litchfield Road 0.5 mile to Peoria Avenue. Route A will then travel along the south side of West Peoria Avenue 1.5 miles to the North 127th Avenue alignment. Route A will then turn south along the mid-section line along the North 127th Avenue alignment approximately 1.1 miles where it will cross over top of West Olive Avenue entering the future Contrail (TS-20) 230kV Substation site.

The Proposed Route E 230kV transmission line will start at the existing El Sol-White Tanks 230kV transmission line transmission line at the northwest corner of West Olive Avenue and 111th Avenue and extend west 2 miles to terminate at the Contrail 230kV Substation.

The Proposed Route G 230kV transmission line will start at the existing El Sol-White Tanks 230kV transmission line at the southwest corner of West Northern Avenue and North 111th Avenue and extend west 2 miles to terminate at the Contrail 230kV

Substation.

Description of alternative route and switchyard locations:

vi) "For each alternative route for which application is made, list the ownership percentages of land traversed by the entire route (federal, state, Indian, private, etc.)."

The approximate land ownership percentages for the Proposed Route A, E, and G are listed in the following table.

Table 3: Transmission Line Route Land Ownership

Transmission Line Routes	Total Length	Private	Municipal	State
Proposed Route A	7.10 miles	78% (5.5 miles)	21% (1.5 miles)	1% (0.1 miles)
Proposed Route E	2.10 miles	100% (2.10 miles)	N/A	N/A
Proposed Route G	2.75 miles	75% (2.05 miles)	25% (0.7 miles)	N/A

5) "List the areas of jurisdiction [as defined in A.R.S. § 40-360(1)] affected by each alternative site or route and designate those proposed sites or routes, if any, which are contrary to the zoning ordinances or master plans of any of such areas of jurisdiction."

All Proposed Routes A, E, G are located within the jurisdiction of the cities of El Mirage, Glendale, Peoria, Youngtown, and Maricopa County, and no routes are contrary to the zoning ordinances or master plans of these jurisdictions.

6) "Describe any environmental studies applicant has performed or caused to be performed in connection with this application or intends to perform or cause to be performed in such connection, including the contemplated date of completion."

The Applicant has evaluated available secondary and field data related to biological resources, visual resources, cultural resources, recreational resources, land use, noise levels, and communications signals to assess the potential impacts that may result from the construction, operation, and maintenance of the Project. These evaluations are included in Exhibits A, B, C, D, E, F, H, and I to this application.

The Applicant has also conducted an extensive public and agency outreach process to gather information and comments relative to the Project. Information collected and analyzed in conjunction with the outreach process is included in Exhibit J of this application.

ARIZONA PUBLIC SERVICE COMPANY

By: /s/ Kevin C. Duncan

Kevin C. Duncan, MBA
APS Transmission and Facility Siting Consultant

I HEREBY CERTIFY that on this 26th day of January 2022, I have delivered to the Arizona Corporation Commission twenty-five (25) copies of this application for a Certificate of Environmental Compatibility.

EXHIBIT A – LOCATION MAP AND LAND USE INFORMATION

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

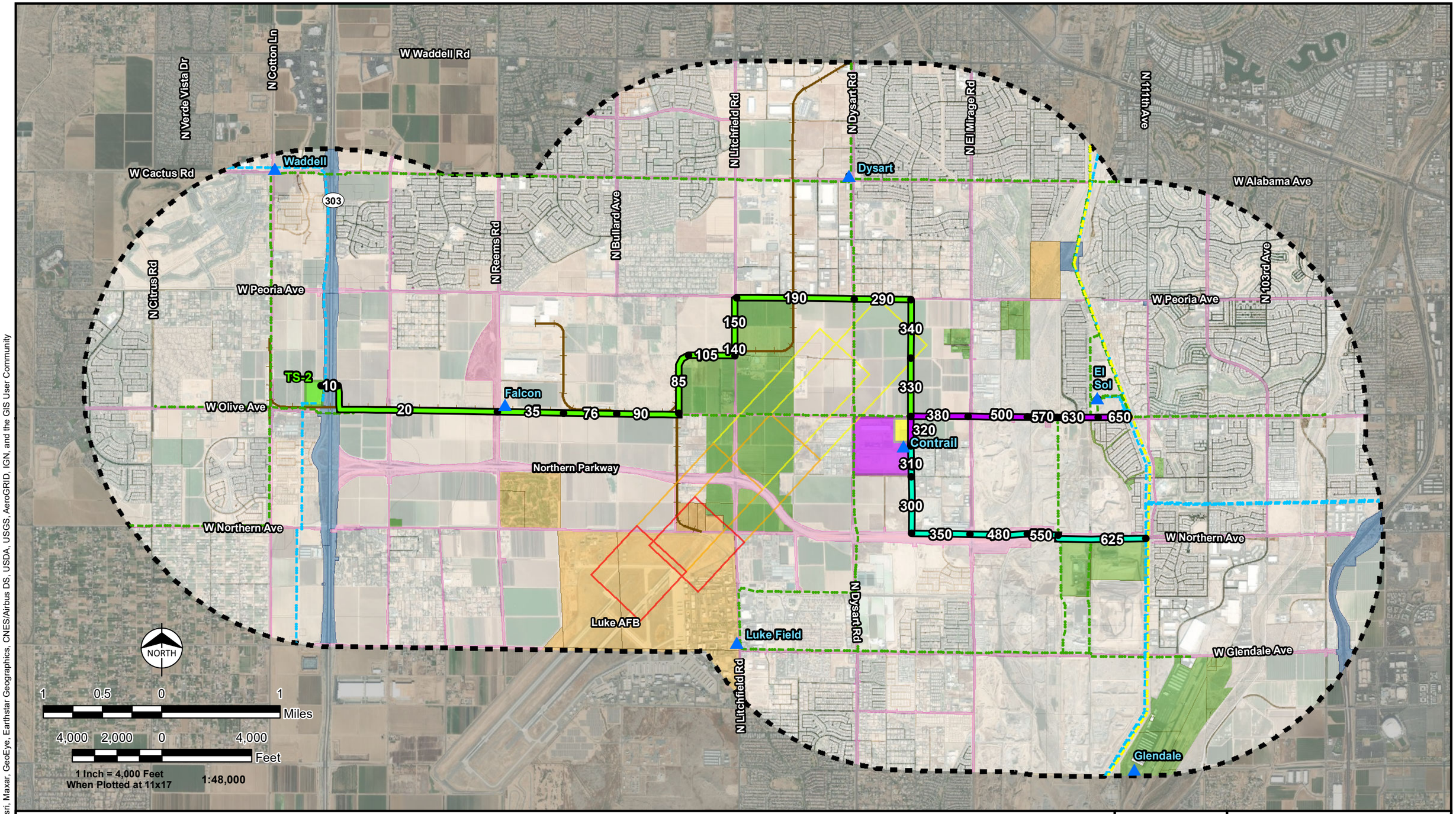
> *Exhibit A:*
> *1. Where commercially available,** a topographic map, 1:250,000 scale, showing the proposed plant site and the adjacent area within 20 miles thereof. If application is made for alternative plant sites, all sites may be shown on the same map, if practicable, designated by applicant's order of preference.*
>
> *2. Where commercially available,** a topographic map, 1:62,500 scale, or each proposed plant site, showing the area within two miles thereof. The general land use plan within this area shall be shown on the map, which shall also show the areas of jurisdiction affected and any boundaries between such areas of jurisdiction. If the general land use plan is uniform throughout the area depicted, it may be described in the legend in lieu of an overlay.*
>
> *3. Where commercially available,** a topographic map, 1:250,000 scale, showing any proposed transmission line route of more than 50 miles in length and the adjacent area. For routes less than 50 miles in length, use a scale of 1:62,500. If application is made for alternative transmission line routes, all routes may be shown on the same map, if practicable, designated by applicant's order of preference.*
>
> *4. Where commercially available,** a topographic map, 1:62,500 scale, of each proposed transmission line route of more than 50 miles in length showing that portion of the route within two miles of any subdivided area. The general land use plan within the area shall be shown on a 1:62,500 map required for Exhibit A-3, and for the map required by this Exhibit A-4, which shall also show the areas of jurisdiction affected and any boundaries between such areas of jurisdiction. If the general land use plan is uniform throughout the area depicted, it may be described in the legend in lieu of on an overlay.*
>
> ***If a topographic map is not commercially available, a map of similar scale, which reflects prominent or important physical features of the area in the vicinity of the proposed site or route shall be substituted.*

OVERVIEW

This section summarizes existing and future land uses in the Project area based on a comprehensive inventory of the existing and planned uses, jurisdictional boundaries, and land ownership patterns.

The following exhibits are required by the Arizona Administrative Code R14-3-219 to support the land use studies conducted for this application:

- Exhibit A-1 illustrates land ownership within the Project area
- Exhibit A-2.1 illustrates jurisdiction encompassing the Project area
- Exhibit A-2.2 illustrates jurisdiction planning areas encompassing the Project area
- Exhibit A-3 illustrates existing land use within the Project area
- Exhibit A-4 illustrates planned land use within the Project area



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation

Project Features
- Future TS-2 Substation
- Future Contrail Substation
- Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Land Ownership
- Federal
- State
- County
- Municipal
- Private/Other

Proposed Routes
- Proposed Route A
- Proposed Route E
- Proposed Route G
- 100 Route Link Number
- Route Link Node

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Exhibit A-1
Land Ownership
West Valley Central
230kV Connection Project

January 2022

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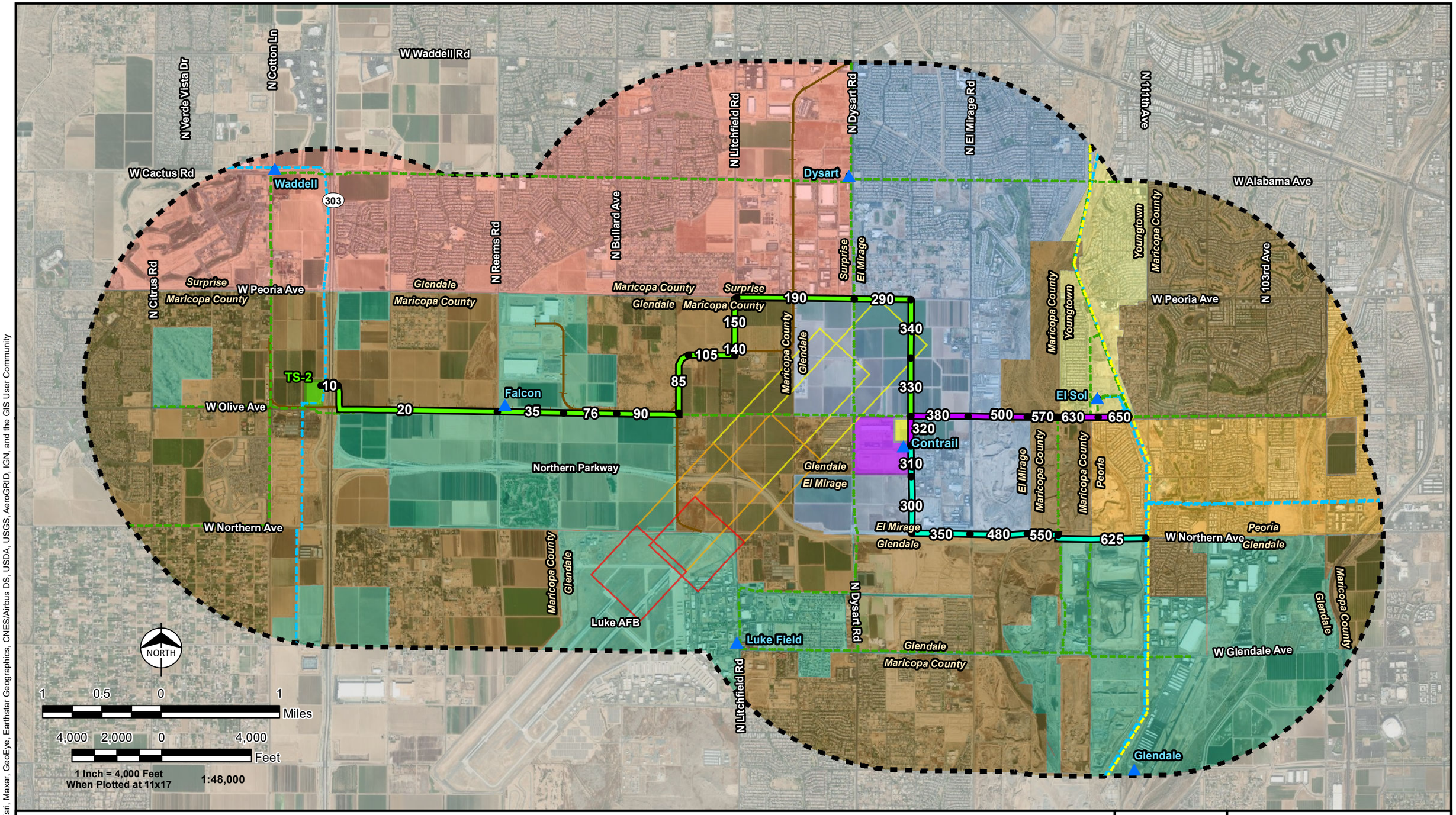

Reference Features
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Existing Transmission Facilities
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Project Features
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- Clear Zone
- APZ I
- APZ II

Proposed Routes
- Proposed Route A
- Proposed Route E
- Proposed Route G
- 100 Route Link Number
- Route Link Node

Jurisdiction
- El Mirage
- Glendale
- Maricopa County
- Peoria
- Surprise
- Youngtown

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Exhibit A-2.1
Jurisdiction
West Valley Central
230kV Connection Project

January 2022

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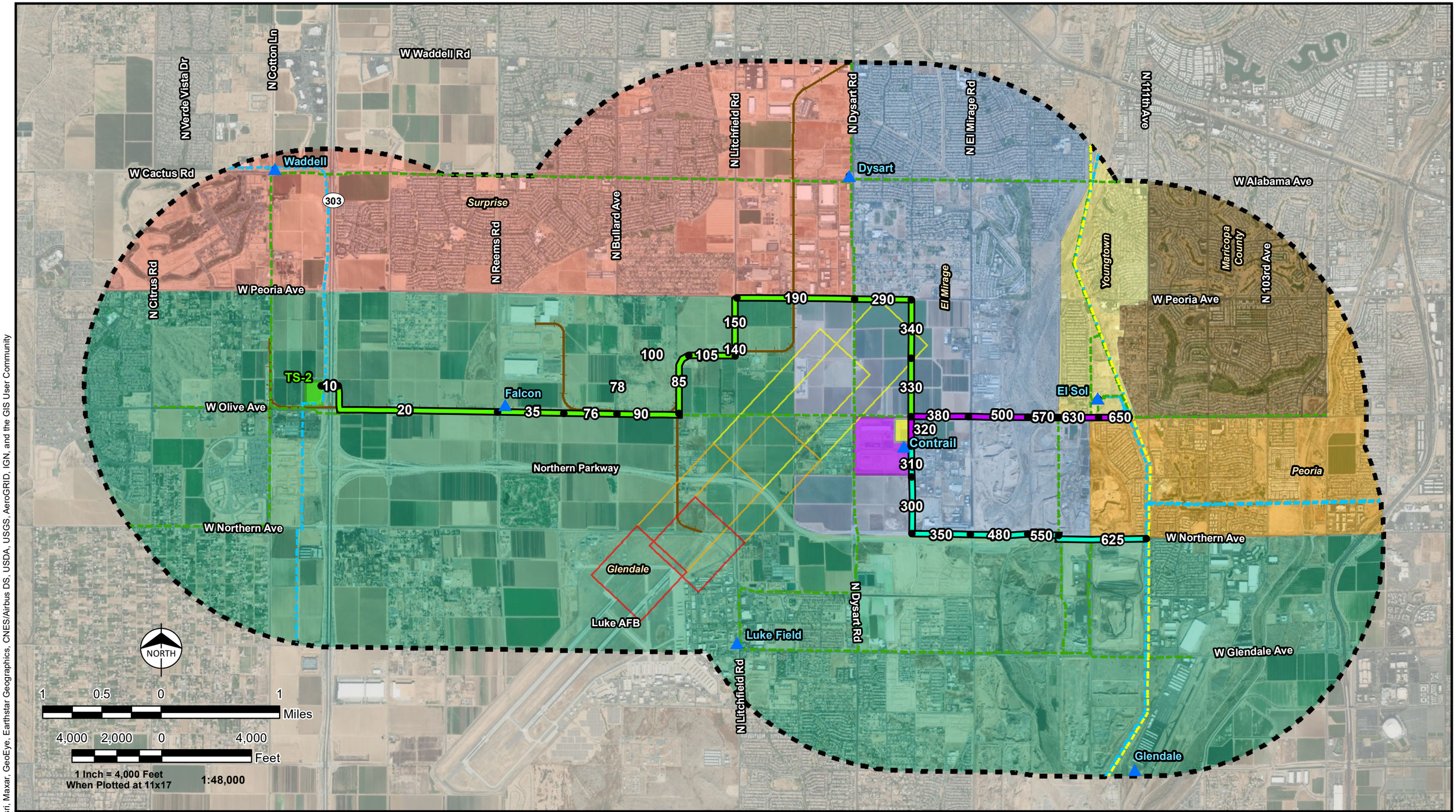

Reference Features
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Proposed Routes
- Proposed Route A
- Proposed Route E
- Proposed Route G
- 100 Route Link Number
- Route Link Node

Jurisdiction
- El Mirage
- Glendale
- Maricopa County
- Peoria
- Surprise
- Youngtown

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Exhibit A-2.2
Jurisdiction Planning Area
West Valley Central
230kV Connection Project

January 2022

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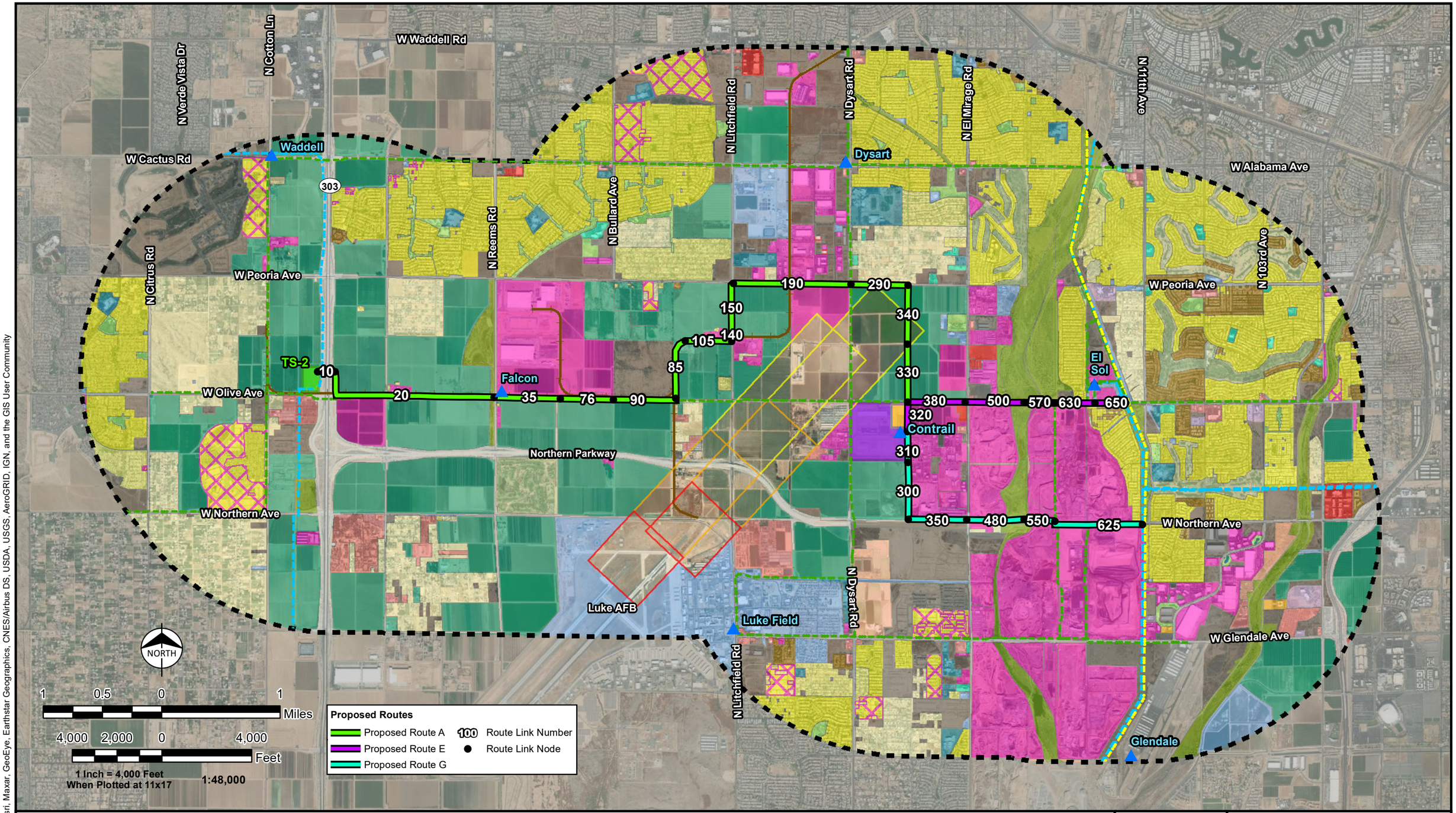

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- Existing 345kV Transmission Line
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Project Features
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Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

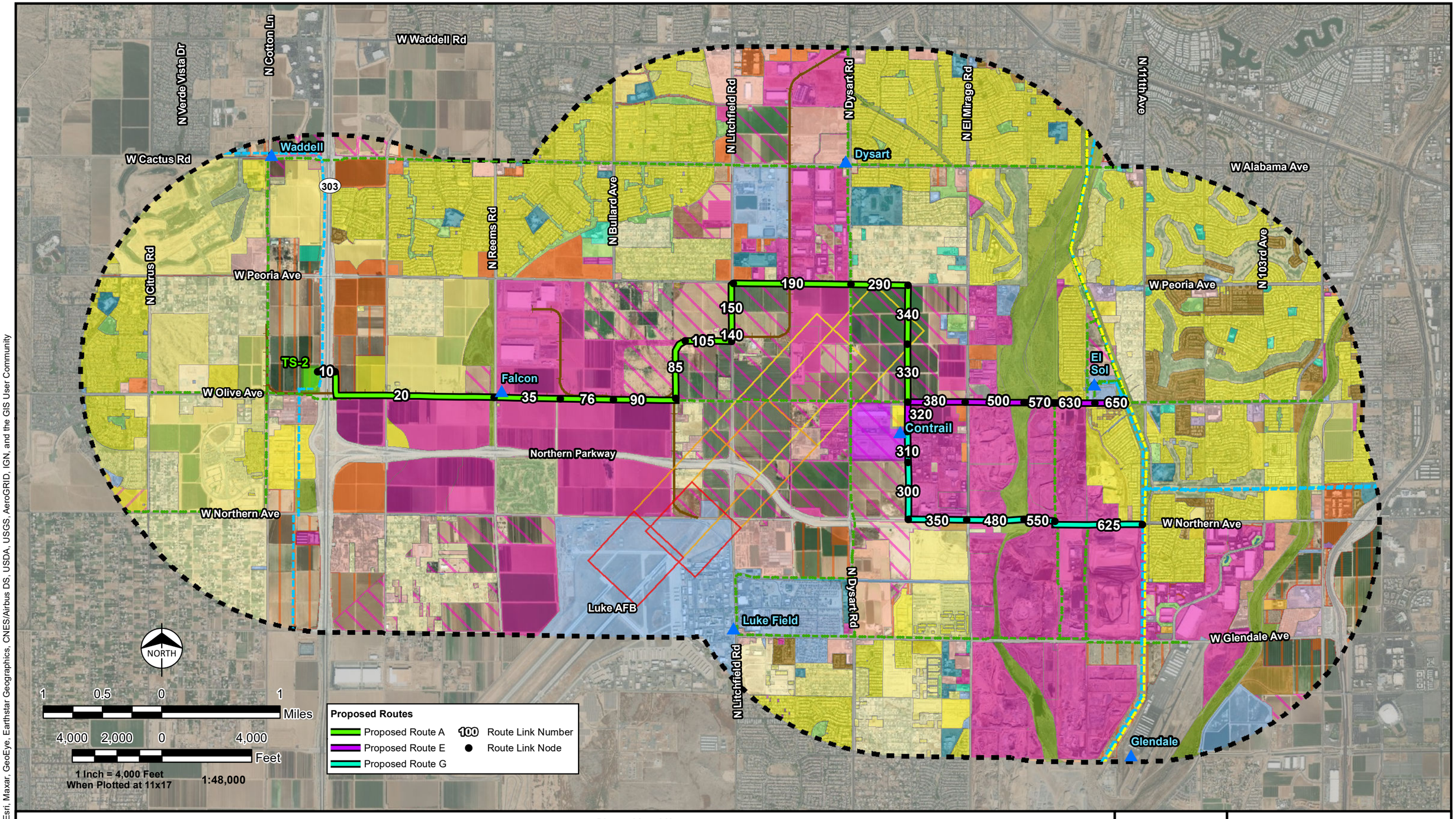
Existing Land Use
- Active Open Space
- Agriculture; Agriculture (Inside APZ)
- Airport
- Commercial High
- Commercial Low
- Developing Employment
- Developing Residential
- Educational
- Golf Course
- Industrial
- Medical/Nursing Home
- Multi Family
- Office
- Other Employment
- Passive/Restricted Open Space
- Public/Special Event/Military
- Religious/Institutional
- Single Family High Density
- Single Family Medium Density
- Single Family Low Density
- Transportation
- Vacant
- Water

aps

Exhibit A-3
Existing Land Use
West Valley Central
230kV Connection Project

January 2022

Issued: 1/17/2022



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Luke AFB Accident Potential Zones
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- APZ II

Planned Land Use
- Active Open Space
- Airport
- Business Park
- Commercial High
- Commercial Low
- Educational
- Golf Course
- Industrial
- Medical/Nursing Home
- Mixed Use
- Multi Family
- Office
- Other Employment
- Passive/Restricted Open Space
- Planned Development
- Public/Special Event/Military
- Religious/Institutional
- Single Family High Density
- Single Family Medium Density
- Single Family Low Density
- Tourist Accomodations
- Transportation
- Water

aps

Exhibit A-4
Planned Land Use
West Valley Central
230kV Connection Project

January 2022

Issued: 1/17/2022

The West Valley Central 230kV Transmission Line Connection Project is located primarily on private land; however, there are parcels of land withing the Project area that are owned by federal, state, and municipal agencies as illustrated on Exhibit A-1 – Land Ownership. The Project is within the jurisdiction of El Mirage, Glendale, Peoria, Surprise, Youngtown, and Maricopa County, Arizona as illustrated on Exhibit A-2.2 – Jurisdiction. Other key agencies with jurisdiction in the area are Department of Defense United States Air Force – Luke Air Force Base (AFB) and the Federal Aviation Administration (FAA). Exhibit A-2.1 – Jurisdiction Planning Area illustrates the areas where jurisdictions have long-range planning authorities, including areas that could potentially be annexed from Maricopa County into the respective cities.

The Project area is approximately 49.5 square miles and is located approximately between Waddell Road on the north, Glendale Avenue and Northern Avenue on the south, Citrus Lane on the west and 103rd Avenue on the east. There are several other major arterial roadways crossing through the Project area that form the general grid patterns where existing and planned land uses occur. These roadways include Cactus Road, Peoria Avenue, Olive Avenue, Cotton Lane, Reems Road, Bullard Avenue, Litchfield Road, Dysart Road, and 111th Avenue. Two major freeways cut through the western and southern portions of the Project area including Loop 303 Bob Stump Memorial Freeway and Northern Parkway, respectively.

The Agua Fria River cuts through the eastern portion of the Project area from north to south. Luke AFB sits just south of Northern Parkway and the Accident Potential Zones (APZs) extend approximately 2 miles from the end of the runway, across Olive Avenue to Peoria Avenue. There is a railroad owned by Burlington Northern Santa Fe (BNSF) that crosses through the central portion of the Project area from the intersection of Waddell Road/Dysart Road to the west near Cotton Lane/Olive Avenue.

There are several major 345kV, 230kV, and 69kV transmission lines present throughout the Project area. There is a 230kV line along the west side of the Loop 303 Freeway and there is a major 345/230kV transmission line corridor following the Agua Fria River and 111th Avenue. There are three 69kV transmission lines crossing the length of the Project area along Cactus Road, Olive Avenue, Dysart Road, and the Agua Fria River. There are numerous 12kV distribution lines crossing throughout the Project area which service residential, industrial, commercial, and agricultural development. The new 230kV transmission lines will connect the existing Contrail Substation to the Future TS2 Substation, which is located along Olive Avenue. The Contrail substation is in El Mirage east of the intersection of Dysart and Olive Avenue. The future TS2 Substation is in Maricopa County (Glendale planning area) just west of the Loop 303 Freeway west of Olive Avenue. The new transmission lines will also connect to the existing El Sol-White Tanks 230kV transmission line near the intersection of Olive Avenue and North 111th Avenue and near the intersection of Northern Avenue and North 111th Avenue.

There is a major propane gas pipeline corridor with four lines connecting between the Plains Energy railroad offloading facility at the intersection of Bullard Avenue/Olive Avenue, then heading east along Olive Avenue and turning south along Dysart Avenue.

The Maricopa County Flood Control District maintains a large flood protection basin located along the west side of Reems Road between Olive Avenue and Peoria Avenue. The drainage channel extends from Northern Avenue to Litchfield Avenue along Reems Road and through a residential community.

The Project area consists of a wide range of existing and planned land uses dispersed throughout the Project area as depicted in the photographs below.

Residential Development

Light Industrial Development

Commercial Development

Public Facilities

Agricultural Land

Agua Fria River

Sand and Gravel Mining

Luke AFB

Reems Road Flood Control District Facility

Northern Parkway Freeway

230/345kV Transmission Line Corridor

El Sol 230/69kV Substation

BNSF Railroad

Propane Gas Pipeline Corridor

INVENTORY METHODS

The Project team consulted with the planning jurisdictions of El Mirage, Glendale, Peoria, Surprise, Youngtown, and Maricopa County, as well as Luke AFB for information on existing and future land uses. Consultation with Maricopa County included discussions with Flood Control District (FCDMC) and Department of Transportation (MCDOT). Each of these entities were contacted to collect and discuss existing and future land use data. Electronic data including general/comprehensive planning documents, and aerial imagery (e.g., Google Maps, Bing Maps, National Agricultural Imagery Program 2020-2021) was gathered from various online and agency sources to compose a comprehensive geographical information system (GIS) database of existing and planned land uses. The existing and planned land use data were mapped in the GIS and several field reviews were conducted between summer 2020 and fall of 2021 to verify the information was accurate.

APS also invited jurisdictional planners and community leaders to briefings throughout the siting process to keep them informed regarding the project's status and to allow them to comment on the existing and future land use data, as well as the Proposed Routes A, E, and G. After the briefings, the agencies provided additional information in the form of conceptual plans, maps, and written descriptions of several new developments that had recently been proposed, approved or in the process or being approved. The GIS database and maps were updated periodically to reflect new information received from the jurisdictions.

INVENTORY RESULTS

Existing Land Uses

The major categories inventoried as existing land uses included residential, commercial, industrial, public/quasi-public, schools/educational facilities, air facilities, agricultural, vacant/undeveloped, and recreation/parks. The existing land uses inventoried in the Project area are illustrated on Exhibit 3 – Existing Land Use. These categories are described in further detail as follows:

- Residential land uses include single-family, multi-family, and mobile homes in densities ranging from low (less than 2 units per acre) to high (more than 15 units per acre).
- Commercial land uses include retail establishments, office buildings, hotels, and warehouses.
- Industrial land uses may include manufacturing facilities, extraction activities (e.g., sand and gravel), recycling, and fabrication.
- Public/quasi-public land uses include churches, government facilities, and hospitals.
- Schools/educational facilities include daycare, primary/secondary/high schools, colleges, and other associated educational facilities.
- Air facilities include Luke AFB and Glendale Municipal Airport.
- Agricultural land uses include farmland, sheds/barns, and irrigation facilities.
- Vacant/undeveloped lands are areas with no existing development. Typically, there are no structures or buildings present on the properties, and the tracts of land are in a non-developed state. These areas may be disturbed or undisturbed.
- Parks/preservation lands are designated by the managing jurisdiction or agency for open space. Typically, they include municipal/recreational parks, riverbeds/washes, and non-developable open space (e.g., areas with slopes in excess of 15 percent).
- General recreation land uses are located throughout the Project area in many forms such as golf courses, and recreational trails in passive open space (e.g., Agua Fria River).

- Mixed use lands are densely developed areas with commercial, light industrial, and previously mined area.
- Transportation corridors including highways, major arterial roads, local access roads, and unimproved agricultural service roads.

The Project area is characterized by a variety of uses such as transportation, commercial, light-to-heavy industrial, residential, utilities, agriculture and grazing, parks, and other open space.

The major transportation routes in the Project area are the Loop 303 Freeway and Northern Parkway. The Loop 303 Freeway traverses north and south through the western half of the Project area and the Northern Parkway traverses east and west along the southern portion of the Project area. Arterial roads occur throughout the Project area including Olive Avenue, Peoria Avenue, Northern Avenue, Litchfield Road, Dysart Road, and Reems Road. Commercial and industrial uses tend to be located along these major transportation routes or in areas with immediate access to these routes.

Residential uses are dispersed throughout the Project area including isolated or small cluster residences along Olive Avenue and Litchfield Road. Portions of the Project area consist of low- to medium-density residential areas including residential communities Twelve Oaks Estates at the southeast corner of Sarival Avenue/Peoria Avenue intersection, Dysart Ranchettes at the northeast corner of Dysart Road/Peoria Avenue intersection, Suncliff at the Olive Avenue/North 114th Avenue intersection, Agua Fria Ranch at the Olive Avenue/North Agua Fria Ranch Road intersection, and the Pueblo El Mirage at El Mirage Road/Peoria Avenue intersection.

The City of El Mirage has a developed Gateway Park near the city hall complex which has multiple use facilities including a skate park, playground equipment, sports fields, and trails. There are small community parks inside some of the residential communities. Open space and preservation lands primarily exist in undeveloped portions of the Agua Fria River and Reems Road Channel. The Agua Fria River is designated for preservation because of the corridor's planned participation in the Maricopa County trail system. However, several areas with the Agua Fria River corridor have active or dormant sand and gravel operations not suitable for recreation.

During the 2001 Arizona legislative session, the statutes, described in A.R.S. § 28-8481 affecting development near military airports were amended requiring political subdivisions to assure that development within certain newly defined zones is compatible with military airports in the vicinity. Those zones are referred to as "high noise and accident potential zones" and are defined in A.R.S. § 28-8461(9). The legislation also incorporated a chart of uses that are compatible with certain areas within the zones (the "Chart"). The Chart as described in A.R.S. § 28-8481(J) is to be used to determine compliance with the statute. As described in A.R.S. § 28-8481(J)(18), the Chart states that "Uses not listed are presumed to not be compatible. If the political subdivision and the military airport mutually agree that an individual use is compatible and consistent with the high noise or accident potential of the military airport or ancillary military facility, the use shall be presumed to be compatible."

Specific to overhead transmission line use for APZ I, the statute defines the term "Structure" to mean an object that is constructed or installed by a human including a building, tower, smokestack or overhead transmission line (emphasis added). Based on the definition of Structure, APZ I disallows transmission lines as a structure and any allowed utilities would have to be underground or on the ground (water, sewer, fiber, gas, electric underground or in conduit on ground).

Secondly, APZ II disallows "new buildings or improvements or expansion of non-agricultural buildings or improvements that would impair visibility or otherwise interfere with operating aircraft, such as electrical emissions that would interfere with aircraft and air force communications. Even though the Chart for APZ II doesn't specifically disallow "structures," APZ II may disallow overheard transmission lines because the statute presumes that "uses not listed are presumed to be not compatible." The Chart does not expressly allow an aboveground utility line in APZ II. However, the statute allows mutual agreement of the city and the military airport that an individual use is compatible. Therefore, cities of El Mirage and Glendale, in consultation with Luke AFB, could reach such mutual agreement to allow transmission structures in this instance. If that is indeed the case, APS would need to obtain written approval from Luke AFB.

With the understanding that APZ I and II would have limitations with respect to constructing an overhead transmission line, APS worked closely with Luke AFB early in the process to determine if locations within the APZs could be compatible with the proposed transmission line. This included locations where there were existing opportunities to co-locate facilities with lower voltage 69/12kV transmission lines already present (e.g., Olive Avenue and Dysart Road. Luke AFB indicated support for evaluation of routes north of Olive Avenue up to Peoria Avenue.

The FAA has guidelines for constructing above ground facilities near airports. Federal Regulation Title 14 Part 77 establishes standards and notification requirements for objects affecting navigable airspace. This notification serves as the basis for:

- Evaluating the effect of the construction or alteration on operating procedures
- Determining the potential hazardous effect of the proposed construction on air navigation
- Identifying mitigating measures to enhance safe air navigation
- Charting of new objects

Notification allows the FAA to identify potential aeronautical hazards in advance thus preventing or minimizing the adverse impacts on the safe and efficient use of navigable airspace.

Care has been taken to avoid areas closest to the runways where an above ground transmission line would not be compatible with Luke AFB. When a final route is approved for construction and transmission line design is completed, any above ground structures within regulated airspace near Luke AFB will be evaluated by the FAA to ensure final compatibility with airport operation

Planned Land Uses

Two levels of planned developments were identified: general plan uses and approved developments. General plan land uses (e.g., parks/preservation, residential, commercial, industrial, mixed use, and school or educational facilities, etc.) are land use categories defined in planning documents from respective jurisdictions. Approved developments are defined as developments that have been submitted to a jurisdiction and may be at various stages from preliminary to final design.

The major categories inventoried for future land use included all existing and planned residential, commercial, industrial, public/quasi-public, schools/educational facilities, air facilities, vacant/undeveloped, and recreation/parks (e.g., existing development was assumed to remain in the future). Based on general plans, the extent of agricultural lands is expected to decrease substantially in the future and will likely be replaced in entirety; these areas are anticipated to convert to residential, business park, commercial, light industrial/industrial, and parks/preservation. The planned land uses inventoried in the Project area are illustrated on Exhibit 4 – Planned Land Use.

Much of the land that is currently used for agriculture is planned for business park, commercial, and industrial uses. There are several locations where new industrial development was recently approved, and construction was started or completed during the Project studies. One area that exemplifies this is the Woolf Logistics Park located along Olive Avenue between Peoria Avenue and Northern Parkway. Several new manufacturing facilities have been built in this area including Rauch North America, Red Bull, Mark Anthony Brewing, and others located south of Peoria Avenue and along the east side of Reems Road in Glendale. A second area known as the Copper Wing Logistics Park in El Mirage includes 1000+ acres of new development planned including Cavco Industries, Consolidated Resources, Tippman Innovation, Avantaii Windows, and others located between Peoria Avenue and Northern Parkway between ½ mile west of Dysart Road and El Mirage Road.

General planned residential developments were identified between the Peoria Avenue and Northern Parkway west of Reems Road. These future residential areas would be located between commercial and industrial uses along the Loop 303 Freeway and adjacent to Reems Road.

General planned commercial and mixed-use developments are located along the Loop 303 and Northern Parkway.

IMPACT ASSESSMENT METHODOLOGY

Impact Criteria

Resource compatibility was the initial element in determining the level of impact that would occur on each land use. The presence or absence of existing transmission lines also was a factor in determining impacts, as the introduction of new structures would constitute a greater impact than rebuilding or upgrading an existing line. In addition, site-specific factors were considered including the nature of the potential losses or restrictions on a land use. For each area of affected land use, only the impacts within the assumed right-of-way of each route alternative were assessed.

The impact assessment was conducted to determine the effect of each Preferred Route A, E, and G on existing and future land uses. The impact assessment for each transmission line route was based on the criteria described below in Table A-1.

Table A-1 – Land Use Impact Assessment Criteria

Impact Rating	Criteria
Low	• Minimal potential conflicts with existing and planned land uses • Routes would have minimal conflict with agency planning guidelines • Examples may include residential areas with existing power and distribution lines; commercial or industrial areas; areas with good construction and maintenance access (e.g., roads); previously disturbed areas; and future general planned residential, commercial, and industrial areas
Moderate	• Some conflicts with existing and planned land uses; however, the potential for mitigation efforts to be successful may reduce impacts • Examples may include commercial areas; primary and secondary roads with no existing transmission lines; residential areas with existing transmission lines where homes are not displaced, or access restricted permanently and/or temporarily; agricultural and/or ranching uses; undisturbed areas that have minimal recreational

Table A-1 – Land Use Impact Assessment Criteria

Impact Rating	Criteria
	value and are planned for development; and future approved residential developments
High	• Route conflicts with existing and planned land uses (e.g., land areas may be identified as protected by agency planning guidelines and mitigation may not effectively reduce impacts to a lower level) • Examples may include existing residential areas without transmission and distribution lines where homes are displaced or access restricted permanently and/or temporarily, existing or planned school areas, existing or planned open space areas, airports, and areas with utilities recently placed underground

MITIGATION MEASURES

The impact assessment considered several mitigation measures that APS will include in the final project design to reduce potential impacts on existing land uses. The list below identifies the mitigation measures that would be implemented to reduce land use impacts resulting from the proposed facilities.

1. All construction vehicle movement outside of the right-of-way will be restricted to predesignated access, contractor-acquired access, or public roads.

2. Access to all lands adjacent to the transmission line will be maintained during construction, unless otherwise agreed to by the landowners.

3. The limits of construction activities typically will be predetermined, with activity restricted to and confined within those limits.

4. Irrigation facilities (e.g., canals, tanks, water lines, wells) will be repaired or replaced to their pre-pre-disturbed conditions as required by the landowner agency if they are damaged or destroyed by construction activities.

5. All existing roads will be left in a condition equal to or better than their condition prior to the construction of the transmission line.

6. Fences and gates, if damaged or destroyed by construction activities, will be repaired or replaced to their original pre-disturbed condition as required by the landowner.

7. During operation of the transmission line, the right-of-way will be maintained free of construction-related debris.

8. Structures will comply with FAA guidelines and military aircraft safety requirements to minimize aircraft hazards.

IMPACT ASSESSMENT RESULTS

The following sections provide a general description of the potential impacts on existing and planned land uses for the proposed transmission line routes and substation. The potential impacts consider the existing,

approved plans, and general plan conditions, as well as previously described mitigation measures incorporated into the project description. Parcels of land with approved development plans were considered to be more sensitive than those with general plans with no specific development plans. The rationale for this difference in impact levels is that general plan uses would have the most opportunity to incorporate the proposed transmission lines into the future uses. Approved plans for specific land uses may have less opportunity to incorporate the proposed transmission lines, while existing land uses would have the least opportunity to plan or account for the proposed transmission lines.

Potential impacts from the Preferred Routes A, E, and G line on land uses are summarized in Table A-2. As indicated below, most of the transmission line routes are projected to have low to moderate impacts.

Table A-2 – Land Use Resources Impact Assessment

Preferred Route	Link Segment	Existing Land Use	Planned Land Use
A	10	• Moderate impacts on Loop 303 freeway, which would be spanned (construction)	• Low impacts on Loop 303 Freeway, which would be spanned
	20	• Moderate impacts on Loop 303 freeway, which would be paralleled (construction) • Low impacts on agricultural lands • Existing 69kV transmission line would be rebuilt on proposed 230kV transmission line • Irrigation facilities and wells will be avoided or relocated • Parallels Olive Avenue right-of-way	• Low impacts on commercial, residential, and business park development
	35	• Low impacts on agricultural lands • Existing 69kV transmission line would be rebuilt on proposed 230kV transmission line • Irrigation facilities and wells will be avoided or relocated • Parallels Olive Avenue right-of-way	• Low impacts on industrial development
	76	• Low impacts on agricultural lands • Existing 69kV transmission line would be rebuilt on proposed 230kV transmission line • Irrigation facilities and wells will be avoided or relocated • Parallels Olive Avenue right-of-way	• Low impacts on industrial development
	90	• Low impacts on agricultural lands • Existing 69kV transmission line would be rebuilt on proposed 230kV transmission line • Irrigation facilities and wells will	• Low impacts on industrial development

Table A-2 – Land Use Resources Impact Assessment

Preferred Route	Link Segment	Existing Land Use	Planned Land Use
		be avoided or relocated • Parallels Olive Avenue right-of-way	
	85	• Low impacts on agricultural lands • Parallels railroad right-of-way	• Low impacts on business park development
	105	• Low impacts on agricultural lands • Parallels railroad right-of-way	• Low impacts on business park development
	140	• Low impacts on agricultural lands and industrial development • Crosses railroad right-of-way • Parallels Litchfield Road right-of-way	• Low impacts on business park development
	150	• Low impacts on agricultural lands • Parallels Litchfield Road right-of-way	• Low impacts on business park development
	190	• Low impacts on agricultural lands • Parallels Peoria Avenue right-of-way	• Low impacts on business park development
	290	• Low impacts on agricultural lands • Parallels Peoria Avenue right-of-way • Moderate impacts on Luke AFB APZ II	• Low impacts on business park development
	340	• Low impacts on agricultural lands • Parallels ½ section line • Moderate impacts on Luke AFB APZ II	• Low impacts on business park development
	330	• Low impacts on agricultural lands • Parallels ½ section line • Moderate impacts on Luke AFB APZ II	• Low impacts on business park development
E	650	• Low impacts on utility development/vacant land • Existing 69kV transmission line would be rebuilt on proposed 230kV transmission line • Parallels Olive Avenue right-of-way	• Same as existing
	630	• High/moderate impacts on residential development • Low impacts on commercial development • Existing 69kV transmission line would be rebuilt on proposed	• Same as existing

Table A-2 – Land Use Resources Impact Assessment

Preferred Route	Link Segment	Existing Land Use	Planned Land Use
		230kV transmission line • Parallels Olive Avenue right-of-way	
	570	• Moderate impacts on open space/Agua Fria River • Existing 69kV transmission line would be rebuilt on proposed 230kV transmission line • Parallels Olive Avenue right-of-way	• Same as existing
	500	• Low impacts on industrial/business park • Moderate impacts on open space/Agua Fria River • Existing 69kV transmission line would be rebuilt on proposed 230kV transmission line • Parallels Olive Avenue right-of-way	• Same as existing
	380	• Low impacts on agricultural land • Existing 69kV transmission line would be rebuilt on proposed 230kV transmission line • Parallels Olive Avenue right-of-way	• Low impacts on business park development
	320	• Low impacts on agricultural land • Existing 69kV transmission line would be rebuilt on proposed 230kV transmission line • Parallels Olive Avenue right-of-way	• Low impacts on business park development
G	625	• Low impacts on Glendale landfill • Parallels Northern Avenue right-of-way	• Same as existing
	550	• Low impacts on sand and gravel mine • Parallels Northern Avenue right-of-way	• Low impacts on future mixed use
	480	• Low impacts on sand and gravel mine • Moderate impacts on open space/Agua Fria River • Parallels Northern Parkway right-of-way	• Low impacts on future mixed use

Table A-2 – Land Use Resources Impact Assessment

Preferred Route	Link Segment	Existing Land Use	Planned Land Use
	350	• Low impacts on industrial development • parallels Northern Parkway right-of-way	• Same as existing
	300	• low impacts on industrial development • parallels Northern Parkway right-of-way	• Same as existing
	310	• low impacts on industrial development • parallels Northern Parkway right-of-way	• Same as existing

Table A-3 includes a summary of impacts for land use by route and link segment for each of the Proposed Routes A, E, and G and associated link segments.

Table A-3 – Land Use Impact Assessment Route and Link Segment Summary

		Existing Land Use			Planned Land Use		
Preferred Route	**Link Segment**	**High**	**Moderate**	**Low**	**High**	**Moderate**	**Low**
A	10	-	0.12	0.03	-		0.15
	20	-	0.09	1.45	-	0.04	1.50
	35	-	-	0.56	-	-	0.56
	76	-	-	0.45	-	-	0.45
	90	-	-	0.54	-	0.03	0.51
	85	-	-	0.53	-	-	0.53
	105	-	-	0.39	-	-	0.39
	140	-	-	0.06	-	-	0.06
	150	-	-	0..44	-	-	0.44
	190	-	-	0..98	-	-	0.98
	290	-	0.01	0.47	-	0.01	0.47
	340	-	0.24	0.25	-	0.24	0.25
	330	-	0.03	0.46	-	0.03	0.46
Total		**-**	**0.49**	**6.62**	**-**	**0.36**	**6.74**
E	650	-	-	0.26	-	-	0.26
	630	0.11	0.13	0.10	0.10	-	0.23
	570	-	0.25	-	-	-	0.25
	500	-	0.13	0.37	-	-	0.50
	380	-	-	0.48	-	-	0.48
	320	-	0.01	0.24	-	-	0.25
Total		**0.11**	**0.52**	**1.45**	**0.10**	**-**	**1.98**

Table A-3 – Land Use Impact Assessment Route and Link Segment Summary

		Existing Land Use			Planned Land Use		
G	625	-	-	0.77	-	-	0.77
	550	-	0.03	0.23	-	-	0.26
	480	-	0.16	0.33	-	-	0.49
	350	-	-	0.49	-	-	0.49
	300	-	-	0.48	-	-	0.48
	310	-	-	0.26	-	-	0.26
Total		--	**0.19**	**2.56**	-	-	**2.75**

Table A-4 includes a summary of impacts for land use for each of the Proposed Routes A, E, and G.

Table A-4– Land Use Impact Assessment Route Summary

	Existing Land Use			Planned Land Use		
Preferred Route	**High**	**Moderate**	**Low**	**High**	**Moderate**	**Low**
A	-	0.49	6.62	-	0.36	6.74
E	0.11	0.52	1.45	0.10	-	1.98
G	-	0.19	2.56	-	-	2.75
Total	**0.11**	**1.20**	**10.63**	**0.10**	**0.36**	**11.47**

CONCLUSIONS

Most of the impacts on existing and future land use resulting from construction, operation, and maintenance of the Proposed Routes A, E, and G would be low to moderate. This is primarily due to the routes being located within existing agricultural and industrial lands, with more industrial and business park land uses rapidly developing along these routes. Luke AFB has reviewed and approved of the minimal crossing of the APZ II lands at the furthest point from the runway. Moreover, these routes follow existing transmission lines, railroads, and roadways extensively, which provides for the ability to share common right-of-way. Mitigation measures including design modifications will reduce the potential effects of the Proposed Routes A, E, and G where they may conflict with existing or future land uses.

The Proposed Routes A, E, and G reflect public preferences within the community. Many of the public comments emphasized locating the proposed transmission lines in the agricultural and industrial lands where there are fewer residences, as well as where there are existing transmission lines. APS worked with several key landowners to locate the line along the edges of roadways and property lines so the proposed transmission line would not conflict with land uses and future development plans.

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EXHIBIT B – ENVIRONMENTAL STUDIES

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

> *Exhibit B:*
>
> *Attach any environmental studies which applicant has made or obtained in connection with the proposed site(s) or route(s). If an environmental report has been prepared for any federal agency or if a federal agency has prepared an environmental statement pursuant to Section 102 of the National Environmental Policy Act, a copy shall be included as a part of this exhibit.*

SITING STUDY

Siting Study Report presented in the following pages

Siting Study Report

Arizona Public Service Company

West Valley Central 230kV Connection Project
Project No. 123524

11/22/2021

Siting Study Report

prepared for

Arizona Public Service Company
West Valley Central 230kV Connection Project
Glendale, Arizona

Project No. 123524

11/22/2021

prepared by

Burns & McDonnell
Phoenix, Arizona

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Page No.

1.0 PROJECT OVERVIEW 1-1
1.1 Project Need 1-1
1.2 Project Description 1-1
1.3 Objective For Siting Studies 1-3

2.0 PROJECT JURISDICTION AND STUDY AREA 2-1

3.0 SITING STUDY 3-12
3.1 Methods 3-12
3.1.1 Preliminary Data Collection 3-13
3.1.2 Opportunities and Constraints Analysis 3-13
3.1.3 Alternatives Identification 3-13
3.1.4 Alternatives Evaluation 3-14
3.1.5 Route Identification 3-14
3.1.6 Route Selection 3-14
3.2 Data Collection 3-15
3.2.1 Land Use 3-15
3.2.2 Federal Aviation Administration/Luke Air Force Base 3-20
3.3 Opportunities and Constraints Analysis 3-21
3.4 Alternatives Identification 3-26
3.5 Public Outreach 3-26

4.0 PRELIMINARY ROUTE OPTIONS 4-28
4.1 Preliminary Routes 4-28
4.2 Public Outreach 4-28
4.3 Impact Summary 4-29
4.3.1 Existing Land Use Impacts 4-29
4.3.2 Planned Land Use Impacts 4-30
4.3.3 Existing Visual Impacts 4-30
4.3.4 Planned Visual Impacts 4-31

5.0 ROUTE SELECTION 5-40
5.1 Criteria 5-40
5.2 Preferred Route 5-41
5.2.1 Existing Land Use Impacts 5-41
5.2.2 Future Land Use Impacts 5-41
5.2.3 Existing Visual Impacts 5-41
5.2.4 Planned Visual Impacts 5-42

6.0 REFERENCES 6-44

LIST OF TABLES

Page No.

Table 3-1: Opportunities and Constraints Criteria..... 3-22

LIST OF FIGURES

Page No.

Figure 1: Project Study Area 1-2
Figure 2: Jurisdiction 2-11
Figure 3: Jurisdiction Planning Area 3-16
Figure 4: Existing Land Use 3-18
Figure 5: Planned Land Use 3-19
Figure 6: Opportunities and Constraints 3-25
Figure 7: Preliminary Route Links 3-27
Figure 8: Preliminary Route Option A 4-32
Figure 9: Preliminary Route Option B 4-33
Figure 10: Preliminary Route Option C 4-34
Figure 11: Preliminary Route Option D 4-35
Figure 12: Preliminary Route Option E 4-36
Figure 13: Preliminary Route Option F 4-37
Figure 14: Preliminary Route Option G 4-38
Figure 15: Preliminary Route Option H 4-39
Figure 16: Preferred Route 5-43

LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
APS	Arizona Public Service Company
AGL	Above ground level
CEC	Certificate of Environmental Compatibility
CFR	Code of Federal Regulations
CLS	Conservation Land System
FAA	Federal Aviation Administration
kV	Kilovolt
ROC	Required Obstacle Clearance
TERPS	Terminal Instrument Procedures

1.0 PROJECT OVERVIEW

1.1 Project Need

The greater Phoenix region has emerged as one of the top markets in the western United States for attracting high-tech industries. The West Valley, including the communities of El Mirage, Glendale, Peoria, Surprise, Youngtown, and Maricopa County, are benefiting from economic development activity that will bring jobs and revenue to the area. Arizona Public Service Company (APS) provides clean, reliable, and affordable electric service to support our existing customers and future growth within these West Valley communities. APS intends to meet this need by constructing, operating and maintaining the facilities identified in the siting study for the West Valley Central 230kV Connection Project (WVC Project).

1.2 Project Description

APS is planning to construct and operate new 230 kilovolt (kV) power lines and substations to provide adequate and reliable power to the rapidly growing West Valley communities. The three new, separate 230kV power line routes would connect directly to the recently constructed Contrail Substation. Figure 1 – Project Study Area illustrates the general location where facilities are needed.

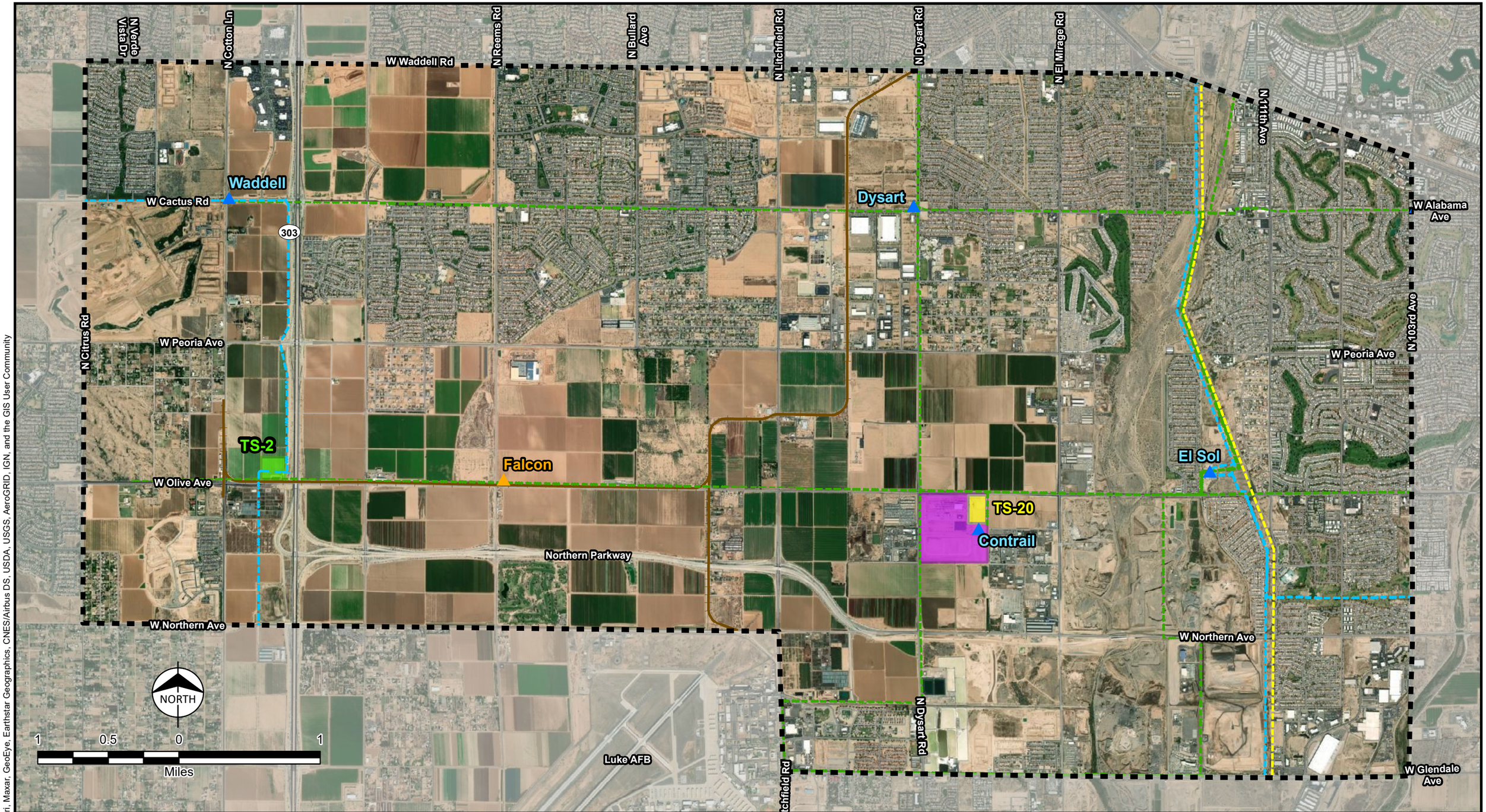
1. A route connecting from the Future TS-2 Substation near the intersection of Loop 303 Freeway and Olive Avenue.

2. A route connecting from the existing El Sol Substation near the intersection of Olive Avenue and North 114th Avenue.

3. A route connecting from the existing El Sol White Tanks 230kV power line near the intersection of Northern Avenue and North 111th Avenue.

The new 230kV powerlines would extend approximately 13 miles, depending on final routes. Average structure height of approximately 125 feet tall, reaching up to 195 feet depending on location (e.g. crossing freeways). Average right-of-way width is approximately 120 feet. The transmission lines will connect to existing or previously planned and approved substations.

- El Sol Substation (existing)
- Contrail Substation (existing)
- TS-2 Substation (planned, approved)



Reference Features
- Study Area
- Municipal Planning Boundary
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Figure 1: Project Study Area
West Valley Central 230kV Connection Project

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, EIA, USGS - PADUS

1.3 Objective For Siting Studies

The objective of the siting study is to identify transmission line routes that are required to meet the purpose and need, while fulfilling the engineering, environmental, and regulatory requirements to successfully permit, construction, operate, and maintain the electrical facilities associated with the WVC Project.

The siting studies have considered a broad range of data and are consistent with past projects APS has conducted and proven methodologies are typical of projects of this nature. APS considers several factors in detail prior to making decisions related to constructing and operating 230kV power lines and substations. There are detailed engineering and environmental studies that are completed during the planning process. When siting new electrical facilities, APS strives to:

- Minimize impacts to sensitive resource areas, including residential developments, airports, etc.; and
- Maximize use of siting opportunities, including locating near existing linear features and/or compatible land uses such as transmission lines, powerlines, roads, canals, substations, etc.

Throughout the siting study process, APS collects input from key agencies and the public (e.g., landowners, residents, business owners, etc.) prior to selecting final locations for the proposed facilities.

This siting study will be the first phase of the permitting process should APS decide to move forward with obtaining a Certificate of Environmental Compatibility (CEC) from the Arizona Corporation Commission (ACC).

Burns & McDonnell has conducted this siting study in coordination with APS. The methods and results of the study are described below, along with conclusions and recommendations for APS to consider when determining how to proceed with the Project.

2.0 PROJECT JURISDICTION AND STUDY AREA

The Project is located within the jurisdiction of the El Mirage, Glendale, Peoria, Surprise, Youngtown, and Maricopa County, Arizona. Other key agencies with jurisdiction in the area are Department of Defense United States Air Force – Luke Air Force Base and the Federal Aviation Administration (FAA). Figure 2 – Jurisdiction illustrates the cities, towns, and agencies with jurisdictional planning responsibility within the study area.

The Project study area is approximately 41.5 square miles and is located between Waddell Road on the north, Glendale Avenue and Northern Avenue on the south, Citrus Lane on the west and 103th Avenue on the east. There are several other major arterial roadways crossing through the study area that form the general grid patterns where existing and planned land uses occur. These roadways include Cactus Road, Peoria Avenue, Olive Avenue, Cotton Lane, Reems Road, Bullard Avenue, Litchfield Road, Dysart Road, and 111th Avenue. Two major freeways cut through the western and southern portions of the study area including Loop 303 Bob Stump Memorial Freeway and Northern Parkway, respectively.

The Agua Fria River cuts through the eastern portion of the study area from north to south. Luke Air Force Base sits just south of Northern Parkway and the Accident Potential Zones extend approximately 2 miles from the end of the runway, across Olive Avenue to Peoria Avenue. There is a railroad owned by Burlington Northern Santa Fe (BNSF) that crosses through the central portion of the study area from the intersection of Waddell Road/Dysart Road to the west near Cotton Lane/Olive Avenue.

The new 230kV transmission facilities will connect the existing Contrail Substation to the Future TS2 Substation and El Sol Substation all of which are located along Olive Avenue. The Contrail substation is located in El Mirage east of the intersection of Dysart and Olive Avenue. The future TS2 Substation is located in Maricopa County (Glendale planning area) just west of the Loop 303 Freeway west of Olive Avenue, and the existing El Sol substation is located west of the intersection of Olive Avenue/111th Avenue in Youngtown.

There are several major 345kV, 230kV, and 69kV transmission lines present throughout the study area. There is a 230kV line along the west side of the Loop 303 Freeway and there is a major 345/230kV transmission line corridor following the Agua Fria River and 111th Avenue. There are three 69kV transmission lines crossing the length of the study area along Cactus Road, Olive Avenue, Dysart Road, and the Agua Fria River. There are numerous 12kV distribution lines crossing throughout the study area which service residential, industrial, commercial, and agricultural development.

There is a major propane gas pipeline corridor with four lines connecting between the Plains Energy railroad offloading facility at the intersection of Bullard Avenue/Olive Avenue, then heading east along Olive Avenue and turning south along Dysart Avenue.

The Maricopa County Flood Control District maintains a large flood protection basin located along west side of Reems Road between Olive Avenue and Peoria Avenue. The drainage channel extends from Northern Avenue to Litchfield Avenue along Reems Road and through a residential community.

The study area consists of a wide range of existing and planned land uses dispersed throughout the study area as depicted in the photographs below.

Residential Development

Light Industrial Development

Commercial Development

Public Facilities

Agricultural Land

Agua Fria River

Sand and Gravel Mining

Luke Air Force Base

Reems Road Flood Control District Facility

Northern Parkway Freeway

Arterial Road

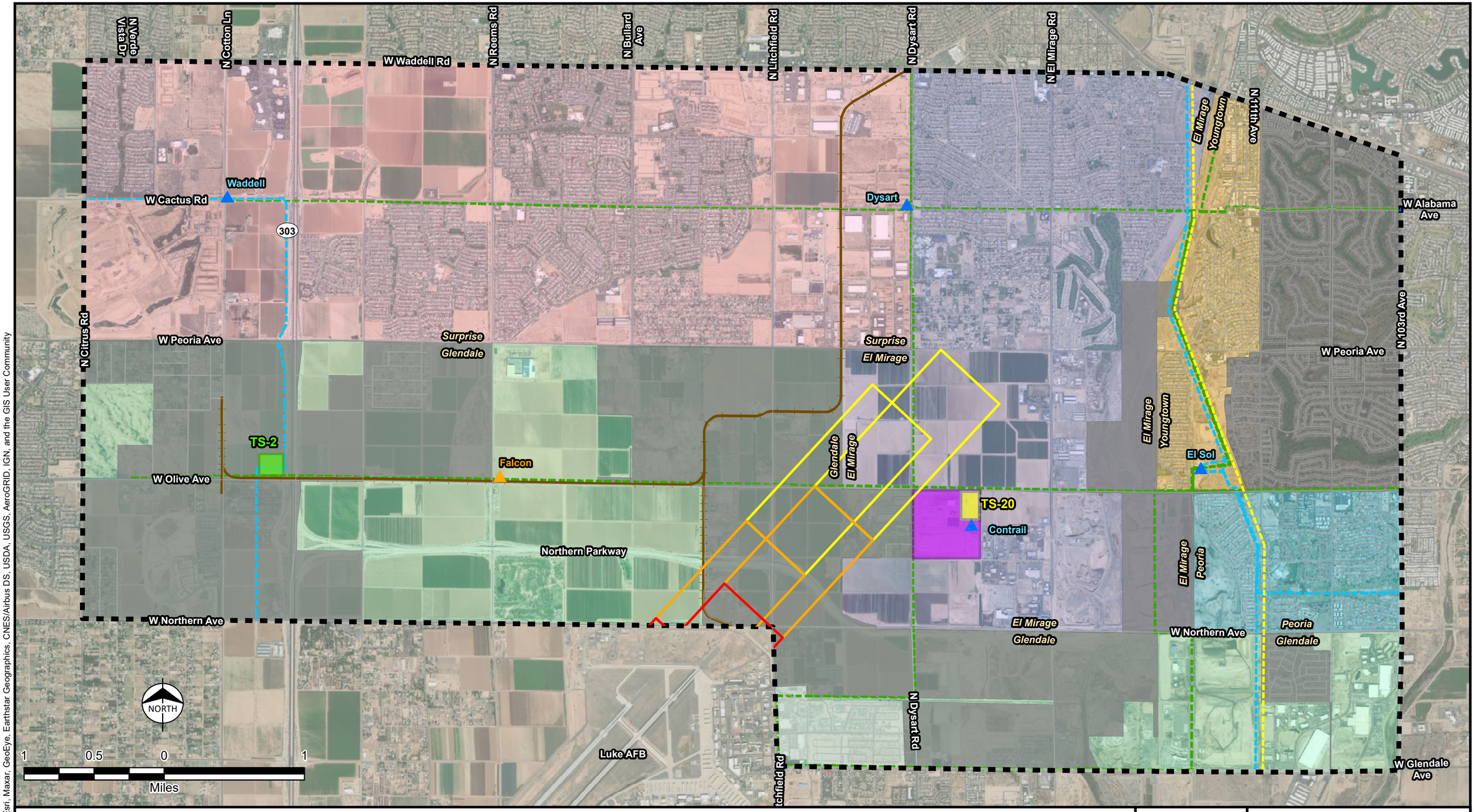
69kV Transmission Line

230/345kV Transmission Line Corridor

El Sol 230/69kV Substation

BNSF Railroad

Propane Gas Pipeline Corridor



Reference Features
- Study Area
- Municipal Planning Boundary
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Jurisdiction
- El Mirage
- Glendale
- Peoria
- Surprise
- Youngtown
- Maricopa County

Source: Esri, EIA, USGS - PADUS

Figure 2: Jurisdiction
West Valley Central 230kV Connection Project

3.0 SITING STUDY

3.1 Methods

The planning process of identifying and evaluating potential transmission line routes was conducted in sequential steps with review of data and input from APS, as well as the agencies and public, at key intervals during the process, as illustrated in the figure below and described in the subsequent sections.

3.1.1 Preliminary Data Collection

A study area, encompassing the land where facilities are needed, was defined by Burns & McDonnell and APS based on the Project purpose and need. After definition of the study area, inventories of existing resources were conducted, primarily consisting of existing and planned land uses, while also giving consideration of visual resources, cultural resources (archaeological and historic), and biological resources (habitat/conservation areas).

Burns & McDonnell developed a comprehensive GIS mapping database to support the siting studies. Data sources were collected primarily from the Maricopa Association of Governments (MAG) and Maricopa County, as well as from the City of El Mirage, City of Surprise, City of Peoria, Town of Youngtown, and City of Glendale County GIS databases and general plans. In some cases, specific future development plan data was provided by the agencies for projects that were in the approval process or recently approved. Google Earth and field reviews were also conducted to confirm data and identify other resources that may be relevant to the siting studies.

3.1.2 Opportunities and Constraints Analysis

An opportunities and constraints analysis were conducted to identify the sensitivity of the environment to the construction of a transmission line. Opportunity areas were also identified where a transmission line would be considered most compatible due to existing linear features such as transmission and distribution power lines. Each existing and planned land use category was assigned a sensitivity level based on the sensitivity of those uses to the introduction of a transmission line within that use category. Areas of low sensitivity included industrial or undeveloped areas, areas with moderate sensitivity included commercial or business park areas, and areas with the highest sensitivity included residential areas and parks/recreation areas. Opportunity areas for preliminary alternative links primarily followed section lines, half-section lines, property boundaries, railroad tracks, existing power lines and roads.

3.1.3 Alternatives Identification

The results of the sensitivity mapping allowed preliminary alternative links (i.e., short segments of potential transmission line segments between other intersecting segments) to be defined. For this project, alternative links followed very consistently along the opportunity corridors (e.g., roads and existing transmission lines). Additional considerations when identifying alternative links included engineering/design factors, right-of-way availability, constructability, and operations/maintenance. Agency and public input were gathered at this point to provide additional information supporting continued evaluation of the alternative links or elimination of other alternative links.

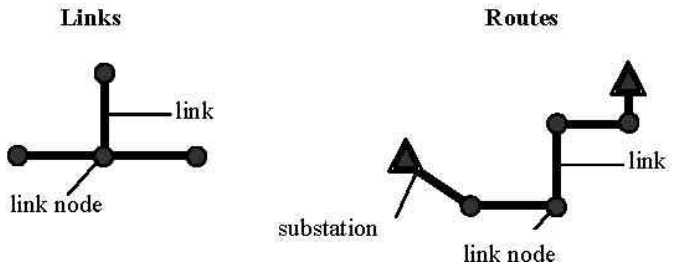
3.1.4 Alternatives Evaluation

After the preliminary alternative links (i.e., route segments) of transmission line routes were identified, detailed environmental analyses (e.g. data collection, impact assessment and mitigation planning) are conducted on each route segment to evaluate the potential impacts of each alternative link with respect to environmental resources (i.e., land use, visual, cultural, and biological resources) present along each route.

3.1.5 Route Identification

Route identification consists of combining alternative links (i.e., route segments) to form complete transmission routes (connections between two substations). Routes are combined using the results of the environmental analyses, agency/public input, and engineering/design considerations to identify routes that are the most feasible to permit, construct, operate, and maintain.

The diagram below illustrates the way alternative links were combined into transmission line routes.



The objective of the route identification process is to bring forward a range of the best routes that balance the environmental, engineering, and agency/public input while meeting the purpose and need for the project. Typically, there are several routes brought forth for additional agency and public comment prior to APS making a final decision.

3.1.6 Route Selection

The final step in the siting study is for APS to select the preferred route to bring forward for permitting and construction. APS will consider several factors, including regulatory approvals, environment, engineering, cost, right-of-way acquisition, and agency/public comment when making route selection decisions. Once a preferred route and any alternative routes are identified, they will be presented in the CEC application to be reviewed by the Arizona Power Plant and Transmission Line Siting Committee and approved by the ACC.

3.2 Data Collection

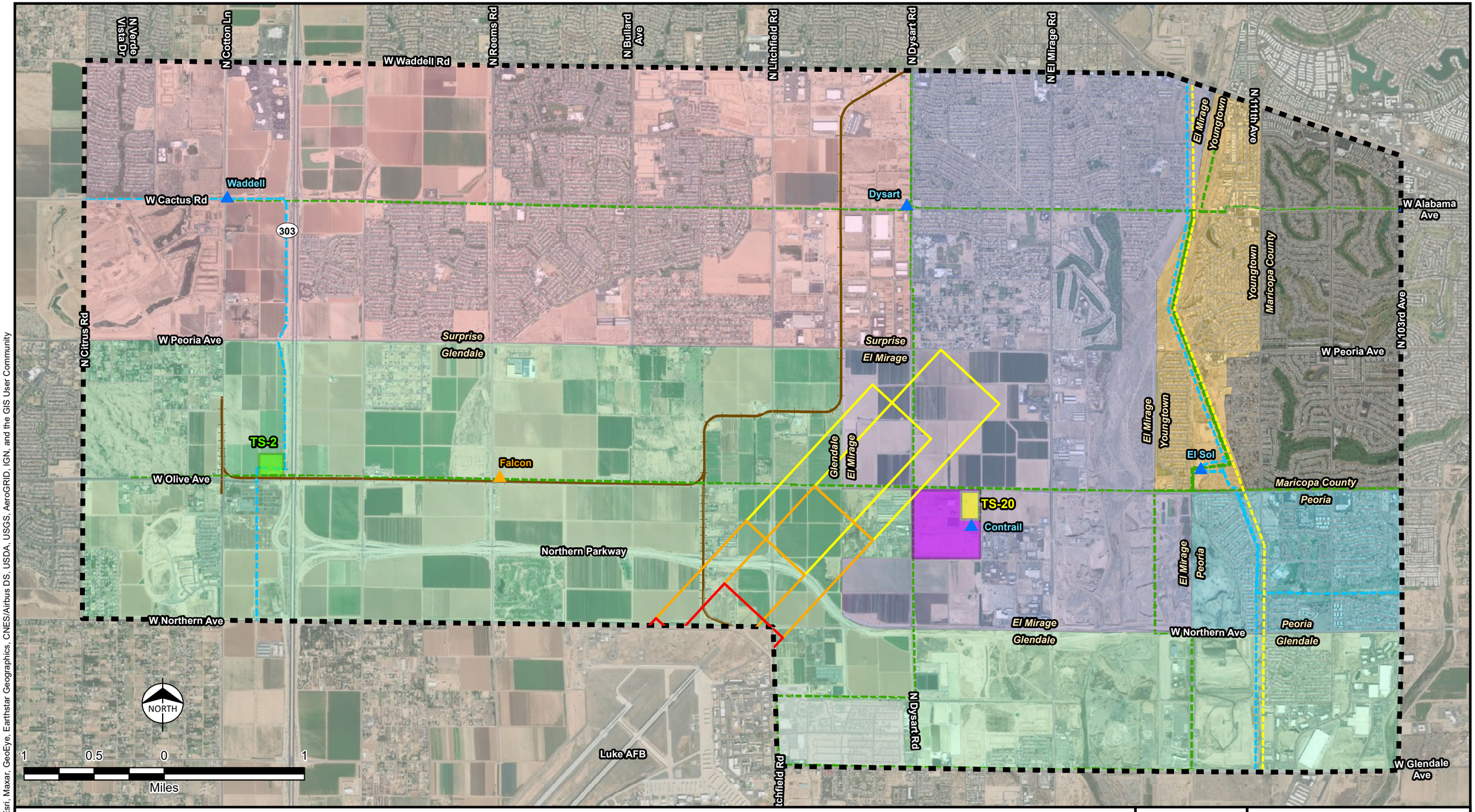
The Project team identified available environmental data primarily from the planning jurisdictions of the El Mirage, Glendale, Peoria, Surprise, Youngtown, and Maricopa County, Arizona for information on existing and future land uses. Additional data was collected via other electronic data sources and mapping services including the following:

- Luke Air Force Base
- ESRI
- Google Earth
- Maricopa County Association of Governments GIS Database
- Maricopa County Assessors Database
- Federal Aviation Administration (FAA)
- U.S. Geological Survey
- U.S. Department of Agriculture - Natural Resource Conservation Service
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- Federal Emergency Management Agency
- National Conservation Easement Database
- U.S. Census Bureau

3.2.1 Land Use

An inventory was conducted to determine where existing land uses may be affected with the construction, operation, and maintenance of the proposed 230/69 KV transmission line. Information was compiled from the available maps and planning documents, as well as aerial photography. Aerial imagery from various sources dated 2020-21 was used for this analysis. Field reviews were conducted several times (i.e., March 2020, March 2021, April 2021, July 2021) to review data and identify any new developments that were starting construction.

Each of the municipal jurisdictions have a designated planning area that they are responsible for managing existing and future land use development. Figure 3 – Jurisdictional Planning Area illustrates the respective planning areas in the project study for El Mirage, Glendale, Peoria, Surprise, Youngtown, and Maricopa County. Within these planning areas each jurisdictions general plan provides guidance on how various planning elements such as land use, housing, employment, parks/recreation, aviation, public facilities, and transportation will be managed.



Reference Features
- Study Area
- Municipal Planning Boundary
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Jurisdiction Planning Area
- El Mirage
- Glendale
- Peoria
- Surprise
- Youngtown
- Maricopa County

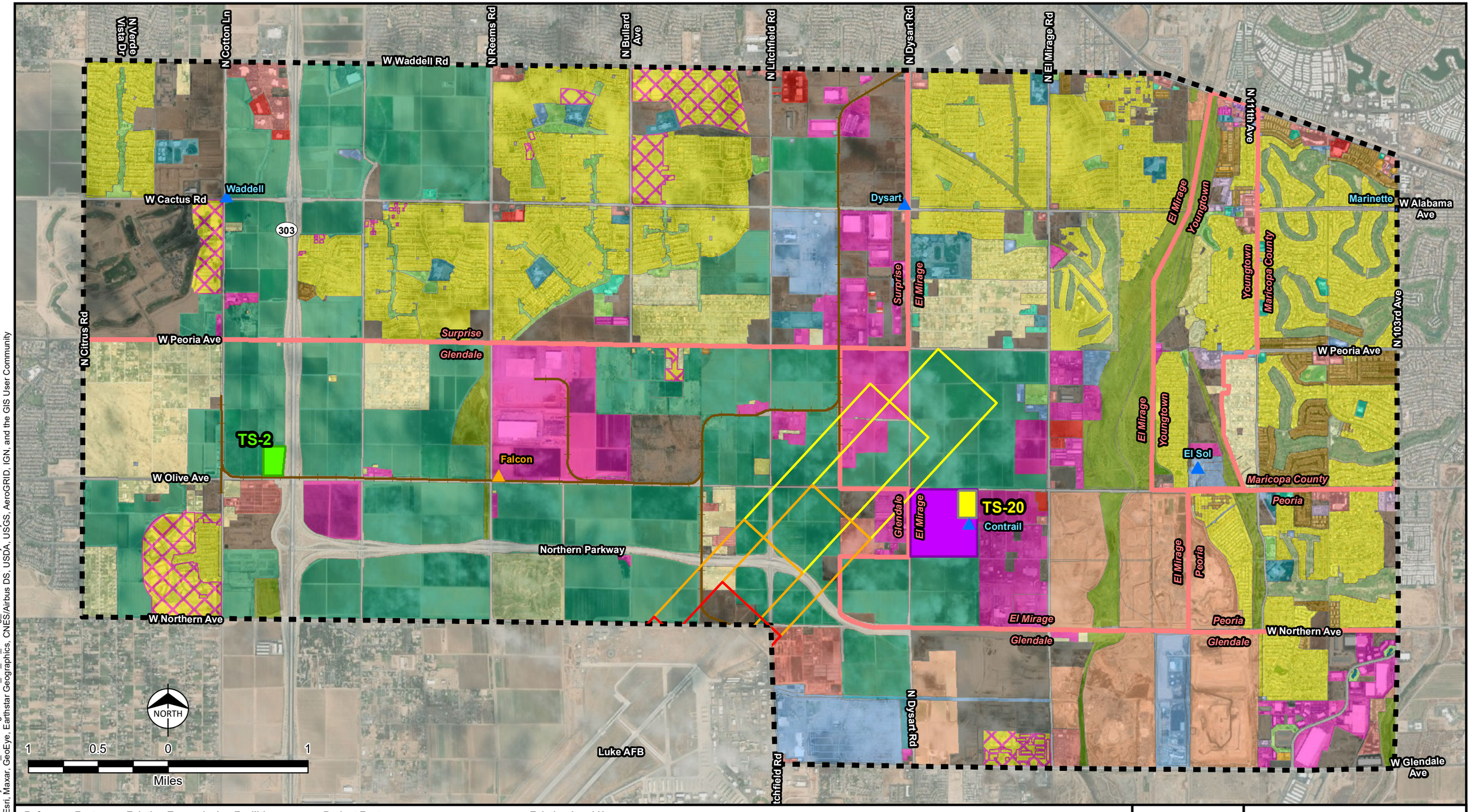
Figure 3: Jurisdiction Planning Area
West Valley Central 230kV Connection Project

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, EIA, USGS - PADUS

Existing land uses included, residential, agriculture, commercial, industrial, mixed-use development, as well as Luke Air Force Base. Existing land uses are more concentrated in select areas within El Mirage, Peoria, Surprise Youngtown, and Maricopa County municipal areas, which consist primarily of residential and commercial development. Glendale, in the central portion of the study area has a predominance of agricultural land interspersed with commercial and industrial development and some residential development. The southern portion of the study area, near Luke Air Force Base (AFB), includes the Luke AFB Accidental Potential Zones (APZ) which is primarily agricultural land, with some light industrial and commercial business. Figure 4 – Existing Land Use illustrates the location and type of land uses within the study area.

Planned land uses include those designated by jurisdictional general plans, recently approved developments, and conceptual plans provided by developers where available. All jurisdictional planning documents (e.g., general plans and available specific plans) used were the current resources for the municipalities for 2020-21. Figure 5 – Planned Land Use, illustrates the location and type of planned land uses within the study area.



Reference Features
- Study Area
- Municipal Planning Boundary
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Existing Land Use
- Active Open Space
- Agriculture; Agriculture (Inside APZ)
- Cemetery
- Commercial High
- Commercial Low
- Developing Employment
- Developing Residential
- Educational
- Golf Course
- Industrial
- Medical/Nursing Home
- Multi Family
- Office
- Other Employment
- Passive/Restricted Open Space
- Public/Special Event/Military
- Religious/Institutional
- Single Family High Density
- Single Family Medium Density
- Single Family Low Density
- Tourist
- Transportation
- Vacant
- Water

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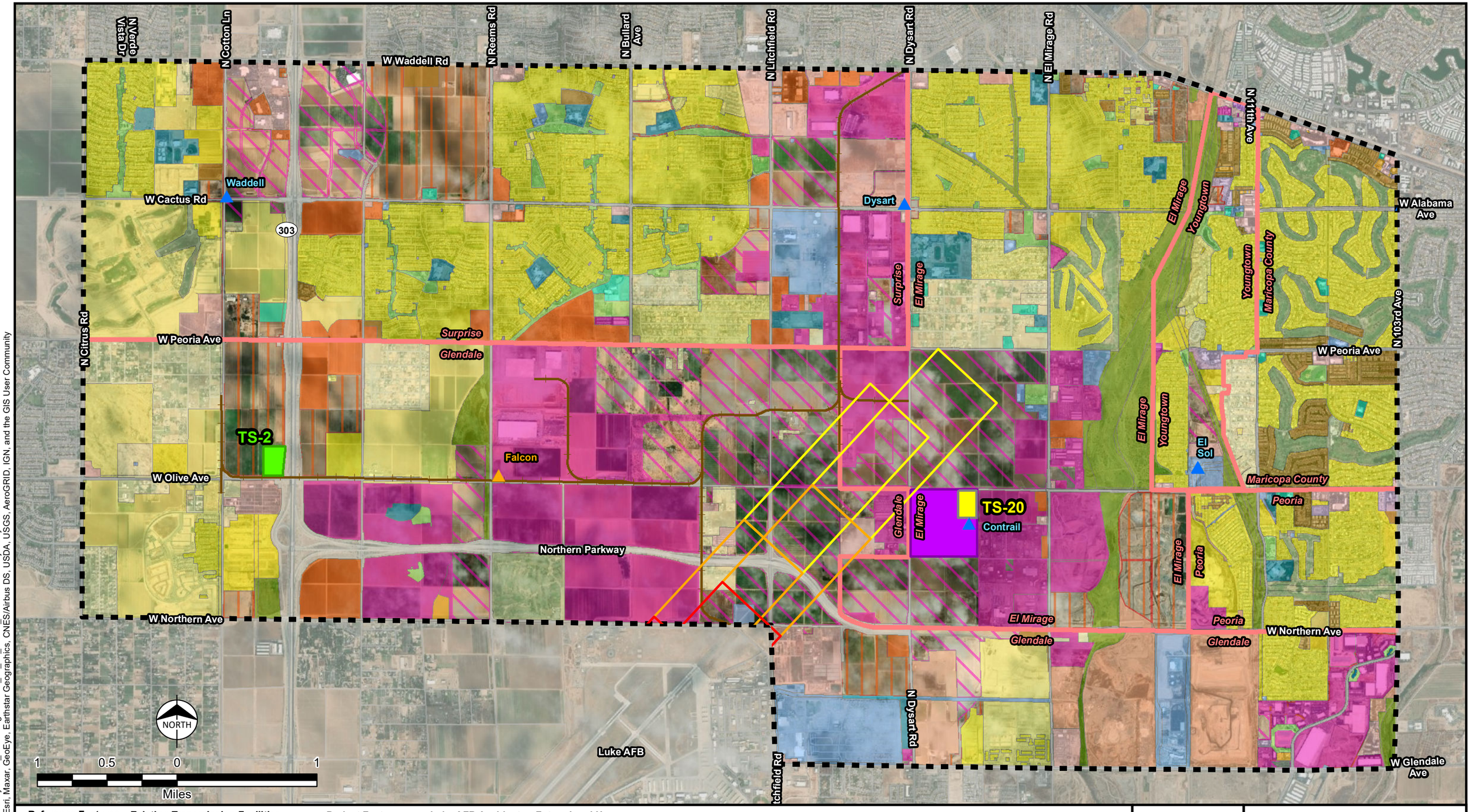
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: AZMag, Burns & McDonnell, aps

Figure 4:
Existing Land Use
West Valley Central 230kV Connection Project



Reference Features
- Study Area
- Municipal Planning Boundary
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Future Land Use
- Active Open Space
- Business Park
- Cemetery
- Commercial High
- Commercial Low
- Educational
- Golf Course
- Industrial
- Medical/Nursing Home
- Mixed Use
- Multi Family
- Office
- Other Employment
- Passive/Restricted Open Space
- Public/Special Event/Military
- Religious/Institutional
- Single Family High Density
- Single Family Medium Density
- Single Family Low Density
- Tourist
- Transportation
- Water

Figure 5:
Planned Land Use
West Valley Central 230kV Connection Project

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Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: AZMag, Burns & McDonnell, aps

3.2.2 Federal Aviation Administration/Luke Air Force Base

During the 2001 Arizona legislative session, the statutes, described in A.R.S. § 28-8481 affecting development near military airports were amended requiring political subdivisions to assure that development within certain newly defined zones is compatible with military airports in the vicinity. Those zones are referred to as “high noise and accident potential zones” and are defined in A.R.S. § 28-8461(9). The legislation also incorporated a chart of uses that are compatible with certain areas within the zones (the “Chart”). The Chart as described in A.R.S. § 28-8481(J) is to be used to determine compliance with the statute. As described in A.R.S. § 28-8481(J)(18), the Chart states that “Uses not listed are presumed to not be compatible. If the political subdivision and the military airport mutually agree that an individual use is compatible and consistent with the high noise or accident potential of the military airport or ancillary military facility, the use shall be presumed to be compatible.”

Specific to overhead transmission line use for APZ I, the statute defines the term "Structure" to mean an object that is constructed or installed by a human including a building, tower, smokestack or overhead transmission line (emphasis added). Based on the definition of Structure, APZ I disallows transmission lines as a structure and any allowed utilities would have to be underground or on the ground (water, sewer, fiber, gas, electric underground or in conduit on ground).

Secondly, APZ II disallows “new buildings or improvements or expansion of non-agricultural buildings or improvements that would impair visibility or otherwise interfere with operating aircraft, such as electrical emissions that would interfere with aircraft and air force communications. Even though the Chart for APZ II doesn’t specifically disallow “structures,” APZ II may disallow overheard transmission lines because the statute presumes that “uses not listed are presumed to be not compatible.” The Chart does not expressly allow an aboveground utility line in APZ II. However, the statute allows mutual agreement of the city and the military airport that an individual use is compatible. Therefore, cities of El Mirage and Glendale, in consultation with Luke AFB, could reach such mutual agreement to allow transmission structures in this instance. If that is indeed the case, I believe APS would need to obtain written approval from Luke AFB.

With the understanding that APZ I and II would have limitations with respect to constructing an overhead transmission line, APS worked closely with Luke AFB early in the process to determine if locations within the APZs could be compatible with the proposed transmission line. This included locations where there were existing opportunities to co-locate facilities with lower voltage 69/12kV power lines already present (e.g., Olive Avenue and Dysart Road. Luke AFB indicated support for evaluation of routes north of Olive Avenue up to Peoria Avenue.

The Federal Aviation Administration (FAA) has guidelines for constructing above ground facilities near airports. Federal Regulation Title 14 Part 77 establishes standards and notification requirements for objects affecting navigable airspace. This notification serves as the basis for:

- Evaluating the effect of the construction or alteration on operating procedures
- Determining the potential hazardous effect of the proposed construction on air navigation
- Identifying mitigating measures to enhance safe air navigation
- Charting of new objects

Notification allows the FAA to identify potential aeronautical hazards in advance thus preventing or minimizing the adverse impacts to the safe and efficient use of navigable airspace.

Care has been taken to avoid areas closes to the runways where an above ground transmission line would not be compatible with Luke AFB. When a final route is approved for construction and transmission line design is completed, any above ground structures within regulated airspace near Luke AFB will be evaluated to ensure final compatibility with airport operations.

3.3 Opportunities and Constraints Analysis

The opportunities and constrains analysis were completed to determine the most suitable locations within the study area for construction and operation of the proposed 230/69kV transmission line. The objective of the opportunities and constraints analysis was to determine:

- locations that minimize impacts to sensitive resource areas (existing residences, parks, schools, airports, etc.)
- locations that maximize the use of existing siting opportunities (existing power lines, roads, railroads, etc.)

The criterial used to conduct the opportunities and constrains analysis is based upon the premise that each inventoried land use type has an inherent level of sensitivity (i.e., constrains) to the introduction of a new transmission line. Typically, the higher the level of sensitivity of a land use type, the lower the compatibility with a new transmission line. The sensitivity levels have been derived from experience with past projects and includes input from planning professionals, agencies, and the public. This opportunities

and constraints analysis has been accepted by federal, state, and municipal planning and regulatory agencies for the development of energy and utility infrastructure.

Sensitivity levels range from low to high sensitivity. Typically, residential land use would be less compatible than a commercial or industrial use because power lines and substation sites could resemble or replicated some of the facilities or design features at commercial or industrial facilities (e.g., high buildings, surface materials, light towers, communication towers).

Additionally, transportation corridors, existing power line corridors, section lines, half-section lines, and other linear facilities were considered opportunities for locating the proposed 230/69kV transmission line.

Previous studies that have been conducted were referenced to help identify areas that better lend themselves to accommodate the proposed transmission line (i.e., opportunities) and locations that would be less accommodating for the transmission line (i.e, constraints). The criteria shown in the opportunities and constraints table below assists in identifying route opportunities for the construction, operation, and maintenance of the proposed 230/69kV transmission line, while minimizing impacts of the line to residences or other sensitive areas. For example, an arterial roadway would be considered a high-ranking opportunity to locate the new power line. However, that same arterial road would rank lower in a residential community (an area of high constraint) than it would within a light industrial/commercial zone (an area of moderate constraint). The criteria used in identifying locations of opportunity and constraints are listed is Table 3-1.

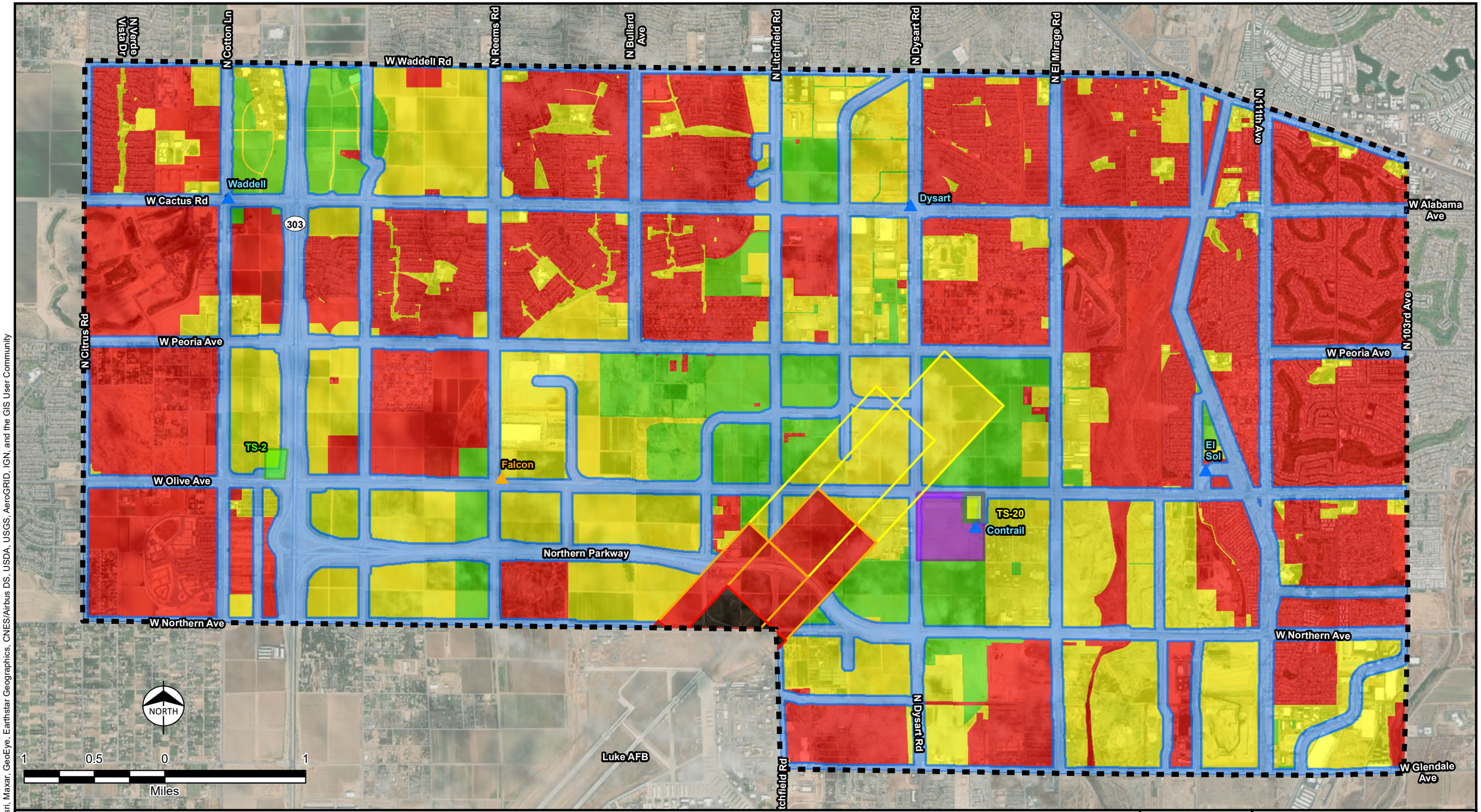
Table 3-1: Opportunities and Constraints Criteria

Existing Land Use Constraints	
Category	**Sensitivity Level**
Residential Low Density	High
Residential Medium Density	High
Residential High Density	High
Subdivision Under Construction	High
Schools/Educational Facilities	High
Parks, Trails, and Designated Scenic Roads	High
Recreation (golf course, racetrack, paintball park, etc.)	High
Open Space/Greenbelt	Moderate
Commercial	Moderate

Public/Quasi-Public	Moderate
Transportation (Roadways)	Moderate
Agriculture/Corral/Stock Tank	Low
Construction Laydown Area/Nursery	Low
Industrial/Mining	Low
Canal	Low
Utility Facilities (substations, pump stations, water treatment, communications, flood control, etc.)	Low
Planned Land Use Constraints	
Category	**Sensitivity Level**
Residential – Final Plat	High
Residential – Preliminary Plat	Moderate
Residential – General Plan	Moderate
Commercial – Final Plat	Moderate
Commercial – Preliminary Plat	Low
Commercial – General Plan	Low
Commercial, Resort/Hotel – General Plan	Moderate
Commercial, Mixed Use – General Plan	Low
School/Education Facilities – Final Plat	High
Schools/Education Facilities – General Plan	Moderate
Industrial – General Plan	Low
Transportation (Roadways) – Final Plat	Moderate
Transportation (Roadways) – Preliminary Plat	Low
Transportation (Roadways) – General Plan	Low
Recreation Trail – General Plan	Moderate
Park/Golf Course – Final Plat	Moderate
Park/Golf Course – General Plan	Low
Open Space – Final Plat	Moderate
Open Space – Preliminary Plat	Low
Open Space – General Plan	Low
Preserve – General Plan	Moderate
Public/Quasi-Public – General Plan	Low
Opportunities	
Category	**Opportunity Level**

Overhead Transmission Line Corridors	High
Overhead 12-kV Distribution Line (suitable for co-location)	High
Canal	High
Highways (State Route)	High
Arterial Roadways	High
Utility Facilities (substations, pump stations, water treatment, communications., flood control, etc.)	Moderate

Existing and planned land use data was used to identify areas that are most suitable for construction of the proposed 230/69 KV transmission lines. The results of the opportunities and constraints analysis are shown on Figure 6 Opportunities and Constraints below and illustrate a composite of all the opportunities and constraints within the study area. Opportunity areas, including following existing power lines and major roadways, are shown in blue. Areas with low sensitivity, including industrial or undeveloped areas, are shown in green; areas with moderate sensitivity, such as commercial areas or business parks, are shown in yellow; and areas with high sensitivity, such as residential areas and schools, are shown in red; and exclusion areas, such are Luke AFB are shown in dark gray.



Reference Features
- Study Area
- Municipal Planning Boundary
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Opportunity Area
- Roads/Railroads/Transmission Lines

Constraint Area
- Exclusion
- High
- Moderate
- Low

Figure 6:
Opportunities and Constraints
West Valley Central
230kV Connection Project

Source: Esri, EIA, USGS - PADUS

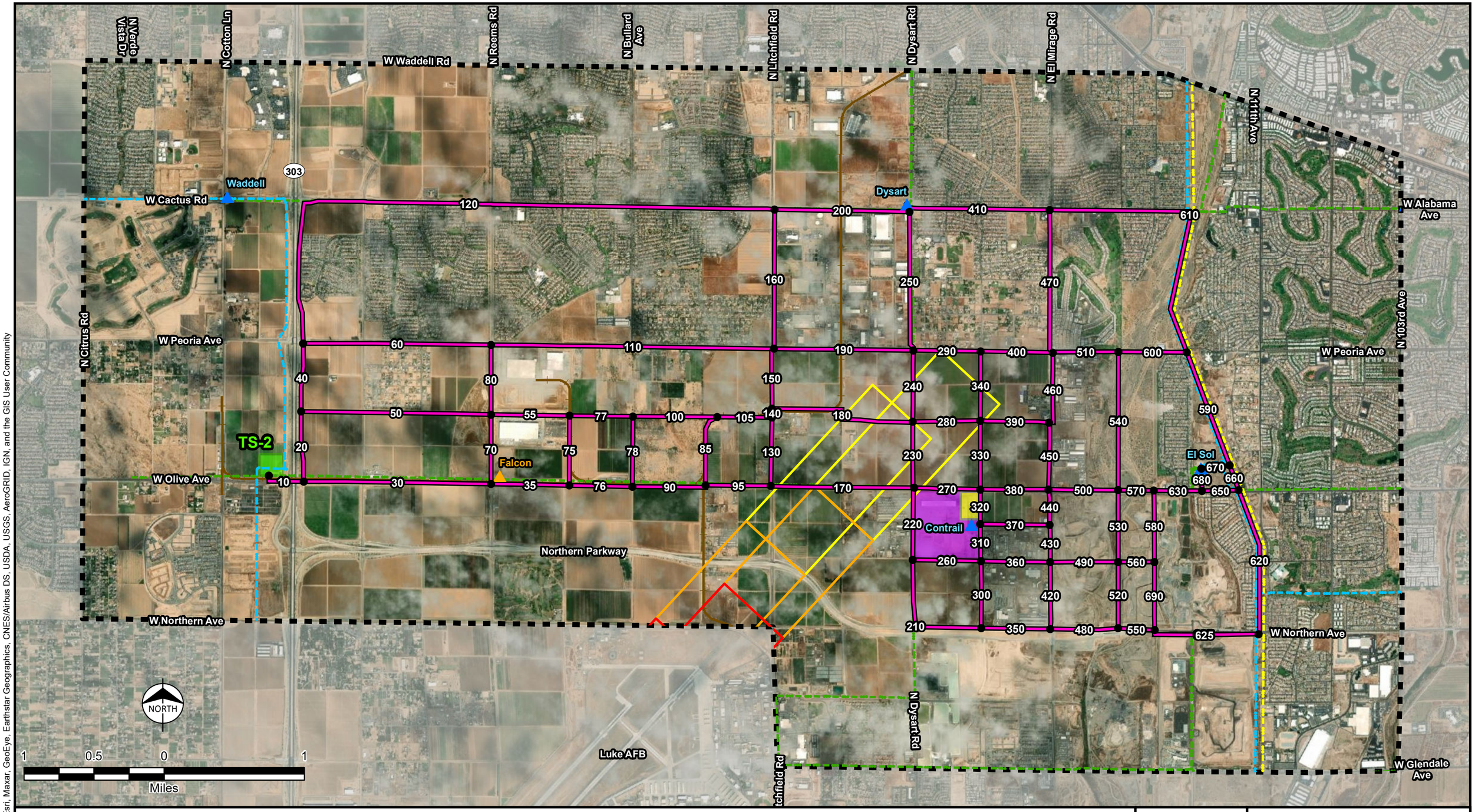
3.4 Alternatives Identification

The results of the opportunities and constraints analysis were used to assist with the identification of alternative route segments (i.e., links), which are illustrated on Figure 7 Preliminary Route Segments. Links are defined as short segments of potential transmission line alignment that are subsequently combined to form routes (connections) between two substations. The map illustrates a all the within the preliminary route segments that were identified. Alternative route segments were identified along many of the opportunity areas (e.g. power lines, railroad, section lines, roadways) where adjacent land uses had low to moderate sensitivity levels. In some cases, alternative segments crossed land uses with high sensitivity to connect to other links required to form a complete route. Overall, the preliminary route segments would be considered reasonably compatible with the existing and planned land uses, especially in areas with existing power lines and road right-of-way that can be utilized for construction, operation, maintenance of the proposed 230/69 KV transmission line.

3.5 Public Outreach

Once the preliminary route segments were identified, a first round of public outreach was conducted focused on allowing the agencies and public to review and comment on the preliminary route segments. A primary goal of the outreach was to collect comments from the agencies and public, as well as identify any potential concerns for the preliminary route segments. The public outreach process consisted of several means of communications including the following:

- Agency briefings
- Newsletter #1
- Social media announcements
- Virtual open house website
- Live virtual public meeting
- Comment forms/questionnaire
- Email and telephone voice message line



Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Preliminary Route Segments
- Route Link
- 100 Route Link Number
- Route Link Node

Source: Esri, EIA, USGS - PADUS

Figure 7:
Preliminary Route Links
West Valley Central 230kV Connection Project

4.0 PRELIMINARY ROUTE OPTIONS

Using the information from the detailed inventory and impact assessment/mitigation planning studies, a series of routes were identified. The preliminary routes covered a range of geographic locations and were compiled with the goal of identifying the alternatives routes that would be most compatible with the minimize impacts to the environment and have support from the public and agencies within the in the study area.

4.1 Preliminary Routes

APS has identified several potential route options that would meet the project purpose and need for the 230kV power lines. During the planning process, APS identified the need to construct and operate three separate 230kV power line routes to connect to the recently constructed Contrail Substation.

1. A route connecting from the Future TS-2 Substation near the intersection of Loop 303 Freeway and Olive Avenue.

2. A route connecting from the existing El Sol Substation near the intersection of Olive Avenue and North 114th Avenue.

3. A route connecting from the existing El Sol White Tanks 230kV power line near the intersection of Northern Avenue and North 111th Avenue.

There was a total of eight Preliminary Routes A – H identified, which are shown on maps in Figures 8 – 15. Each route provides a connection between an origination point as described above to the Contrail Substation Preliminary Routes A and C also include some sub-route options that could be used in conjunction with the primary route to resolve potential landowner concerns with existing or future land use.

4.2 Public Outreach

Once the preliminary routes were identified, a second round of public outreach was conducted focused on allowing the agencies and public to review and comment on the preliminary routes. A primary goal of the outreach was to collect comments from the agencies and public, as well as identify any potential concerns for the preliminary routes. The public outreach process consisted of several means of communications including the following:

- Agency briefings

- Newsletter #2
- Social media announcements
- Virtual open house website
- Live virtual public meeting
- Comment forms/questionnaire
- Email and telephone voice message line

4.3 Impact Summary

An impact assessment was conducted for land use and visual resources identified along each of the Preliminary Routes. The results of the impact assessment are presented in the tables within the sections below. Impacts are characterized in terms of potential for high, moderate, or low impact levels resulting from the construction, operation, and maintenance of the proposed transmission line for each of the Preliminary Routes.

4.3.1 Existing Land Use Impacts

	Impact Level (miles)			
Route	**High**	**Moderate**	**Low**	**Total**
Route A	-	0.80	6.34	7.14
Route A1	-	0.05	1.05	1.10
Route A3	-	0.78	0.21	0.99
Route B	-	1.63	4.90	6.53
Route C	0.22	0.55	5.99	6.76
Route C1	-	0.13	1.88	2.01
Route D	0.22	1.56	4.42	6.19
Route E	0.11	0.52	1.62	2.25
Route F	0.11	0.74	1.41	2.26
Route G	-	0.19	2.56	2.75
Route H	-	0.19	2.56	2.75

4.3.2 Planned Land Use Impacts

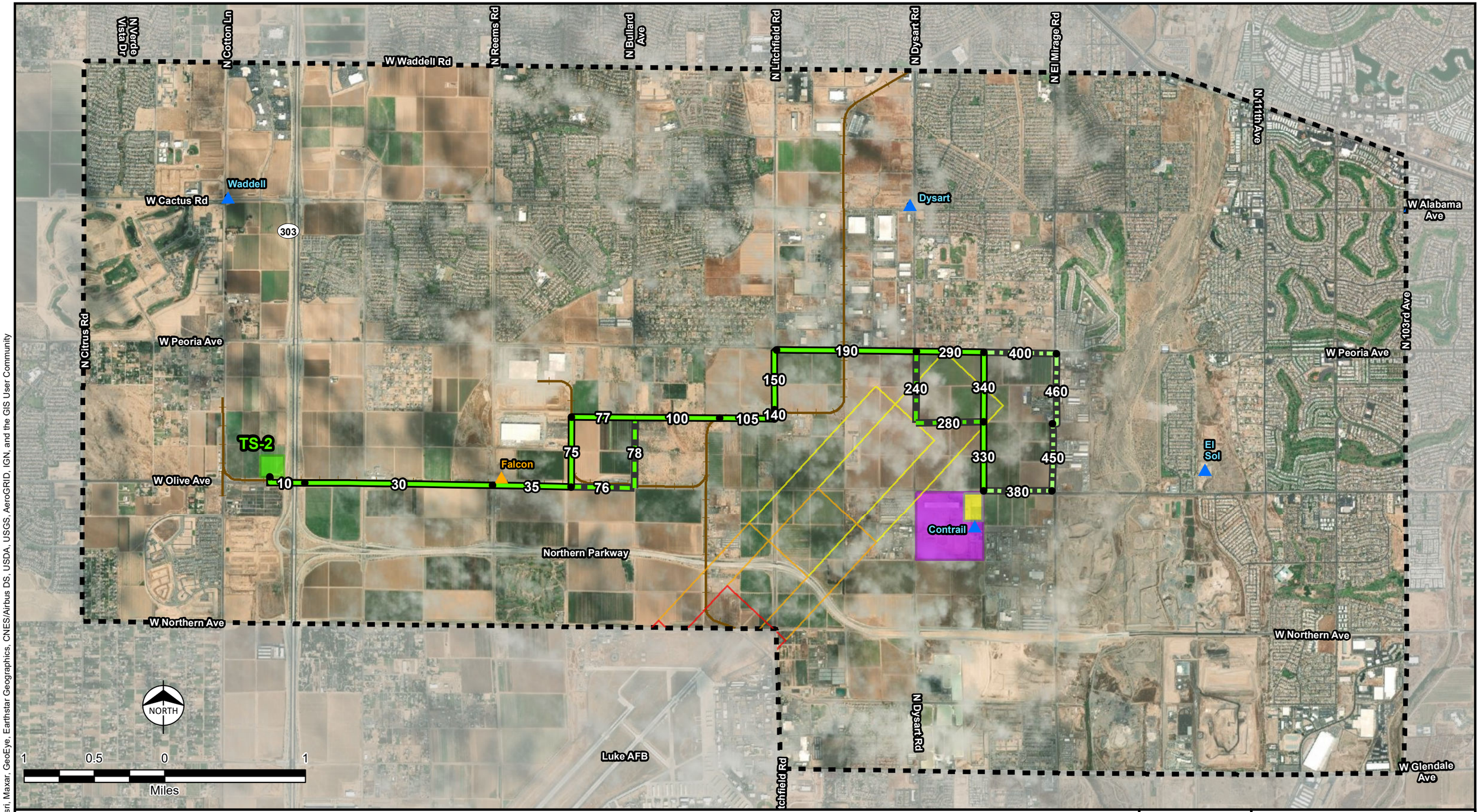
Route	Impact Level (miles)			
	High	Moderate	Low	Total
Route A	-	0.33	6.81	7.14
Route A1	-	-	1.10	1.10
Route A3	-	0.78	0.21	0.99
Route B	-	1.37	5.16	6.53
Route C	-	1.18	5.57	6.76
Route C1	-	-	2.01	2.01
Route D		2.20	3.99	6.19
Route E	0.10	-	2.15	2.25
Route F	0.10	0.07	2.09	2.26
Route G	-	-	2.75	2.75
Route H	-	-	2.75	2.75

4.3.3 Existing Visual Impacts

Route	Impact Level (miles)			
	High	Moderate	Low	Total
Route A	1.38	2.20	3.56	7.14
Route A1	-	-	1.10	1.10
Route A3	0.13	0.61	0.25	0.99
Route B	0.70	2.54	3.28	6.53
Route C	2.52	1.42	2.82	6.76
Route C1	1.02	0.27	0.72	2.01
Route D	1.77	1.36	3.06	6.19
Route E	-	1.48	0.77	2.25
Route F	-	1.48	0.78	2.26
Route G	1.15	0.57	1.03	2.75
Route H	1.12	0.56	1.08	2.75

4.3.4 Planned Visual Impacts

Route	Impact Level (miles)			
	High	Moderate	Low	Total
Route A	1.43	2.92	2.79	7.14
Route A1	-	-	1.10	1.10
Route A3	-	0.23	0.76	0.99
Route B	0.40	2.88	3.25	6.53
Route C	2.57	1.85	2.34	6.76
Route C1	1.02	0.27	0.72	2.01
Route D	1.45	1.39	3.36	6.19
Route E	-	1.48	0.77	2.25
Route F	-	1.48	0.78	2.26
Route G	1.71	0.44	0.59	2.75
Route H	1.29	0.44	1.02	2.75



Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

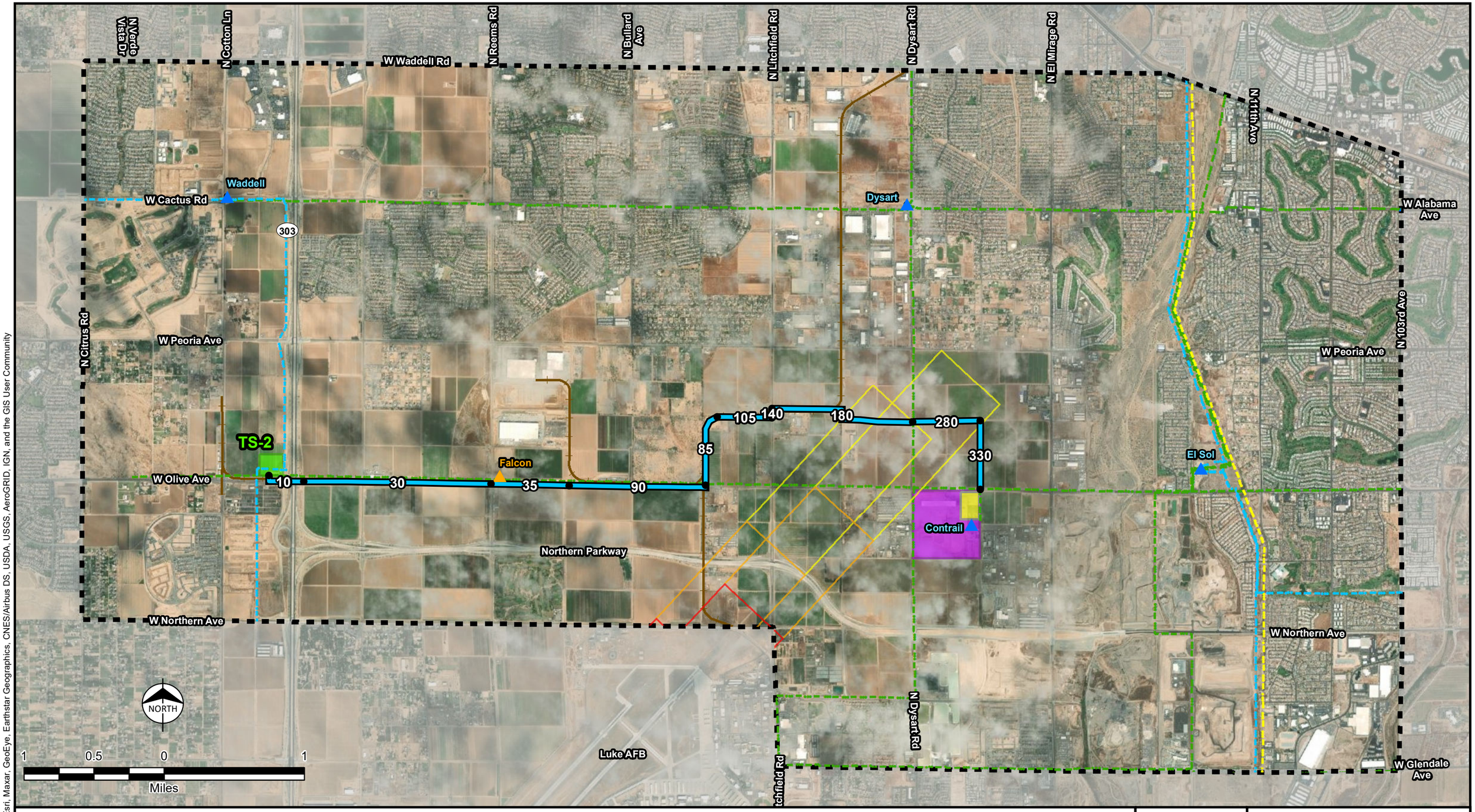
Preliminary Routes
- Route A
- Route A-1 (Optional, Replaces Links 75 and 77)
- Route A-2 (Optional, Replaces Links 330 and 340)
- Route A-3 (Optional, Replaces Links 290 and 340)

100 Route Link Number

● Route Link Node

Figure 8:
Preliminary Route A
West Valley Central 230kV Connection Project

Source: Esri, EIA, USGS - PADUS



Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

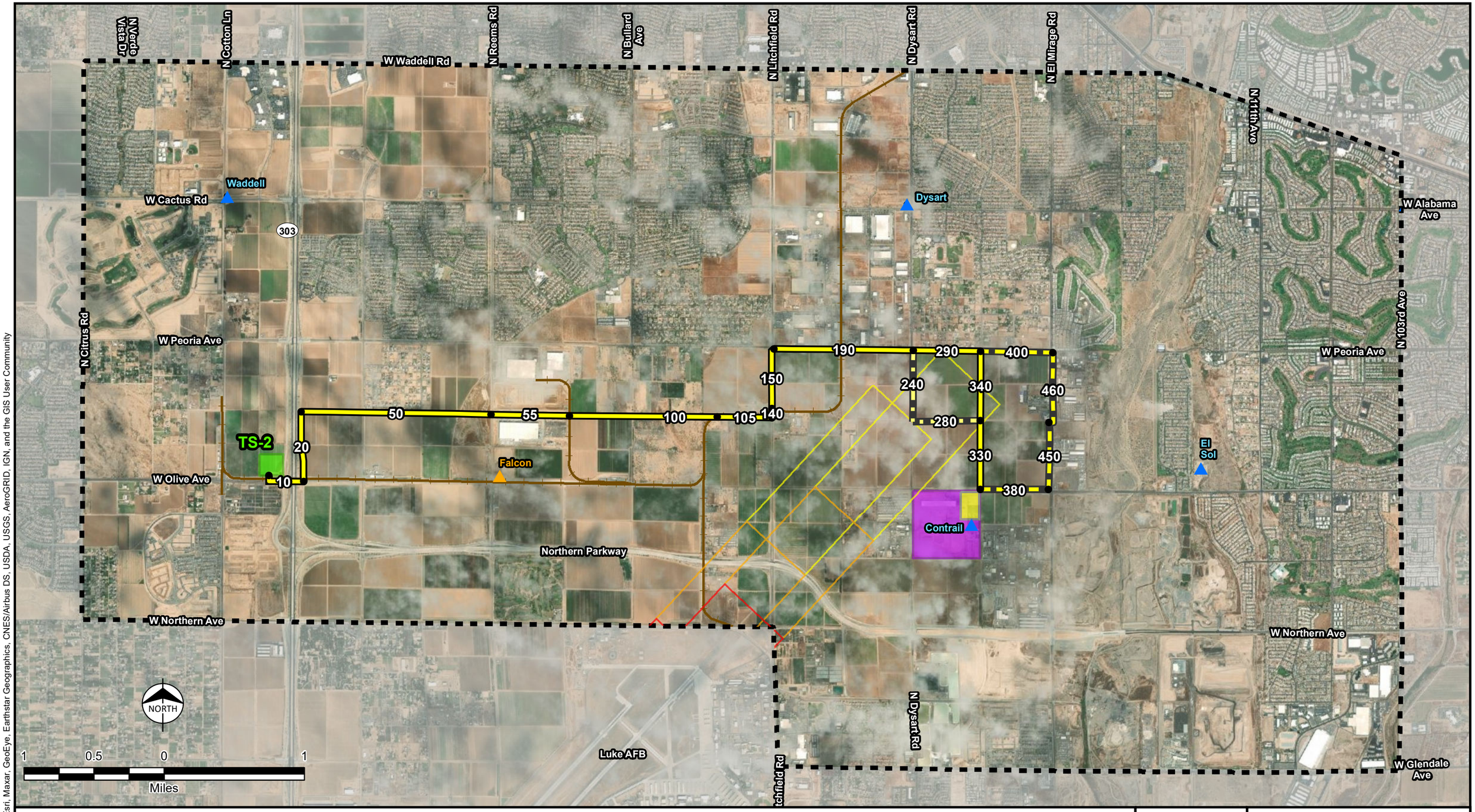
Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Preliminary Routes
- Route B
- 100 Route Link Number
- Route Link Node

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, EIA, USGS - PADUS

Figure 9:
Preliminary Route B
West Valley Central 230kV Connection Project



Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

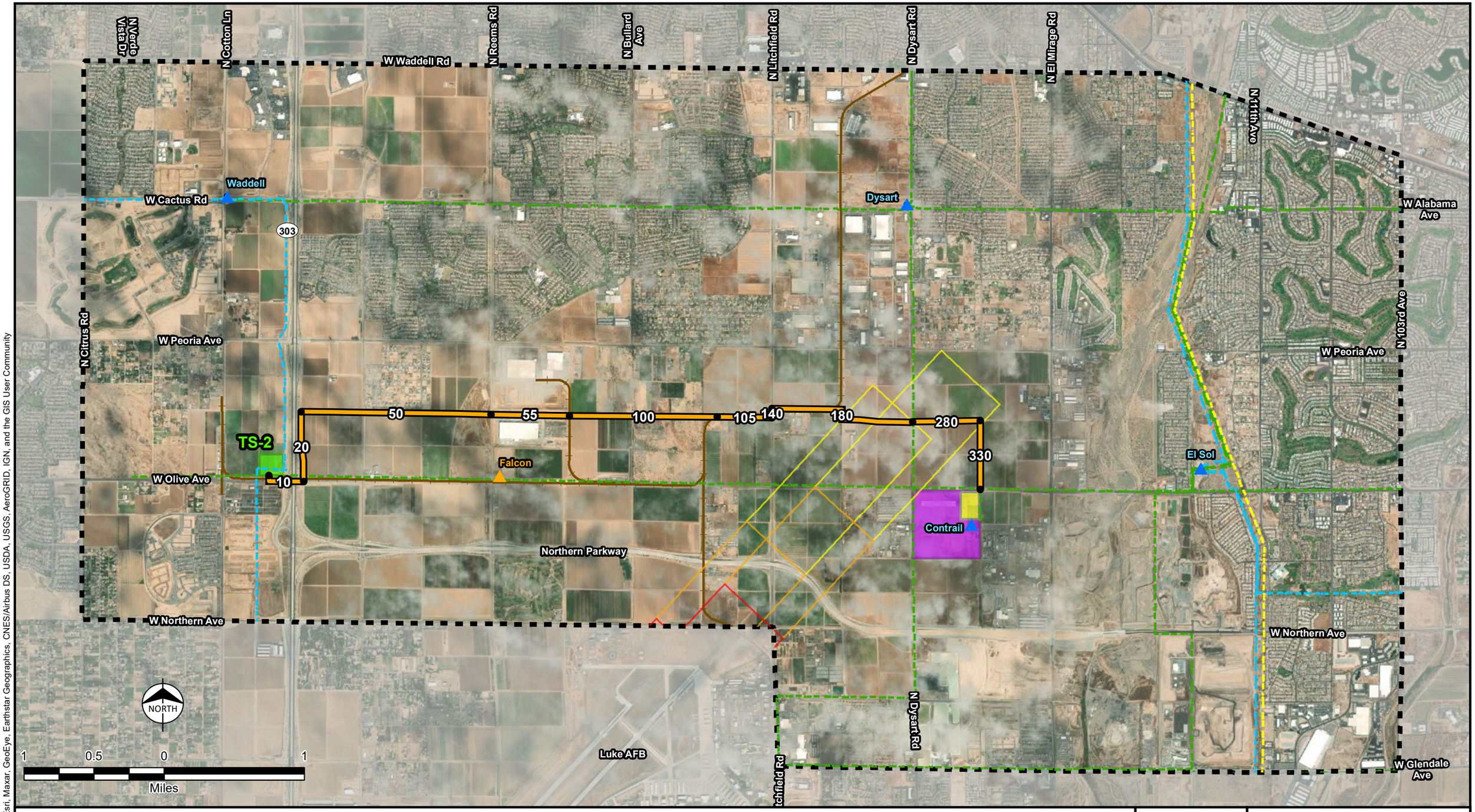
Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Preliminary Routes
- Route C
- Route C-1 (Optional, Replaces Links 330 and 340)
- Route C-2 (Optional, Replaces Links 290 and 340)
- 100 Route Link Number
- Route Link Node

Figure 10:
Preliminary Route C
West Valley Central 230kV Connection Project

Source: Esri, EIA, USGS - PADUS



Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

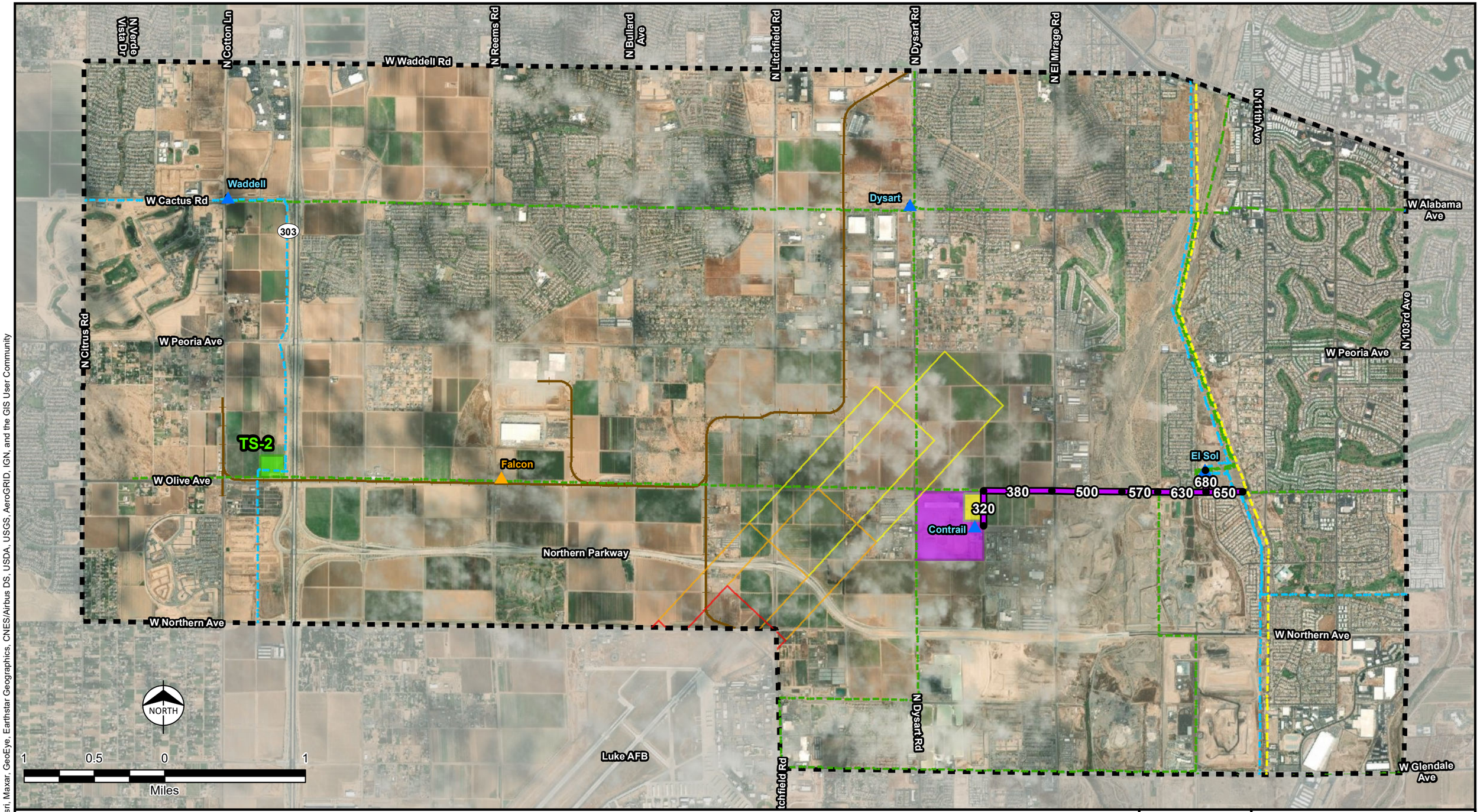
Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Preliminary Routes
- Route D
- 100 Route Link Number
- Route Link Node

Figure 11:
Preliminary Route D
West Valley Central 230kV Connection Project

Source: Esri, EIA, USGS - PADUS



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

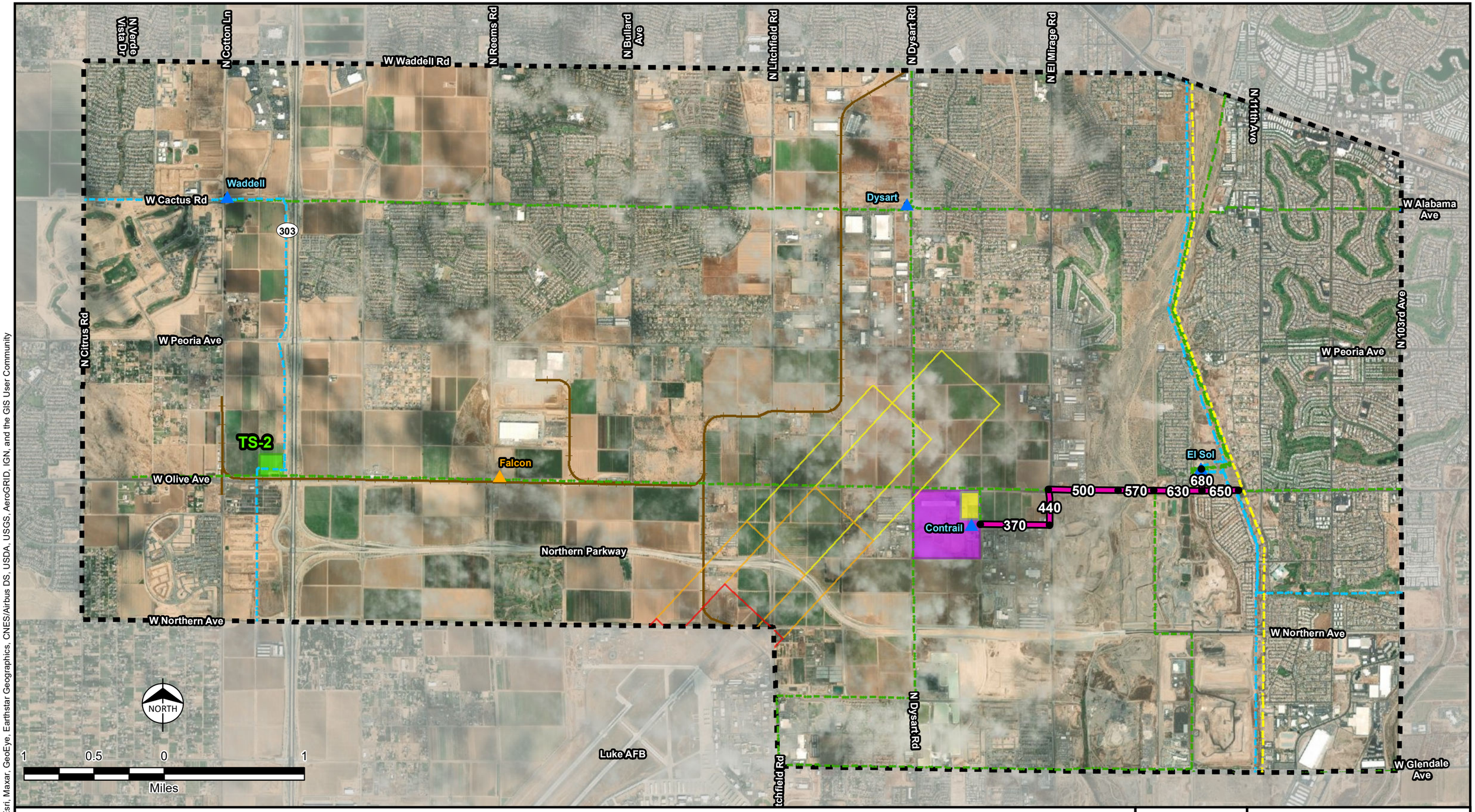
Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Preliminary Routes
- Route E
- 100 Route Link Number
- Route Link Node

Source: Esri, EIA, USGS - PADUS

Figure 12:
Preliminary Route E
West Valley Central 230kV Connection Project



Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

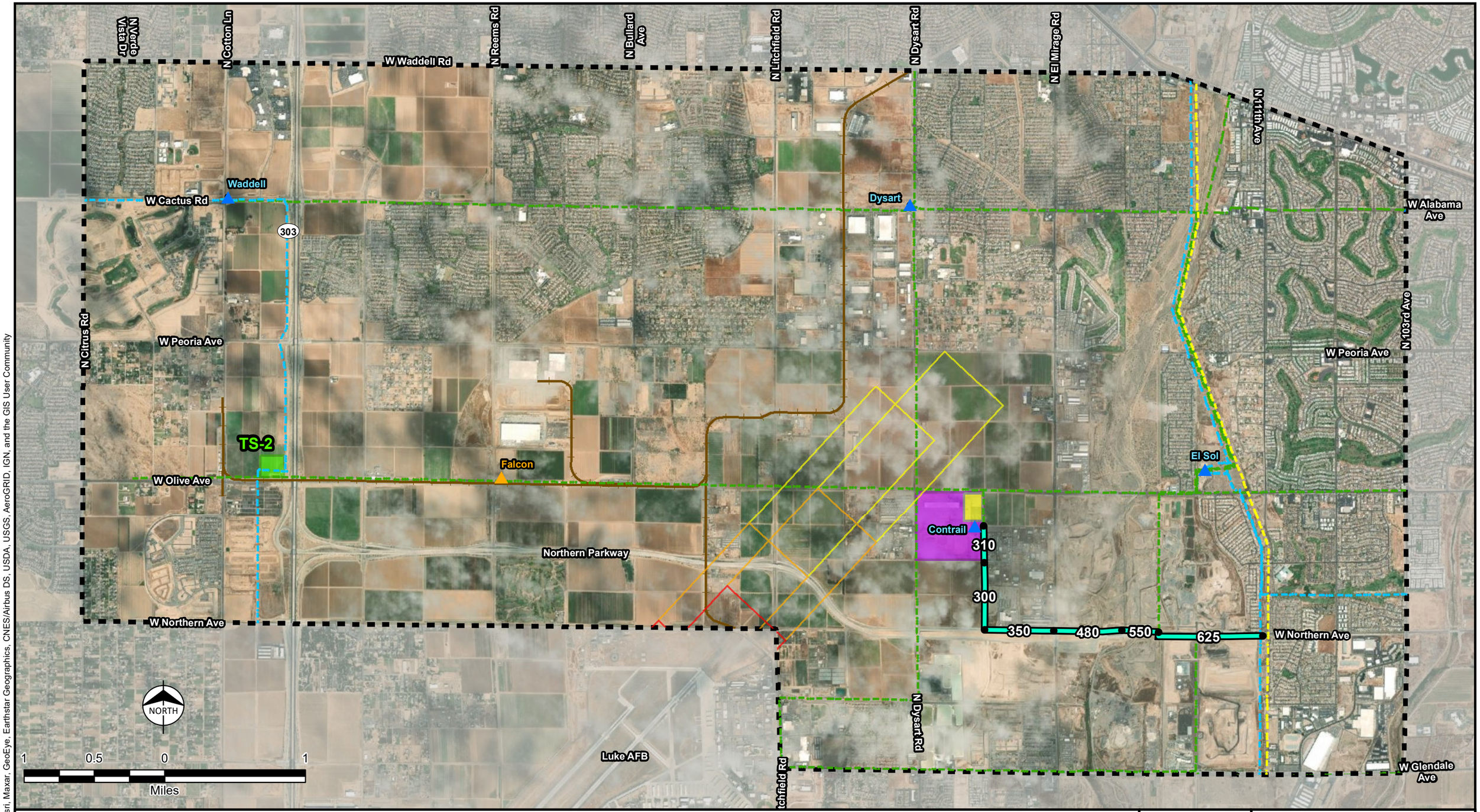
Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Preliminary Routes
- Route F
- 100 Route Link Number
- Route Link Node

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, EIA, USGS - PADUS

Figure 13:
Preliminary Route F
West Valley Central 230kV Connection Project



Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

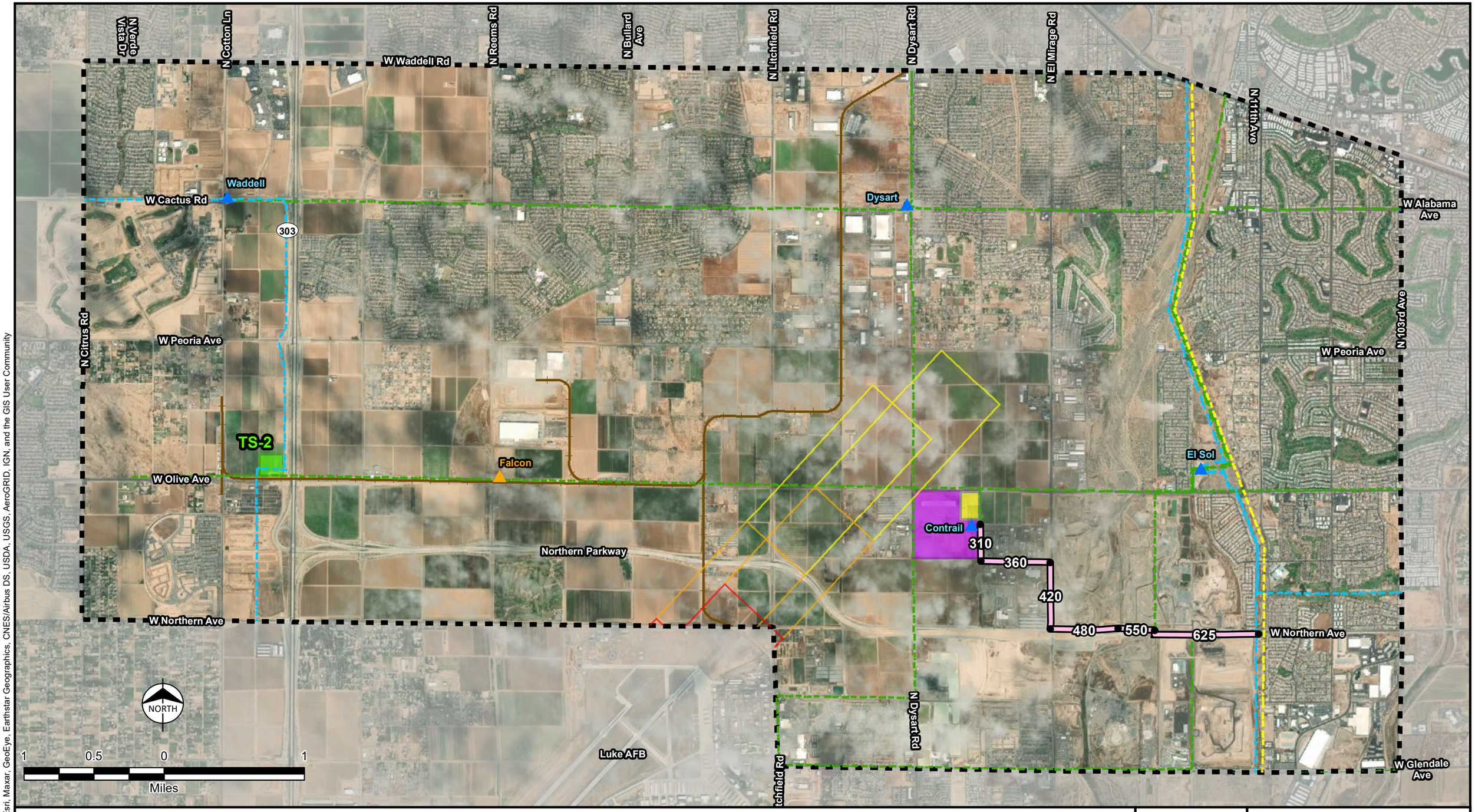
Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Preliminary Routes
- Route G
- 100 Route Link Number
- Route Link Node

aps

Figure 14:
Preliminary Route G
West Valley Central 230kV Connection Project

Source: Esri, EIA, USGS - PADUS



Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Preliminary Routes
- Route H
- 100 Route Link Number
- Route Link Node

aps

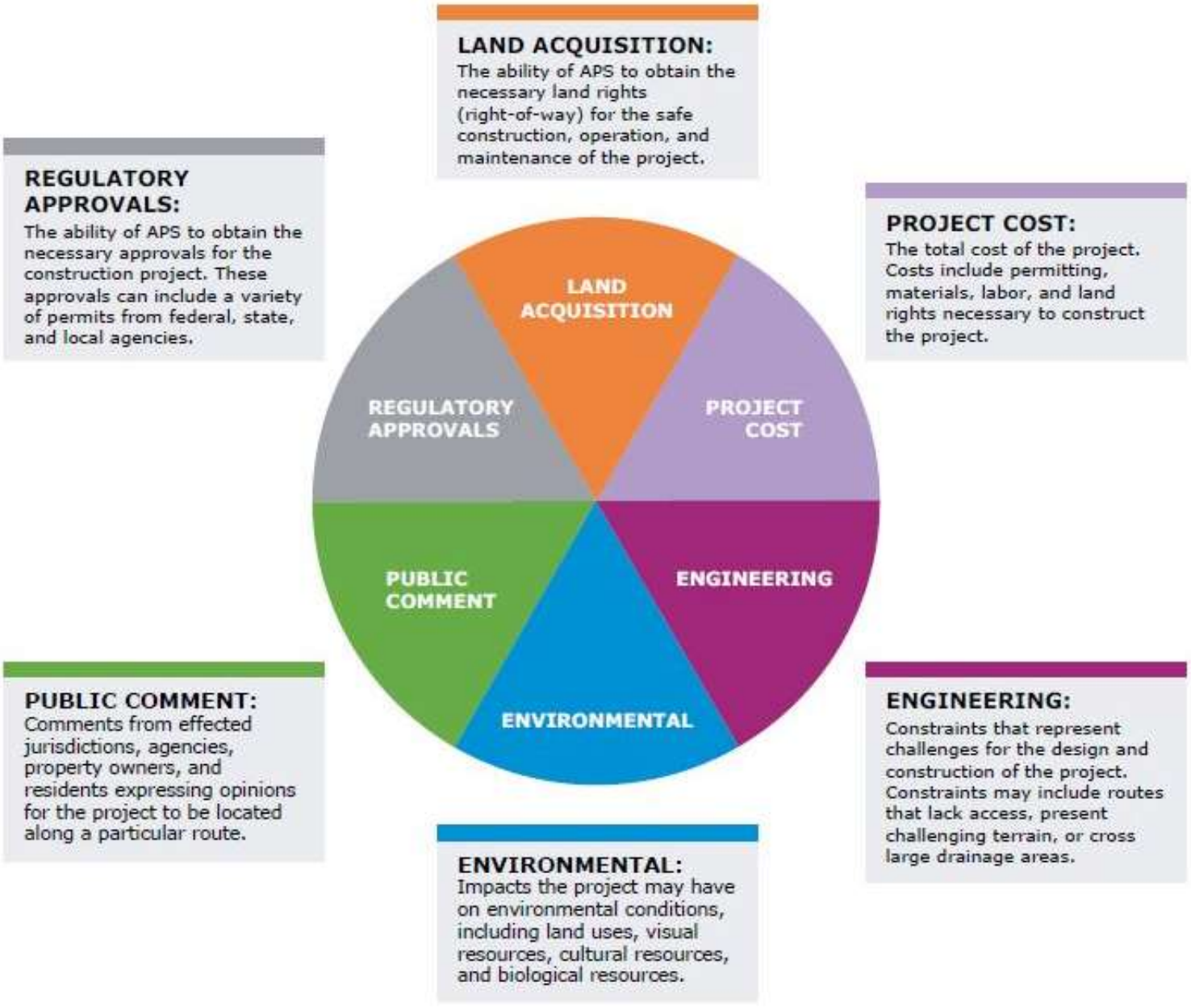
Figure 15:
Preliminary Route H
West Valley Central 230kV Connection Project

Source: Esri, EIA, USGS - PADUS

5.0 ROUTE SELECTION

5.1 Criteria

APS uses a range of important criteria when identifying their preferred route for selection. These criteria must be considered objectively and are not ranked in any order of importance. The figure below illustrates the route selection criteria APS used when making its decision on which route(s) to carry forward.



5.2 Preferred Route

The preferred routes that APS selected balances the potential environmental impacts with the purpose and need for the project. The preferred routes meet the design, right-of-way, and cost considerations, and is generally supported by the public and agencies. The results of the impact assessment are presented in the tables below summarizing the environmental impacts for the preferred route.

5.2.1 Existing Land Use Impacts

Route	Impact Level (miles)			
	High	Moderate	Low	Total
Route A	-	0.63	6.47	7.1
Route E	0.11	0.52	1.62	2.25
Route G	-	0.19	2.56	2.75
Total	0.11	1.34	10.65	12.1

5.2.2 Future Land Use Impacts

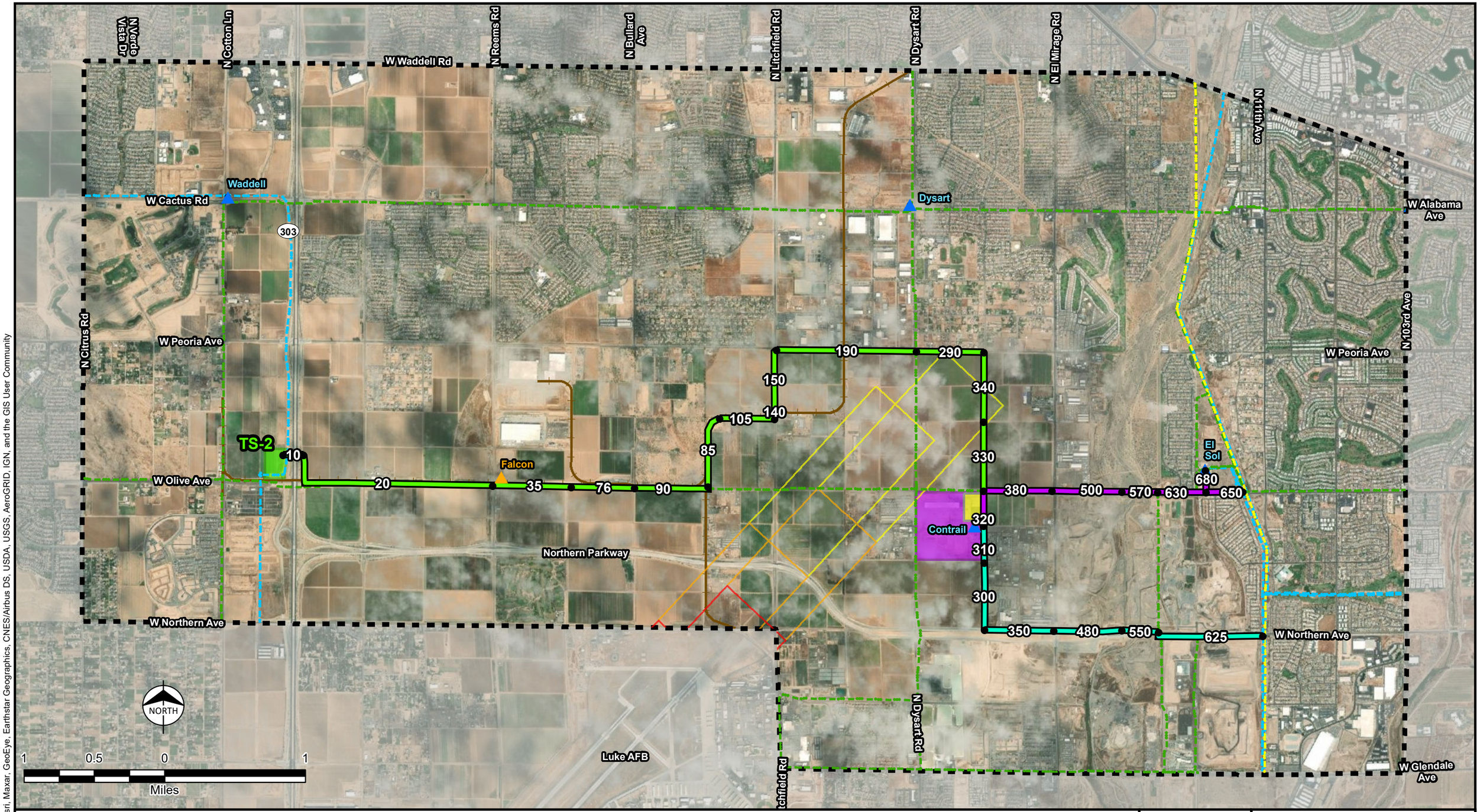
Route	Impact Level (miles)			
	High	Moderate	Low	Total
Route A	-	0.36	6.74	7.1
Route E	0.1	-	2.15	2.25
Route G	-	-	2.75	2.75
Total	0.1	0.36	11.64	12.1

5.2.3 Existing Visual Impacts

Route	Impact Level (miles)			
	High	Moderate	Low	Total
Route A	1.46	2.6	3.04	7.1
Route E	-	1.48	0.77	2.25
Route G	1.15	0.57	1.03	2.75
Total	2.61	4.65	4.84	12.1

5.2.4 Planned Visual Impacts

Route	Impact Level (miles)			
	High	Moderate	Low	Total
Route A	1.52	3.35	2.23	7.1
Route E	-	1.48	0.77	2.25
Route G	1.71	0.44	0.59	2.75
Total	1.52	5.27	3.59	12.1



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, EIA, USGS - PADUS

Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Routes
- Preferred Route
- Route E
- Route G
- 100 Route Link Number
- Route Link Node

aps

Figure 16:
Preferred Route
West Valley Central
230kV Connection Project

6.0 REFERENCES

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EXHIBIT C – BIOLOGICAL WEALTH SPECIAL STATUS SPECIES AND SPECIES OF CONCERN

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

Exhibit C:

Describe any areas in the vicinity of the proposed site or route which are unique because of biological wealth or because they are habitats for rare and endangered species. Describe the biological wealth or species involved and state the effects, if any, the proposed facilities will have thereon.

OVERVIEW

Exhibit C addresses species protected by federal or state laws and policies because of their conservation status. Exhibit C also addresses whether any areas protected for conservation purposes (i.e., areas of biological wealth) are present in or near the vicinity of the Project. The Project vicinity, or Project area, is generally defined as all areas within a 2-mile buffer of the Proposed Routes identified in this application. The Project area is where all ground disturbance associated with the Project would occur within the Project area. Exhibit C addresses the complete results of database queries and discusses whether identified species or protected areas may be present or affected by the Project.

LAWS AND POLICIES

Laws and policies protecting rare species on private lands in Arizona include the following:

- The U.S. Fish and Wildlife Service (USFWS) administers the Endangered Species Act (ESA) of 1973, as amended. The ESA protects species listed as threatened or endangered from "take" (generally, directly, or indirectly harming or disturbing listed species and/or their habitat). Prior to being listed as threatened or endangered, a proposed listing rule is issued. When agency priorities take precedence over certain listing actions, species may also be designated as candidates, to be evaluated and potentially listed when no longer precluded by higher-priority actions. The ESA also allows for the designation of critical habitat (areas essential to the survival and recovery of listed species), although designation of critical habitat is not always required when a species is listed. Critical habitat is an administrative designation of a defined area with specific characteristics important to the survival and recovery of a listed species. Designation of critical habitat can affect federal actions, but not state or private actions without a federal nexus.

- The Arizona Game and Fish Department (AGFD) manages and conserves wildlife in Arizona. Nearly all take of wildlife is regulated in some manner through the hunting and fishing license system. Arizona does not have a counterpart to the federal ESA, but a list of rare species (Wildlife Species of Concern) was created in 1996 without creating any specific statutory protections for those species. However, hunting regulations are used to provide some protection, and no hunting or capture of any of those species is currently allowed.

- The Arizona State Wildlife Action Plan (SWAP) provides strategies and conservation actions for managing Arizona's fish, wildlife, and wildlife habitats that are in greatest need of conservation. The current SWAP was updated in 2012 for a 10-year period as funded through a state-federal partnership and grant program (AGFD, 2012). The SWAP identifies Species of Greatest Conservation Need (SGCN), in several tiers. Tier 1A includes ESA-listed and candidate species or those covered by conservation agreements and closed season species. Tier 1B includes species that do not meet Tier 1A criteria, but are regionally rare or declining, species with a United States range primarily in Arizona that are dependent on conservation efforts within the state, and other species with identified conservation issues that may warrant management action. Tier 1C includes species with substantial data gaps and unknown conservation status, but conservation concern may be warranted. Other tiers include species that are common, widespread, or are in stable populations. Exhibit C addresses Tier 1A and 1B SGCNs. Exhibit C does not address Tier 1C SGCNs, because the lack of conservation information does not necessarily indicate that those species meet the definition of "rare or endangered species" included in the statute. All SGCNs except Tiers 1A and 1B are addressed collectively with other wildlife in Exhibit D.

- Native plants in Arizona are managed by the Arizona Department of Agriculture (AZDA), which regulates harvest and salvage. Harvest or salvage of most plant species may be permitted or required. Plants listed as Highly Safeguarded may only be taken or salvaged for scientific or conservation purposes and include plants that may become jeopardized or in danger of extinction throughout all or a significant portion of their ranges and includes plants resident to the state and list as endangered, threatened, or category 1 in the ESQA. A field survey prior to construction would confirm the presence of any Highly Safeguarded plant species, or any other rare plant species present in the Project area, although none are expected due to the level of urbanization and agricultural activity in the Project area.

No other federal or state agency has jurisdiction over sensitive biological resources in the Project area.

INVENTORY METHODS

On August 21, 2020, Burns & McDonnell Engineering, Inc. (BMcD) requested an automated database query report using the AGFD's Arizona Environmental Online Review Tool Report. The query returned special status species, special areas, SGCNs, and species of economic and recreation importance that may be present in the Project area. Due to the Project area including a 2-mile buffer, the AGFD's database query may result in the inclusion of habitat types and species that are not present in the direct Project impact areas used for the remainder of the analysis. However, Table C-1 addresses the full results of the query. The USFWS maintains an online database, the Information for Planning and Conservation (IPaC), that generates ESA-listed species and their critical habitat that may be present in an area subject to a query. The IPaC query results for the Project area are attached to this exhibit (USFWS, 2021a).

INVENTORY RESULTS

Protected Areas

The Project area includes two Maricopa County Wildlife Movement Areas – Riparian Wash according to the AGFD database query which are, Agua Fria (lower) and New River – Ganial Peak Wash. There are no other areas protected for the benefit of wildlife, or other important wildlife concentration areas such as connectivity zones, critical habitat, or important bird areas that could be considered Areas of Biological Wealth in the Project area.

Special Status Species

Table C-1 addresses species listed in the reports from the AGFD and IPaC databases. Table C-1 provides summary information, including notes on whether each species may be present in the Project area. If a species may be present, Exhibit C includes a discussion of the species and how it may be affected by the Project.
Because the Project area has been previously subjected to ground disturbance for agricultural, commercial, residential, and industrial development, minimal undisturbed native vegetation remains. Some native plant species are present in disturbed areas and the floodplain of the Agua Fria River, but no intact native vegetation communities are present. Most sensitive species in Table C-1 are dependent on native vegetation and habitat and are not likely to be present in the Project area. However, some species such as bats, raptors, and migratory birds can live or forage in modified habitats such as that within the Project area. Table C-1 addresses the potential for these species to be present.

The discussions of species and potential impacts of the Project addresses species with similar habitat uses or types of impacts collectively wherever possible.

Determinations in Table C-1 regarding the potential presence of a species in the Project area are based on database queries and desktop review of the habitat and species distribution or records of occurrence from the following sources:

- Non-game and Endangered Wildlife (AGFD, 2021)
- The Cornell Lab – All About Birds and eBird (Cornell University, 2019)
- A Guide to the Amphibians and Reptiles of California (California Herps, 2021)
- USFWS Online Resources and Species Profiles (see References)

Bats

Eleven species of special-status bats were predicted within the Project area based on modeling, eight of which are identified as potentially present due to range and/or habitat. These species are discussed together here because the potential issues are similar for all species. The Project area does not appear to support suitable native roost habitat for any bat species. However, anthropogenic features in the Project area such as bridges and old buildings may support roosting by bats. The surrounding region to the west and north likely includes similar features used by roosting bats in addition to native roost habitat such as large trees, rock crevices, caves, or mines. Many desert bat species prefer to forage over water, where insect prey is most available. Agricultural areas often also support high densities of insects and can be an important resource for foraging bats and these areas are prevalent in the Project area. Because some bat species travel long distances to forage, the Project area likely supports foraging bats regardless of the absence of roost sites within the Project area. Foraging habitat is also present along the Agua Fria River within the eastern portion of the Project area.

Terrestrial Mammals

A total of five terrestrial mammals were predicted within the Project area based on modeling and a sixth species, Sonoran pronghorn (*Antilocapra americana sonoriensis*), was identified in the IPaC as potentially present (USFWS, 2021a). Due to lack of native habitat and limited distribution for some mammal species, terrestrial mammals are not likely to be present in the Project although it could occur infrequently.

Raptors

Three raptor species were documented within the Project area according to the AGFD heritage database including western burrowing owl (*Athene cunicularia hypugaea*), American peregrine falcon (*Falco peregrinus anatum*), and the Sonoran Desert population of the bald eagle (*Haliaeetus leucocephalus* pop. 3). A fourth raptor, the ferruginous hawk (*Buteo regalis*) was predicted to occur based on modeling (AGFD, 2020). Based on habitat, distribution and known behavior, the western burrowing owl is the only species likely to be present in the Project area where they may modify existing small mammal burrows in areas with soft soils and open vegetation structure, including grasslands, desert scrub, and agricultural areas. This species is also known to use anthropogenic features such as culverts for nesting and roosting. Other raptor species select nest sites without human disturbance and the Project area is surrounded by urbanization from agricultural activities, residential, commercial, and industrial development. However, all species forage widely and may occasionally pass through or hunt prey in or near the Project area.

Waterbirds

One species of waterbird was identified as documented in the Project area, the Yuma ridgway's rail (*Rallus obsoletus yumanensis*). Other waterbirds listed as potentially present in the Project area based on AGFD and IPaC are wood duck (*Aix sponsa*), American bittern (*Botaurus lentiginosus*), and California least tern (*Sterna antillarum browni*). The wood duck and American bittern prefer bodies of water with vegetation, although either species may occasionally be observed in non-typical habitat. These species may only be present in manmade bodies of water surrounding the Project area but are not likely to occur in the Project area. The California least tern is a shorebird species and is not likely to inhabit the Project area or may occur incidentally.

Other Birds

The yellow-billed cuckoo (Western Distinct Population Segment, *Coccyzus americanus*) and southwestern willow flycatcher (*Empidonax traillii extimus*) are two bird species documented within the Project area. These species are not likely to occur in the Project area due to lack of riparian habitat upon which these species depend and are more likely to occur in riparian habitat much farther south of Project area along the Gila River. Critical habitat has been designated for both species, but that habitat is located outside the Project area.

Other species listed in the data as potentially present include the following:

- gilded flicker (*Colaptes chrysoides*),
- Gila woodpecker (*Melanerpes uropygialis*)
- Lincoln's sparrow (*Melospiza lincolnii*)
- Abert's towhee (*Melozone aberti*)
- savannah sparrow (*Passerculus sandwichensis*)
- yellow warbler (*Setophaga petechia*)
- LeConte's thrasher (*Toxostoma lecontei*)
- pacific wren (*Troglodytes pacificus*)
- Arizona Bell's vireo (*Vireo bellii arizonae*)

Gila woodpecker, Lincoln's sparrow, Abert's towhee, savannah sparrow, and yellow warbler may be present due to their potential use of urban habitat and/or agricultural areas. The gilded flicker, LeConte's

thrasher, Pacific wren, and Arizona Bell's vireo are less likely to occur due to the urban environment and lack of intact habitat. These species may still occasionally forage or disperse through the Project.

The IPaC also lists the USFWS Birds of Conservation Concern (BCC) for the Project area which include the following species:

- Bendire's thrasher (*Toxostoma bendirei*)
- black-chinned sparrow (*Spizella atrogularis*)
- Clark's Grebe (*Aechmophorus clarkia*)
- Costa's Hummingbird (*Calypte costae*)
- Gila woodpecker (*Melanerpes uropygialis*)
- Lawrence's goldfinch (*Carduelis lawrencei*)
- marbled godwit (*Limosa fedoa*)
- willet (*Tringa semipalmata*)

These species are also less likely to occur due to lack of intact habitat but may forage or migrate through the Project area.

Fishes

Two fish species were identified as potentially present in the Project area, Gila topminnow (*Poeciliopsis occidentalis*) and roundtail chub (*Gila robusta*). The Gila topminnow is a native species of the Gila River historically but is now only found in limited distribution in specific areas of Pima County. The roundtail chub is not likely present due to lack of perennial rivers in the Project area.

Reptiles

Of the 10 reptile species identified as potentially occurring in the Project area, only the variable sandsnake (*Chilomeniscus stramineus*) and Sonoran whipsnake (*Coluber bilineatus*) are anticipated to be present in the remnant desert areas of the urban fringes. The other species are not likely to occur due to their range occurring outside the Project area, lack of native habitat, and/or the urbanized environment present in the Project area.

Amphibians

The lowland leopard frog (*Lithobates yavapaiensis*), Arizona toad (*Anaxyrus microscaphus*) and Sonoran Desert toad (*Incilius alvarius*) were identified as potentially present in the Project area. None of these species are likely to occur due to lack of permanent water features and habitat or limited distribution that occurs outside the Project area.

Insects

The monarch butterfly (*Danaus plexippus*) was the only insect identified as potentially present in the Project area. This species is likely to migrate through the Project area during the spring and summer months between California and Mexico.

IMPACT ASSESSMENT RESULTS

Bats

Bats can collide with manmade structures, particularly during long-distance migration. Migrating special-status bats often fly high above ground level and do not actively echolocate. However, during normal foraging activity, special-status bats are actively using echolocation and are typically able to detect and avoid features such as overhead transmission lines. No information suggests that transmission lines in a setting such as the Project area would pose a risk to special-status bats. Ground disturbance from the Project, taking place in previously disturbed areas and farm fields, would not appreciably affect any special-status bat species by removing foraging habitat. Abundant foraging habitat is present in farmland throughout the Project area and in patchy riparian habitat along the Aqua Fria River to the east. Since work will occur during daylight hours, impacts on bats are not anticipated and no nesting or roosting habitat will be impacted.

Birds

Transmission lines can pose a collision risk to birds, including raptors (Avian Powerline Interaction Committee [APLIC], 2012). However, many factors influence whether birds are likely to collide with a specific transmission line. Collision risk is relatively low when multiple transmission lines are co-located or placed near other infrastructure, so that the collective infrastructure is likely to be perceived by birds and avoided. Birds also often attempt to fly above transmission lines and other obstacles. The Project would be constructed in an area with numerous existing transmission lines and are not likely to contribute to an increase in special-status bird mortality within the Project area.

Electrical transmission and distribution lines can also cause bird electrocution, although the risk is highest with lower-voltage lines. Electrocution occurs when a bird simultaneously contacts energized and grounded electrical components. High-voltage lines require spacing between those components that cannot be spanned even by very large birds, so that electrocution risk is precluded almost entirely (APLIC, 2006). The transmission line would be designed in accordance with APLIC guidelines to avoid the risk of electrocution to birds.

Most special-status birds are not likely to nest in the Project area, given the entirely altered vegetation and ongoing human disturbance and activity associated with agriculture and industrial use. However, burrowing owls can occupy and nest in fallow farmland, field margins, and canal banks. Because burrowing owls may in some cases retreat underground when alarmed rather than flying, and because their nests are underground, they are at risk of harm from ground-disturbing activities such as that resulting from construction of the Project. Burrowing owls may be present and a field survey of the Project area is recommended prior to construction to determine whether burrowing owls inhabit any areas proposed for disturbance.

It is not anticipated any special-status birds are dependent on the disturbed, altered habitat present in the Project area. However, ground disturbance and vegetation removal occurring due to the Project may impact nesting birds, if they are present.

Mammals, Reptiles, and Amphibians

Ground disturbance creates a risk of harm to any small, terrestrial mammals, reptiles, and amphibians. While some active, diurnal species may avoid construction activities and move out of work areas, burrowing and nocturnal species would not. However, due to the human-modified landscape within the Project area, the potential for any of these special-status species to be present is low. The small patches of

uncultivated vegetation within the Project area are isolated and are not likely to be important to the maintenance of local population levels for any of these species, and habitat loss is not likely to have a detectable effect on any of these species.

Fish

No impacts on special-status fish would occur from the Project.

Insects

Since the Project is likely used as a migratory flyway for the monarch butterfly, impacts on this species are not anticipated to be significant due to the highly urbanized development in the Project.

MITIGATION MEASURES

Because the Project would be constructed entirely in areas subject to previous disturbance, outside of areas that provide essential habitat for rare or endangered species, impacts on most special-status species present in the region would not occur or would not rise to a level that would warrant mitigation. The following measures address the risk that electrical infrastructure poses to special-status birds and the risk that ground-disturbing activities pose to burrowing owls:

- Transmission structures would be constructed in compliance with standards provided by APLIC (APLIC, 2006 and 2012). When these standards are used, the risk of electrocution and collisions for large birds, including all special-status species in the Project area, is essentially eliminated.

- Preconstruction surveys for burrowing owls would be conducted by qualified biologists according to current protocols. Burrows occupied by burrowing owls would be avoided if feasible. If any burrowing owl relocation is necessary, this would be performed by a licensed wildlife rehabilitator.

- If construction occurs during the nesting bird season, a migratory bird and raptor nest survey would be performed prior to any vegetation removal or ground disturbance to avoid impacts on nesting migratory birds and raptors. Should active nests be found, the nest would be protected by an appropriately sized buffer and avoided until young birds fledge.

CONCLUSIONS

The Project is not likely to significantly affect any rare species. No ESA-listed species are present, and none would be affected by the Project. No protected areas, or any areas of biological wealth, are within the direct impact area of the Project. The risk that electrical infrastructure poses to birds would be addressed by following standard guidelines as design features for the Project, and preconstruction surveys for the burrowing owl, migratory birds, and raptors would address potential impacts on these species.

Table C-1 – Special Status Species Results for the Project Area			
Common Name ***Scientific Name***	**Status**	**Habitat**	**Potential to Occur in Project Area**
Mammals			
Harris' antelope squirrel *Ammospermophilus harrisii*	SGCN 1B	Desert habitats in Arizona with cacti and desert shrubs, and open plains with gravel and sand	Not likely due to urban development and lack of native desert and open plains habitat
Ocelot *Leopardus pardalis*	LE, SGCN 1A	Southeastern Arizona, although limited in range; areas of dense cover or vegetation and high prey density outside of open country; thorn scrub and deciduous forests in Sonora, although little is known about habitat use in Arizona	Not likely due to extreme rarity, lack of habitat and presence of urbanization
Jaguar *Panthera onca*	LE, SGCN 1A	Thornscrub, desertscrub, lowland desert, mesquite grassland, Madrean oak woodland and pine-oak woodland southeastern Arizona and Mexico	Not likely due to extreme rarity, lack of habitat and presence of urbanization
Little pocket mouse *Perognathus longimembris*	SGCN 1B	Range within Arizona where its natural habitat is dry lowland grassland	Not likely due to lack of habitat and presence of urbanization
Kit fox *Vulpes macrotis*	SGCN 1B	Occurs in open desert, shrubby, or shrub-grass habitat; found year-round, pups den from February to April	Not likely due to lack of native habitat
Pale Townsend's big eared bat *Corynorhinus townsendii pallescens*	SC, SGCN 1B	Day roosts and maternity and hibernation colonies in caves, mines, or buildings; night roosts may include caves, buildings, and tree cavities; associated with mesic forested habitats but occupies a broad range of habitats including arid scrub, pine forest, pinyon juniper, and wooded canyons between 500 and 8,400 feet in elevation; range throughout Arizona	Likely present due to usage of anthropogenic features and range
Spotted bat *Euderma maculatum*	SC, SGCN 1B	Roosts in crevices and cracks of cliff faces; sometimes roosts in caves or in buildings near cliffs; variety of habitats including low to high deserts, riparian areas, ponderosa, and spruce-fir forests below 10,600 feet in elevation. Range throughout Arizona	Likely present due to range and usage of anthropogenic features

Table C-1 – Special Status Species Results for the Project Area			
Common Name ***Scientific Name***	**Status**	**Habitat**	**Potential to Occur in Project Area**
Mammals			
Greater western bonneted bat *Eumops perotis californicus*	SC, SGCN 1B	Range within most of Arizona; habitat must large open area with roost sites having vertical faces such rock fissures in high cliff faces	Not likely present due to lack of roost sites with high cliff faces
Western red bat *Lasiurus blossevillii*	SGCN 1B	Roosts in trees, particularly cottonwoods. Associated with broad-leaf deciduous riparian forests and woodlands from 1,900 to 7,200 feet in elevation; in Arizona, range includes northwestern through southeastern portions of the state	Not likely due to lack of native tree habitat and range
Western yellow bat *Lasiurus xanthinus*	SGCN 1B	Riparian woodland habitats where they roost in trees such as *Populus fremontii*, *Platanus wrightii*, and *Quercus arizonica* and desert environments	Likely present in project vicinity where riparian areas contain trees
California leaf-nosed bat *Macrotus californicus*	SC, SGCN 1B	Caves and abandoned mines in deserts of southwest North America	Not likely present due to leave of caves and abandoned mines in the Project area
Arizona myotis *Myotis occultus*	SC, SGCN 1B	Day roosts and maternity colonies in tree cavities and crevices; maternity colonies also in buildings and bridges; winter roost records from mines; riparian areas and in ponderosa pine and oak-pine woodland near water below 8,600 feet; also found along permanent water; in Arizona, range includes central band from east to west and north-central portions of the state	Likely present due to usage of anthropogenic features and range
Cave myotis *Myotis velifer*	SC, SGCN 1B	Cave habitat but will also roost in alternative areas such as mines, rock crevices, abandoned buildings, barns, and under bridges	Likely present since may use anthropogenic features
Yuma myotis *Myotis yumanensis*	SC, SGCN 1B	In spring through fall, found in desert scrub, riparian, woodlands, and forests; however, this species is closely associated with water and cliff	Likely present spring through fall due to usage of anthropogenic features and range

Table C-1 – Special Status Species Results for the Project Area			
Common Name ***Scientific Name***	**Status**	**Habitat**	**Potential to Occur in Project Area**
Mammals			
		faces; roosts in caves, mines, cliff crevices, buildings, and bridges; this species typically overwinters in Mexico	
Pocketed free-tailed bat *Nyctinomops femorosaccus*	SGCN 1B	Inhabits semiarid desertlands and roosts can be found in caves, tunnels, mines, and rock crevices or hanging under the roof tiles of buildings; typically found in large colonies	Likely present due to usage of anthropogenic features and range
Brazilian free-tailed bat *Tadarida brasiliensis*	SGCN 1B	Found in a wide variety of habitats from desert communities through pinyon-juniper woodlands and pine-oak forests at elevations up to approximately 9,000 feet; maternity colonies and roosts found in limestone caves, abandoned mines, bridges, buildings, and hollow trees; range throughout Arizona.	Likely present due to usage of anthropogenic features and range
Sonoran pronghorn[1] *Antilocapra americana sonoriensis*	EXPN	Dry plains and desert in broad alluvial valleys separated by granite mountains and mesas	Not likely present due to limited distribution and urbanization
Birds			
Western burrowing owl[2] *Athene cunicularia hypugaea*	SC, SGCN 1B	Found year-round of portions of Arizona; occurs in open areas, areas with mammal burrows, and areas that have been cleared for human use; considered migratory in northern Arizona	Likely to occur due to known use of urban areas by this species, particularly agricultural areas, and anthropogenic features such as culverts and pipes
Yellow-billed cuckoo (Western DPS)[1,2] *Coccyzus americanus*	LT, SGCN 1A	Winters in South America; during spring through early fall, breeds typically in riparian woodland vegetation (cottonwood [*Populus* spp.], willow [*Salix* spp.], or saltcedar [*Tamarix* spp.]) at elevations below 6,600 feet; dense understory foliage appears to be an important factor in nest site selection	Not likely due to lack of riparian woodland vegetation and dense understory foliage

Table C-1 – Special Status Species Results for the Project Area			
Common Name ***Scientific Name***	**Status**	**Habitat**	**Potential to Occur in Project Area**
Mammals			
Southwestern willow flycatcher[1,2] *Empidonax traillii extimus*	LE, SGCN 1A	Late spring breeder in Arizona found in riparian forests with trees and thickets where it nests	Not likely due to lack of intact riparian forests for breeding and nesting
American peregrine falcon[2] *Falco peregrinus anatum*	SC, SGCN 1A	Breeds in open areas with cliffs; occurs year-round in Arizona within landscapes having cliffs and rivers; nearly any open habitat; mudflats, lake edges, and mountain chains	Not likely due to lack of native habitat, but may forage in agricultural areas
Bald eagle – Sonoran desert population[2] *Haliaeetus leucocephalus* pop. 3	SC, BGEPA, SGCN 1A	Prefers mature trees and snags near water for breeding in winter/spring; forages in a variety of habitats, including dry areas in summer/fall/winter; found anywhere in Arizona during winter	Not likely due to lack of water sources and mature trees, but may forage in open areas
Yuma ridgway's rail[1,2] *Rallus obsoletus yumanensis*	LE, SGCN 1A	Freshwater marshes containing cattail and bulrush with emergent vegetation averaging greater than 6 feet tall and water 3.5 inches deep	Not likely due to lack of freshwater marshes
Wood duck *Aix sponsa*	SGCN 1B	Wooded swamps, marshes, streams, beaver ponds, and small lakes	Not likely due to lack of water in the area
American bittern *Botaurus lentiginosus*	SGCN 1B	Winters in southern Arizona and uses water bodies and brackish marshes; breeds mainly in freshwater marshes containing tall vegetation	Not likely to occur due to lack of water bodies and marshes containing tall vegetation
Ferruginous hawk *Buteo regalis*	SC, SGCN 1B	Prefers to forage in open environments including grasslands or desert	Not likely due to lack of open grasslands and desert, may forage in agricultural areas
Gilded flicker *Colaptes chrysoides*	SGCN 1B	Extensive stands of giant cactus, especially saguaro, as well as desert washes with cottonwood and willow	Not likely present unless incidental on urban fringes where more intact desert habitat occurs
Gila woodpecker *Melanerpes uropygialis*	SGCN 1B	Stands of saguaro cactus, desert scrub, arroyos and washes, and small towns	Likely present due to use of urban habitat containing desert remnant habitat and on urban fringes with desert scrub

Table C-1 – Special Status Species Results for the Project Area			
Common Name ***Scientific Name***	**Status**	**Habitat**	**Potential to Occur in Project Area**
Mammals			
Lincoln's sparrow *Melospiza lincolnii*	SGCN 1B	Breeds in wet meadows filled with willows, alders, and sedges or patches of aspens, cottonwoods, and willows as well as shrubby areas near streams; during migration they use brushy fields, forest edges, and thickets; in winter, they use tropical forests, pine-oak forests, tropical scrub, weedy pastures, and shrubby fields	Likely present during winter months in which agricultural lands may be used
Abert's towhee *Melozone aberti*	SGCN 1B	Low, dense cover along desert streams and riverbeds with cottonwoods, willows, or mesquite and suburban landscapes	Likely present due to utilization of suburban landscapes
Savannah sparrow *Passerculus sandwichensis*	SGCN 1B	Breed in open areas with low vegetation, including tundra to grassland, marsh, and farmland; found on the ground or in low vegetation in open areas and along the edges of roads adjacent to farms	Likely present due to utilization of suburban landscapes including roads and farms
Yellow warbler *Setophaga petechia*	SGCN 1B	Shrubby thickets and woods, particularly along watercourses and in wetlands; common trees include willows, alders, and cottonwoods, also a backyard species	Likely present due to utilization of suburban landscapes
LeConte's thrasher *Toxostoma lecontei*	SGCN 1B	Very dry, lightly vegetated desert habitat with cholla, saltbush, mesquite, and other plants tolerant of hot, arid conditions	Not likely present due to urban environment and lack of intact desert habitat
Pacific wren *Troglodytes pacificus*	SGCN 1B	Forested habitats from sea level to 12,000 feet; most common in old-growth evergreen forests, also deciduous forests, mixed evergreen and deciduous forests, and aspen stands; some individuals move to lower elevations in winter and use scrub oak, pinyon-juniper forests, parks, and gardens	Not likely due to limited range in Arizona and lack of forested or scrub oak habitat and pinyon-juniper forests
Arizona Bell's vireo *Vireo bellii arizonae*	SGCN 1B	Thickets and thorn scrub in the southwest	Not likely present due to urban environment

Table C-1 – Special Status Species Results for the Project Area			
Common Name ***Scientific Name***	**Status**	**Habitat**	**Potential to Occur in Project Area**
Mammals			
			and lack of desert habitat
California least tern[1] *Sterna antillarum browni*	LE	Barrier islands and beaches, dredge spoil, river islands, flat gravel rooftops, and similar habitats for nesting; forages along rivers, estuaries, bays, ocean coastlines	Not likely present due to lack of habitat for nesting and foraging
Fishes			
Gila topminnow (incl. Yaqui)[1] *Poeciliopsis occidentalis*	LE	Native fish of the Gila River; in Arizona now only found in specific locations in Pima County including Cienega Creek, Sabino Canyon, and lower Santa Cruz River	Not likely present due to lack of habitat and limited distribution
Roundtail chub[1] *Gila robusta*	C	Moderate-sized, perennial rivers in pools and eddies with swift swirling water below rapids	Not likely present due to lack of perennial rivers
Reptiles			
Variable sandsnake *Chilomeniscus stramineus*	SGCN 1B	Dry deserts with sand or loamy soil, including sandy or gravelly washes, creosote bush flats, arroyos, and areas grown with mesquite and saguaro, and ocotillo	Likely present in remnant desert areas on urban fringes
Tuscon shovel-nosed snake *Chionactis occipitalis klauberi*	SC, SGCN 1A	Sandy areas in Mohave County Arizona	Not likely present due to range outside of Project area
Sonoran whipsnake *Coluber bilineatus*	SGCN 1B	Rocky canyons, riparian areas, foothills, and mountains with dense vegetation in elevations and open creosote bush flats	Likely present in remnant desert areas on urban fringes
Tiger rattlesnake *Crotalus tigris*	SGCN 1B	Rocky slopes and bajadas in desert scrub, but also chapparal and semi-desert grassland	Not likely present due to lack of native habitat including rocky and mountainous areas
Sonoran desert tortoise[1] *Gopherus morafkai*	CCA, SGCN 1A	Rocky slopes and bajadas of Mojave Desert Scrub communities and Arizona Sonoran Desert Scrub communities; often associated with palo verde mixed cacti dominated landscapes	Not likely due to lack of intact desert habitat and presence of urbanization
Gila monster *Heloderma suspectum*	SGCN 1A	Desert and grassland regions	Not likely due to lack of intact desert habitat

Table C-1 – Special Status Species Results for the Project Area			
Common Name ***Scientific Name***	**Status**	**Habitat**	**Potential to Occur in Project Area**
Mammals			
			and presence of urbanization
Desert mud turtle *Kinosternon sonoriense sonoriense*	SGCN 1B	Normally occurs in ponds and slow-moving tree-lined watercourses, including quiet pools in streams, oxbows, ponds, creeks, and cattle tanks; found in woodlands and occasionally in grasslands; needs a permanent or nearly permanent water source	Not likely due to urbanization and lack of permanent water sources
Sonoran coralsnake *Micruroides euryxanthus*	SGCN 1B	Desert scrub, semi-desert grassland, and lower reaches of oak woodlands in bajadas and rock canyons, and rarely in valley bottoms	Not likely due to urbanization and lack of desert habitat
Regal horned lizard *Phrynosoma solare*	SGCN 1B	Sandy desert scrub	Not likely due to urbanization and lack of desert habitat
Saddled leaf-nosed snake *Phyllorhynchus browni*	SGCN 1B	Sandy, gravelly, and rock desert scrub to semi-desert grassland	Not likely due to urbanization and lack of desert habitat
Amphibians			
Lowland leopard frog[1] *Lithobates yavapaiensis*	SC, SGCN 1A	Permanent or nearly permanent waters of streams, river, cienegas, cattle tanks, and impoundments in desert scrub, semi-desert grassland, upslope into oak woodlands, and agricultural areas	Not likely due to lack of water and patchy distribution in southern Arizona
Arizona toad *Anaxyrus microscaphus*	SC, SGCN 1B	Found year-round in areas of shallow, flowing, permanent water over sandy or rocky substrates, typically in river canyons or foothill streams below 8,000 feet above mean sea level	Not likely to occur due to lack of permanent water within river canyons or foothill streams.
Sonoran desert toad *Incilius alvarius*	SGCN 1B	Oak-pine woodlands, grasslands, desert scrub, thorn scrub, and deciduous forests; also, semi-aquatic regions near streams, springs, rain pools, and ditches	Not likely due to lack of permanent water features and intact habitat due to urbanization
Insects			

Table C-1 – Special Status Species Results for the Project Area			
Common Name ***Scientific Name***	**Status**	**Habitat**	**Potential to Occur in Project Area**
Mammals			
Monarch butterfly *Danaus plexippus*	C	Across North America wherever suitable feeding, breeding, and overwintering habitat exists; during summer, western monarchs live in canyons or riparian areas of the west, southwest, inland California, and the inland northwest states up to British Columbia	Likely present during spring and summer months during migration

LE – Endangered; LT – Threatened; C – Candidate; CCA – Candidate Conservation Agreement; SC – Species of Concern; EXPN – Experimental Nonessential Population; DPS – Distinct Population Segment; BGEPA – Bald and Golden Eagle Protection Act; SGCN – Species of Greatest Conservation Need; 1A, 1B – SGCN Tier

[1] USFWS, 2021 (IPaC)

[2] Special status species documented within Project area

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EXHIBIT D – BIOLOGICAL RESOURCES

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

> *Exhibit D:*
>
> *List the fish, wildlife, plant life and associated forms of life in the vicinity of the proposed site or route and describe the effects, if any, the proposed facilities will have thereon.*

OVERVIEW

The Project area is generally defined as all areas within a 2-mile buffer of the Project's features, including all alternative routes, as identified in this application. The Project area includes all areas where ground disturbance associated with the Project may occur.

INVENTORY RESULTS

Physical Setting

The Project area is located within the Sonoran Desert, one of the wettest, most productive, and diverse of the North American deserts. The Sonoran Desert is part of the Basin and Range physiographic region geologically, which is the area of North America generally between the Sierra Nevada and Rocky Mountains, extending into Mexico. The Basin and Range Province is represented by numerous steep rugged mountain ranges separated by valleys with deep alluvial fill and relatively low slopes. Some of these valleys contain regional major rivers, although most rivers have been hydrologically altered with dams and water diversion.

The Project area is set in a broad, nearly level valley, formed by the confluences of the Agua Fria River with the Gila River. Much of the Phoenix metropolitan area is constructed on alluvial fill deposited by these rivers. The Agua Fria River is dammed at Lake Pleasant upstream, so is supported primarily by urban runoff and treated wastewater in the Phoenix area and is ephemeral or intermittent within the Project area. South of the Project area, the Gila River has perennial flow, primarily supported by treated wastewater from the Phoenix metropolitan area.

The Sonoran Desert experiences winter storms from the Pacific Ocean often providing widespread regional rainfall and a midsummer monsoon season bringing tropical moisture into the region, also known as a bimodal precipitation pattern. Rainfall in the summer monsoon season is typically provided by isolated, but potentially strong, thunderstorms. These thunderstorms can be extremely variable, seasonally depending on the strength and duration of the overall monsoon weather pattern, and locally depending on the occurrence of individual thunderstorms. Rainfall generally increases with elevation. The Project area is at a relatively low elevation, between 1,150 and 1,250 feet. Average annual precipitation in the Desert Southwest averages as low as 3 or 4 inches per year (Western Region Climate Center, 2021).

Vegetation

The Sonoran Desertscrub biotic community, as described by Turner (1994) and mapped by Brown (1994), is divided in two major subdivisions. The Arizona Upland subdivision is typical of rocky slopes and moderate elevations dominated by numerous desert tree species and the saguaro (*Carnegiea gigantea*). The Project area is set within the more-arid Lower Colorado River Valley subdivision which is much less diverse than the Arizona Upland subdivision and is typical of lower elevations and valley bottoms. The dominant plant species is creosote bush (*Larrea tridentata*), and cacti are uncommon, although some saguaros and other cacti may be present near the lower slopes of mountain ranges. Creosote bush and other upland plants are replaced by saltbush (*Atriplex* spp.) and other plants adapted to higher soil salinity on the lowest slopes and level areas in or near river floodplains.

Although the Project area is set within an area that was once typical of the Lower Colorado River Valley subdivision of Sonoran Desertscrub, much of the Project area has been subject to human disturbance and has been converted to non-native vegetation types. The Project area is a well-developed mix of community commercial and suburban residential development that includes existing utility infrastructure, industrial facilities, and agricultural uses. Scattered native plants that are tolerant of disturbance are present along field margins and in fallow fields.

The Proposed Routes A, E, and G are predominantly within modified, non-native vegetation types, and no impacts on native vegetation would occur from construction of any of these routes.

Wildlife Species

This section discusses wildlife species that may be present in the Project area which has been largely converted to non-native vegetation and is not likely to support wildlife. However, some mobile or disturbance-tolerant wildlife species may occur throughout the Project area, but the number of species present in any location or at any one time would be a small proportion of the species discussed below.

Mammals

High mammal diversity, including bat and small rodents persist in parts of the Sonoran Desert. Many large and small mammal species are not tolerant of highly modified landscapes and cannot persist in areas subject to tilling and ground disturbance. Some disturbance-tolerant small mammals can be very abundant in farmland, using canal banks and road margins for burrow construction. Coyotes (*Canis latrans*) can become tolerant of human activities and will prey on small mammals in agricultural areas. Some bats can use ornamental trees, old buildings, and other anthropogenic features such as bridges as roost sites. Bats may also roost outside of developed areas but travel miles to forage on the high numbers of insects associated with farmland. Surface water associated with human activity is also an important resource for bats and small mammals in arid regions. Manmade water sources, which are few and far between in the Project area are likely to provide food and water for bats and other mammals. Table D-1 lists mammal species that may be present in the Project area.

Birds

Birds are highly mobile and may be uncommon in the Project area or prefer the native desert environment but may still be observed in the urban and agricultural landscapes in the Project area. Some of the birds present may be year-round Sonoran Desert residents or are migratory, wintering in the Project area, passing through during migration, or migrating to winter elsewhere following nesting.

There is the likelihood of raptor species to be present in the Project area due to the availability of rodent

and bird prey around fields. Agricultural landscapes also provide suitable wintering and foraging habitat for some wading birds, shorebirds, and grassland species that prefer sparse vegetation, shallow water, and other characteristics of farmed areas. Table D-2 lists bird species that may be present in the Project area, focused on species that occur somewhat regularly or have ranges and documented sightings.

Reptiles

Reptiles such as snakes and lizards have a low likelihood of occurring in the Project area because these species are not tolerant of land disturbance and agricultural activities despite the Sonoran Desert having a very high diversity of these animals. However, some reptile species can persist in modified environments preying on rodents and insect pests associated with farmland. No native turtles would be present in the Project area due to lack of aquatic habitat to support these species. Table D-3 lists reptile species that may be present in the Project area.

Amphibians

Several species of toads are the only native amphibians likely to be present in the Project area. Toads in the Sonoran Desert typically depend on summer rainfall and reproduce rapidly in temporary pools that are formed. Some of these species can also use manmade bodies of water and may occur in agricultural areas. Table D-4 lists amphibian species that may occur in the Project area.

Fish

No native fish species are likely to be present in the Project area as there is no perennial water present to support such species. No major canals are crossed by the Project, although several small irrigation delivery ditches support farm fields in the Project area.

IMPACT ASSESSMENT RESULTS

Potential Impacts on Vegetation

Minimal impacts on vegetation are anticipated due to construction of the Project. The Project would be predominantly constructed in previously disturbed areas that do not support native vegetation communities.

Potential Impacts on Mammals

Small terrestrial mammals are likely to avoid construction activities due to ground disturbance that threatens these animals. Active and diurnal mammal species are likely to avoid construction activities fleeing from work areas during construction but burrowing species would not. Mammal species are not likely to occur within the Project area due to the human-modified landscape. The cultivated and fallow fields and field margins within the Project area are not likely to be important to the maintenance of local population levels for any of these species, and loss of this type of habitat is not likely to have a detectable effect on any of these species.

Since work will occur on an urban developed landscape during daylight hours, impacts on bats are not anticipated. Bats are likely to forage in agricultural areas and the Agua Fria River during dark and dusk outside of working hours. No natural or anthropogenic features that provide habitat for nesting and roosting for bats will be impacted by the Project.

Potential Impacts on Birds

Transmission lines can pose a collision risk to birds, including raptor species (APLIC, 2012). Factors that influence whether birds are likely to collide with a specific transmission line depend on whether there is co-location of multiple transmission lines and placement near other infrastructure so that the collective infrastructure is likely to be perceived by birds and avoided. Birds also often attempt to fly above transmission lines and other obstacles decreasing the risk of collision. The Project would be constructed in an area with numerous existing transmission lines and is not likely to contribute to an increase in bird mortality or injury resulting from collisions within the Project area.

Electrical transmission and distribution lines can also cause bird electrocution, although the risk is highest with lower-voltage lines. Electrocution occurs when a bird simultaneously contacts energized and grounded electrical components. High-voltage lines require spacing between those components that cannot be spanned even by very large birds, so that electrocution risk is precluded almost entirely (APLIC, 2006).

Most native birds are not likely to nest in the Project area due to urbanization and lack of native habitat. However, burrowing owls can nest in burrows and cavities found in fallow farmland, field margins, and canal banks. Because burrowing owls may in some cases retreat underground when alarmed rather than flying and their nests are underground, they are at risk of harm from ground-disturbing activities resulting from construction of the Project. Burrowing owls could occur anywhere in the Project area, although their presence cannot be confirmed without conducting a preconstruction burrowing owl survey.

Some native birds regularly forage in farmland such as those present in the Project area, although minimal loss of farmland will occur because of construction of the Project and substantial farmland is present elsewhere throughout the Project area and surrounding areas. Although some ground disturbance and vegetation removal would occur due to the Project, this is not likely to have a detectable effect on any bird species should a survey for nesting birds be conducted prior to vegetation removal and ground disturbance during sensitive reproductive periods.

Potential Impacts on Reptiles

Potential impacts on reptiles would be the same as those described for terrestrial mammals and would be related to the risk of harm during ground-disturbing activities. Very few reptiles are likely to be present in the Project area and impacts on these species are expected to be minimal due to the fragmented urban habitat and low likelihood of occurrence.

Potential Impacts on Amphibians

Potential impacts on amphibians would be the same as those described for terrestrial mammals and would be related to the risk of harm during ground-disturbing activities. Very few amphibians are likely to be present in the Project area.

Potential Impacts on Fish

Irrigation ditches pass through the Project area, but do not have surface water continuously present so do not provide permanent fish habitat. Because the Project would not affect any canals or irrigation facilities, and because no self-sustaining population of fish is present in the Project area, the Project would have no impact on fish.

MITIGATION MEASURES

Because the Project would be constructed entirely in areas subject to previous disturbance, outside of areas that provide essential habitat for rare or endangered species, impacts on most species present in the region would not occur or would not rise to a level that would warrant mitigation. The following measures address the risk that electrical infrastructure and ground disturbing activities poses to birds:

- Transmission structures would be constructed in compliance with standards provided by APLIC (APLIC, 2006 and 2012). When these standards are used, the risk of electrocution and collisions for large birds is essentially eliminated.

- If construction occurs during the nesting bird season, a migratory bird and raptor nest survey would be performed prior to any vegetation removal or ground disturbance to avoid impacts on nesting migratory birds and raptors. Should active nests be found, the nest would be protected by an appropriately sized buffer and avoided until young birds fledge.

CONCLUSION

The Project is not likely to contribute significantly to the loss of native vegetation that provides wildlife habitat or cause declines in any native plant or wildlife species because the Project would occur in an area highly disturbed by agricultural and urban development. The risk that electrical infrastructure poses to birds would be addressed by following standard guidelines as design features for the Project, and preconstruction surveys for the burrowing owl, migratory birds, and raptors would address potential impacts on these species.

Table D-1 – Mammal Species that May Occur in the Project Area

Common Name ***Scientific Name***	**Habitat**
California myotis *Myotis californicus*	Desertscrub with rock faces. Roosts in crevices, occasionally caves and mines.
Western mastiff bat *Eumops perotis*	Sonoran Desertscrub adjacent to cliffs. Roosts in rock crevices and requires a 10-foot vertical drop to launch flight.
Western pipistrelle *Parastrellus hesperus*	Areas with canyon walls or cliff faces for roosting, streambeds, and tanks for foraging.
Big brown bat *Eptesicus fuscus*	Ponderosa pine forest, piñon-juniper woodlands, and desertscrub. Uses a wide range of roost sites. Preys on beetles and moths.
Hoary bat *Lasiurus cinereus*	Mixed deciduous-coniferous forests and woodlands. Roosts among foliage in trees; migratory.
Pallid bat *Antrozous pallidus*	Desertscrub and evergreen woodlands. Roosts in caves, mines, cliffs, and bridges. Preys on ground-dwelling insects.
Desert cottontail *Sylvilagus audubonii*	Desertscrub, semi-desert grassland.
Black-tailed jackrabbit *Lepus californicus*	Desertscrub and other areas with open ground cover.
Round-tailed ground squirrel *Xerospermophilus tereticaudus*	Creosote bush/saltbush desert with sandy or gravelly soil.

Table D-1 – Mammal Species that May Occur in the Project Area

Common Name ***Scientific Name***	**Habitat**
Botta's pocket gopher *Thomomys bottae*	Any area with soil suitable for digging burrows from sea level to above timberline.
Arizona pocket mouse *Perognathus amplus*	Arid valley bottoms in Sonoran Desertscrub
Desert pocket mouse *Chaetodipus penicillatus*	Sandy areas of desertscrub with sparse vegetation.
Bailey's pocket mouse *Chaetodipus baileyi*	Flats and lower slope areas of desertscrub.
Merriam's kangaroo rat *Dipodomys merriami*	Sandy areas of desertscrub.
Desert kangaroo rat *Dipodomys deserti*	Areas with friable sand such as washes, or wind-blown sands stabilized by creosote bush or other vegetation.
Western harvest mouse *Reithrodontomys megalotis*	Desertscrub or chaparral.
Deer mouse *Peromyscus maniculatus*	May occur in riparian areas.
White-footed mouse *Peromyscus leucopus*	Mixed deciduous forests, agriculture fields and semi-desert grasslands.
Arizona cotton rat *Sigmodon arizonae*	Mesquite scrub and weedy areas along canals and washes.
Desert woodrat *Neotoma lepida*	Rocky and densely vegetated areas in Sonoran Desertscrub.
White-throated woodrat *Neotoma albigula*	Areas below the conifer belt, especially with prickly pear or paloverde plants.
Coyote *Canis latrans*	Cosmopolitan, from spruce forest to low desert. Tolerant of urban areas and human presence.
Gray fox *Urocyon cinereoargenteu*	Open desertscrub, chaparral, lower-elevation woodland.
Ringtail *Bassariscus astutus*	Widespread in Sonoran Desertscrub, including occasionally around agricultural activity.
Northern raccoon *Procyon lotor*	Occupies a ride range of habitats ranging from wetlands and mesic woodlands to urban areas.
Western spotted skunk *Spilogale gracilis*	Open woods, canyons, and agriculture fields.
American badger *Taxidea taxus*	Flats and drainages adjacent to mountains, grasslands.
Mountain lion *Puma concolor*	Almost any area that provides prey. Individuals from desert mountains such as the Sierra Estrella may enter developed areas.
Bobcat *Lynx rufus*	Rocky upland areas interspersed with open desert, grassland, or woodland.
Collared peccary *Pecari tajacu*	Desertscrub and up to approximately 6,500 feet; washes and brushy hillsides; shelter in mine adits.
Mule deer *Odocoileus hemionus*	Semi-desert grasslands, desertscrub and dry coniferous forests.

Source: Arizona Public Service Company, 2021

Table D-2: Bird Species that May Occur in the Project Area

Common Name ***Scientific Name***	**Habitat**
Eared grebe *Podiceps nigricollis*	Lakes and ponds
Clark's grebe *Aechmophorus clarkii*	Lakes, ponds, and lagoons
Pied-billed grebe *Podilymbus podiceps*	Shallow ponds and marshes with emergent vegetation
American white pelican *Pelecanus erythrorhynchos*	Shallow, protected water
Double-crested cormorant *Phalacrocorax auritus*	Lakes, ponds, streams, and aqueducts
Black-crowned night-heron *Nycticorax nycticorax*	Freshwater swamps, marshes, and ponds with emergent vegetation
Green heron *Butorides virescens*	Streams, ponds, or marshes that include edge canopy
Cattle egret *Bubulcus ibis*	Pastures, weedy fields, along weedy irrigation ditches
Snowy egret *Egretta thula*	Marshes, drainage ditches, wetlands
Great egret *Ardea alba*	Wetland habitats including marshes, drainage ditches, and ponds
Great blue heron *Ardea herodias*	Rivers, streams, lakes, reservoirs, canals, and agricultural fields
White-faced ibis *Plegadis chihi*	Any open water source
Mallard *Anas platyrhynchos*	Lakes, ponds, streams, and canals
Gadwall *Anas strepera*	Shallow fresh water
Green-winged teal *Anas crecca*	Shallow ponds, marshes, and flooded fields
Northern pintail *Anas acuta*	Shallow ponds and marshes with emergent vegetation
American wigeon *Mareca americana*	Freshwater lakes and ponds; may graze in fields
Cinnamon teal *Spatula cyanoptera*	Ponds, streams, and canals
Northern shoveler *Spatula clypeata*	Shallow, weedy, or grassy ponds
Redhead *Aythya americana*	Lakes and ponds
Ring-necked duck *Aythya collaris*	Ponds and rivers, often near trees
Lesser scaup *Aythya affinis*	Ponds, lakes, and protected bays
Bufflehead *Bucephala albeola*	Open lakes, harbors, and bays
Common merganser	Deep, clear lakes and rivers

Table D-2: Bird Species that May Occur in the Project Area

Common Name *Scientific Name*	Habitat
Mergus merganser	
Hooded merganser *Lophodytes cucullatus*	Wetlands, streams, and rivers
Red-breasted merganser *Mergus serrator*	Occasionally present in larger bodies of water
Ruddy duck *Oxyura jamaicensis*	Lakes and ponds
Canvasback *Aythya valisineria*	Marshes and ponds
Canada goose *Branta canadensis*	Common around bodies of water, including in highly urbanized areas
Turkey vulture *Cathartes aura*	Open country, woodlands, farms
Black vulture *Coragyps atratus*	Sonoran desertscrub with abundant trees
Osprey *Pandion haliaetus*	Lakes, rivers, and estuaries. Perches in trees, poles, and towers
Northern harrier *Circus cyaneus*	Wetlands, grasslands, and fallow agricultural fields
Red-tailed hawk *Buteo jamaicensis*	Plains, prairie groves, desert
Swainson's hawk *Buteo swainsoni*	Prairies and agriculture fields
Cooper's hawk *Accipiter cooperii*	Broken woodlands or streamside groves
Sharp-shinned hawk *Accipiter striatus*	Mixed coniferous forests; forages along forest edges, hedgerows, and urban areas
Zone-tailed hawk *Buteo albonotatus*	Foothill canyons with permanent streams and open woodland
American kestrel *Falco sparverius*	Open country in a variety of habitat types, as well as cities
Prairie falcon *Falco mexicanus*	Dry, open country; prairies
Peregrine falcon *Falco peregrinus*	Predator on birds such as doves and waterfowl, often foraging near water
Gambel's quail *Callipepla gambelii*	Desert scrublands and thickets
Common gallinule *Gallinula galeata*	Lakes and pond with abundant emergent vegetation
American coot *Fulica americana*	Lakes, ponds, streams, and marshes
Virginia rail *Rallus limicola*	Occurs in marshes and other wetlands with dense emergent vegetation
Sora *Porzana carolina*	Occurs in marshes and other wetlands with dense emergent vegetation
Killdeer *Charadrius vociferus*	Open terrain, not always associated with shores, disturbed ground, and agricultural areas

Table D-2: Bird Species that May Occur in the Project Area

Common Name *Scientific Name*	Habitat
American avocet *Recurvirostra americana*	Open, shallow bodies of water
Black-necked stilt *Himantopus mexicanus*	Shallow, open waters of treatment plants and ponds
Greater yellowlegs *Tringa melanoleuca*	Shallow water and mudflats
Lesser yellowlegs *Tringa flavipes*	Shallow water and mudflats with scattered emergent vegetation
Spotted sandpiper *Actitis macularius*	Any manmade or natural aquatic habitat
Western sandpiper *Calidris mauri*	Mudflats and sandy beaches
Least sandpiper *Calidris minutilla*	Mudflats with scattered vegetation
Long-billed Dowitcher *Limnodromus scolopaceus*	Shallow muddy pools and freshwater ponds
Wilson's Snipe *Gallinago delicata*	Most damp to shallow wet habitats with adjacent vegetation
Wilson's phalarope *Phalaropus tricolor*	Shallow ponds and grassy marshes
Ring-billed gull *Larus delawarensis*	Lakes, ponds, and rivers
Bonaparte's gull *Larus delawarensis*	Uses various wetlands and bodies of water during migration
Forster's tern *Sterna forsteri*	Open water and marshes
Black tern *Chlidonias niger*	Marshes and ponds; roosts on sandbars
Mourning dove *Zenaida macroura*	Wide variety of habitats
White-winged dove *Zenaida asiatica*	Habitat generalists
Inca dove *Columbina inca*	Associated with urban and rural human developments
Common ground-dove *Columbina passerina*	Open or brushy areas near washes
Greater roadrunner *Geococcyx californianus*	Scrub desert and mesquite groves, less common in chaparral and oakwoodland
Barn owl *Tyto alba*	Open country; nests in embankments, mine adits, buildings, bridges, and other locations
Western screech-owl *Megascops kennicottii*	Open woodlands, streamside groves, deserts, suburban areas
Great horned owl *Bubo virginianus*	Common in wide variety of habitats
Lesser nighthawk *Chordeiles acutipennis*	Dry, open country, scrubland, desert

Table D-2: Bird Species that May Occur in the Project Area

Common Name *Scientific Name*	Habitat
Common nighthawk *Chordeiles minor*	Open environments including clearings, ponds, and urban areas
Common poorwill *Phalaenoptilus nuttallii*	Occurs in a wide range of vegetation communities in arid and semi-arid country
White-throated swift *Aeronautes saxatalis*	May occur anywhere insect prey is present while foraging
Black-chinned hummingbird *Archilochus alexandri*	Habitat generalists in lowlands and low mountains.
Rufous hummingbird *Selasphorus rufus*	Mountain meadows and riparian habitats
Anna's hummingbird *Calypte anna*	Coastal lowlands, mountains, deserts
Costa's hummingbird *Calypte costae*	Desert washes, dry chaparral
Broad-tailed hummingbird *Selasphorus platycercus*	Can occur in a wide range of habitat, including urban areas, while migrating.
Belted kingfisher *Megaceryle alcyon*	Sheltered, open water
Ladder-backed woodpecker *Picoides scalaris*	Dry shrublands; mesquite and cactus country; towns and rural areas
Black phoebe *Sayornis nigricans*	Rivers, streams, canals, ponds, reservoirs, and other aquatic habitats
Say's Phoebe *Sayornis saya*	Dry, open areas; canyons, cliffs
Olive-sided flycatcher *Contopus cooperi*	Prefers montane woodlands but uses other habitat types during migration
Western wood pewee *Contopus sordidulus*	Riparian areas and other woodlands
Hammond's flycatcher *Empidonax hammondii*	Mixed coniferous forests
Dusky flycatcher *Empidonax oberholseri*	Brushy patches of forest clearings
Ash-throated flycatcher *Myiarchus cinerascens*	Wide variety of habitats
Brown-crested flycatcher *Myiarchus tyrannulus*	Saguaro desert, riparian woodlands, groves, and low elevation woodlands
Western kingbird *Tyrannus verticalis*	Dry, open country
Loggerhead shrike *Lanius ludovicianus*	Open and relatively flat habitats with thorny trees and shrubs
Common raven *Corvus corax*	Mountains, deserts, coastal areas
Cassin's vireo *Vireo cassinii*	Mixed coniferous woodlands
Warbling vireo *Vireo gilvus*	Riparian woodlands
Horned lark	Habitat generalists in areas with open, barren ground

Table D-2: Bird Species that May Occur in the Project Area

Common Name *Scientific Name*	Habitat
Eremophila alpestris	
Northern rough-winged swallow *Stelgidopteryx serripennis*	Banks of streams and canals, streams, ponds, and lakes
Cliff swallow *Petrochelidon pyrrhonota*	Lakeside, cliffs, and canals; nesting under nearby bridges, buildings, and other overhangs; streams and ponds
Barn swallow *Hirundo rustica*	Variety of open habitats; nest in on bridges, buildings, culverts, etc. and require access to mud for nest building
Bank swallow *Riparia riparia*	Often forages over or near water, and in farmlands, where insect prey is abundant
Tree swallow *Tachycineta bicolor*	Often forages over or near water, and in farmlands, where insect prey is abundant
Violet-green Swallow *Tachycineta thalassina*	Open habitats; nest in tree cavities and cliff crevices
Verdin *Auriparus flaviceps*	Southwestern deserts, including Sonoran Desertscrub
Red-breasted nuthatch *Sitta canadensis*	Wooded areas, including riparian forests
Brown creeper *Certhia americana*	Prefers montane forests in the Southwest, but occasionally present in desert riparian woodlands in winter.
Cactus wren *Campylorhynchus brunneicapillus*	Desertscrub habitats
Canyon wren *Catherpes mexicanus*	Rocky slopes and canyons in Sonoran Desertscrub.
Bewick's wren *Thryomanes bewickii*	Dense, brushy habitats from mesquite thickets to chaparral and riparian thickets
Rock wren *Salpinctes obsoletus*	Rocky habitats in canyons, open hillsides, talus slopes
House wren *Troglodytes aedon*	Dense, brushy areas
Marsh wren *Cistothorus palustris*	Marshes of cattails, tules, or reeds
Ruby-crowned kinglet *Regulus calendula*	Woodlands, thickets
Blue-gray gnatcatcher *Polioptila caerulea*	Interior chaparral and arid piñon-juniper woodlands
Northern mockingbird *Mimus polyglottos*	Variety of habitats
Mountain bluebird *Sialia currucoides*	Winters in piñon-juniper woodlands, desertscrub, and agriculture fields
Western bluebird *Sialia mexicana*	Mixed coniferous forests with open grassy patches and occasionally in urban environments such as parks
American robin *Turdus migratorius*	Often present in urban landscapes in winter.
Hermit thrush *Catharus guttatus*	Present in winter in the Southwest in dense vegetation, such as riparian and landscaped urban areas.
Bendire's thrasher	Desertscrub and brushy grasslands

Table D-2: Bird Species that May Occur in the Project Area

Common Name *Scientific Name*	Habitat
Toxostoma bendirei	
Phainopepla *Phainopepla nitens*	Riparian areas, especially in trees with mistletoe
American pipit *Anthus rubescens*	Expansive open prairies, fields, and beaches
Cedar waxwing *Bombycilla cedrorum*	Winters in open woodlands with abundant fruit, including urban environments
Orange-crowned warbler *Oreothlypis celata*	Winters in brushy habitats, including interior chaparral, open woodlands, desertscrub, and urban environments
MacGillivray's warbler *Geothlypis tolmiei*	Dense thickets in riparian woodlands and piñon-juniper woodlands
American redstart *Setophaga ruticilla*	Uncommon but regularly present in riparian areas in winter in the Sonoran Desert
Yellow-rumped warbler *Setophaga coronata*	Brushy undergrowth of piñon-juniper woodlands, as well as riparian thickets
Black-throated gray warbler *Setophaga nigrescens*	Pine-oak woodlands.
Hermit warbler *Setophaga occidentalis*	Mixed coniferous forests
Townsend's warbler *Setophaga townsendi*	Mixed coniferous forests with an oak understory
Wilson's warbler *Cardellina pusilla*	Riparian thickets, especially willows
Yellow-breasted chat *Icteria virens*	Dense thickets and brush, often in marshes or near water
Canyon towhee *Melozone fuscus*	Sonoran desertscrub
Green-tailed towhee *Pipilo chlorurus*	Dense brush; in lowlands in winter
Spotted towhee *Pipilo maculatus*	Chaparral, shrub-steppe, riparian thickets, and oak stands in piñon-juniper woodlands
Chipping sparrow *Spizella passerina*	Brushy edges and riparian areas
Grasshopper sparrow *Ammodramus savannarum*	Semidesert grasslands with scattered shrubs
Black-chinned sparrow *Spizella atrogularis*	Brush hillsides in chaparral or desertscrub vegetation
Sagebrush sparrow *Artemisiospiza nevadensis*	Sagebrush shrublands and arid shrub-steppe
Lark sparrow *Chondestes grammacus*	Brushy, weedy areas, riparian areas, and field edges.
Lark bunting *Calamospiza melanocorys*	Semidesert grasslands and desertscrub
Song sparrow *Melospiza melodia*	Dense undergrowth near water
Swamp sparrow *Melospiza georgiana*	Fallow agriculture fields adjacent to water

Table D-2: Bird Species that May Occur in the Project Area

Common Name ***Scientific Name***	**Habitat**
Vesper sparrow *Pooecetes gramineus*	Habitat generalists
Black-throated sparrow *Amphispiza bilineata*	Desertscrub
White-crowned sparrow *Zonotrichia leucophrys*	Suburban, riparian, and other brushy areas
White-throated sparrow *Zonotrichia albicollis*	Mixed coniferous-deciduous forests
Dark-eyed junco *Junco hyemalis*	Open woodlands including urban environments
Northern cardinal *Cardinalis cardinalis*	Woodland edges, swamps, streamside thickets, suburban gardens
Pyrrhuloxia *Cardinalis sinuatus*	Thorny brush, mesquite thickets, desert, woodland edges, ranchlands
Black-headed grosbeak *Pheucticus melanocephalus*	Open woodlands including deciduous and mixed conifer-deciduous forests.
Blue grosbeak *Passerina caerulea*	Riparian areas and mesquite bosques
Lazuli bunting *Passerina amoena*	Weedy and shrubby areas along irrigation ditches and other bodies of water and suburban areas
Summer tanager *Piranga rubra*	Mature riparian woodlands
Western tanager *Piranga ludoviciana*	Prefers montane coniferous woodlands but may be present in low elevation riparian areas in winter and during migration
Western meadowlark *Sturnella neglecta*	Fields and other open areas; deserts
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	Marshy areas with emergent vegetation
Red-winged blackbird *Agelaius phoeniceus*	Emergent vegetation in wetland habitats; including irrigated agricultural lands
Great-tailed grackle *Quiscalus mexicanus*	Open areas with reliable water sources; including agricultural and urbanized areas
Brewer's blackbird *Euphagus cyanocephalus*	Open habitats; gregarious
Brown-headed cowbird *Molothrus ater*	Habitat generalists; common in human modified environments
Bronzed cowbird *Molothrus aeneus*	Rural and urban areas
Bullock's oriole *Icterus bullockii*	Riparian woodlands
Scott's oriole *Icterus parisorum*	Arid scrub and open woodland landscapes
Hooded oriole *Icterus cucullatus*	Open woodlands often adjacent to fan palms
House finch *Haemorhous mexicanus*	Riparian and suburban areas, farmland, desert
Lesser goldfinch	Riparian areas

Table D-2: Bird Species that May Occur in the Project Area

Common Name *Scientific Name*	Habitat
Carduelis psaltria	
American goldfinch *Spinus tristis*	Orchards, hedgerows, overgrown fields, and gardens
Lawrence's goldfinch *Spinus lawrencei*	Riparian corridors and piñon-juniper grasslands

Sources: Arizona Public Service Company, 2021; Corman and Wise-Gervais 2005; Cornell University, 2019; Sibley, 2014

Table D-3 – Reptile Species that May Occur in the Project Area

Common Name *Scientific Name*	Habitat
Desert iguana *Dipsosaurus dorsalis*	Creosote bush desert to subtropical scrub, most common in sandy habitats, also, along rocky streambeds, on bajadas, floodplains, and clay soils
Zebra-tailed lizard *Callisaurus draconoides*	Frequents washes, desert pavements of small rocks, and hardpan
Long-tailed brush lizard *Urosaurus graciosus*	Lower Colorado River and Mojave Desertscrub; brushy habitats along drainages and on valley flats
Ornate tree lizard *Urosaurus ornatus*	Often in riparian and xeroriparian areas, but also may occur in treeless areas in desertscrub
Common side-blotched lizard *Uta stansburiana*	Arid or semi-arid regions with sand, rock, hardpan, or loam with grass, shrubs, and scattered trees; often found along sandy washes
Desert spiny lizard *Sceloporus magister*	Arid and semi-arid regions on plains and lower slopes of mountains, found in most desertscrub habitats and associated riparian areas
Desert horned lizard *Phrynosoma platyrhinos*	Flat valley bottoms in Sonoran Desertscrub, restricted to areas north of the Gila River
Long-nosed leopard lizard *Gambelia wislizenii*	Widespread in Sonoran Desertscrub, although usually in valley bottoms
Tiger whiptail *Aspidoscelis tigris*	Inhabits deserts and semi-arid habitats, usually where plants are sparse; also found in woodland, streamside growth, and in warmer, drier forests
Western banded gecko *Coleonyx variegatus*	Widespread throughout desertscrub communities
Western threadsnake *Rena humilis*	Inhabits elevations from desertscrub up to chaparral; primarily nocturnal
Desert nightsnake *Hypsiglena chlorophaea*	Inhabits Lower Colorado Subdivision Sonoran Desert up into Petran Montane Conifer Forest; crepuscular to nocturnal
Western groundsnake *Sonora semiannulata*	Inhabit elevations from Lower Colorado River Desertscrub up into woodland habitats
Sonoran lyresnake *Trimorphodon lambda*	Rocky slopes in Sonoran Desertscrub
Gophersnake *Pituophis catenifer*	Nearly all terrestrial habitats from mountains to low desert and coastal areas

Table D-3: Reptile Species that May Occur in the Project Area

Common Name ***Scientific Name***	**Habitat**
Glossy snake *Arizona elegans*	Below 6,000 feet in sparsely vegetated woodland, chaparral, grassland or desertscrub with loose soil
Spotted leaf-nosed snake *Phyllorhynchus decurtatus*	Open desert with finer loose soils, especially creosote bush
Desert patch-nosed snake *Salvadora hexalepis*	Piñon–juniper woodland to low deserts on variety of soil types
Coachwhip *Coluber flagellum*	Sparsely vegetated areas from juniper woodland to low desert
Long-nosed snake *Rhinocheilus lecontei*	Desertscrub, prairie, tropical woodland to 5,500 feet
California kingsnake *Lampropeltis californiae*	Inhabits elevations from desertscrub up to lower portions of Great Basin Conifer Woodland and Madrean Evergreen Woodland
Mojave rattlesnake *Crotalus scutulatus*	Wide range of habitat preferences, but generally in valley bottoms
Western diamondback rattlesnake *Crotalus atrox*	Wide range of habitats below 7,000 feet; predominantly nocturnal

Source: Arizona Public Service Company, 2021; National Audubon Society, 1999

Table D-4 – Amphibian Species that May Occur in the Project Area

Common Name ***Scientific Name***	**Habitat**
Couch's Spadefoot *Scaphiopus couchii*	Frequents shortgrass plains, mesquite savannah, creosote bush desert, thornscrub, tropical deciduous forest, and other areas of low rainfall
Woodhouse's Toad *Anaxyrus woodhousii*	Desertscrub, woodland, and agricultural habitats
Great Plains Toad *Anaxyrus cognatus*	Inhabits valley bottoms in prairies or deserts, often breeding after heavy rains in summer in shallow temporary pools or quiet streams

Source: Arizona Public Service Company, 2021; National Audubon Society, 1999

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EXHIBIT E – SCENIC AREAS, HISTORIC SITES AND STRUCTURES, AND ARCHEOLOGICAL SITES

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

> *Exhibit E:*
>
> *Describe any existing scenic areas, historic sites and structures or archeological sites in the vicinity of the proposed facilities and state the effects, if any, the proposed facilities will have thereon.*

SCENIC AREAS AND VISUAL RESOURCES

OVERVIEW

Landscapes in the Project area are within are characteristic of a region known as the Basin and Range physiographic province, which is distinguished by isolated, roughly parallel, north-south trending mountain ranges. The Project area is relatively flat and is situated between the Agua Fria River corridor on the east and the White Tank Mountains on the west. The Project area is predominantly agricultural land and developed lands consisting of residential, recreation commercial, light industrial, industrial. The Project area also includes several major freeway and roadway corridors, a Burlington Northern Santa Fe railroad, canals, transmission lines, and gas pipelines.

One notable development in the area is Luke Air Force Base, including the core base operations facilities, living quarters, and runways, as well as airspace and accident potential zones. This operation has notable influence on the landscape including development patterns in the central portion of the Project area. While there are currently open panoramic viewing conditions throughout the Project area, rapid development of large-scale light industrial and commercial buildings is quickly disrupting the viewing conditions in the Project area and creating fewer distant viewing conditions.

INVENTORY METHODS

This visual resource study focused on evaluating the existing and future landscape setting, including the potential for adverse impacts to occur on scenic quality and sensitive viewers resulting from the construction, operation, maintenance, and long-term presence of the proposed facilities. The methodology for the inventory and assessment was derived from the BLM Visual Resource Inventory and Contrast Rating System (8400 Series Manual-BLM, January 1986), as well as experience with past visual resource studies conducted for similar projects in the region.

INVENTORY RESULTS

Visual Sphere of Influence

The Project area in which the proposed facilities may result in adverse impacts on landscape scenic quality and/or sensitive viewers is defined as the Visual Sphere of Influence (VSOI). The VSOI for this project is more specifically defined as an area within 2 miles of either side of the proposed centerline of the Proposed Routes A, E, and G. The 2-mile distance threshold was established, since it represents a

reasonable distance where Proposed Routes A, E, and G could result in impacts on viewers in a relatively flat, open panoramic landscape setting.

Landscape Character

The Project area is located on the western side of the Phoenix metropolitan area in Maricopa County, Arizona. Most of the natural landscape setting can be characterized as relatively flat, open agricultural and desert plains dissected by ephemeral drainages. Major watercourses within the Project area include the Agua Fria River, which dissects the eastern portion of the Project area in a north to south alignment. The flat desert basins allow for expansive views of nearby mountain ranges, including the distant White Tank Mountains to the west and Sierra Estrella Mountains to the south. These distant ranges enhance the visual diversity and interest by adding distinctive form, line, color, and texture features within the generally flat landscape setting. Interspersed throughout the region are small to mid-sized farms and agricultural lands, which further enhance the open nature of the Project area.

Native vegetation within the Project area is characteristic of typical Sonoran Desert native vegetation. The prominent vegetation community can be characterized as southwestern desertscrub occurring in small, isolated parcels of land. The vegetative pallet is composed of numerous species of trees (e.g., foothill paloverde, ironwood, saguaro, mesquite), cacti (e.g., barrel, cholla, prickly pear), creosote bush, brittlebush, and scrub grasses with some riparian areas containing denser and more diverse vegetation (e.g., foothill paloverde and ironwood). The crops associated with the agricultural lands also enhance the setting by adding color and texture patterns. Crops include small grains, cotton, flowers, alfalfa, and produce.

Existing cultural manmade modifications in the Project area include, but are not limited to, residential communities (e.g., Twelve Oaks Estates, Dysart Ranchettes, Suncliff, Agua Fria Ranch, Pueblo El Mirage), commercial retail and office parks, light industrial and industrial facilities, roadways (e.g., Loop 303, Northern Parkway, Olive Avenue, Peoria Avenue, Northern Avenue, Litchfield Road, Dysart Road, Reems Road), airports (e.g., Glendale, Luke Air Force Base), dispersed agricultural centers and associated facilities (e.g., farm buildings and equipment), irrigation canals, and pipelines. Most of the overhead infrastructure in the area consists of high-voltage transmission lines, aboveground communication, electric distribution lines, and communication towers.

Agency consultation and review of applicable comprehensive/general plans and specific approved future plans indicate that much of the remaining open desert and agricultural land will be developed in the near future. This will result in a substantial change in the existing open landscape to a more densely developed "built" urban environment. It will consist of more uniform residential, commercial, light industrial/industrial, parks, and open space areas interspersed with required infrastructure such as roads, transmission lines, street signs/lights, and flood control features. Therefore, the existing landscape setting likely will be substantially modified prior to the addition of some of the proposed facilities into the landscape.

Landscape Scenic Quality

The inventory of the existing scenic quality began by classifying the area's landscape character and inherent scenic attributes of landscapes within the VSOI. Scenic quality is determined by rating the uniqueness and diversity of interest of a particular landscape in terms of landform, vegetation, water, cultural features, and the effects of adjacent scenery. Additionally, landscape scenic quality can be affected by the presence of manmade modifications (e.g., transmission lines and industrial facilities) in the visual setting.

Based on the following criteria, the Project area was separated into four scenic quality classes to identify the relative scenic value of landscapes within the Project area. Generally, the landscapes representative of Class A are those areas containing the greatest amount of scenic diversity and visual interest, while Class C landscapes include areas with the least diversity and visual interest. Developed areas are considered a separate class where no valuation has been placed on the scenic quality of the area due to the variety of architectural styles, development patterns, and user attitudes, which define the setting. Scenic quality classes are defined as follows:

- Class A – Areas of outstanding diversity or interest; characteristic features of landform, rock, water, and vegetation are rare, distinctive, or unique in relation to the surrounding region. These areas contain considerable variety in form, line, color, and texture. Typically, public concern for preserving this landscape type is high.

- Class B – Areas of above-average to average diversity or interest providing some variety in form, line, color, and texture. The features are not considered rare in the surrounding region but provide adequate visual diversity to be considered somewhat unique. Typically, public concern for preserving this landscape type is moderate, but also may be high.

- Class C – Areas of minimal diversity or interest where representative features have limited variation in form, line, color, or texture in the context of the surrounding region. Cultural modifications (e.g., transmission lines and communication facilities) are highly noticeable given the relative flatness of the surrounding terrain. Typically, public concern for preserving this landscape type is low, but may be moderate.

- Developed – Areas composed primarily of residential, commercial, and industrial facilities or a mix of these development types. It also included utility, railroad, and roadway corridors. These areas generally do not contain substantial amounts of open space, except for developed parks or recreation sites. Typically, public concern for preserving this landscape is varied based on the type of development, and ranges from high in residential areas to low in industrial settings.

Photographs shown on following pages illustrate the typical visual conditions that have been identified within the VSOI. There were no Class A landscapes inventoried within the Project area due to the lack of unique and visually diverse landscapes such as small mountains or foothills.

A large portion of land within the VSOI is currently used for agricultural purposes and is of Class B landscape scenic quality. Checkerboard agricultural parcels supporting a variety of crops and flowers add to the distinctiveness of the setting and create unique elements of color and texture within the natural desert landscape. When in production, agricultural lands display brown, tan, and green colors in addition to the vibrant array of colors displayed by fields of blooming roses and other ripe crops. At times when the agricultural lands are fallow, they offer minimal variation in color from the surrounding desert landscape. The Agua Fria River corridor north of Olive Avenue and the Reems Road Channel are two natural appearing landscapes with water drainages and a more diverse vegetation that would be considered Class B.

In contrast, small parcels of undeveloped land and fallow agricultural land is relatively homogeneous, with typical southwestern desertscrub vegetation offering limited visual diversity. Most of these areas can be characterized as Class C landscapes, because of their limited visual appeal.

Developed areas are common within the Project area, occurring throughout a significant portion of the land inventoried. Developed areas can include new light industrial development with appealing aesthetic quality and distinctive character including landscaping, as well heavy industrial areas like landfills and sand/gravel operations where the landscape in not visually appealing.

Class B – Agricultural Land

Class B – Reems Road Channel Flood Control Facility

Class B – Agua Fria River

Class D – Residential Neighborhood

Class D – Light Industrial Development

Class D – Olive Avenue Corridor

Class D – Burlington Northern Santa Fe Railroad Corridor

Class D – Utilities/Transmission Line Corridor

Viewpoints and Visibility

Sensitive viewpoints are those locations where viewers would be the most susceptible to visual impacts resulting from the introduction of the proposed facilities into their viewshed, based on their level of sensitivity. Viewer sensitivity is a measure of the degree of concern viewers would have towards change occurring in their viewshed. Levels of sensitivity were determined by evaluating the compatibility of land uses to be accepting of change within their viewshed. For example, views from a residence or park would be assigned a higher level of sensitivity than views from a commercial or industrial area. Sensitive viewpoints were identified based on review of available land data, data gathered during field reviews, public and agency input, and previous environmental studies conducted for similar projects in similar settings. In addition, future sensitive viewpoints were identified through agency consultation, as well as review of current comprehensive approved plans for those jurisdictions located within the VSOI.

Generally, the viewpoints assigned a high sensitivity level include residential areas (e.g., Twelve Oaks Estates, Dysart Ranchettes, Suncliff, Agua Fria Ranch, Pueblo El Mirage) and recreational areas (e.g., City of El Mirage Gateway Park Agua Fria River, and trails). However, the presence of intrusive modifications in a high sensitivity area may cause the area to be characterized as having lower viewer sensitivity regardless of the type of use. Moderate sensitivity viewpoints commonly include public use and government buildings and major travel routes (i.e., Loop 303, Northern Parkway, and major arterial roads). Views from commercial/light industrial/industrial areas are considered low sensitivity.

Impact Assessment Methodology

The potential impacts of the proposed facilities on visual resources within the Project area could result from a variety of project activities occurring during both construction (e.g., erection of poles, stringing conductors, clearing of substation sites) and operation (e.g., presence of poles, conductors, and substations). This section discusses the methods used to assess the potential impacts the facilities would have on landscape scenic quality and sensitive viewers within the VSOI, as well as the results of the analysis. Potential visual impacts resulting from the proposed facilities range from high in areas where substantial changes would occur in the visual setting to low in areas where change would be least evident. In addition, mitigation measures that could be used to reduce impacts on the visual setting are described.

Project Contrast

Impacts on landscape scenic quality and sensitive viewers were determined by evaluating the degree of contrast the proposed facilities would have in the VSOI. Project contrast is defined as a measure of the degree of perceptible change that would occur to the scenic quality or sensitive views within the VSOI. Project contrast is determined by evaluating the following three variables: (1) physical landform changes, (2) removal of vegetation, and (3) the addition of structural changes in the landscape.

Landform and vegetation contrast were not evaluated in detail for this study because the project would not require substantial grading/landform manipulation, primarily because the area is relatively flat and accessible. The project also would not require notable vegetation removal because the routes are in areas that are modified/disturbed or likely will be developed during or before the Proposed Routes A, E, and G are built. Therefore, the primary component in the evaluation of project contrast was the relationship between existing and proposed transmission line structures within the context of the surrounding environment as well as the future environment.

The introduction of new or modified structures into the existing landscape would create noticeable visual changes in the VSOI. However, these impacts would not be as noticeable when adding a transmission line

to an existing corridor versus a previously unmodified setting. Constructing the proposed transmission line next to an existing transmission line with the same or similar structures would result in the lowest impact on scenic quality and sensitive viewers. Alternatively, the most substantial impacts would result from the introduction of a transmission line into an area that does not have existing lines. Additional factors that would affect the degree of contrast include the type of adjacent development. For example, transmission lines typically are less noticeable in industrial settings or in areas where other vertical features such as signs, lights, buildings, roadway intersections/interchanges, and trees dominate the setting. These variables also were included in the evaluation of project contrast.

Project contrast levels (existing and future visual conditions) were established for each of the Proposed Routes A, E, and G evaluated, with many areas have low to moderate project contrast levels due to the presence of existing overhead transmission lines.

Landscape and Scenic Quality Methodology

Impacts on scenic quality are determined by evaluating the level of change to the aesthetic qualities of landscapes within the VSOI because of the implementation of the proposed facilities. Impacts on landscape scenic quality considered existing conditions and accounted for the predicted future conditions of the VSOI. The potential for impacts on scenic quality was driven by changes in the built environment as much as by the addition of the proposed facilities. The need for the proposed transmission lines is driven by future development, which typically occurs before or during the construction of the transmission lines.

While the existing scenic quality of the landscapes within the VSOI was inventoried, the primary element driving the evaluation of impacts was the likely future condition of the landscapes established by the review of comprehensive /general plans and approved plans relevant to the Project area. It is anticipated that most of the land that is currently open space or used for agricultural purposes, from the Loop 303 Freeway east, likely will be developing into light industrial and commercial uses, and some areas of residential. Open space will consist primarily of developed recreational areas and vegetated drainage corridors (e.g., Reems Road Channel and Agua Fria River) interspersed throughout these urban areas.

Impacts from the proposed facilities on scenic quality would be highest in Class B landscapes and parks, as well as residential areas. Impacts would be lowest when the proposed facilities are in existing transmission line corridors or commercial and industrial areas. It is anticipated that most of the impacts on landscape scenic quality would be moderate to low due primarily to avoidance of highly scenic areas and/or locating the proposed facilities in areas where there are no existing plans for development or where future plans can be developed to accommodate the Proposed Routes A, E, and G. The scenic quality impacts resulting from the proposed facilities were established using the general criteria in the following table. It should be noted that these criteria are only guidelines and specific conditions could change impact levels.

Viewer Impact Methods

Impacts on sensitive viewers are directly attributable to the visibility potential or how the project would be seen from a particular viewing area. The impact assessment considered three components in establishing the degree of impact on sensitive viewers resulting from the introduction of the Proposed Routes A, E, and G into the VSOI: (1) viewing distance (i.e., relationship of the viewer to the transmission line); (2) screening and backdropping (i.e., adjacent vegetation, terrain, and development); and (3) degree of project contrast discussed previously.

The noticeable visual change to the landscape resulting from the introduction of transmission lines depends largely on the distance of the facilities from the viewer. The contrast of transmission lines within the landscape typically decreases with increased viewing distance because the details and scale/dominance of the transmission lines are reduced. Conversely, when viewed in proximity (e.g., within 600 feet) the details and scale/dominance of the transmission lines are prominent. Although each project is unique due to several viewing variables, potential impacts on sensitive viewers were evaluated within the VSOI at the following distance zones:

- Immediate Foreground (0-600 Feet)
- Foreground (Foreground 660 - 1,320 feet)
- Middleground (1,320 - 5,280 feet)
- Background (1 mile +)

Available screening and backdropping also were considered in the assignment of impact levels. Two types of screening were identified within the Project area: (1) vegetative screening and (2) development screening (e.g., adjacent residential, commercial, and industrial areas). Topographic screening was not considered in this study due to the relatively flat terrain throughout the VSOI. The presence of vegetative or development screening could effectively lower levels of impact assigned to views from surrounding areas since visibility of the proposed facilities may be substantially reduced or blocked. Another variable evaluated in the assignment of impact levels is consideration of backdropping from terrain (e.g., White Tank Mountains) or development (e.g., tall light industrial buildings). The proposed facilities are absorbed to varying degrees when viewed against background terrain or development. The visual absorption capability is determined by the degree or complexity of elements and similarity in colors and textures, which make up the background.

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As previously described, sensitive viewers are those most susceptible to visual impacts resulting from the introduction of the proposed facilities into their viewshed. The degree of potential impact on viewers is based on the level of viewer sensitivity combined with project visibility and contrast relative to the view. The viewer impacts resulting from the proposed facilities were established using the general criteria in the following table. It should be noted that these criteria are only guidelines and specific conditions could change impact levels.

Impact Assessment Criteria

Table E-1 includes a summary of the criteria used to assess potential impacts on existing and future landscape scenic quality and sensitive views, for each of the Proposed Routes A, E, and G.

Table E-1 – Impact Assessment Criteria

Impact Rating	Criteria
Low	• Minimal potential conflicts with existing scenic quality or views, as well as views from planned land uses • Scenic quality Class C landscapes or Class B landscapes with adjacent existing transmission lines or industrial development, as well as industrial and commercial retail areas • Non-residential areas with open views to existing transmission lines, industrial areas, areas with good construction and maintenance access (e.g., roads), and previously disturbed areas such as sand and gravel mining

Table E-1 – Impact Assessment Criteria

Impact Rating	Criteria
	• Views (moderate sensitivity) typically would be in the background or middleground distance zone where there are existing transmission lines • Routes would comply with visual resource planning guidelines and scenic management policies
Moderate	• Some conflicts with existing and planned visual resources • Scenic quality Class B landscapes with no existing transmission lines or Class A landscapes with existing transmission lines or adjacent industrial development, as well as commercial office park areas and active use recreation areas • Mitigation efforts can reduce visual impacts to low levels • Commercial areas, primary and secondary roads with no existing transmission lines, residential areas with existing transmission lines, agricultural and/or ranching uses, and undisturbed areas with minimal value in terms of scenic quality or views and that are planned for development • Views (high or moderate sensitivity) typically would be in the middleground distance zone or immediate foreground and foreground distance zones where there are existing transmission lines
High	• Routes conflict with existing scenic quality or high sensitivity views, as well as likely views from high sensitivity future land uses • Scenic resources may be protected by agency planning guidelines • Scenic quality Class A landscapes as well as residential and regional park/preserve areas • Mitigation efforts may reduce impacts, but not to low levels • Existing nearby residential or recreation areas (parks, trails, opens space) without transmission lines, planned recreation or scenic areas, areas without existing access that would require substantial soil and vegetation disturbance, and areas with utilities recently placed underground • Views (high sensitivity) typically would be in the immediate foreground or foreground distance zones where there are no existing transmission lines

The production of visual simulations was a key component of the visual analysis conducted for the project. The visual simulations were used to verify impact levels as well as provide the public and agencies an opportunity to review the magnitude of change associated with the proposed project facilities in the VSOI.

In general, the process of creating visual simulations includes (1) photographing the project location from various viewpoints; (2) developing a three-dimensional (3-D) model of the proposed project structures; and (3) superimposing the modeled structures into the photographs. To obtain the highest quality image for simulation, photographs were taken with a Canon AE-1 using a 50-millimeter lens with slow speed slide film (ISA 50). These photographs were subsequently scanned at a resolution of 72 dpi, with a single image size of 3072 x 2048 pixels. When a single photograph could not depict the entire impact area and its immediate setting, images taken from a 50-millimeter lens were spliced together to obtain the sufficient angle of view. The splicing process results in a more accurate representation of views than photos that could be acquired using a typical wide-angle lens. The 3-D digital models of proposed structures were produced by APS. Using these models, 3-D perspective views of proposed project facilities and selected existing structures were generated in 3D Studio, under lighting conditions selected to match those associated with the conditions when the photographs were taken. These 3-D perspective views were then superimposed onto the scanned photographs, using existing terrain and structures to

accurately reference and locate the proposed facilities in the image, for final scaling and rendering in Photoshop. This is consistent with project description assumptions.

MITIGATION MEASURES

The impact assessment considered several mitigation measures that APS will include in the final project design to reduce overall project contrast and minimize potential impacts on landscape scenic quality and sensitive viewers. The effectiveness of a mitigation measure is determined by the degree to which it diminishes the visual contrast of the proposed facilities in each setting. The following mitigation measures may be implemented to reduce visual contrast resulting from the proposed facilities.

1. To avoid disturbance to sensitive features (e.g., residences, recreation areas), access roads will not be constructed in those areas unless necessary. Instead, construction and maintenance traffic will use existing roads or cross-country access routes (including right-of-way) where suitable access exists. If access roads are required, APS will return the affected areas as near to their original condition as possible.

2. To minimize ground disturbance, operational conflicts, and/or visual contrast, the transmission line structure design will be a single-steel pole with a galvanized or dulled finish to reduce surface reflection.

3. To reduce visual contrast and/or potential operational conflicts, standard tower design will be modified to correspond with spacing of existing transmission line structures where practicable and within limits of standard structure design. The normal span will be modified to correspond with existing structures, when possible.

4. To reduce visual impacts, potential impacts on recreation values, and safety at highway, wash, and trail crossings, structures are to be placed at the maximum viable distance from the crossing within limits of standard structure design.

5. Non-reflective (non-specular) conductors will be used for the entire length of the transmission line route.

6. Landscape walls matching the local architectural styles and vegetation will be incorporated around substations sites to minimize visibility and visual contrast.

7. Low profile designs will be used when feasible for all electrical equipment within the substation walls to minimize visibility and visual contrast when possible.

Impact Assessment Results

The following sections provide a general description of the potential impacts on landscape scenic quality and sensitive viewers for Proposed Routes A, E, and G. The potential impacts consider the existing and future visual conditions, as well as previously described mitigation measures incorporated into the project description.

Impacts on future landscape settings typically would be lower than for existing landscapes because future plans can be more readily adapted to account for the presence of the Proposed Routes A, E, and G. More specifically, impacts on the landscape setting for planned areas approved for implementation typically are

higher than those associated with general planned areas because plans would need to be changed to accommodate the proposed transmission lines.

Table E-2 includes a summary of impact so existing and future landscape scenic quality and sensitive views, and relevant comments associated with the analysis of each of the Proposed Routes A, E, and G. and associated link segments.

Table E-2 – Visual Resources Impact Assessment Results

Proposed Route	Link Segment	Existing Visual Resources	Planned Visual Resources
A	10	• Low impacts on Class B and D landscapes • Low impacts on views along Loop 303, due to presence of existing 230kV and 69kV transmission lines, signage, and light poles	• Low impacts on views from future mixed use and residential development • Moderate impacts from future residential development north of Olive Avenue
	20	• Low impacts on Class B landscapes • Moderate impacts on views from isolated residences along Olive Avenue near existing 69kV transmission lines • Low impacts on views along Olive Avenue	• Low to moderate impacts on views from future residences near existing 69kV transmission lines • Moderate impacts from future residential development north of Olive Avenue • Moderate impacts from future parks/open space in Reems Road Channel
	35	• Low impacts on Class B landscapes • Moderate impacts on views from isolated residences along Olive Avenue near existing 69kV transmission lines • Low impacts on views along Olive Avenue	• Low impacts on views from future light industrial/industrial development near existing 69kV transmission lines • Moderate impacts from future parks/open space in Reems Road Channel
	76	• Low impacts on Class B and D landscapes • Low impacts on views along Olive Avenue	• Low impacts on views from future light industrial/industrial development along existing 69kV transmission lines
	90	• Low impacts on Class B and D landscapes • Moderate impacts on views from isolated residences along south side of Olive Avenue near existing 69kV transmission lines • Low impacts on views along Olive Avenue	• Low impacts on views from future light industrial/industrial and business park development near existing 69kV transmission lines

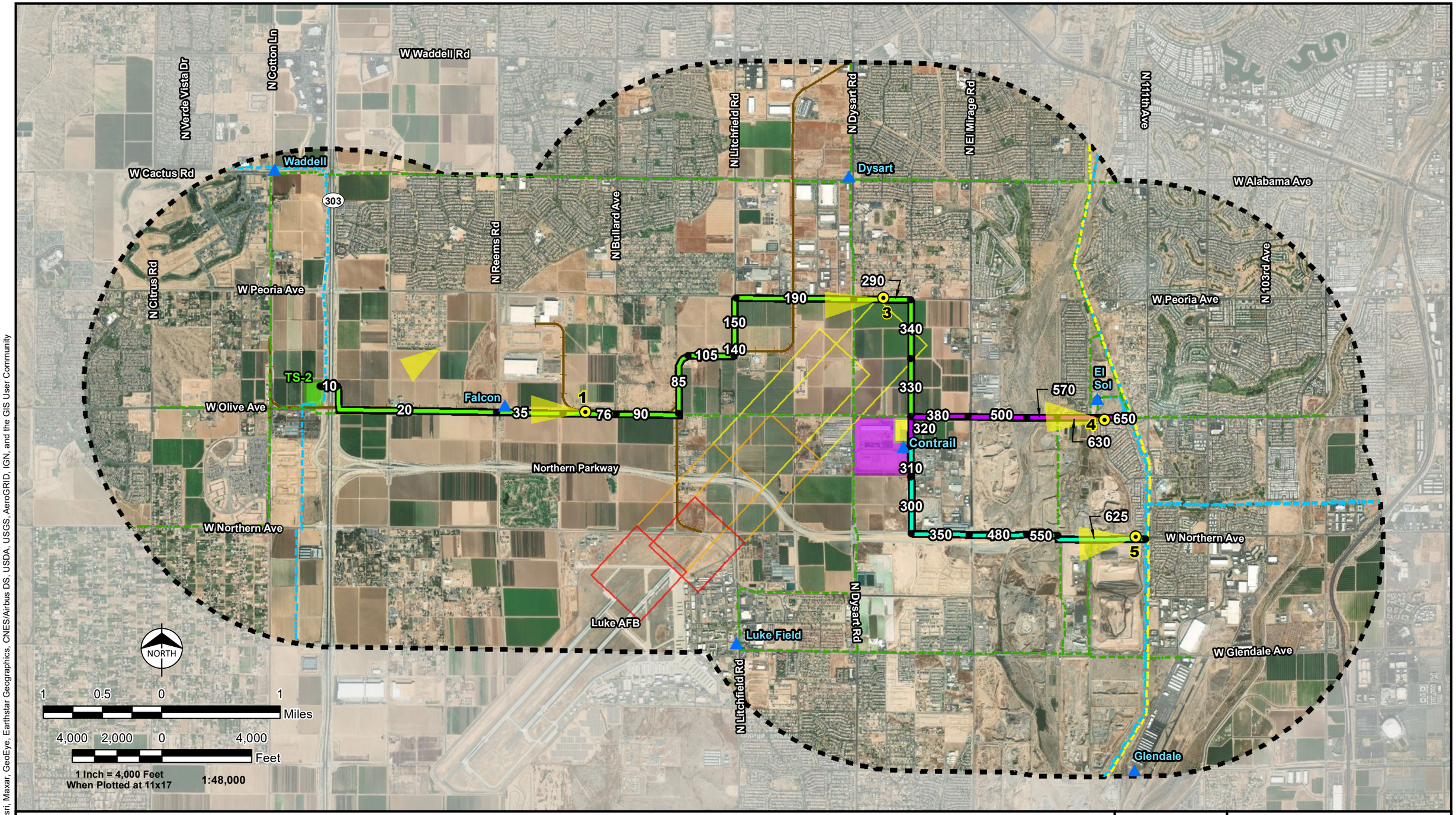
Proposed Route	Link Segment	Existing Visual Resources	Planned Visual Resources
	85	• Low impacts on Class B and D landscapes along railroad • Moderate to high impacts on views from isolated residences along south side of Olive Avenue viewing through existing 69kV transmission lines • Low impacts on views along Olive Avenue	• Low impacts on views from future business park development
	105	• Low impacts on Class B and D landscapes along railroad • Moderate to high impacts on views from isolated residences west of Litchfield Road viewing through industrial/agricultural development	• Low impacts on views from future business park development
	140	• Low impacts on Class B and D landscapes along railroad and agricultural buildings • Moderate to high impacts on views from isolated residences west and east of Litchfield Road viewing through industrial/agricultural development • Low impacts on views along Litchfield Road	• Low impacts on views from future business park development
	150	• Moderate impacts on Class B landscapes • Moderate to high impacts on views from isolated residences west of Litchfield Road and north of Peoria Avenue • Low impacts on views along Litchfield Road	• Low impacts on views from future business park development
	190	• Moderate impacts on Class B landscapes • Moderate to high impacts on views from isolated residences within commercial/industrial development north of Peoria Avenue • Low impacts on views along Peoria Avenue	• Low impacts on views from future business park development

Proposed Route	Link Segment	Existing Visual Resources	Planned Visual Resources
	290	• Moderate impacts on Class B landscapes • High impacts on views from residences with Dysart Ranchettes north of Peoria Avenue • Low impacts on views along Peoria Avenue	• Low impacts on views from future business park development
	340	• Moderate impacts on Class B landscapes • Moderate to high impacts on views from residences with Dysart Ranchettes north of Peoria Avenue • Low to moderate impacts from distant residences north of Peoria Avenue and the Gateway Park at the City of El Mirage complex.	• Low impacts on views from future business park development
	330	• Moderate impacts on Class B landscapes • Low impacts from distant residences north of Peoria Avenue and the Gateway Park at the City of El Mirage complex	• Low impacts on views from future business park development
E	650	• Low impacts on Class D landscapes with several 345kV, 230kV, and 69kV transmission lines present • Moderate impacts on views from residences within the Suncliff subdivision along south side of Olive Avenue, viewing towards existing 69kV transmission lines • Low impacts on views along Olive Avenue	• Low to moderate impacts on views from future residential and utility corridors near
	630	• Low impacts on Class D landscapes with 69kV transmission lines present • Moderate impacts on views from residences within the Agua Fria Ranch subdivision along north side of Olive Avenue, viewing towards existing 69kV transmission lines	• Low to moderate impacts on views from future residential and utility corridors near

Proposed Route	Link Segment	Existing Visual Resources	Planned Visual Resources
		• Low impacts on views along Olive Avenue	
	570	• Low impacts on Class D landscapes with 69kV transmission lines present • Low to moderate impacts on views from residences within the Agua Fria Ranch subdivision along the north side of Olive Avenue, viewing towards existing 69kV transmission lines • Low to moderate impacts on views from open space along Agua Fria River • Low impacts on views along Olive Avenue	• Low to moderate impacts on views from future residential and parks/open space along Agua Fria River
	500	• Low impacts on Class D landscapes with 69kV transmission lines present • Low to moderate impacts on views from open space along Agua Fria River • Low impacts on views along Olive Avenue	• Low to moderate impacts on views from future residential and parks/open space along Agua Fria River
	380	• Low impacts on Class D landscapes with 69kV transmission lines present • Low impacts on views along Olive Avenue	• Low impacts on views from future business park/light industrial/industrial development
	320	• Low impacts on Class D landscapes with 69kV transmission lines present • Low impacts on views from industrial development along Olive Avenue • Low impacts on views along Olive Avenue	• Low impacts on views from future business park/light industrial/industrial development
G	625	• Low impacts on Class D landscapes with several 345kV, 230kV, and 69kV transmission lines present, as well as the City of Glendale landfill • Moderate to high impacts on views from residences within the Suncliff subdivision along north side of Northern	• Low to moderate impacts on views from future residential, parks/open space, and mixed use development near utility corridor and landfill

Proposed Route	Link Segment	Existing Visual Resources	Planned Visual Resources
		Avenue, with City of Glendale Landfill on south side of Northern Avenue • Low impacts on views along Northern Avenue	
	550	• Low impacts on Class D landscapes with several sand and gravel pits, as well as the City of Glendale landfill • Low impacts on views from industrial developments • Low impacts on views along Northern Avenue	• Low to moderate impacts on views from future parks/open space and mixed use development
	480	• Low impacts on Class D landscapes with several sand and gravel pits, as well as the City of Glendale landfill • Moderate to high impacts on open space along Agua Fria River • Low impacts on views from industrial developments • Low impacts on views along Northern Avenue	• Low to moderate impacts on views from future parks/open space and mixed use development
	350	• Low impacts on Class D landscapes with several industrial developments • Low impacts on views from industrial developments • Low impacts on views along Northern Avenue	• Low to moderate impacts on views from future industrial development
	300	• Low impacts on Class D landscapes with several industrial developments • Low impacts on views from industrial developments	• Low to moderate impacts on views from future industrial and business park development
	310	• Low impacts on Class D landscapes with several industrial developments • Low impacts on views from industrial developments	• Low to moderate impacts on views from future industrial and business park development

Visual simulations were completed from five viewpoints as shown on Exhibit E1 – Visual Simulation Photo Locations to assist with the analysis of the visual impacts associated with the introduction of proposed project into the landscape. The visual simulations are provided as Exhibits E2-E5.



Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation

Project Features
- Future TS-2 Substation
- Future Contrail Substation
- Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Visual Simulation Locations
- Photo Location
- Visual Simulation View Direction

Proposed Routes
- Proposed Route A
- Proposed Route E
- Proposed Route G
- 100 Route Link Number
- Route Link Node

aps

Exhibit E-1
Visual Simulation
Photo Locations
West Valley Central
230kV Connection Project

January 2022

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Issued: 1/17/2022

Viewpoint #1 – Olive Avenue

Existing Condition - Viewing west along Olive Avenue, approximately ½ mile west of Reems Road

Proposed Condition

Conceptual, June 2021

Viewpoint #3 – Peoria Avenue/Dysart Ranchettes

Existing Condition – Viewing west at intersection of Peoria Avenue/North 127th Avenue

Proposed Condition

Conceptual, June 2021

Viewpoint #4 – Olive Avenue/Suncliff Subdivision

Existing Condition – Viewing west at intersection of Olive Avenue/North 114th Avenue

Proposed Condition

Viewpoint #5 – Northern Avenue/Suncliff Subdivision

Existing Condition – Viewing west at intersection of Northern Avenue/North 112th Avenue

Proposed Condition

Table E-3 includes a summary of impacts for visual resources by Route and Link Segment for each of the Proposed Routes A, E, and G and associated link segments.

Table E-3 – Visual Resources Impact Assessment Route and Link Segment Summary

		Existing Visual Resources			Planned Visual Resources		
Proposed Route	**Link Segment**	**High**	**Moderate**	**Low**	**High**	**Moderate**	**Low**
A	10	-	-	0.15	-	0.08	0.07
	20	-	0.88	0.66	-	1.54	-
	35	-	0.29	0.27	-	0.29	0.27
	76	-	-	0.45	-	-	0.45
	90	-	0.27	0.27	-	0.30	0.24
	85	0.08	0.14	0.31	0.10	0.13	0.31
	105	0.24	0.15	--	0.24	0.15	-
	140	0.05	0.02	-	0.05	0.02	-
	150	0.12	0.31	-	0.12	0.31	-
	190	0.39	0.42	0.18	0.44	0.41	0.14
	290	0.47	0.01	-	0.47	0.01	-
	340	0.10	0.13	0.26	0.10	0.13	0.26
	330	-	-	0.49	-	-	0.49
Total		**1.46**	**2.60**	**3.04**	**1.52**	**3.34**	**2.23**
E	650	-	0.25	0.01	-	0.25	0.01
	630	-	0.34	-	-	0.34	-
	570	-	0.25	-	-	0.25	-
	500	-	0.48	0.02	-	0.48	0.02
	380	-	-	0.48	-	-	0.48
	320	-	-	0.25	-	-	0.25
Total			**1.32**	**0.77**	**-**	**1.32**	**0.77**
G	625	0.32	0.43	0.02	0.44	0.31	0.02
	550	0.26	0.00	-	0.26	-	-
	480	0.49	-	-	0.49	-	-
	350	0.08	0.14	0.27	0.49	-	-
	300	-	-	0.48	0.04	0.13	0.31
	310	-	-	0.26	-	-	0.26
Total		**1.15**	**0.57**	**1.03**	**1.71**	**0.44**	**0.59**

Table E-4 includes a summary of impacts for visual resources for each of the Proposed Routes A, E, and G.

Table E-4 – Visual Resources Impact Assessment Route Summary

	Existing Visual Resources			Planned Visual Resources		
Proposed Route	**High**	**Moderate**	**Low**	**High**	**Moderate**	**Low**
A	1.46	2.60	3.04	1.52	3.34	2.23
E	-	1.32	0.77	-	1.32	0.77
G	1.15	0.57	1.03	1.71	0.44	0.59
Total	**2.61**	**4.50**	**4.84**	**3.24**	**5.11**	**3.60**

CONCLUSIONS

A majority of the impacts on existing and future visual resources resulting from construction, operation, and maintenance of the Proposed Routes A, E, and G would be low to moderate. This is primarily due to the routes being located within existing agricultural and industrial lands, with more industrial lands rapidly developing along these routes. High impacts on existing residential views will be short term, as the area is planned for a significant change to light industrial and business park development that will reduce visual contrast of the proposed transmission lines. Moreover, these routes follow existing transmission lines, railroads, and roadways extensively, which provides visually compatible areas for siting Proposed Routes A, E, and G. Mitigation measures will reduce the potential effects of the Proposed Routes A, E, and G where they cross adjacent to residential areas.

The Proposed Routes A, E, and G reflect public preferences within the community. Many of the public comments emphasized locating the proposed transmission lines in the agricultural and industrial lands where there are fewer residences, as well as where there are existing transmission lines.

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HISTORIC SITES AND STRUCTURES AND ARCHAEOLOGICAL SITES

OVERVIEW

The West Valley Central 230kV Connection Project is located on the floor of the Aqua Caliente River Basin, to the west of the Agua Fria River. The area is a broad alluvial fan of the White Tank Mountains with a gentle slope toward the east toward the Agua Fria River. The natural vegetation of the area would have been brush and other vegetation that are typical of the northern reaches of the Sonora Desert.

Human occupation of the region has a rich and varied history. Nomadic hunters and gatherers, known as Paleoindians, ranged across much of North America at least 12,000 years ago. Over-hunting or climatic warming and drying led to the extinction of several species of large game animals that had been staples of Paleoindian subsistence. Evidence of Paleoindian occupation in the project vicinity is limited to a few isolated spear points. The people of the subsequent Archaic era traveled with the seasons to hunt game and collect plant resources in different environmental zones. Archaic sites are more common than Paleoindian sites in the Project area, but still are relatively rare. The end of this era, about 2,000 to 3,000 years ago, is marked by the addition of horticulture to subsistence strategies. Approximately 1,500 years ago, the local inhabitants, known as the Hohokam, came to rely primarily on agriculture and became masters of irrigation farming. Hohokam shell, bone, stone, and pottery artifacts are found at remnants of small camps and large village sites, some with ceremonial mounds and ball courts. The Hohokam cultural system, which had thrived for a millennium or more, changed drastically at about A.D. 1450 and the large canal systems and many villages were abandoned. Archaeological evidence of subsequent periods of aboriginal occupation is uncommon. Culturally, this Project occurs within the land previously occupied by the Hohokam, a prehistoric culture that thrived in the region. They were centered along the rivers and drainages as well as a complex canal system in which they could manipulate the water of the valley. They are responsible for the predominant prehistoric cultural material found in the Project area.

When Europeans first arrived in the area, the Phoenix Basin was largely uninhabited by native peoples because it was a contested boundary zone between the territories of the Akimel O'odham (Pima) and Maricopa villagers residing on the Gila River to the south, Yavapais to the north, and Apaches to the northeast. Evidence of ethnohistoric occupation in the Project area is limited to a few ceramic sherds of ambiguous affiliation.

Early Euro-American agricultural settlement and development was confined largely to the areas immediately adjacent to the Gila River, where the Hohokam had developed irrigation canals centuries before. The Buckeye Canal was in operation by 1886, and was the stimulus for the founding of the Town of Buckeye in 1889 and the community of Liberty in 1895. Attempts to augment the water supply north of the Buckeye Canal began with the development of an irrigation project along the lower Agua Fria River Valley in the 1880s. William Beardsley and the Agua Fria Water and Land Company began building a diversion dam near Frog Tanks in the 1890s. However, the dam was left unfinished until 1926-1927 when it was completed in conjunction with the construction of Waddell Dam and the Beardsley Canal. Southwest Cotton, a subsidiary of Goodyear Tire & Rubber Company, purchased 24,000 acres west of the Agua Fria River during World War I and developed farms to grow long-staple cotton to meet wartime demands for tires and airplane fabric. During World War II, the Luke Air Field became the largest advanced pilot training facility in the world and the Litchfield Naval Air Facility was established to test and deliver aircraft produced by Goodyear.

INVENTORY METHODS

Historical and archaeological resources were among the many factors considered during the initial siting studies for the Proposed Routes A, E, and G. That consideration as based on the results of prior studies and information about previously recoded historical and archaeological resources. The primary information source was the AZSITE Cultural Resource Inventory, a computerized database compiled by the AZSITE Consortium, which included the State Historic Preservation Office (SHPO), Arizona State Museum (ASM), Arizona State University, and Museum of Northern Arizona. This database was supplemented with additional review of records of the prior surveys and their associated reports. In addition, file checks were conducted with the National Register of Historic Places (NRHP) and the State Register of Historic properties (SRHP) as well as historic General Land Office plats on file with the Bureau of Land Management (BLM) were reviewed for information about the original surveys and land patents, information that could uncover unrecorded historic properties.

This exhibit summarized the results of the records review. This documentation is intended to support the Arizona Corporation Commission in complying with the State Historic Preservation Act as it reviews the Application for a CEC for the proposed project.

INVENTORY RESULTS

The AZSITE data were acquired for an approximately 23,040-acre Project area that encompassed the Proposed Routes A, E, and G locations that were considered for the Project. AZSITE includes information about 87 cultural resource studies that have been conducted previously with this area. Most of these studies were conducted to assess the potential impacts of roads, utilities, residential developments, sand and gravel pits, and flood control facilities. These studies have inventoried approximately 75 percent of the entire Project. The studies were relatively evenly distributed throughout the Project area and represent samples of a variety of environmental zones, including river terraces and farmland on the valley floor.

AZSITE includes information about 20 recorded archaeological and historic resources within the Project area. These previously recorded sites included Hohokam artifact scatters and mounds, as well as historic-age trash dumps and roads (AZSITE 2021). However, only three of these were located in areas that potentially could be affected by the Proposed Routes A, E, and G locations considered during the system election study. Most of the previously recorded sites have been removed from the landscape during the construction of a parkway, housing developments, or gravel/sand pits along the river. There are no known buried Hohokam canals within the Project area (AZSITE 2021).

Table E-5 – Previously Recorded Sites within the Project Area

Site	Type	Eligibility	Date Recorded	Route	Developed? (Y/N)
AZ T:7:12 (ASM)	Artifact scatter	Not Eligible	3-15-1974	Project area	Housing
AZ T:7:13 (ASM)	Artifact Scatter	Not Eligible	3-15-1974	Project area	Housing
AZ T:7:23 (ASM)	Lithic Scatter	No data	10-7-1986	Project area	Housing
AZ T:7:24 (ASU)	Water Control	Not Eligible	12-1973	Project area	Housing
AZ T:7:25 (ASM)	Mound/Artifact Scatter	Not Eligible	10-14-1987	Project area	No
AZ T:7:33 (ASM)	Ceramic scatter	Not Eligible	6-1976	Project area	Housing
AZ T:7:79 (ASM)	Artifact Scatter	Not Eligible	10-23-1992	Project area	Housing
AZ T:7:80 (ASM)	Artifact scatter	Not Eligible	10-23-1992	Project area	Housing

Table E-5 – Previously Recorded Sites within the Project Area

Site	Type	Eligibility	Date Recorded	Route	Developed? (Y/N)
AZ T:7:129 (ASM)	Historic Trash Scatter	Not Eligible	8-12-2012	Project area	Housing
AZ T:7:174 (ASM)	Artifact scatter	Eligible	11-17-1999	Project area	No
AZ T:7:176 (ASM)	Ceramic scatter	Eligible	2-18-2000	Project area	Housing
AZ T:7:253 (ASM)	Lithic Scatter	Not Eligible	11-7-2002	Project area	Housing
AZ T:7:366 (ASM)	Artifact scatter	Eligible	8-9-2012	Project area – near G	Parkway
AZ T:7:426 (ASM)	Historic Trash Scatter	Not Eligible	8-8-2012	Project area – near G	Parkway
AZ T:7:427 (ASM)	Historic trash scatter	Not Eligible	8-9-2012	Project area	Parkway
AZ T:7:430 (ASM)	Historic Trash Scatter	Not Eligible	8-9-2012	Project area	Parkway
AZ T:7:432 (ASM)	Road	Not Eligible	8-9-2012	Proposed G	Parkway
AZ T:7:731 (ASM)	Road	Not Eligible	8-9-2012	Proposed G	Road
AZ T:11:138 (ASM)	Road	Not Eligible	2-1-2005	Proposed G	Road
AZ V:2:101 (ASM)	Road	Not Eligible	4-4-1994	Project area	Road

Source: AZSITE 2021

A file search conducted in the NRHP and the SRHP data bases indicates that no sites listed on either register are located within the Project area (National Park Service 2021; Arizona State Parks 2021).

The GLO plat maps were searched to identify potential historic sites in the Project area. The available GLO plat maps indicate that the Project area was originally surveyed in 1879 and 1884 with sub-sections resurveyed in 1921 (Table 1-3) (BLM 2021a). The plat maps do not show anything of historic significance.

Table E-6 – Available GLO Plats of the Project Area

Township	Range	Type of Survey	Registry Date
18 North	19 East	Original	11-8-1879
18 North	19 East	Subdivision Original	11-15-1921
17 North	18 East	Subdivision Original	02-05-1884

Source: BLM 2021a

A search of the GLO land patent records was also conducted to identify the original date of historic period Euro-American occupation within the Project area (BLM 2021b). The land patent study indicates that the area indicates that the oldest patent was held by the Atlantic & Pacific Railroad under a development grant (14 Statute [Stat.] 292) which was awarded on 20 July 1899. The rest of the patents were awarded between 1910 and 1931 under the Arizona Enabling Act (36 Stat. 557), Ex-Indian Reserve (27 Stat. 62), Desert Land Act (19 Stat. 377), and the Original Homestead Act (12 Stat. 392) (BLM 2021b). The last patent awarded for the Project area was awarded to the Fisher Construction Company on 13 October 1960 under the Mineral Patent-Placer Act (15 Stat. 251) (BLM 2021b).

A review of U.S. Geological Survey (USGS) maps of the area and the Maricopa County cemetery location database indicates that there are no known cemeteries within the Project area (Findagrave 2021; USGS 1957a, USGS 1957b, USGS 2011, and USGS 2018).

Inventory Assessment Methodology

Each of the routes, Proposed, Route A-1, Route A-4, Proposed E, and Proposed G were assessed for the presence of previously recorded archaeological and historic sites, considering, not only the known recorded sites but also any areas that were noted on the GLO and other data bases for the Project area.

Impact Criteria

The impacts of the Proposed Routes A, E, and G considers the types of sites known to be present, the location of the proposed structures/poles, the locations of workspaces, the locations of road crossings, and the eligibility of the sites.

Impact Assessment Results

Table E-7 summarizes the level of impact respective to Proposed Routes A, E, and G.

Table E-7 – Cultural Resource Impacts Associated with Each System Option

Proposed Route	High Impacts	Moderate Impacts	Low Impacts	Comments
Proposed Route A[1]	No A	No	Atchison, Topeka & Santa Fe Railroad spurs	Evaluated as insignificant Will be spanned or paralleled in different areas Spurs currently being added for new warehouses and factories
			Active irrigation canals and siphons	Paralleled or spanned
Proposed Route E[2]	No	No	Active irrigation canals	Paralleled or spanned
Proposed Route G[3]	No	No	El Mirage Road (AZ T:7:731 [ASM])	Active Road will be spanned
			Dysart Road (AZ T:11:138 [ASM])	Active Road will be spanned
			Northern Ave (AZ T:7:7312 [ASM])	Active Road will be paralleled
			Active irrigation canals	Paralleled or spanned

[1] Approximately 60 to 70 percent of the corridor has been surveyed
[2] Approximately 20 to 30 percent of the corridor has been surveyed (primarily crosses the river and heavily disturbed areas
[3] Approximately 100 percent of the corridor has been surveyed

CONCLUSIONS

A few important historical properties are located along the Proposed and Alternative system options within the Project area. However, it appears that the Proposed system option would not result in any substantial impacts on any known archaeological or historic resources eligible for the NRHP or SRHP. From a cultural resource perspective, the Alternative system options do not offer any advantages over the Proposed system option. A majority of existing and future visual impacts on the scenic quality and sensitive views associated with the Proposed and alternative system options would be low and moderate.

The Proposed system option would impact fewer sensitive views within the immediate foreground by locating the system option along linear features (e.g., roads, section lines, half-section lines, property boundaries) o and on lands designated for future commercial or mixed-use development. The same would go for the alternative options. There are areas where high impacts would occur to residential view in the immediate foreground and foreground distance zones both all the alternatives.

Before construction begins an Unintentional Discovery Plan should be developed to cover the contingency of the location of unknown buried cultural material. If buried cultural material is located during the construction, then the project should cease in the immediate area until the find is analyzed by a qualified professional archeologist.

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U.S. Geological Survey (USGS). 1957a. El Mirage, ARIZ, 7.5" Quadrangle, 1:24,000 scale.

USGS. 1957b. Waddell, ARIZ, 7.5" Quadrangle, 1:24,000 scale.

USGS. 2011. El Mirage, ARIZ, 7.5” Quadrangle, 1:24,000 scale.

USGS. 2018. Waddell, ARIZ, 7.5” Quadrangle, 1:24,000 scale.

EXHIBIT F – RECREATIONAL PURPOSES AND ASPECTS

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

> *Exhibit F:*
>
> *State the extent, if any, the proposed site or route will be available to the public for recreational purposes, consistent with safety considerations and regulations and attach any plans the applicant may have concerning the development of the recreational aspects of the proposed site or route.*

OVERVIEW

Existing and future recreational sites within the Project area are managed by the City of El Mirage, Town of Youngtown, City of Peoria, City of Surprise, City of Glendale, and Maricopa County. Existing recreation opportunities found within the Project area include open space along the Agua Fria River, several city parks, neighborhood parks within residential development, and a golf course.

The Agua Fria River corridor, which bisects the eastern portion of the Project area, provides open space as well as active and passive recreational opportunities. The Maricopa County Regional Trail System Plan (Maricopa County Trails Commission 2004), Youngtown General Plan (Youngtown General Plan 2025), and El Mirage General Plan (El Mirage General Plan 2020) identify open space and recreational trails including the Potential Paved (Agua Fria Watercourse Master Plan) Multi-Use Trail along the Agua Fria River corridor. This corridor is a major open space asset for El Mirage and Youngtown. Most of Youngtown's opportunities for new growth are in areas east and south of the Agua Fria River between Peoria Avenue and Northern Avenue. New development in this area potentially could include industrial amenities and services provided in traditional mixed generation communities (Youngtown General Plan 2025).

The City of Surprise development pattern is primarily structured around master planned communities providing private neighborhood level plans that are less than 5-acres in size (Surprise General Plan 2035). The Project would not cross existing or proposed residential areas within the City of Surprise.

The Maricopa County Planning and Development Department and Parks and Recreation Department identify existing and proposed recreational opportunities such as county parks, open space, trails, and national monuments within Maricopa County. The Project would not cross existing or proposed parks and recreation facilities within Maricopa County.

The Flood Control District of Maricopa County manages the Reems Road channel along the west side of Reems Road. This channel is designed to collect and prevent runoff from heavy rainstorms to protect adjacent development. The Flood Control District does allow these areas to be utilized for recreation use if a municipality would choose to designate and develop the area for recreation uses. Currently there are no specific plans to utilize the Reems Road Channel for recreational purposes.

If planned recreational activities are developed near the Project, APS will cooperate with the appropriate planning authorities and communities to accommodate the appropriate recreational uses with consideration for the Proposed Routes A, E, and G operational and maintenance requirements, as well as safety considerations. It is not anticipated that the Project would significantly affect the future siting of proposed recreational facilities.

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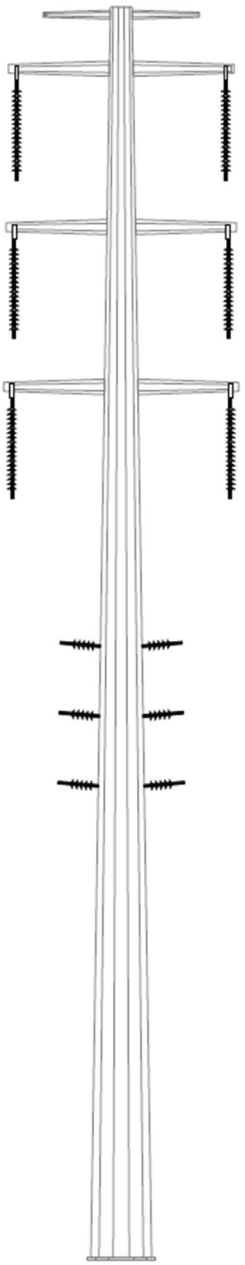
EXHIBIT G – CONCEPTUAL DRAWINGS OF TYPICAL FACILITIES AND TRANSMISSION FACILITIES

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

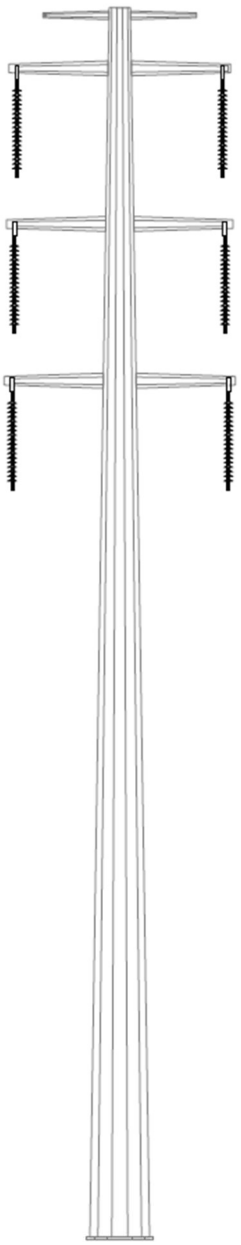
> *Exhibit G:*
>
> *Attach any artist's or architect's conception of the proposed plant or transmission line structures and switchyards, which applicant believes may be informative to the Committee.*

OVERVIEW

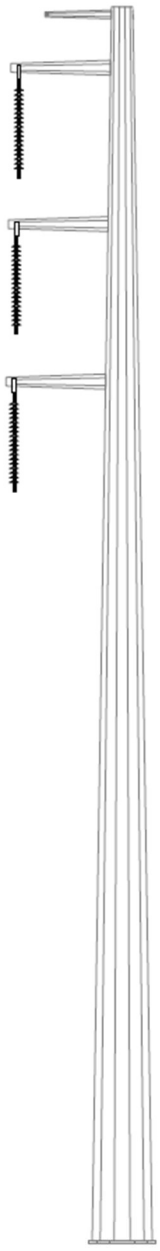
The Project will utilize a range of structure types including the example conceptual drawings illustrated on the following pages.



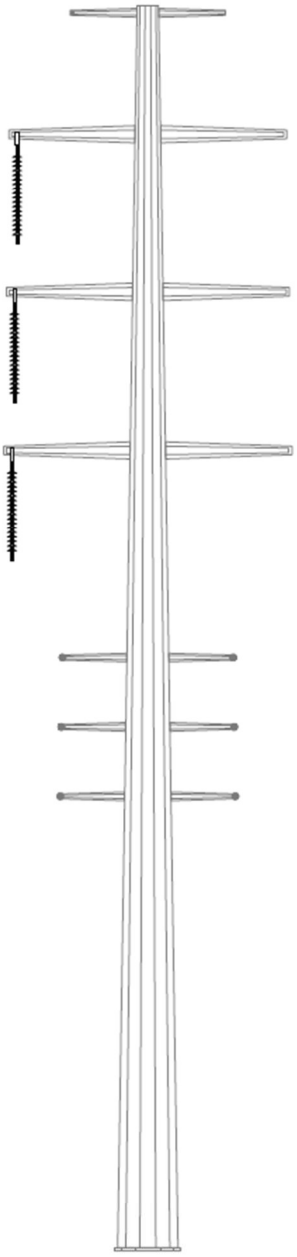
aps ARIZONA PUBLIC SERVICE COMPANY T&D CONSTRUCTION STANDARDS	**STRUCTURES** **230kV DOUBLE CIRCUIT TANGENT POLE** **69kV DOUBLE CIRCUIT UNDERBUILD**	**11918**



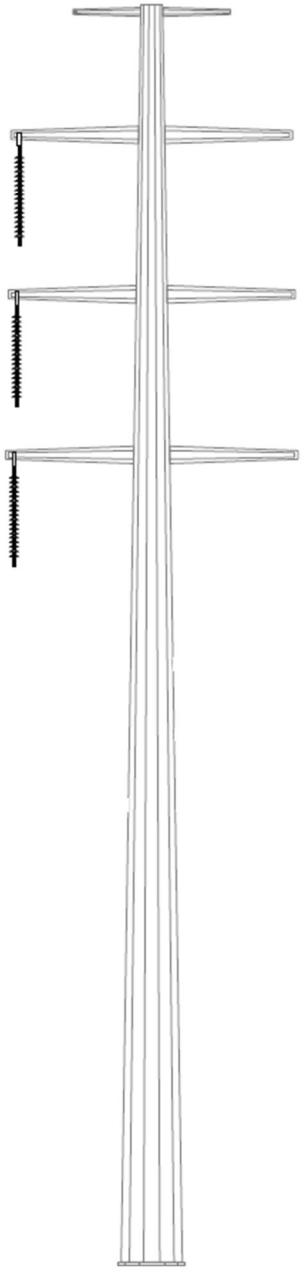
aps ARIZONA PUBLIC SERVICE COMPANY T&D CONSTRUCTION STANDARDS	**STRUCTURES** **230kV DOUBLE CIRCUIT TANGENT POLE**	**11918**



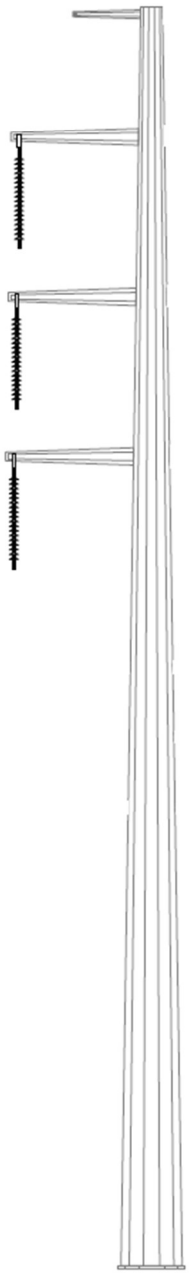
aps ARIZONA PUBLIC SERVICE COMPANY T&D CONSTRUCTION STANDARDS	**STRUCTURES** **230kV SINGLE CIRCUIT TANGENT POLE**	**11918**



aps ARIZONA PUBLIC SERVICE COMPANY T&D CONSTRUCTION STANDARDS	**STRUCTURES** **230KV DOUBLE CIRCUIT ANGLE POLE (15º - 90º)** **69KV DOUBLE CIRCUIT UNDERBUILD**	**11921**



aps ARIZONA PUBLIC SERVICE COMPANY T&D CONSTRUCTION STANDARDS	**STRUCTURES** **230KV DOUBLE CIRCUIT ANGLE POLE (15º - 90º)**	**11921**



aps ARIZONA PUBLIC SERVICE COMPANY T&D CONSTRUCTION STANDARDS	**STRUCTURES** **230kV SINGLE CIRCUIT ANGLE POLE (15° - 90°)**	11921

Figure 0-1- Typical 230kV Substation

EXHIBIT H – EXISTING PLANS

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

> *Exhibit H:*
>
> *To the extent applicant is able to determine, state the existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site or route.*

EXISTING PLANS

As part of the land use study, general and specific plans were gathered for the Project area from Maricopa County, City of El Mirage, City of Glendale, City of Peoria, City of Surprise, and the Town of Youngtown. Land uses are mapped in Exhibit A-3 – Land Use and Exhibit A-4 – Planned Land Use.

During the planning process, members of the Project team also met directly with representatives from Luke Air Force Base, City of El Mirage, City of Glendale, City of Peoria, City of Surprise, Town of Youngtown, Flood Control District of Maricopa County, Maricopa County Department of Transportation, Plains Energy/Rose Law Group, John F. Long Properties/Dermody Properties, and Woolf Logistics/Ross Property Advisors, as well as other private landowners within the Project area. During these briefing meetings, APS reviewed the Project purpose and need, engineering data, environmental data, and the public involvement process that was being conducted to engage stakeholders in the community. Further details of the meetings are presented in Exhibit J – Special Factors, which provides details regarding the public involvement process.

One of the key aspects of the briefings with the agencies and landowners was to exchange information regarding existing and future plans being contemplated for the Project area. There was valuable information shared by all the Project briefing participants. Through this briefing process we identified conceptual land use plans, new developments recently approved, and plans that were expected to be approved soon. In some cases, we were notified of new projects that recently broke ground for construction. This information was critical to conducting the environmental and engineering studies and identified the Proposed Routes A, E, and G as the preferred routes for the transmission lines.

Table H-1 identifies the briefings that were conducted, and Exhibit H-2 indicates all the relevant comprehensive or general plans used to identify the plans of the federal, state, local, and private stakeholders in the area.

Table H-1 – Stakeholder Engagements

Event	Date
Luke Air Force Base Briefing	July 2020
Flood Control District of Maricopa County Briefing	September 2020
City of Surprise Briefing	August 2020
Town of Youngtown Briefing	August 2020
Maricopa County Department of Transportation Briefing	September 2020
City of El Mirage Briefing	August 2020
City of Glendale Briefing	August 2020
City of Peoria Briefing	August 2020
Maricopa County Flood Control District Briefing	September 2020
Luke Air Force Base Briefing	July 2021
Luke Air Force Base Briefing	August 2021
Luke Air Force Base Briefing	February 2021
Luke Air Force Base Briefing	April 2021
Flood Control District of Maricopa County Briefing	May 2021
City of Surprise Briefing	May 2021
Town of Youngtown Briefing	May 2021
Maricopa County Department of Transportation Briefing	May 2021
Maricopa County Flood Control District Briefing	May 2021
City of El Mirage Briefing	May 2021
City of Glendale Briefing	May 2021
City of Peoria Briefing	May 2021
Plains Energy/Rose Law Group	July 2021
John F. Long Properties	July 2021
Woolf Logistics/Ross Property Advisors Briefing	July 2021
Luke Air Force Base Briefing	July 2021
Luke Air Force Base Briefing	August 2021
John F Long Properties/Dermody Properties	November 2021
Woolf Logistics/Ross Property Advisors/Merritt Partners Briefing	November 2021
City of Surprise Briefing	January 2022
Town of Youngtown Briefing	January 2022
Maricopa County Department of Transportation Briefing	January 2022
Maricopa County Flood Control District Briefing	January 2022
City of El Mirage Briefing	January 2022
City of Glendale Briefing	January 2022
City of Peoria Briefing	January 2022

Table H-2 – Comprehensive or General Plans Used

	Title	Date	URL
Maricopa County	Maricopa County; Vision 2030; Comprehensive Plan	January 13, 2016	https://www.maricopa.gov/DocumentCenter/View/3786/Vision-2030-Maricopa-County-Comprehensive-Plan-PDF
City of Glendale	Envision Glendale 2040	General Plan September 30, 2016	https://p1cdn4static.civiclive.com/UserFiles/Servers/Server_15209001/File/Work/Planning/General_Plan/Envision%20Glendale%202040%20General%20Plan%20093016.pdf
City of Surprise	Surprise General Plan 2035; Foundation for the Future	December 19, 2015	https://www.surpriseaz.gov/DocumentCenter/View/18530/General-Plan-2035?bidId=
City of El Mirage	City of El Mirage: General Plan 2020	November 2020	https://content.civicplus.com/api/assets/324638dc-a67d-4c97-8b5d-fec1eb3dead9
Town of Youngtown	Youngtown General Plan 2025	November 4, 2014	https://p1cdn4static.civiclive.com/UserFiles/Servers/Server_12608991/File/Our%20Services/Community%20Development/Directory%20of%20Regulatory%20Documents/6-24-14%20General%20Plan%202025%20-%20Final.pdf
City of Peoria	Plan Peoria AZ; General Plan 2040	December 2020	https://www.peoriaaz.gov/home/showpublisheddocument/23952/637503566345130000
Arizona State Legislature	Luke Air Force Base Accidental Potential Zones	2021	https://www.azleg.gov/ars/28/08461.htm#:~:text=%22Accident%20potential%20zone%20two%22%20means,that%2C%20for%20Luke%20air%20force

REFERENCES

Arizona State Legislature. 2021. Luke Air Force Accidental Potential Zones. Available at https://www.azleg.gov/ars/28/08461.htm#:~:text=%22Accident%20potential%20zone%20two%22%20means,that%2C%20for%20Luke%20air%20force

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EXHIBIT I – ANTICIPATED NOISE/INTERFERENCE WITH COMMUNICATION SIGNALS

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

> *Exhibit I:*
>
> *Describe the anticipated noise emission levels and any interference with communication signals which will emanate from the proposed facilities.*

The following information is provided as stipulated by the Arizona Corporation Commission Article 2 - Rules of Practice and Procedure Before Power Plant and Transmission Line Siting Committee Exhibit 1 which states the following under the section titled "Exhibit I":

"DESCRIBE THE ANTICIPATED NOISE EMISSION LEVELS AND ANY INTERFERENCE WITH COMMUNICATION SIGNALS WHICH WILL EMANATE FROM THE PROPOSED FACILITIES."

Certain electromagnetic effects are inherently associated with overhead transmission of electrical power at extra high voltage (EHV). These effects are produced by the electric and magnetic fields of the transmission line with one of the effects being corona discharge. Corona effects are manifest as audible noise (AN), radio interference (RI), and television interference (TVI). These particular effects are minimized by line location, line design, and construction practices. The project lines were modeled using the EPRI ACDCLine software to calculate these various electromagnetic effects which are presented here. The project involves three different transmission lines that are modeled separately. The highest modeled result from each line will be summarized. Attachment A gives a diagram of each line.

CORONA

Corona is a luminous discharge due to ionization of the air surrounding a conductor and is caused by a voltage gradient which exceeds the breakdown strength of air. Corona is a function of the voltage gradient at the conductor surface. This voltage gradient is controlled by engineering design and is a function of voltage, phase spacing, height of conductors above ground, phase geometry, and meteorological conditions. Irregularities on the surface of the conductor such as nicks, scratches, contamination, insects, and water droplets, increase the amount of corona discharge. Consequently, during periods of rain and foul weather, corona discharges increase. For the transmission design configurations considered for this project, the calculated peak voltage gradient at the conductor surface was consistently in the range of 10.72 – 11.2 kVrms/cm. For comparison purposes, the breakdown strength of air is 21.1 kVrms/cm at 25 °C and 76 mm barometric pressure.

Corona represents power loss on the transmission line and creates transmission line noise. Successful operation of 230 kV lines with similar gradients indicates that these transmission lines will not create adverse corona effects.

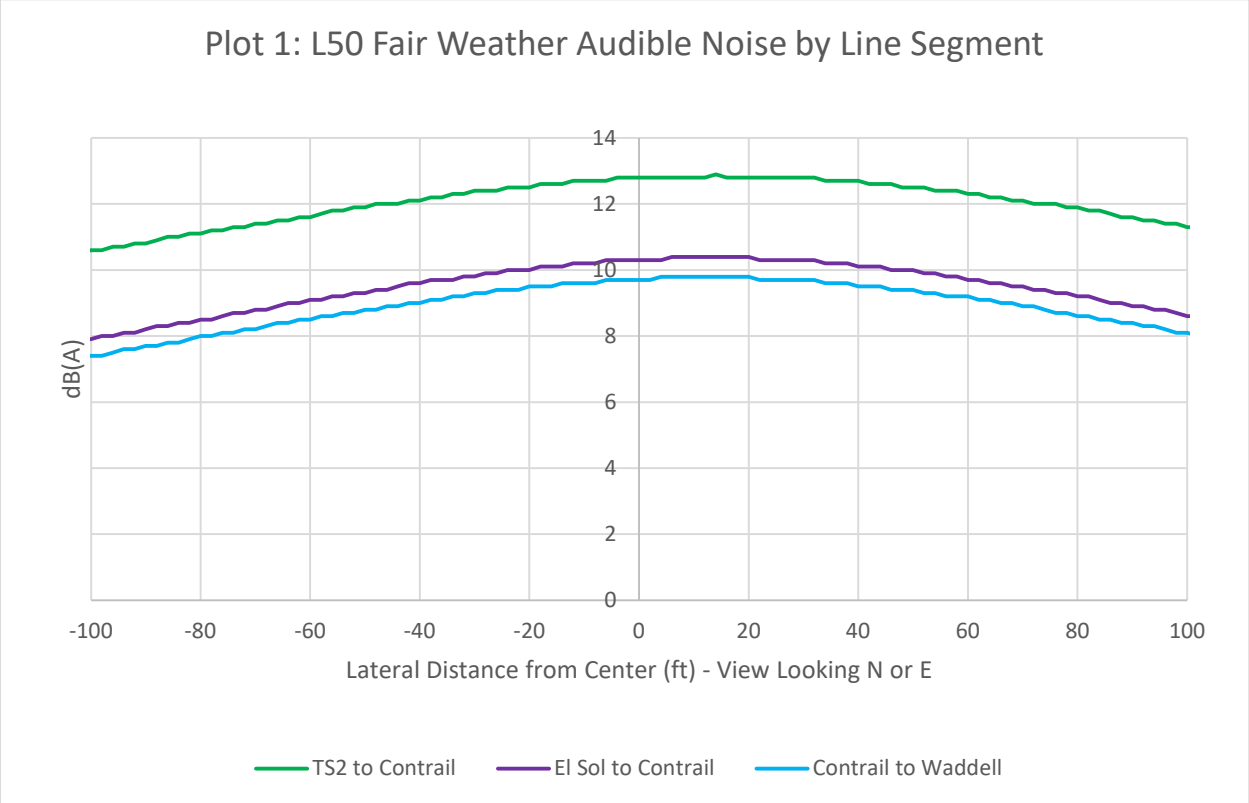
TRANSMISSION LINE AUDIBLE NOISE

Audible noise (AN) is created by corona discharge along the transmission line. As a result, the amount of audible noise is directly related to the amount of corona, which is in turn affected by meteorological conditions (most notably rain). Transmission line audible noise is categorized into broadband high

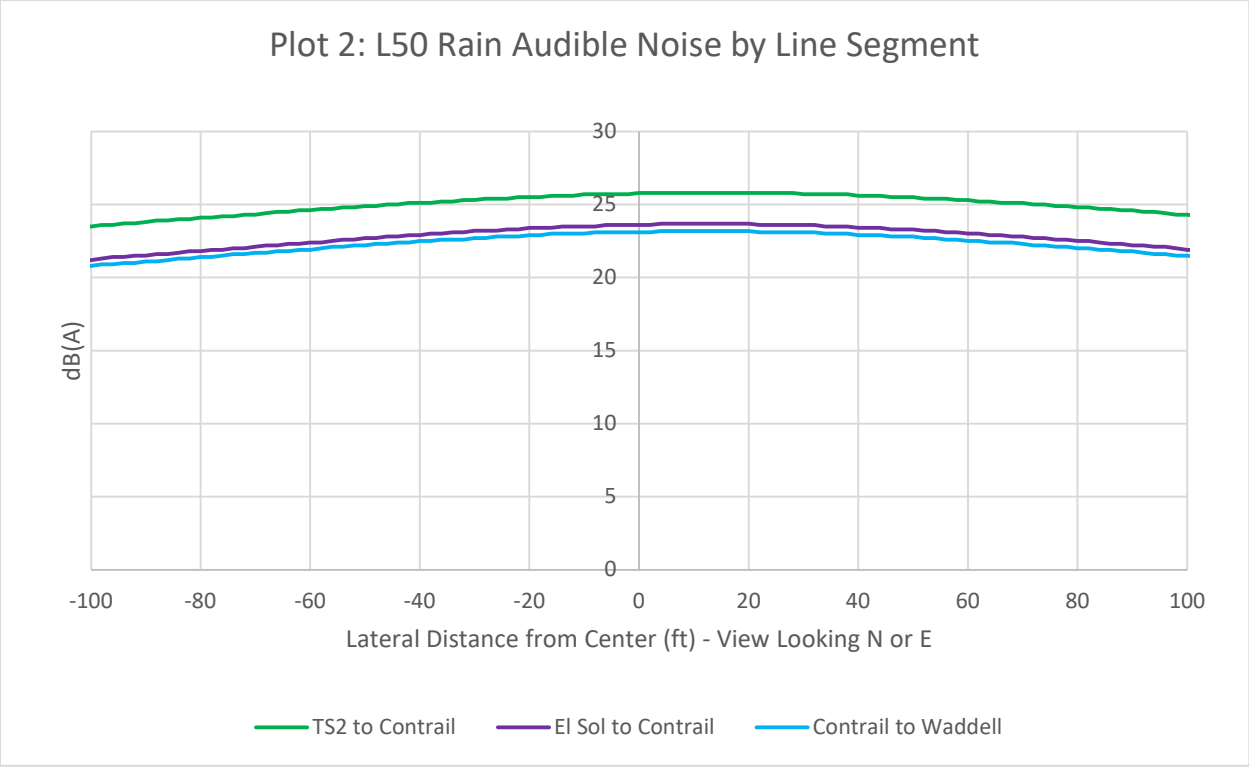
frequency sounds, which can be described as hissing or sputtering, and low frequency tones, which are best described as humming sounds.

The highest calculated audible noise levels generated by these transmission line designs during foul weather (rain) may occasionally reach 38.6 dB for TS2 to Contrail, and 36 dB for the other two lines measured on an "A" weighted scale at the edge of the right-of-way. These noise levels will occur during very heavy rain conditions[1], which will serve to mask the noise. During light rain[2], or wet conductor conditions, the expected audible noise is in the range of 23.2 – 24.7 dB(A) along TS2 to Contrail, and 20.4 – 21.5 dB for the other two lines at the edge of the right-of-way. During fair weather the audible noise generated by these lines as heard at the edge of the right-of-way is significantly reduced with a maximum calculated value of 11.7 dB(A) for TS2 to Contrail, and 8.2 dB along the other two lines.

Study work of transmission line noise has categorized noise levels by the probability of complaints being generated. A level of 52.5 dB(A) or lower at 100 feet from the centerline of a line has been found to generate no complaint. The noise generated by this transmission line is well below this value and no noise problems due to this line are expected. Plots 1 and 2 show the calculated L50 fair weather and L50 rain audible noise levels for the worst-case model of the different line segments modeled.



[1] Heavy rain conditions are designated statistically as L5 conditions (95% of the time noise levels are at or below the specified values).
[2] Light to moderate rain levels are designated statistically as L50 conditions (50% of the time noise levels are at or below the specified values).



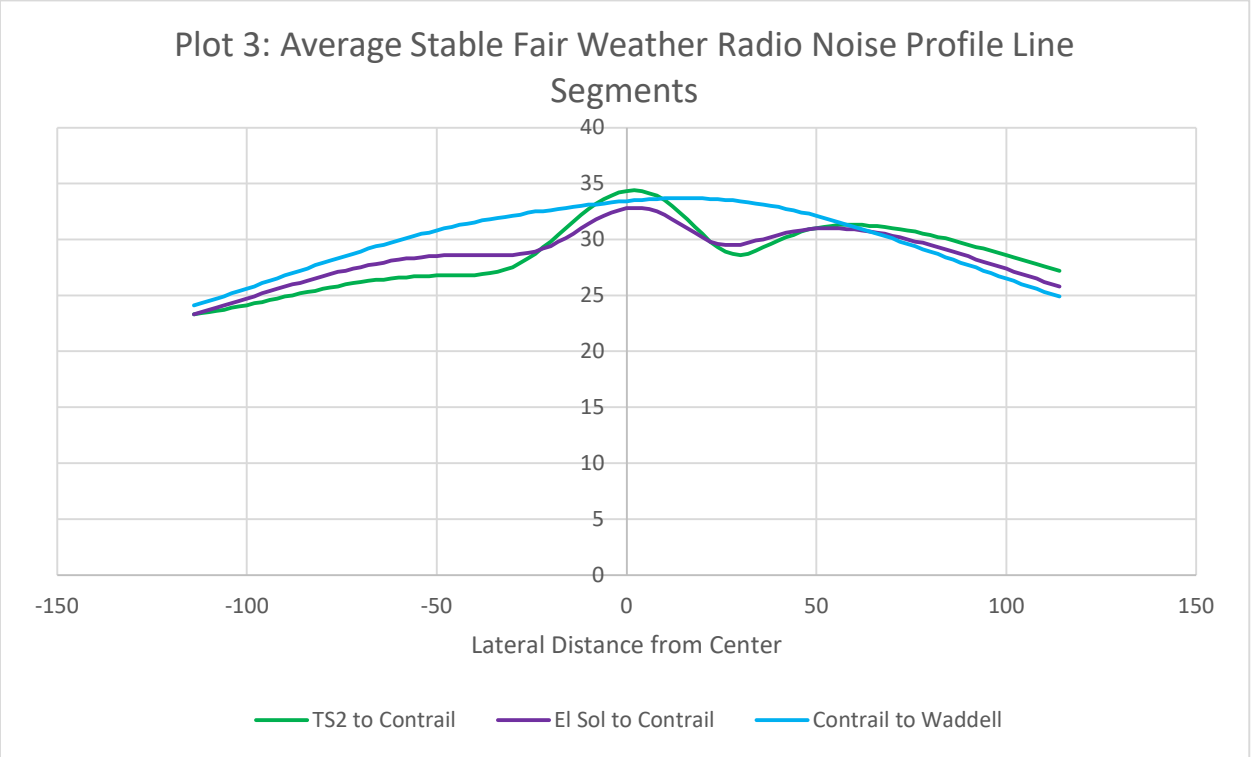
RADIO INTERFERENCE

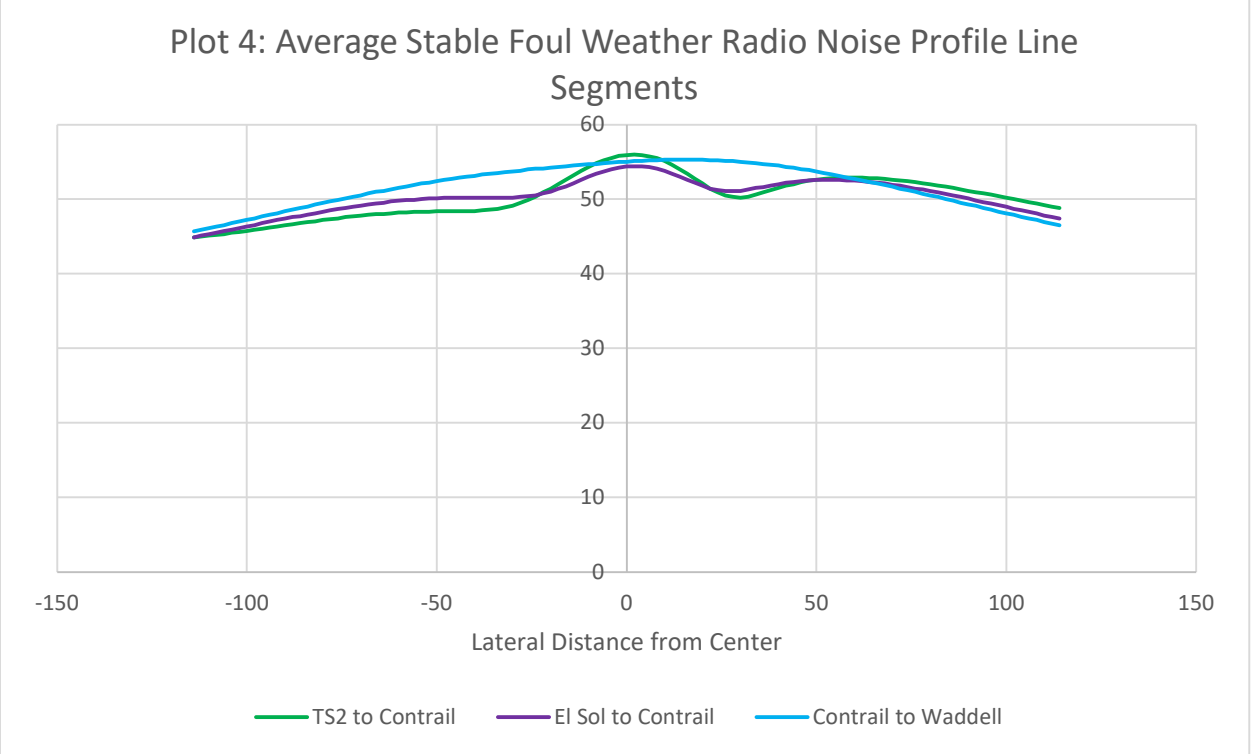
Radio interference is the reception of spurious energy not generated by the transmitting station. This energy affects the amplitude modulated (AM) radio band, but not the frequency modulated (FM) radio band. Transmission line radio interference is caused by corona and by gap discharges. Gap discharges are electrical discharges across a small gap with the most common cause being loose hardware. Gap discharges comprise a large percentage of all interference problems and are easily remedied. Experience shows that gap discharges are not a problem with steel structures but are more prevalent with wood structures due to the expansion and contraction of the wood causing hardware to loosen.

Corona caused radio interference impact is dependent on various factors including distance from the line to the receiver, radio signal strength, ambient radio noise level, receiving antenna orientation, and weather conditions. A common practice of determining the expected level of radio interference is to calculate the transmission line radio interference at a frequency of 1 MHz. As the frequency of interest increases, corona produced radio noise reduces with typical reductions in the range of 20 – 40 dB for a frequency increase from 1 MHz to 100 MHz [EPRI] depending on the distance to the conductor.

Comparison of the calculated radio noise levels for the transmission line designs shows average stable fair weather radio noise levels generated by these transmission lines in the range of 23.3 – 29.9 dB for TS2 to Contrail, and 23.3 – 25.8 dB for the other two lines at 100 feet from the outside phase. This compares favorably with the maximum suggested noise level of 40 dB. [IEEE]. During inclement weather, transmission line noise levels increase to levels in the range of 44.9 – 51.5 dB for TS2 to Contrail, and 44.9 – 47.4 for the other two lines 100 feet from the outside phase (average stable foul weather values). In addition to these comparisons of calculated and recommended interference values, transmission line experience for lines of similar design traversing similar terrain has shown radio interference to be acceptable. It is noted that other 230 kV lines traverse the area near the proposed location. Should radio interference caused by the transmission line become unacceptable in each situation, the utility is willing to

work with the complainant to resolve the interference problem. Calculated radio interference plots for average stable fair weather and foul weather are given in Plots 3 and 4.





TELEVISION INTERFERENCE

Television interference effects are similar to radio interference. Traditional analog television broadcasts occur in three ranges:

54 - 88 MHz (Channels 2 - 6)
174 - 216 MHz (Channels 7 - 13)
470 - 890 MHz (Channels 14 - 83)

Transmission line interference reduces with increasing frequency above 100 MHz. Consequently, television interference (TVI) only affects the lower VHF band (Channels 2 through 6) and no interference will be experienced in the upper VHF (Channels 7 - 13) and UHF bands (Channels 14 - 83) even during foul weather.

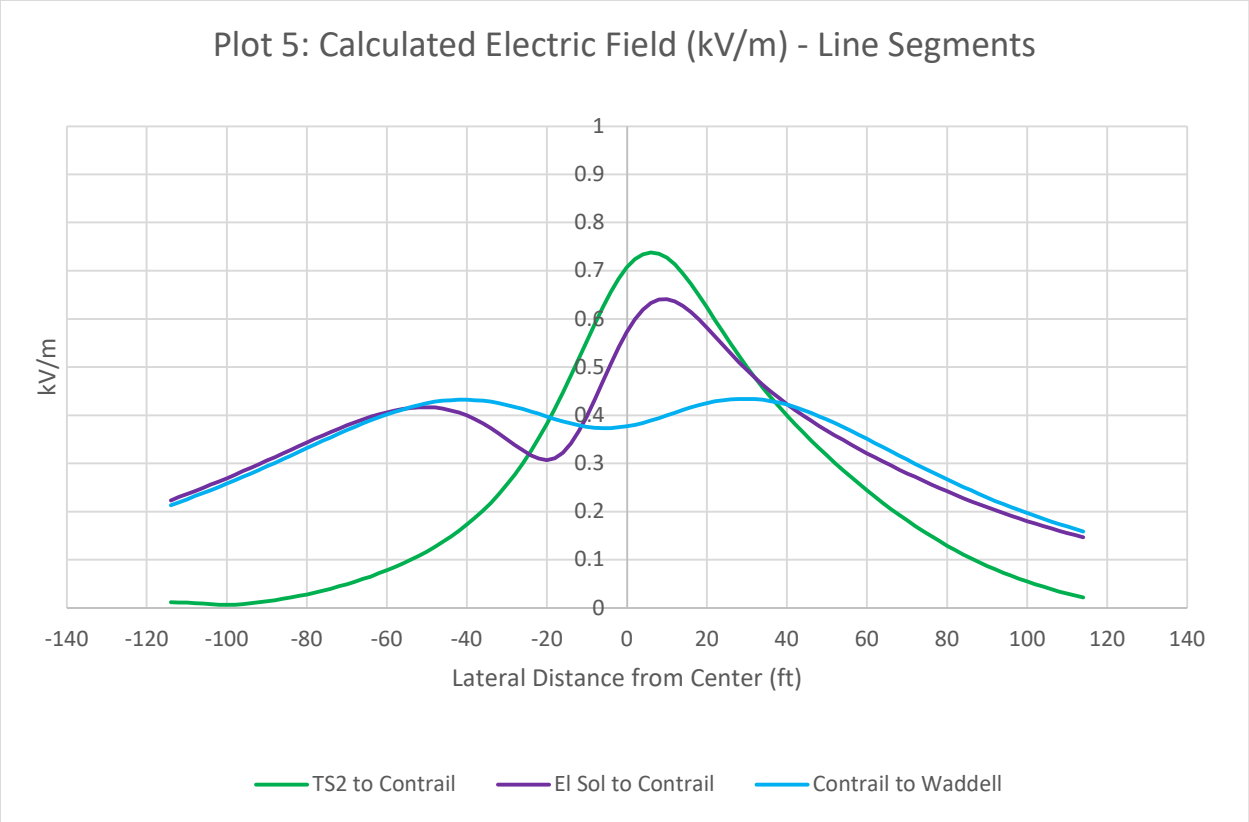
No transmission line generated television interference is expected along the lines, even during periods of inclement weather since expected TVI levels at the edge of the right-of-way are expected to be similar to other operating 230 kV lines which traverse similar terrain.

In cases where transmission line generated television interference has been found to be a problem, it is generally the result of induced voltage on fences, conductors, and hardware, which are adjacent to the right-of-way. In these situations, the interference can be easily corrected by grounding the objects, or by realigning, relocating, or providing higher gain television antennas. APS is prepared to assist affected parties in resolving TVI problems resulting from the operation of our facilities. However, with the increasing popularity of newer technologies such as cable, satellite, and internet-based television, transmission line television interference problems warranting any sort of corrective action are even more unlikely.

ELECTRIC AND MAGNETIC FIELD EFFECTS

Electric and magnetic field (EMF) effects are primarily electric and magnetic induction effects whereby voltages and currents are induced in nearby conductive objects by the voltage and current associated with the line.

Electrostatic induction is the capacitive coupling of a voltage onto insulated objects near the transmission line. The induced voltage is a function of the electric field associated with the line, which in turn is a function of the line voltage. Other factors, which affect the level of induced voltage include insulation, object orientation and dimensions, and line height. When a person reaches to touch a conducting object which has been charged by electrostatic induction, a spark discharge will occur similar to that experienced by a person reaching for a doorknob after walking on a nylon carpet with the difference that sparking will continue to occur if the person's hand remains close enough to the object for the sparks to occur. Based on computer modeling the electric fields associated with the proposed transmission lines will be consistent with the electric field values of similar existing 230 kV transmission lines. No electrostatic induction problems are anticipated. Should any electrostatic induction problems occur, they can be easily corrected by grounding the conductive objects. The transmission lines will be designed to limit the value of short-circuit current from a conductive object to 5 mA or below, which is the maximum design limit permitted by the National Electrical Safety Code. Plot 5 shows the expected electric field (calculated 1m above ground) for the various expected configurations of the different line segments. Note that the expected electric fields are well below the 5 kV/m limit outside the right-of-way and 10 kV/m inside the right-of-way as specified by IEEE Standards [IEEE C95.6].

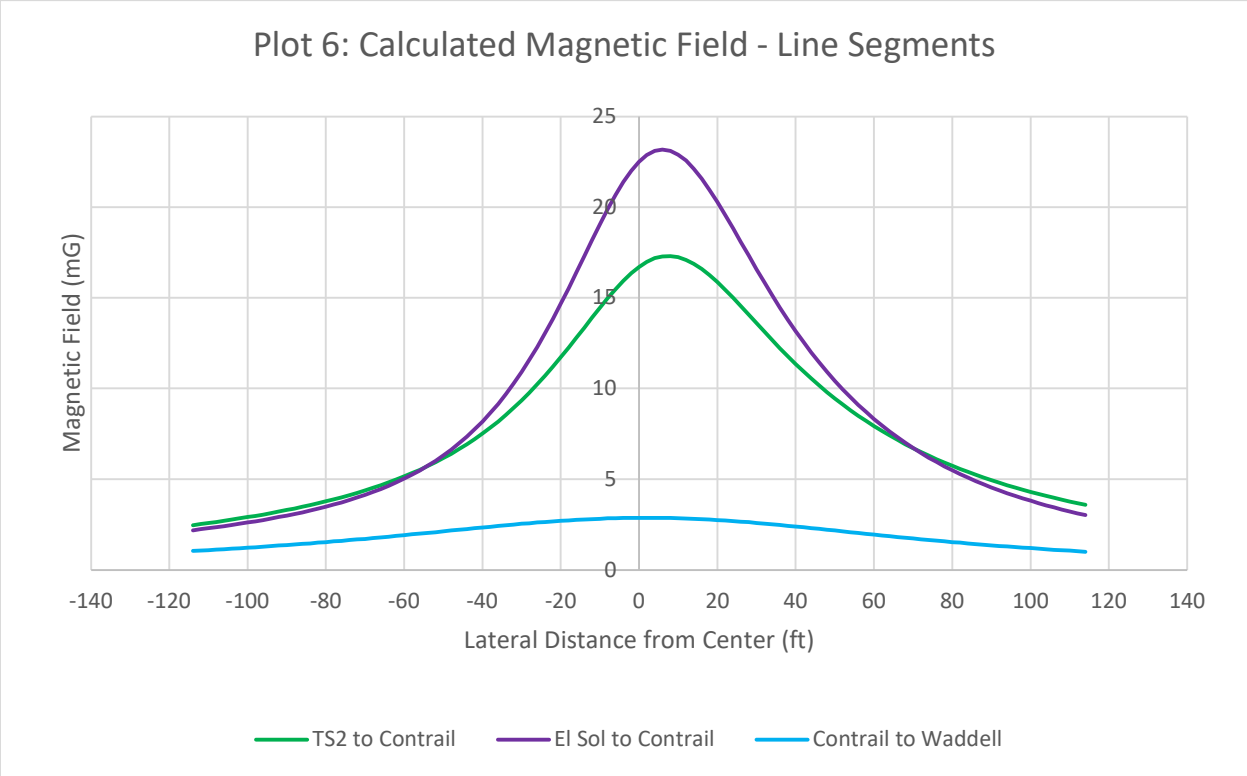


The magnetic fields associated with transmission lines can also induce voltages and currents in conductive objects (e.g. fences, communication lines, railroads, pipelines, etc.), which are close to and run parallel to the transmission line. The magnetic field level is a function of the current level in the transmission line, which in turn is a function of the line loading.

In addition to the electric and magnetic field induction issues described above, scientific and public interest regarding potential health effects of human exposure to 60 hertz EMF has led to extensive study for more than 30 years. One recent example of such research was a study completed in 2007 by the World Health Organization (WHO). The report titled "Extremely Low Frequency Fields Environmental Health Criteria Monograph No. 238" details the results of a health risk assessment of extremely low frequency (ELF) electromagnetic fields (EMF) up to 100 kHz. The WHO study found that scientific evidence that demonstrates a consistent pattern of increased risk for childhood leukemia due to chronic low-intensity power-frequency magnetic field exposure is based on epidemiological studies. The report goes on to state that "Virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status."[WHO] The report concludes that "Thus, on balance, the evidence is not strong enough to be considered causal, but sufficiently strong to remain a concern." [WHO], The results of the WHO report support previous findings by the National Institute of Environmental Health Science [NIEHS] and International Agency for Research on Cancer [IARC] that the use of electricity does not pose a major unrecognized health danger.

As noted above, the WHO Report did concur with the overall conclusions of the 2002 IARC report on Electric and Magnetic Fields. The 2002 IARC report did not conclude that power frequency fields present a specific health risk, however, IARC did state that, with respect to childhood leukemia, power frequency magnetic fields are 'possibly carcinogenic to humans. This finding was based on limited human evidence and inadequate evidence in experimental animals [IARC].

The actual electric and magnetic fields associated with these power lines will depend on the final construction, the amount of current in the lines, height of the conductors, and other nearby sources of fields. Based on computer modeling of expected construction configuration and operating conditions, the electric and magnetic fields associated with these lines is comparable to other already existing lines of this voltage in the state. Plot 6 shows the calculated magnetic field for the expected line configurations (calculated 1 m above ground).



Calculation Notes

The EPRI "ACDCLine" program was used to calculate the various corona, noise, and electric/magnetic field quantities reported herein based on the expected transmission line designs for the lines of interest. Different cases based on the different expected conductor configurations of the lines were modeled to represent the conditions expected along the entire line lengths.

REFERENCES

[IEEE] 1980. "Review of Technical Considerations on Limits to Interference from Power Lines and Stations", IEEE Radio Noise and Corona Subcommittee Report, RI Limits Task Force, Working Group #3, IEEE Transactions on Power Apparatus and Systems, Vol. PAS-99, No. 1, Jan./Feb. 1980, pages 365-388.

[IEEE C95.6] "IEEE Standard for Safety Levels with Respect to Human Exposure to Electromagnetic Fields, 0 – 3 kHz.", 2002.

[NIEHS] Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields, National Institute of Environmental Health Sciences, National Institutes of Health, NIH Publication No. 99-4493, May 1999.

[IARC]IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 80, Non-Ionizing Radiation, Part 1: Static and Extremely Low Frequency (ELF) Electric and Magnetic Fields, 2002: Lyon, France.

[WHO]Extremely Low Frequency Fields Environmental Health Criteria Monograph No. 238 (2007), World Health Organization, Geneva, Switzerland, ISBN 978-92-4-157238-5

[EPRI] EPRI Transmission Line Reference Book, 2nd Edition, 1982, The Electric Power Research Institute.

Attachment A – Map of Segments Modeled

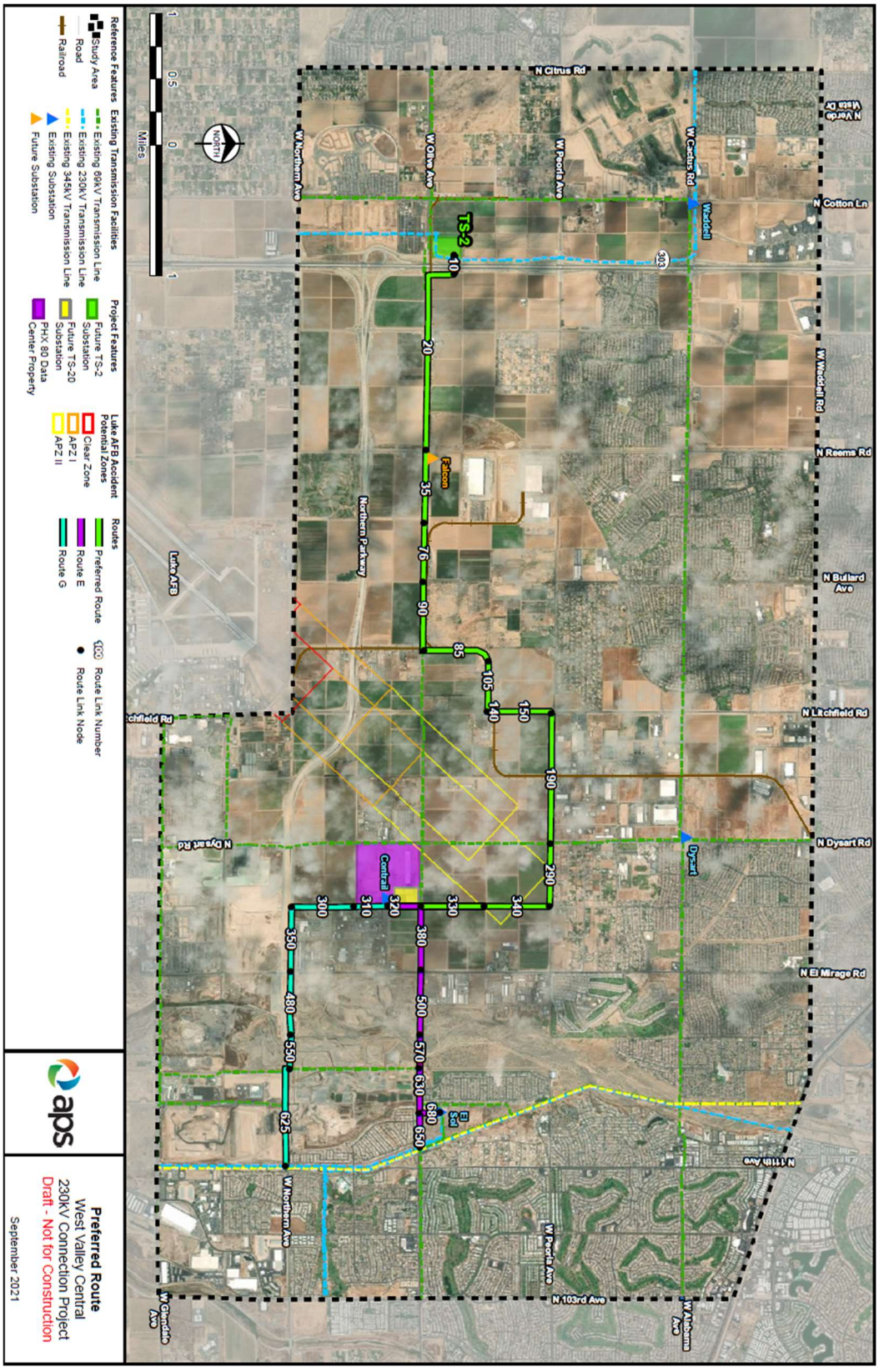


EXHIBIT J – SPECIAL FACTORS

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

Exhibit J:

Describe any special factors not previously covered herein, which applicant believes to be relevant to an informed decision on its application.

PUBLIC INVOLVEMENT

INTRODUCTION

The West Valley Central 230KV Connection Project is intended to determine the location of 230KV electric transmission lines that are needed to serve an industrial customer on the southeast corner of Olive Avenue and Dysart Road and enhance overall system reliability in the study area. The project also will include a new 230/69kV substation located on the customer's property, a new 230kV transmission line connecting the new substation to the east into the existing El Sol – White Tanks 230kV transmission line or the El Sol Substation; and a new 230kV transmission line connecting the new substation to the west into the planned TS-2 Substation previously permitted as part of the West Valley South Project. The study area is bounded by N. Citrus Road on the west, W. Cactus Road on the north, and N. 103rd Avenue on the east. The southern boundary of the study area is W. Northern Avenue between N. Citrus Road and N. Litchfield Road, then drops south to W. Glendale Avenue between N. Litchfield Road and N. 103rd Avenue.

The siting process will culminate with an Application for a Certificate of Environmental Compatibility filed with the Arizona Corporation Commission.

THE IMPORTANCE OF PUBLIC INVOLVEMENT

There are a number of factors that need to be considered when comparing alternative locations for power lines, such as existing and planned land use and environmental/visual considerations. Public input is another critical consideration, and traditionally is accomplished via public meetings along with some level of online presence to provide opportunities for the community to learn about the project and weigh in on the analysis.

Virtual Public Engagement was utilized in lieu of traditional in-person public meetings not only due to the COVID-19 pandemic, but also in order to capture a broader audience than traditional public meetings can. To engage and involve stakeholders and the public, a project website and online open house launched in October 2020. When a person visits the online open house, they are able to click on PDF files showing display materials such as maps, charts, infographics, etc. The materials are deliberate about providing the information that people will need to give meaningful input.

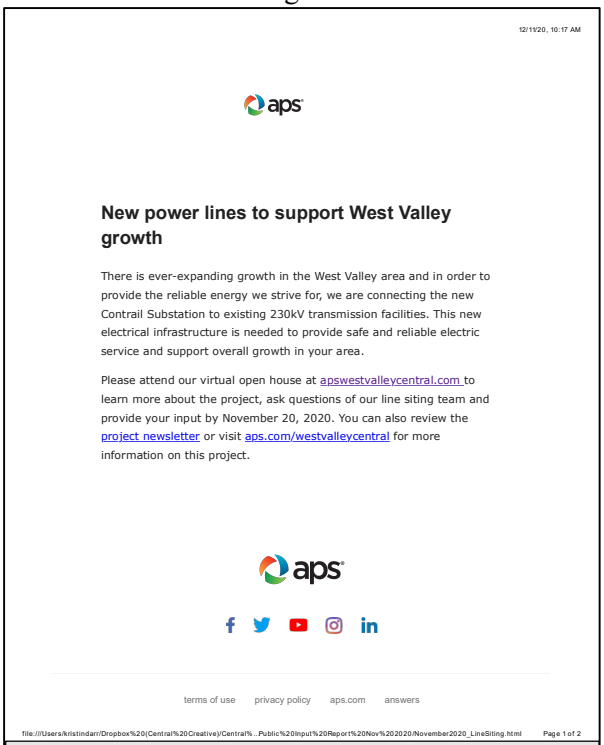
The project website provides the public an ongoing opportunity to view project information, provide comments, and interact with the project team throughout the approximately 2-year planning process. This opportunity is supplemented by a telephone hotline. In addition, there are two specific milestones in the planning process that require additional public input in the form of personal (in this case virtual) interaction:

- In October 2020, a universe of potential links was presented to the community.
- In Summer 2021, specific alternatives for the routing of the new transmission line were made available for review and comment.
- In early 2022 a preferred alternative was provided for review and comment, in conjunction with the CEC Application process.

FALL 2020 PUBLIC COMMENT PERIOD

To prepare for the first public comment period, the study team conducted stakeholder briefings to inform government agencies in the study area about the project. These agencies included the cities of Surprise, Peoria, Glendale, and El Mirage, the Town of Youngtown, Luke Air Force Base, and Maricopa County (Department of Transportation and Board of Supervisors). In addition to informing them about the project, the team was able to gather information and data useful to the project, and to determine the primary point of contact and process for communicating with these agencies and their elected officials.

Notes from all stakeholder meetings held throughout the project are provided in Table J-1.



12/11/20, 10:17 AM

aps

New power lines to support West Valley growth

There is ever-expanding growth in the West Valley area and in order to provide the reliable energy we strive for, we are connecting the new Contrail Substation to existing 230kV transmission facilities. This new electrical infrastructure is needed to provide safe and reliable electric service and support overall growth in your area.

Please attend our virtual open house at apswestvalleycentral.com to learn more about the project, ask questions of our line siting team and provide your input by November 20, 2020. You can also review the project newsletter or visit aps.com/westvalleycentral for more information on this project.

aps

terms of use privacy policy aps.com answers

file:///Users/kristindarr/Dropbox%20(Central%20Creative)/Central%...Public%20Input%20Report%20Nov%202020/November2020_LineSiting.html Page 1 of 2

APS sent an email about the project to customers in the study area on November 10, 2020

Notification Information

Notice for project included mailing a newsletter to approximately 38,000 property owners and tenants in the study area. Additional notice included an email to customers November 10, 2020, social media posts November 10-17, 2020, and stakeholder partner social media posts. Partners shared via social media (e.g., Surprise September 1 and October 15, 20, and 29; El Mirage October 20)—referring back to the stakeholder briefings, one of the purposes was to encourage them to share the info via their existing channels to increase the project's reach into the community. Advertisements were also placed in the Arizona Republic on November 11, 13, and 14, and in the Surprise Independent on November 11. Tear sheets for the ads are included at the end of this report.

APS posted about the project on Facebook an geotargeted followers in the study area November 10-17

The project website at www.apswestvalleycentral.com launched October 15, 2020 and as of November 30 had 1,300 users and 1,629 total sessions, nearly 90 percent of which were new. 68.2 percent of site users (894 users) accessed the site directly, likely due to newsletter notification. 26 percent of site traffic (342 users) came from social media links. 4 percent (53 users) of traffic was via site referrals. 1.7 percent (22 users) of site usage came from organic searches. 97 percent of site users were from the United States, with 79.7 percent of users from Arizona.

Public Meetings

The online Virtual Open House at www.apswestvalleycentral.com was available for members of the public to visit at their convenience and included a short survey as well as options to provide open ended comments. In addition, Live Virtual Town Hall meetings were held November 4 and 10. There were 16 total registrants, five of whom attended November 4 and two on November 10.

Questions from attendees included:

- Can the lines be put underground?
- Will the data center have emergency power generation on-site? Will it be totally dependent on APS?
- Cactus Road runs through a major housing community. Will you be looking at alternative routes that are not already built up, like Olive Rd or Peoria?
- During construction, will there be any planned outages?

Fall 2020 Public Comment Summary

Community members completed 26 surveys and provided 26 open ended comments received via the Contact Us form on the website. The majority of comments received were from residents in Surprise and indicated opposition to new transmission lines being cited along Cactus and Peoria through residential areas. Many indicated that it would be preferable to place the line further south in industrial areas along Olive or Northern. There also were comments on undergrounding, EMF, and property values.

There was one hotline call—the caller was inquiring about whether the lines could be put underground and indicated a preference for the lines to be cited away from homes and in more industrial areas.

An overall summary of comments received is as follows:

- The majority of responses said they understand the need for the proposed transmission line.
- Support transmission line routes in agricultural or commercial/industrial areas along Olive Avenue or Northern Avenue/Parkway.

- Support placement of transmission line routes along existing power lines, utility corridors, and roadways.
- Oppose new transmission lines routes along Cactus Road and Peoria Avenue near residential areas.
- Concerns were expressed about potential impacts on property values, views, and health and safety effects due to EMF.
- Concerns were expressed about potential impacts to customer electric rates from the project.
- Understand the importance of Luke Air Force base and associated restrictions.
- Suggested placing the transmission lines underground in the project area.

SURVEY RESPONSES

The survey responses were as follows:

City/State/Zip

Of the 26 respondents, every respondent who indicated their zip code was within the City of Surprise. Two left it blank.

How did you learn about the project? (please select all that apply)

Mailing	5
Internet	10
Neighbor or Friend	8
News Release	1

Other

- Councilman email from Surprise
- Mayor and City Council of Surprise posts on Facebook

Which of the following applies to your situation? (please select all that apply)

My home is within the project area or adjacent to a potential route	20
I am a landowner in the project area or adjacent to a potential route	1
My business is within or adjacent to a potential route	0
I am within the study area but not directly affected by the project	6

Other (please specify)

- I didn't see a thing about who's paying for this. And what's the cost if any to the homeowner customer
- My child's school is in the project area

The routing of a transmission line involves many considerations. From the list of routing factors below, please select the corresponding level of importance of each factor.

Maximize distance from homes

- Important 1
- Very Important 24

Maximize distance from commercial/industrial facilities/businesses

- Important 7

- Somewhat Unimportant 5
- Uncertain 4
- Unimportant 7
- Very Important 2

Maximize distance from public facilities
(e.g. schools, libraries, parks, churches, cemeteries, etc.)
- Important 8
- Somewhat Unimportant 3
- Uncertain 1
- Very Important 13

Maximize distance from Luke Air Force Base and associated airspace near runways
- Important 8
- Somewhat Unimportant 2
- Uncertain 4
- Unimportant 4
- Very Important 2

Minimize crossing agricultural land
- Important 2
- Somewhat Unimportant 4
- Uncertain 5
- Unimportant 10
- Very Important 4

Minimize crossing directly through property (versus along property boundaries)
- Important 5
- Uncertain 4
- Very Important 16

Minimize total length of the transmission line and number of angles (reducing the project footprint)
- Important 7
- Somewhat Unimportant 4
- Uncertain 1
- Unimportant 4
- Very Important 9

Maximize distance from historic/cultural sites
- Important 6
- Somewhat Unimportant 3
- Uncertain 7
- Unimportant 3
- Very Important 6

Maximize placement of transmission line along freeways and arterial roads
- Important 8
- Uncertain 3
- Unimportant 2

- Very Important 12

Maximize placement of transmission line along existing power lines and utility corridors

- Important 6
- Somewhat Unimportant 2
- Uncertain 7
- Unimportant 3
- Very Important 7

Maximize placement of transmission line along property lines (e.g., section or ½ section lines)

- Important 7
- Somewhat Unimportant 1
- Uncertain 11
- Unimportant 2
- Very Important 4

Do you believe the purpose and need for this transmission line has been adequately explained?

- Yes 14
- No 7
- Uncertain 4

Why do you feel the project has not been adequately explained? What additional information would be helpful to you?

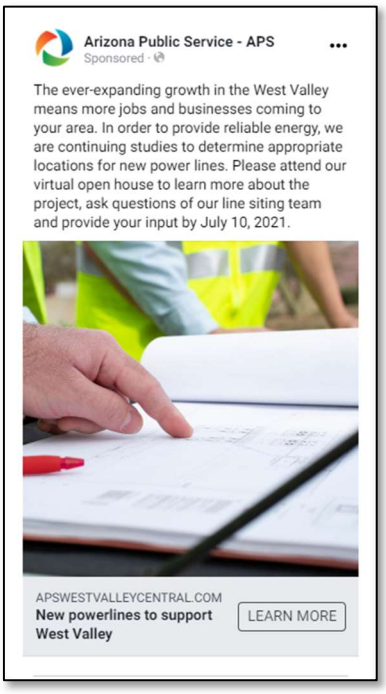
- Why can this not be accomplished using existing lines or with underground lines?
- Why it is needed? Has not been explained whatsoever. And why it would need to go through personal property
- It should be under ground
- Clearer maps with greater zoom detail tomorrow show the properties impacted.
- Where is the money coming from that will pay for this project? Will APS start charging us the home owner? Or will the end user companies defray the cost
- Question and answer forum is important
- Your survey has an error in its code. I had answered the the project HAD been adequately explained.
- I selected "yes" to the previous question, indicating that it HAD been adequately explained.
- What are the plan routes of the lines?
- Why the need for additional lines?
- What is the latest projection as to these new companies coming on board? Is it your start to completion date?
- Whether 230kv single or double circuit poles will be used.
- Where it will go.

The final question of the survey was "We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration." The responses to this question, along with open-ended comments received from the public and via the "Contact Us" form at www.apswestvalleycentral.com, are included in Table J-2.

Emails received at contactus@apswestvalleycentral.com, along with the associated responses, are provided in Table J-3.

SUMMER 2021 COMMENT PERIOD

To prepare for the Summer 2021 comment period, the study team conducted a second round of stakeholder briefings to inform government agencies in the study area about the alternative routes that had been identified based on technical analysis and public input to date. These agencies included the cities of Surprise, Peoria, Glendale, and El Mirage, the Town of Youngtown, Luke Air Force Base, the Maricopa County Department of Transportation, and the Flood Control District of Maricopa County.



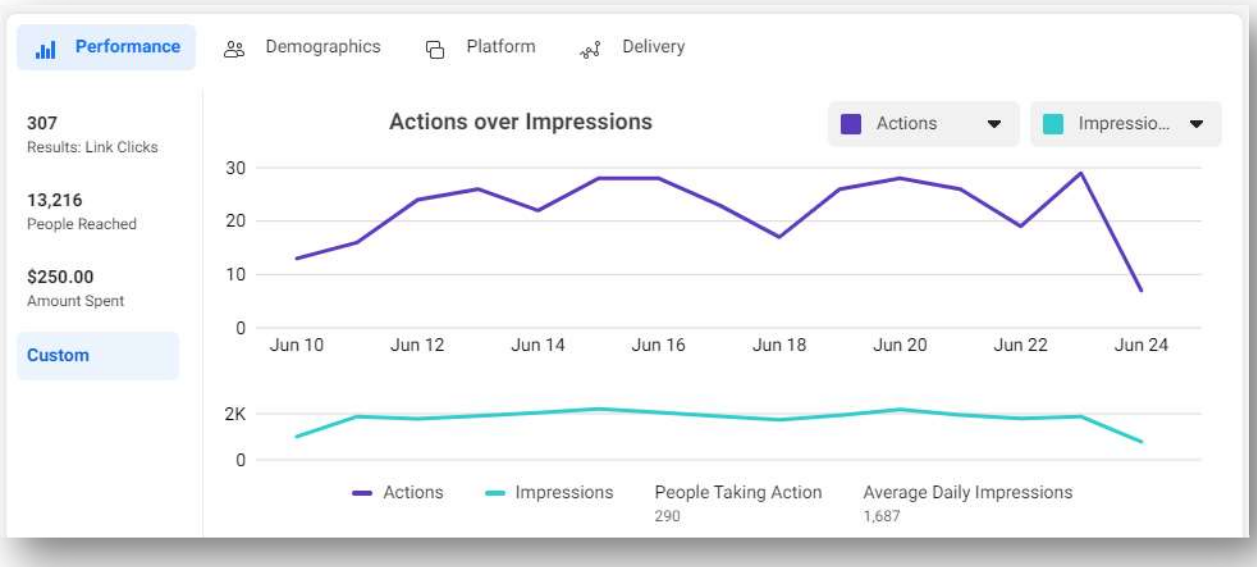
The team presented preliminary route alternatives and received preliminary feedback. The team also shared the newsletter and route maps.

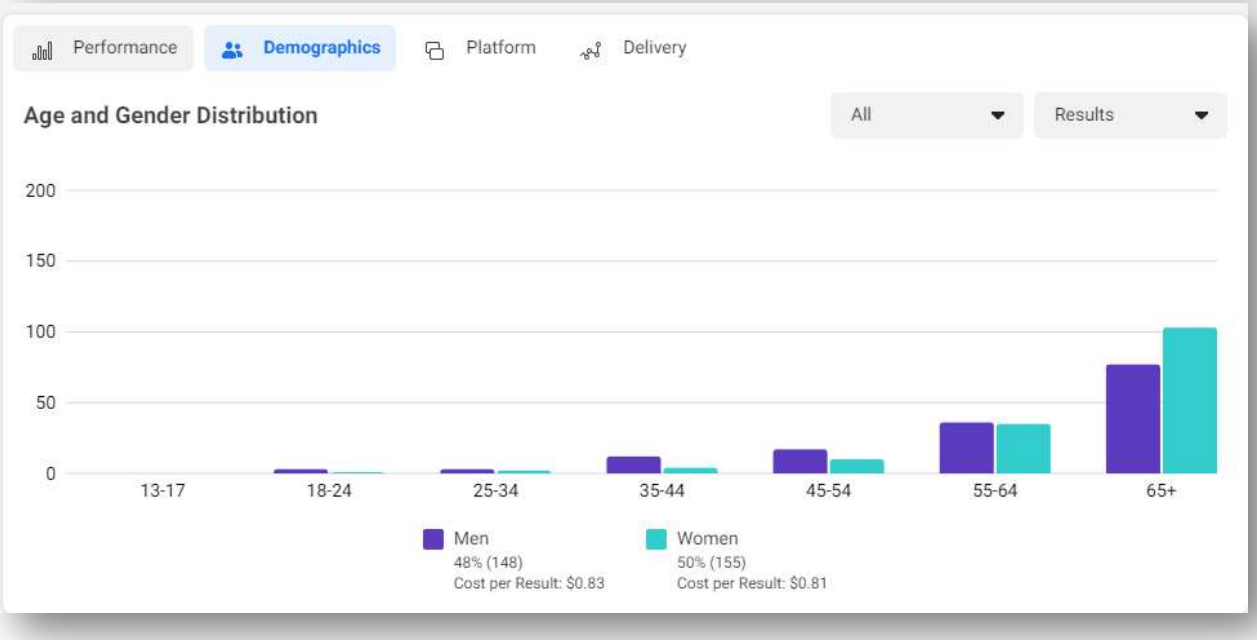
Discussions also commenced with companies representing large land development, which is rapid in the study area. Documentation is provided in the Stakeholder meeting notes are provided in Table J-1 and Large Land Development meeting notes table J-4.

Notification Information

Notice for project included mailing a newsletter to approximately 38,000 property owners and tenants in the study area. Additional notice included an email to customers on June 10, 29, and 30, 2021, social media posts (Facebook and Instagram) on June 10, 2021, and stakeholder partner social media posts.

Social media metrics for the APS posts are as follows:





Partners also shared information about the project via social media—referring back to the stakeholder briefings, one of the purposes was to encourage them to share information via their existing channels to increase the project's reach into the community. Surprise Mayor Skip Hall shared information via social media on June 8, 2021, and Vice Mayor Patrick Duffy shared information on June 12, 2021.

Advertisements were also placed in the Arizona Republic on June 11, June 12, June 30, July 2, and July 3, 2021; and the Surprise Independent on June 16 and June 30, 2021.

Updates to the project website at www.apswestvalleycentral.com launched on June 1, 2021 and as of July 22 had 1,102 users and 1,303 total sessions, nearly 91 percent of which were new. 67 percent of site users

(740 users) accessed the site directly, likely due to newsletter notification. 28.6 percent of site traffic (316 users) came from social media links. 1.8 percent (20 users) of traffic was via site referrals. 2.6 percent (29 users) of site usage came from organic searches. 96.46 percent of site users were from the United States, with 78.82 percent of users from Arizona.

Public Meeting

The online Virtual Open House at www.apswestvalleycentral.com was available 24/7 for members of the public to visit at their convenience and included a short survey as well as options to provide open ended comments. In addition, a Live Virtual Public Meeting was held June 15, 2021. Eleven people attended. Questions from the attendees included:

Question: For routes A and B would the routes be on the same side of Olive Avenue as the existing 69kV lines?

Answer: Yes, and we would be working closely with MCDOT to ensure that the lines were placed outside of the road right-of-way so that they would not have to be moved in the future if the roadway were widened. We would underbuild the existing 69kV lines on the new 230kV poles rather than adding an additional set of poles.

Question: The current line you are building for the Microsoft data center along Olive is on the north side of the road. Would you move this to the south side if you were to choose Olive?

Answer: The lines are on the north side of Olive east of the Contrail substation. It is our preference to place lines where there is the least impact on surrounding land uses, and to consolidate lines on poles rather than having lines on both sides of a road.

Public Comment Summary

Community members completed 22 surveys and provided 14 open ended comments received via the Contact Us form on the website. Respondents who provided their address identified themselves as being from Surprise (10), Waddell (5), Sun City (2), Glendale (1), Peoria (1), and Cave Creek (1). The overriding theme of the comments was opposition to new transmission lines being cited near residential areas. Other comments:

- The majority of responses said they understand the need for the proposed transmission line.
- Concerns were expressed about potential impacts on property values, views, and health and safety effects due to EMF.
- Concerns were expressed about potential impacts to customer electric rates from the project.
- Understand the importance of Luke Air Force base and associated restrictions.
- Suggested placing the transmission lines underground in the project area.
- Stated preference to choose the most direct routes possible.

SURVEY RESPONSES

How did you learn about the project? (please select all that apply)

- Mailing **(13)**
- Internet **(5)**

- Neighbor or Friend **(3)**
- News Release **(2)**
- Other (please specify)
  - Email
  - You sent me an email

Which of the following applies to your situation? (please select all that apply)

- My home is within the project area or adjacent to a potential route **(14)**
- I am a landowner in the project area or adjacent to a potential route **(1)**
- My business is within or adjacent to a potential route **(1)**
- I am within the study area but not directly affected by the project **(7)**
- Other (please specify)
  - I have a home affected by the project and I am a landowner adjacent to a potential route.
    - I am an Engineer and recommend an underground solution Through the Luke AFB Accident Potential Zone - parallel W Olive Ave.
  - Will we have enough power for all future electric vehicles, and we know that's coming?

Do you believe the purpose and need for this transmission line has been adequately explained?

- Yes **(16)**
- No **(3)**
- Uncertain **(3)**

Do you have any concerns about Preliminary Route A?

- Yes **(11)**
- No **(10)**

If YES, what are your concerns?

- Route A seems to go way off the path to get from TS-2 230 kv substation to TS -20 230kv substation and definitely impacts several neighborhoods.
- WAY TOO CLOSE to residential neighborhoods along Peoria Ave.
- It's unclear to me where segments 150,140,105,100,77, and 75 (and/or 76,78) cut through. I don't know of a street there, so is it on farmland? If so, that does concern me. What happens to the animals? Why are they not of any concern yet the residential developments are? And when the land is sold off, as is happening with seemingly all of the farms out here, what happens then? Will the lines need to be moved?
- The map is to small to accurately determine where the route will go!
- Too close to existing residential, and too complicated
- The map is difficult to interpret.
- Route A is too closed to the residential homes in Copper Canyon Ranch. These proposed 230 kv power lines pose a health threat and they will devalue the homes in this area and the future sales of homes. This is a negative impact are all people in this area.
- Runs to far north exposed to housing north of Peoria ave. and Reems
- Seems like this is rather indirect and would be closer to many homes or businesses.
- The potential of a 195' pole carrying 230 KV in the Luke AFB Accident Potential Zone is just unacceptable. Luke is a training base and to add a new hazard for new pilots to avoid, just doesn't

make sense. Consider a night landing with a new pilot who comes in low, he/she may be dealing with lots of things and confused, an accident is more than possible. It is very probable. The added cost of installing the new 230 KV line underground for 2 miles may/ will save lives by avoiding a major accident.
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.
- YOUR OWN BROCHURE SAYS IT ALL THESE POLES ARE UGLY-PUT THEM SAFELY UNDERGROUND

Do you prefer Preliminary Route A?

- Yes **(8)**
- No **(13)**

If NO, please state your reason(s).

- Above
- For the concerns stated above... where exactly do the lines go in the above mentioned segments?
- The map is to small to accurately determine where the route will go!
- Too close to existing residential, and too complicated
- A less direct route. The shortest distance between two points is a straight line. Preliminary Route A adds, what appears to me, unnecessary distance between the two points. More wire, more towers = more maintenance, more material, more $. Also, it seems like it would interfere with planned residential areas. Preliminary Routes B and D seem to be the ideal choices.
- Don't know what the Preliminary Route A is.
- See remarks above.
- Don't want visual from my yard
- see above
- I recommend a 2 mile underground installation of 230 KV line Through the Luke AFB Accident Potential Zone.
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.
- As stated in a question. We all know electric vehicles are coming on, and quickly. Do you think we have enough power for all these new electric vehicles not to far in the distant future? That's my concern, especially with the required power to cool homes in our hot summer.

Do you have any concerns about Preliminary Route B?

- Yes **(9)**
- No **(13)**

If YES, what are your concerns?

- The length of this route seems extensive. It would be much easier to go with Route E or F because it would have the least impact (because of the length and existing substations) on

neighborhoods. I had submitted a comment on Route B saying this would be the best route but I clearly now see that routes E and F are the better choices.
- It cuts through a fairly sizable chunk of the Luke Accident zone.
- The map is to small to accurately determine where the route will go!
- Map is difficult to interpret.
- See remarks above.
- Not as direct as possible
- I prefer Route B, with 2 mile underground through the Luke AFB Accident Potential Zone.
- Having read the presentation, my preferences would I prefer Route B, with 2 mile underground through the Luke AFB Accident Potential Zone. be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.
- NO POLES-UNDERGROUND-ONLY

Do you prefer Preliminary Route B?

- Yes **(10)**
- No **(10)**

If NO, please state your reason(s).

- Above
- See my concerns in question 7.
- The map is too small to accurately determine where the route will go!
- Still too long
- See remarks above.
- I believe this is less unsightly for residential area
- Indirect and on a busy main avenue (Olive)
- I prefer Route B, with 2 mile underground for 230 KV line through Luke AFB Accident Potential Zone.
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.
- DOESN'T MATTER HIDE THEM UNDERGROUND
- Either or, not in those areas.

Do you have any concerns about Preliminary Route C?

- Yes **(15)**
- No **(6)**

If YES, what are your concerns?

- Route C is the one (along with route D) that will impact our neighborhoods the most. Visually it will be horrible to look at every day. This line is directly behind our homes. It will drive down out home prices and impact the fields.

- It would run WAY TOO CLOSE to the residential neighborhoods near and South of Peoria Rd. It would be extremely harmful to those neighborhoods and those property owners.
- I have the same concerns I had with A.
- The map is to small to accurately determine where the route will go!
- Longer, and too close to existing residential
- The map is difficult to interpret.
- See remarks above.
- My home resides in the area adjacent to the proposed lines. I searched all around the valley to buy a home in an area that did not have visible power lines. This will affect my home value, resale, and enjoyment and prefer APS choose another route.
- Route C is immediately adjacent to the Twelve Oaks neighborhood and community park. The power lines would be a huge eye-sore and noise pollution. Route C would also prevent the future planned expansion of Twelve Oaks to the south as the power lines would run right through the middle of the neighborhood. This is definitely not a great option for our community and the long-term planning of development in our area.
- Too close to our community, Greer Ranch!
- To far North
- Too similar to A and too close to homes and businesses while not as direct.
- A Luke AFB training accident is still possible. I prefer Route B, with underground 230 KV line through Luke AFB Accident Potential Zone.
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.
- This route is much too close to our neighborhood.

Do you prefer Preliminary Route C?

- Yes **(4)**
- No **(14)**

If NO, please state your reason(s).

- Above
- It would run WAY TOO CLOSE to the residential neighborhoods near and South of Peoria Rd.. It would be extremely harmful to those neighborhoods and those property owners.
- See my concerns with route A.
- The map is to small to accurately determine where the route will go!
- Longer and too close to existing residential
- The same reasons for not preferring Route A
- See remarks above.
- Same as above.
- Route C is immediately adjacent to the Twelve Oaks neighborhood and community park. The power lines would be a huge eye-sore and noise pollution. Route C would also prevent the future planned expansion of Twelve Oaks to the south as the power lines would run right through the middle of the neighborhood. This is definitely not a great option for our community and the long-term planning of development in our area. Routes A or B are a better option.
- Too close to our community, Greer Ranch.
- Runs to far north exposed to housing north of Peoria ave. and Reems

- Indirect and somewhat on a busy Peoria Ave.
- Potential for an accident of low flying landing or take off by a trainee at Luke AFB. The 230 KV poles could be 195' high. This is in the flight path. I prefer Route B with 2 miles of underground 230 KV cable through Luke AFB Accident Potential Zone.
- This route is much too close to our neighborhood.

Do you have any concerns about Preliminary Route D?

- Yes **(14)**
- No **(6)**

If YES, what are your concerns?

- See remarks in Route C section.
- It would run WAY TOO CLOSE to the residential neighborhoods near and South of Peoria Rd. It would be extremely harmful to those neighborhoods and those property owners.
- Like route B, this crosses into a sizable chunk of the Luke Accident Potential zones.
- The map is too small to accurately determine where the route will go!
- Better, but still very long
- The map is difficult to interpret.
- Still too close to residential homes, poses a health threat and impacts future salability of homes in this area. Of all the routes, Route D is the one we prefer....if it must be.
- My home resides in the area adjacent to the proposed lines. I searched all around the valley to buy a home in an area that did not have visible power lines. This will affect my home value, resale, and enjoyment and prefer APS choose another route.
- Route D is immediately adjacent to the Twelve Oaks neighborhood and community park. The power lines would be a huge eye-sore and noise pollution. Route D would also prevent the future planned expansion of Twelve Oaks to the south as the power lines would run right through the middle of the neighborhood. This is definitely not a great option for our community and the long-term planning of development in our area.
- Too close to our community, Greer Ranch!
- to far north
- I prefer Route B, with 2 mile underground 230 KV line through the Luke AFB Accident Potential Zone. Parallel W. Olive Ave.
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.
- This route is much too close to our neighborhood.

Do you prefer Preliminary Route D?

- Yes **(6)**
- No **(12)**

If NO, please state your reason(s).

- Above

- It would run WAY TOO CLOSE to the residential neighborhoods near and South of Peoria Rd. It would be extremely harmful to those neighborhoods and those property owners.
- See my concerns stated in question 11.
- The map is to small to accurately determine where the route will go!
- This would be ok too, as its a straight shot and farther away from existing residential, but still long
- Same as above.
- Route D is immediately adjacent to the Twelve Oaks neighborhood and community park. The power lines would be a huge eye-sore and noise pollution. Route D would also prevent the future planned expansion of Twelve Oaks to the south as the power lines would run right through the middle of the neighborhood. This is definitely not a great option for our community and the long-term planning of development in our area. Routes A or B are a better option.
- Too close to our community, Greer Ranch.
- Runs to far north exposed to housing north of Peoria Ave. and Reems.
- I prefer Route B, with 2 miles of underground 230KV line through Luke AFB Accident Potential Zone.
- This route is much too close to our neighborhood.

Do you have any concerns about Preliminary Route E?

- Yes **(4)**
- No **(14)**

If YES, what are your concerns?

- The map is too small to accurately determine where the route will go!
- Keep it south.
- On a busy Olive Ave.
- This route looks most direct and is not in the Luke AFB flight path.
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.

Do you prefer Preliminary Route E?

- Yes **(11)**
- No **(5)**

If NO, please state your reason(s).

- The map is to small to accurately determine where the route will go!
- N/A out of my residential area
- On a busy Olive Ave.
- Shortest line and least cost from El Sol sub to TS-20 sub, paralleling W. Olive Ave.

Do you have any concerns about Preliminary Route F?

- Yes **(6)**
- No **(12)**

If YES, what are your concerns?

- Where exactly do segments 370 and 440 cross? Are there existing roads there already?
- The map is to small to accurately determine where the route will go!
- Keep it south.
- Most direct but too close to Olive Ave.
- Not as direct as Route E. Higher cost.
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.

Do you prefer Preliminary Route F?

- Yes **(7)**
- No **(8)**

If NO, please state your reason(s).

- It's silly to make a route through land that's not already cleared like it is for route E.
- The map is to small to accurately determine where the route will go!
- N/A out of my residential area
- See above
- Similar to Route E, but 2 corner poles needed at N. El Mirage RD.
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.
- WHATEVER-JUST INSTALL THEM UNDERGROUND

Do you have any concerns about Preliminary Route G?

- Yes **(6)**
- No **(13)**

If YES, what are your concerns?

- What do segments 310 and 300 cut through?
- The map is to small to accurately determine where the route will go!
- Place it along Northern Parkway.
- Not as direct as Route E. Higher cost.
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.
- UNDERGROUND-ONLY

- NO, because we're right off of Northern on Harmont Dr, and we had the Northern Parkway shoved down our throats. They didn't care about our concerns at all! No, we'll move out if this happens!

Do you prefer Preliminary Route G?

- Yes **(11)**
- No **(6)**

If NO, please state your reason(s).

- Why not follow existing roads?
- The map is to small to accurately determine where the route will go!
- N/A out of my residential area
- Not as direct as Route E. Will cost more.
- Already explained above.

Do you have any concerns about Preliminary Route H?

- Yes **(5)**
- No **(13)**

If YES, what are your concerns?

- Similar to my concerns for many of the routes, why not follow existing roads instead of cutting through farmland or disrupting desert?
- The map is to small to accurately determine where the route will go!
- Not as direct as Route E. Will cost more.
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.
- Why don't you put it on Glendale Ave.? NOBODY LIVES THERE!! DUH

Do you prefer Preliminary Route H?

- Yes **(8)**
- No **(8)**

If NO, please state your reason(s).

- See answer to number 19.
- The map is to small to accurately determine where the route will go!
- N/A out of my residential area
- More indirect than Route G.
- Cost
- Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future

developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.

- Explained above! OMG, put it on GLENDALE AVE.

The final question of the survey was "We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration." The responses to this question, along with open-ended comments received from the public and via the "Contact Us" form at www.apswestvalleycentral.com, are included in Table J-2.

Emails received at contactus@apswestvalleycentral.com, along with the associated responses, are provided in Table J-3.

There were five hotline calls:

June 7, 2021
Landowner: 2 acres at the corner of Cactus and Dysart and 13 acres at the corner of Cactus and El Mirage. Both lots are for sale. Returned call to discuss how this project will impact those properties; the closest alternative route is a mile away.

June 7, 2021
Resident: wants to know why we don't put the lines on Glendale Avenue. Upset that there are alternatives near residential properties.

June 10, 2021
Resident in Twelve Oakes ([redacted],[3] Waddell). Caller is a recent cancer survivor and is very concerned about EMF; opposes C and D.

June 16, 2021
Land owner (approximately 39 acres) and business owner (machine shop) at Sarival and Mountain View (south of Peoria). Caller opposed to routes C and D; asked about when the decision would be made. I answered that we would have a recommendation in the fall and that another newsletter would go out at that time, and that the newsletter would also outline the CEC/ACC process and opportunities for public involvement in that. Caller also indicated that the Mormon Church owns the land to the south of them. The company is called "Suburban Land Reserves." Caller also mentioned the Twelve Oaks residential area to the east of them, and the Woolf Logistics Compound.

June 21, 2021
Land owner: north of Olive between Litchfield and Bullard. Asking about details related to Route B.

SPRING 2022 PUBLIC COMMENT PERIOD

Once a final recommendation was determined, APS and the study team prepared for the filing of the Certificate of Compatibility, which includes continued public involvement. APS prepared a newsletter to be mailed to the working list of approximately 38,000 property owners and tenants in the study area. The mailing list has been updated throughout the project, and the Spring 2022 mailing is expected to hit mailboxes approximately February 2, 2022. Additional notice includes an email from APS to its customers in the area, social media posts, and stakeholder partner social media posts, as well as advertisements in the Arizona Republic and Surprise Independent. APS also has continued Stakeholder

[3] Address redacted for privacy consideration

and Large Land Development meetings. Documentation is provided in the Stakeholder meeting notes table (J-1) and Large Land Development meeting notes table (J-4).

Public Comment Table

Table J-1
Stakeholder Meeting Notes

Meeting Date	Stakeholder	Notes
May 19, 2020	Luke AFB	The discussion about Luke Air Force Base operations and concerns was led by Christopher P. Toale, who is the Director, Community Initiatives Team (CIT) at Luke Air Force Base, Ariz. and manager of the Air Installation Compatible Use Zone. As the liaison between the base and surrounding communities, he is responsible for fostering relations with community elected officials and civic leaders to ensure encroachment issues do not affect flying mission requirements. He engages with eleven municipalities, Maricopa County, and the State of Arizona to advance the ability of the base to coexist with its neighbors. APS presented an overview of two project they are conducting in the area including Phoenix 80 (West Valley Central) to the Northeast of base and Phoenix 70 to the southwest. The focus of the discussion was primarily on Phoenix 80 as it is a new project, whereas Phoenix 70 exists and new facilities are being added in the existing footprint. Luke Air Force base primary concerns is development within the Accident Potential Zones extending from the end of the runway approximately 2 miles to the northeast and also potential flight hazards due to elevated structures in the flight lines. We discussed what types of structures might be compatible in the APZs and the answer was described as preferably no structures in APZs. Also they would expect a Terminal En Route Procedures (TERPS) analysis to be completed to determine potential airspace obstructions. Chris provided a follow up email with the following statements." Thanks to APS for taking the time to identify your key projects in the West Valley. I'm certain you all understand the importance of preserving and protecting our flying mission at Luke and how important that is to the entire west valley. We look forward to your proposed courses of action for the 230KV lines on the West Valley Central project. In our last two meetings we have remained clear that power lines crossing

Meeting Date	Stakeholder	Notes
		the APZs was going to have an operational impact to us. If there is anything technical we can help you understand, please don't hesitate to ask. Our most accurate GIS data on our Accident Potential Zones can be found at the Maricopa County Planning Maps. https://gis.maricopa.gov/PND/PlanNet/index.html . The Arizona State Land Department is the authority and keeper of the GIS data for the noise contours and APZs. You can reach out to their GIS Manager for that information. His details are: Ryan Johnson rjohnson@azland.gov 602-542-4094 Arizona State Laws A.R.S. 28-8461 and 28-8481 define military airport operational compatibility. These laws can be found at www.azleg.gov.
August 3, 2020	City of Surprise	The City noted that if a line is routed along Thunderbird or Cactus, these are primarily residential areas. The group also discussed Luke AFB Accident Potential Zones and the associated restrictions. City inquired about possibility of lower poles for more direct route, and about width of easement (approximately 120 feet). The City desires continued communication and transparency. Council Members have monthly meet and greets, and virtual HOA meetings also mentioned. City indicated that routing along Olive would not be a problem, but Peoria or Cactus would. Council District 6 running for election in 2022. Two Council Districts in study area. Due to COVID, City gatherings are cancelled through the end of 2020, and most City facilities are closed. City is interested in recurring meetings and APS participation in a Council Study Session.
August 6, 2020	City of Peoria	Dirt 101 recycling center at 11450 W Northern Ave, Peoria, AZ 85345 will be concerned about visual impacts. Dan Nissen will be Randy's main POC. City asked for information to be emailed and said they need time to digest the information. Elected officials need to be briefed prior to mailing. The study area is in Councilwoman Dunn's district and she lives in the study area.

Meeting Date	Stakeholder	Notes
		Communications with elected officials and the community to be coordinated with Adina Lund and Irene Charlez.
August 21, 2020	Town of Youngtown	Youngtown south boundary is Olive Ave. The piece south of Olive shown as Youngtown on the jurisdiction map is unincorporated. Youngtown is planning a 2-lane road from Peoria south to Olive to serve commercial areas north of the substation. There is an approved plat east of the transmission line, south of Peoria Ave, north of the El Sol substation. There is a battery storage facility being planned north of the El Sol substation (Invenergy) to store energy for APS. Not in construction yet, but Town has issued special use permit. The Town wants to be part of the WVC 230kV siting process. Town is planning to develop the area north of the substation. Agua Fria Ranch subdivision is northwest of the El Sol substation and Town can provide information for their HOA. Town utilizes Facebook, electronic signs, kiosks for community communication, and also the Youngtown Village Reporter starting in October. Town requested meeting(s) to brief Mayor and Council. Jeanne Blackman will be POC for Outreach Team.
August 31, 2020	City of Glendale	A comment on the schedule graphic was that the green indicating 2022 activities and the green indicating public involvement activities are too close in color and one should be changed for clarity. The biggest concern for Glendale is where the corridor will be located. They are actively annexing large parcels in this area for industrial uses (2,000 new acres in the last year and a half). R. Huggins and T. Perry have a lot of background on this. City is not annexing residential (that remains County). The City asked and the team described the structures (130-140 feet tall typically, monopole (not lattice) structures. The easement needed will be approximately 125 feet. The City indicated existing railroad tracks that serve industrial customers, north side of Olive in the Cotton-Litchfield area. The team will add these to the project maps. Glendale is not planning development in the Luke AFB APZs.

Meeting Date	Stakeholder	Notes
		City asked about potential undergrounding and indicated it will be imperative to show it as an option. Power poles seen as development prohibitive--developers shy away from areas where poles would need to be moved. City also suggested using existing structures as much as possible. The group indicated that MCDOT owns Olive from Dysart west to White Tank Regional Park and wants it as a scenic gateway to the park. At Litchfield and Northern Parkway, the City built a signal and had to modify it for the APZs--they will be interested to see what happens with our tall poles. City encouraged team to look at County Assessor's map for what is really in the City. Jurisdiction map shows "planning area". SW corner of study area, County residents, horse properties, generally opposed to development/change.
September 8, 2020	Maricopa County Department of Transportation	MCDOT has ongoing transportation facility improvement projects in the area. Olive, 303-Remes, relocating 69kV now, construction 2022--long-range plan to build out. Peoria Ave, Citrus-Cotton, scoping study underway. Litchfield, Peoria-Northern, scoping. Butler, Dysart-129th Ave then 129th south to Northern--in final design. Northern Parkway overpasses start construction early 2021 (Dysart, El Mirage). Northern Parkway projects also going into final design near Loop 101. Projects are safety and capacity improvements to accommodate future growth. There is a lot going on in Olive Ave. MWD Irrigation mentioned. MCDOT road ROW is 130 ft to avoid impacts/conflicts.
October 13, 2020	Luke AFB	The APS Team shared maps depicting existing and future land use opportunities and constraints and the Luke AFB (LAFB) representatives were receptive and appreciative of the analysis. LAFB reiterated sensitivity in the APZs. LAFB recently announced upcoming expansions and APS recognizes and supports the critical nature of the LAFB mission. Randy Simpson asked about El Mirage development nears the APZs and LAFB confirmed that conversations have been ongoing. Randy asked if industrial development occurs in

Meeting Date	Stakeholder	Notes
		the area would this make the area more compatible for the contemplated 230kV facilities. LAFB said no--height restrictions and compatibility with state law and restrictions are currently in place. Potential El Mirage development does not change LAFB position related to the potential 230kV facilities. APS asked what kind of development might be allowed in the area and LAFB replied that is depends. Facilities with steam and/or smokestacks could affect visibility in the area. LAFB can assist with TERP analysis and provide an informal preview to streamline the formal review. There is a lot of development happening north of Northern Parkway and LAFB is in tune--will streamline and enhance working relationship. APS team shared plans for upcoming public involvement and showed 90 percent complete version of the project website. LAFB expressed appreciation for the involvement and reiterated their need to sustain their mission.
February 25, 2021	Luke AFB	Randy Simpson provided a brief overview of the project and what connections are needed to serve the new data center at the southeast corner of Olive and Dysart. Randy presented three potential routes and focused on what might occur near the APZs. He also discussed concerns expressed during the first round of public involvement about 230kV facilities being built near residents along Peoria Ave and Cactus Rd. One alternative does run along the south side of Peoria (across Peoria Ave from residential development). LAFB expressed appreciation for the opportunity to review the alternatives and asked about the height of the structures. APS promised to provide further information and also showed a diagram of typical 230kV structures, which vary between 100 and 195 feet tall. Shorter structures mean smaller spans (400-500 ft vs. 1000-1200 ft spans for taller structures). APS will look more closely and provide proposed structure heights with 3 to 4 weeks for the alternatives that are near the APZs. LAFB will conduct an FAA Obstruction Analysis--if they know the maximum structure

Meeting Date	Stakeholder	Notes
		height they can get an answer to APS fairly quickly. APS would like to know from LAFB what heights would work. Assuming a 50:1 glide slope, which would be the most restrictive projection, the height at the northwest corner of the data center height would be 211 ft. This is an initial estimate. APS indicated that a typiocal height would probably be 130-140 feet. APS asked would there be concerns related to underground construction across the APZs and LAFB said probably not. LAFB reiterated an overall preference that the 230kV facilities not cross the APZs. APS also discussed potential routes further east that would run along El Mirage Road near El Mirage City Hall and an elementary school. A half mile further to the east does not cross the corner of the APZ. LAFB inquired about the number of spans that would be needed if the structure height was reduced to 100 feet across the APZ and APS estimate three structures at 500-ft spans. APS indicated that a preferred route is anticipated to be determined early in the summer of 2021.
April 21, 2021	Luke AFB	The meeting was conducted to review the analysis of the data that APS provided for the Link Segments that would potentially affect Luke Air Force Base, in particular the air space obstructions and presence within Accident Potential Zones (APZs). This included the areas along Olive Avenue (preliminary structures 282-289) as well as the areas along the ½ section line between Olive Avenue and Peoria Avenue (preliminary structures 300-312). Chris opened the meeting by indicating that Luke AFB has reviewed the information and has determined that several of the Link Segments would be potentially problematic for both air space and in conflict with the APZs. Preliminary structure numbers 282-286 violate TERPS between 11-26' above 1235' MSL, resulting in a negative operational impact. Waivers could be granted, but requires additional studies and FAA consultation/approval.

Meeting Date	Stakeholder	Notes
		There are additional preliminary structures that would potentially occur further west along Olive Avenue that may obstruct air space too, more data would be needed to evaluate. Ralphie followed up with the additional APS design data west along Olive Avenue a few days after the meeting. Chris mentioned they would prefer routes that do no cross APZs, especially the clear zone and APZ I, which are managed to be as free of development as possible. The APZs are meant to limit development to protect public safety and the safety of the pilot if an aircraft had to be set to the ground on approach or departure. They don't feel like any routes along Olive Avenue would be compatible with the APZs. There is no mitigation for routes that cross APZs, however they may consider supporting routes that cross APZ II, especially at the outer edge further from the end of the runway. Chris said they understand the need to bring alternatives to the public for evaluation. Luke would consider the ½ section route, with the specific condition that the route would include moving the existing 69kV transmission line from Olive Avenue to the half section alignment. They would also like to see that 69kV line moved to Peoria Avenue from Olive Avenue for that route. This would free up the APZ, but they recognize there is another 69kV transmission line along Dysart Road that cannot be relocated as part of this project. Luke prefers the location of the line to be on Peoria Avenue and along Link Segment 340, while it does cross a portion of APZ II at the end of the runway, this would not be as much of a concern and with the potential to relocate the 69kV transmission line from Olive Avenue, there would be a net benefit. Brad indicated in the future as APS gets closer to the making a decision, they would like to request that Luke AFB provide an official letter stating their position with respect to the route(s) being carried forward. Chris asked that APS make an

Meeting Date	Stakeholder	Notes
		official request for a response when the route(s) are ready to review.
April 21, 2021	Luke AFB. email from Randy Simpson to christopher.toale.1@us.af.mil	Chris, Thank you and your team for all the valuable input today. I thought the discussion was very helpful as we look to make route decisions and transition through the last phase of the siting/public involvement process. Per your request, I am attaching a couple of maps and some .kmz files that includes the Preliminary Routes that we reviewed during our meeting. Please do not distribute these materials outside your team and keep in mind that APS has a little more work planned before making final decisions. However, these routes do seem to be pretty good options given all the competing resources in the area. Depending upon the number and location of route options that get carried forward, we may also end up renaming these routes to simplify them for the public review. Right now I am working with about 12 different route options (coming from both directions to the Contrail Substation) and anticipating that we have about 5 to 7 to present to the public. We will let you know more formally which routes will be going out for public review sometime in May and will solicit a formal written response from Luke AFB on those routes and that correspondence will be included in the application we file with the Arizona Corporation Commission.
May 11, 2021	Flood Control District of Maricopa County	Brad Larsen and Randy Simpson provided an overview of the project, noting in particular the rapid land use changes occurring in the project area. In covering the opportunities and constraints map, the team focused in on the FCDMC retention basin at Reems Road--known as the Reems Road Channel and Basin Project. The channel continues south to Northern Ave and Reems Road, then southeast to discharge at the northwest corner of the Falcon Dunes golf course. FCDMC indicated that overhead lines crossing the basin would be acceptable, although they would not look favorably on structures (poles) in the middle of the basin. Pedestrians do traverse the area, although it is not currently designated

Meeting Date	Stakeholder	Notes
		for recreational use. The area is shown as "passive open space" on future land use map. There also is residential use being proposed west of the basin. Olive would be the "path of least resistance". Would likely need an aerial easement over a future park. Would there be conflicts with ballpark lighting if ballparks were built there? It was recommended to check with the City of Glendale on any plans they might have for future recreational use. Steve expressed concern about the impacts that bisecting the property would have on future usability. The group also discussed the Agua Fria crossing on the east side of Contrail. Don and Steve not aware of any FCDMC facilities in that area. Brad asked for "official" comments from FCDMC. Kristin emailed final newsletter and route maps on May 23, 2021, and followed up with an additional email on June 7 notifying stakeholders that the newsletter had hit mailboxes June 4 and that the website is live with updated information.
May 12, 2021	City of Surprise	Brad Larsen and Randy Simpson provided an overview of the project. The City asked about undergrounding through the APZs. Brad said we did look at it and determined that it would cost six times as much as overhead. The City asked if Microsoft could absorb some of the cost for the undergrounding. The group discussed existing features in the project area that could potentially pose conflicts, such as irrigation canals, gas lines, and existing development. City of Surprise representatives indicated that they were pleased that the route options closest to their City avoid Peoria and Cactus, and indicated a preference for the blue option. There was a short discussion about the routes to the east, and that there is potential opportunity for consolidation of powerlines in that area. Regarding the ACC process, it was discussed that APS will bring forth a recommendation and possibly an alternate, and that ultimately ACC has the final say. City representatives asked if we know which one we are recommending yet and the answer was no. Randy expressed the importance of stakeholder

Meeting Date	Stakeholder	Notes
		participation in the CEC/ACC process. The APS team indicated that there will be a third round of public involvement in the fall. Kristin emailed final newsletter and route maps on May 23, 2021, and followed up with an additional email on June 7 notifying stakeholders that the newsletter had hit mailboxes June 4 and that the website is live with updated information. The June 7 follow-up email was specifically designed to address a question from Jodi Tas in the May 12 meeting and in reply to the May 23 email about when it would be appropriate for the City to share the information with the public.
May 12, 2021	Town of Youngtown	The meeting began with extensive discussion of ongoing development, including the Ridgeview Subdivision and the battery storage facility (Invenergy). the Town wanted to know when the routes will be determined and what is the timeline for going to the ACC. The team estimated arriving at a recommendation in approximately late August 2021. The Town indicated that pole placement will be very important, and that the route coming out of El Sol is the most relevant and interesting to them. The study team shared information about the potential for consolidation of power lines, higher structures, and fewer structures, and indicated that a visual simulation of this consolidation is forthcoming. Grant discussed a potential 32-foot, 2-way paved roadway connection that is being contemplated between Olive and Peoria and that fewer structures would be helpful. The Town also expressed a need for improved access to the battery storage facility. Youngtown would like to see the green line to the left of the purple line go away (along the back of residential development), and asked if the existing powerline there could be relocated to the east and co-located with the purple line. Brad and Jessica will take this back to APS and continue to coordinate with Grant and Jeanne. The group discussed development east/adjacent to Agua Fria Ranch (Ridgeview and Invenergy), and the potential for an onsite meeting to discuss in further detail--maybe in July

Meeting Date	Stakeholder	Notes
		or August. Grant will send drawings and asked for the information shared during the meeting to be emailed to him. Kristin emailed final newsletter and route maps on May 23, 2021, and followed up with an additional email on June 7 notifying stakeholders that the newsletter had hit mailboxes June 4 and that the website is live with updated information. Brad committed to determining the APS point of contact for the Invenergy project and sharing with Jeanne. Jeanne asked about timeline. There will be another updated when a recommendation is determined. This is estimated for August 2021. Siting hearings estimated for November 2021.
May 18, 2021	Maricopa County Department of Transportation	Randy Dunsey began by reminding the team that MCDOT has some existing and future projects in the study area and coordination should be ongoing. Randy Simpson discussed how route options were designed to avoid Plains Energy gas lines and also using south side of Peoria and Olive to allow for future widening. The group discussed the ongoing development of Northern Parkway --construction of the Dysart and El Mirage overpasses it just beginning now. Final design 87th to 99th Ave just kicked off, and final design between 99th Ave and the Agua Fria bridge starts this fall. Randy Dunsey will provide the scoping documents for the Northern Ave segments that are initiating final design (provided via email on May 28, 2021). Randy Simpson asked about plans on Peoria Ave and was told the only portion that MCDOT owns is the river crossing. There were no plans indicated. Denise reminded the group that if an APS facility is contemplated next to MCDOT right of way, remember that MCDOT wants to preserve its right of way for future widening. MCDOT Planning indicated a preference for the half section routes. MCDOT's biggest concern is the roads they own, operate, and maintain. Olive is very crowded already (NWD too). Finally the group discussed the ACC process and the importance of stakeholder involvement. Kristin emailed final newsletter and route maps on May

Meeting Date	Stakeholder	Notes
		23, 2021, and followed up with an additional email on June 7 notifying stakeholders that the newsletter had hit mailboxes June 4 and that the website is live with updated information.
May 18, 2021	City of El Mirage	The City reviewed the information provided and indicated that we can expect vocal opposition from the residents on the north side of Peoria Ave, the Dysart Ranchettes. The property owners are organized and vocal. Tom Doyle has updates on development coming--Randy will send the map to Tom and Tom will mark it up. It was discussed that by the time these lines are built, there will be businesses everywhere. The area is developing rapidly. Frontage along El Mirage Road is important to developers. The City would oppose the El Mirage Road alignment--just paid for undergrounding along El Mirage Road and would not support overhead lines there. It was noted that the alignment of "Link 300" is being paved as part of the Northern Parkway project. There are houses planned on the south side of Northern from El Mirage Road west. Houses will probably be built before 230kV line and we would get a lot of complaints. The group discussed ways to avoid residential development. Jessica was invited to speak at a Council meeting--will coordinate with Robert. Another substation north of Contrail (JF Long Development) was discussed and Brad will check in to it. Tom Doyle provide via email on May 25, 2021 a map showing new developments coming to El Mirage. Kristin emailed final newsletter and route maps on May 23, 2021, and followed up with an additional email on June 7 notifying stakeholders that the newsletter had hit mailboxes June 4 and that the website is live with updated information.
May 19, 2021	City of Glendale	The discussion immediately focused on the high amount of development in the area. Randy Huggins shared some details, including 540 acres of industrial near Olive and Reems (Woolf), and development south of Olive as well. Jayme noted that Olive Avenue is owned by MCDOT. Glendale representatives indicated that the blue route looks better than the green one. Olive and

Meeting Date	Stakeholder	Notes
		half section--Olive seems like the natural choice. The study team indicated that there may be some route adjustments based on specific plans that Glendale will share. Randy Huggins can provide contact information for new property owners. On May 20, 2021, Randy Huggins emailed a Woolf Logistics Phase 1 and Phase 2 map for the area from Peoria Ave to Olive Ave, and Reems Road to the Bullard Ave alignment. Kristin emailed final newsletter and route maps on May 23, 2021, and followed up with an additional email on June 7 notifying stakeholders that the newsletter had hit mailboxes June 4 and that the website is live with updated information.
May 20, 2021	City of Peoria	The City discussed the "construction fatigue" that is occurring in the area of Northern Parkway at the east end of the study area. Northern Parkway 99th Ave to Agua Fria Bridge is going in to final design. Minimizing residential takes is a priority for the City. Randy Simpson emphasized that the route option there would be on the south side of the road and would present a potential opportunity to consolidate powerlines--visual simulations of this consolidation are forthcoming. The City asked about the construction schedule--land acquisition is anticipated in 2022 and construction to start possibly late 2022. Dan asked if Link 650 could be moved north. Randy pointed to 680 as an option, which heads north in to El Sol just west of the entrance to the residential development on the south side of Northern. The Tail along 115th Ave between Butler and Olive is a City project (along the west side of the residential development). As part of the potential consolidation of power lines, there is an existing section of line between Olive and Northern that could potentially go away. The City wants to make sure they can signalize Northern and 111th Ave in the future with no conflicts. Kristin emailed final newsletter and route maps on May 23, 2021, and followed up with an additional email on June 7 notifying stakeholders that the newsletter had hit mailboxes June 4 and that the website is live with updated information.

Meeting Date	Stakeholder	Notes
July 9, 2021	Luke AFB. email from Jessica Perry to christopher.toale.1@us.af.mil	Chris, A huge thank you to you and your team for your time and efforts in reviewing APS's proposed project plans and being part of our public process. Please find attached a letter requesting comments from Luke Air Force Base regarding the development plans and specific route preferences for the APS West Valley Central 230kV Connection Project. The comments requested will be included in the Certificate of Environmental Compatibility application for this project and filed with the Arizona Transmission Line Siting Committee. If you have any questions, please don't hesitate to reach out to anyone from our APS team.
July 19, 2021	Luke AFB. email from Brad Larsen to mark.james.14@us.af.mil	Mark, please find the attached route options. We made an addition to options A by adding an A-3 option (Links 240 & 280) recommended and supported by John F. Long properties. This new option is also shown on option C as C-1. This new alternative is a north/south option between Cactus and Dysart Road alignments. A portion of the existing 69kV along Olive will be relocated on all A options (A, A-1, A-2, A-3). The existing 69kV will remain for options C and C-1. I met with Ralphie Adams, our Overhead Engineer this morning to discuss Options E-H going east from the Contrail substation. While he did considerable design for those options crossing the APZs, at this early planning stage he has not done any design for E through H. Normally design would not be completed until a route or routes are selected. If you need the same level of design as we provided crossing the APZs, it will likely take us 3 to 4 weeks to get this completed. Depending on how much detail you need we may be able to provide some latitude/longitude from Google Earth. We could pick specific intersections or various points to determine elevation and then add the pole heights to this.

Meeting Date	Stakeholder	Notes
		Again, we wouldn't be able to show specific structure locations without doing detail design. I can say that the structures are likely going to be around 150 feet tall out of ground. Or elevation plus 150 feet. The maximum height would be 195 but I don't see us using structures of that height unless it is at the far east side where we connect into the existing transmission lines running north/south approximately at the Agua Fria River. Any information you can provide us could help and please let us know how much detail to provide. We didn't believe there would be any major concerns to the east as we were well outside the APZs. As always, detailed design would be submitted to Luke AFB and the FAA for final approval. Also, we had asked for your recommendations and comments by the end of the week. We will extend this review time to the end of July so you can adequately review the new options and options E-H. If you need a level of detail that will require our engineers to do design work, then this will push out our project timeline and the time for your review. If you want to do a quick call to discuss this were more than happy to make ourselves available
July 19, 2021	Luke AFB. email from mark.james.14@us.af.mil	Hi Brad, Thank you for the reply and additional Routes and information. No worries on the Lat/Longs for those Routes to the East – I just thought perhaps you had them already done, but I will grab them off Google Earth – no worries. We will get those comments to you ASAP, but no later than 30 July. Thank you.
July 21, 2021	Luke AFB	Mark James – Luke AFB Community Planning asked to clarify some questions related to the location and design parameters for some of the Routes under consideration. In particular, he wanted to discuss the additional Route Option A3 (Link Segment 240 and 280) proposed by John F Long, the Routes E-H east of Contrail, and the

Meeting Date	Stakeholder	Notes
		relocation of the 69kV line from Olive to Route A or B. Mark indicated that the operations team did not think the Route Option A3 (Link Segment 240 and 280) would be helpful in resolving their concerns about development in the APZs. While they have less concern with development in APZ II especially near Peoria , they didn't feel this route helped minimize the influence inside the APZs. He did not think they would do any specific evaluations of this Route Option. He reinforced that they would not support any route along Olive Avenue or within APZ I and Randall confirmed APS was no longer considering those link segments. Mark wanted to confirm the feasibility of moving the 69kV line along Olive Avenue further north to be consolidated with the proposed 230KV line. I stated this would be feasible for Route Options A and B, so long as they could connect between Contrail and Falcon Substations. APS had offered this as mitigation for concerns along Olive Avenue and to support the Route Options A and B. Randall also explained the purpose and need for the connections from the east into Contrail. He said they would respond in general terms to the Routes E-H, but since we did not provide any detailed data (structure location and latitude and longitudinal coordinates) to review that it would not be a conclusive final response. Randal told him that if he thought it would be helpful in their response letter to make a request for APS to continue to work with Luke AFB as the project goes through the design and construction process, it would allow us to more specifically address any addition height restrictions as the detailed design comes together. He appreciated that suggestion and stated that APS has always been good to work with and thought that would be helpful in the future. He did not confirm which routes they would support, but did say they were likely to state a

Meeting Date	Stakeholder	Notes
		preferred route and an alternative route similar to what was discussed during our last briefing. Mark thanked us for the additional information. Randall told him to feel free to contact us for additional information and we looked forward to their response.
July 21, 2021	Luke AFB. email from Randy Simpson to mark.james.14@us.af.mil	I wanted to provide this .kmz file that includes all the routes that we are still considering to assist with your analysis. The portion of this files listed as segments includes lines previously studied, but no longer under consideration. You only need to focus on the color coded routes.
July 22, 2021	email from Luke AFB (mark.james.14@us.af.mil)	Thanks for reaching back out. I did have a good chat with Randy and it helped to shape our letter. We are 95% done with our comments, but one sentence in there discusses our preferred height of the poles being in MSL terms or Mean Sea Level which is the object plus the ground elevation above sea level because that is how we evaluate our airfield surfaces that extended beyond the physical runway. I just want to make sure the engineers will understand that. I am sure they deal with that all the time, but that would be the only part of the letter that may be a bit confusing. Basically we are going to say that we would need the poles to be at or below 1235 feet MSL – which is the 150 foot pole plus elevation above sea level. Luke's runway is 1085 MSL for example. The FAA process will evaluate all of that, but it's better to know ahead of time in my opinion.
August 19, 2021	Luke AFB	Brad Larsen asked to clarify some of the statements provided by Luke Air Force Base in their response letter dated July 30, 2021. In particular, we wanted to clarify if structure numbers 251, 252, 253 & 254, which are part of Link Segment 90 along Route B (could also be added to Route A) are entirely incompatible due to height restrictions or if it could be supported with lower heights below the indicated 1235 MSL. Mark Indicated the structures would only be in conflict if they were at 1235' MSL or above.

Meeting Date	Stakeholder	Notes
		Brad indicated there is potential to have this route designed at a lower height but it would require more design evaluation to determine feasibility. This is more difficult when 69kV lines are underbuilt on the proposed 230kV structures and would likely require shorter spans and more structures to be feasible. However, APS does have similar height facilities in its electrical system. Randall indicated that APS has not made a final decision, but that Link Segments 85 and 90 are preferred by Woof Logistics and AMI Holdings/TKR Enterprises since it would have the least impact to their future development plans. Also Plains Energy who owns the LP gas offloading facility along Olive Avenue opposes Link Segment 78 because they have concerns that the overhead line would potentially interfere with operations and restrict trains from offloading. They need to offload in this area and ship the gas to the east, then south via pipelines to the Morton Salt Facility salt caverns where the LP gas is stored underground. Randall indicated that based upon all the land use concerns in this area, it would be helpful if we could utilize Link Segment 85 and 90 along with the balance of Route A that Luke AFB supports to address as many concerns as possible. Mark indicated he knew how difficult it is to resolve all concerns and appreciates the efforts we are going to find a solution. Mark indicated he would have his team take another look at the preliminary design information that APS provide and verify if structure numbers 251, 252, 253 & 254 along Links 90 to care potentially restrictive. We also reviewed the Route A-3 option that was proposed by John F Long for Route A. We explained the future development plans that John F Long had presented to us and why they preferred the route to be located along the existing 69kV line along North Dysart Road as a way to minimize the impacts to future development they are planning.

Meeting Date	Stakeholder	Notes
		Mark asked if the 69kV line along Olive would be relocated to keep the APZ as open as possible in these options and Brad indicated that is still feasible. Brad indicated that if they confirm these structures are the only ones of concern that he would have his engineers look at lower structure heights and he would use that information to determine which final route(s) would be carried forward in the CEC application. Randy indicated that we would be reaching back out to Luke AFB and the other agencies once the final route(s) were determined and announced to the public. Randy indicated we may ask Luke for a final letter if they are in agreement with the route(s) that APS chooses to bring forward. Mark said they appreciate the opportunity to stay informed and participate in the planning process. Later that afternoon, Mark sent us an email confirming that their analysis showed issues on the structures and included a map and table illustrating some key information related to their analysis.
September 14, 2021	Luke AFB	Brad Larsen thanked Luke AFB for their partnership and assistance throughout the project, and introduced Kevin Duncan who is assuming the Project Manager role for APS upon Brad's impending retirement. APS described considerations, and Marc asked Ralphie for the map files presented so Luke AFB can take one more look. The team noted reduced structure heights and span lengths on segments 80 and 95 to meet height requirements related to Mean Sea Level. Regarding segment 240/280, dashed lines that cross the APZs, property owner may prefer this. We meet with them this week. There are also property owner concerns in relation to segments 78 and 100. This is where we lowered the structures to be able to use 90 and 85. The study team asked for clarification of the Luke AFB in writing and Marc James agreed.
October 5, 2021	City of El Mirage	Meeting focused on trying to best accommodate as many parties as possible and seeking support.

Meeting Date	Stakeholder	Notes
		Frequent discussions with Luke AFB and JF Long have cause reconsideration of final recommendation. According to Jorge Gastelum, the JFL development on the south side of Peoria Ave includes a landscape buffer and large setback to separate the industrial uses from the residential areas on the north side of Peoria Ave (Dysart Ranchettes). The group discussed concerns about locating along El Mirage Road including constructability and ROW issues. In fact, the City paid to have lines along El Mirage Road undergrounded. The City has development plans in the area around the City complex and remains concerned about Peoria Avenue alignment. Discussion of potential to underground certain segments and associated cost. El Mirage will consider conversation and follow up with suggestions.
October 12, 2021	City of El Mirage	The City gave consideration to the October 5 discussion and suggests alignment co-located with the RR tracks south of Peoria Ave, or, if that doesn't work, at the south end of the setback, or 60 feet north of the 400-foot setback. City would want APS to purchase the entire strip south of Peoria. Both El Mirage and APS will follow up with JFL.
November 5, 2021	Luke AFB. email from mark.james.14@us.af.mil	Good Morning Brad, please see below responses to the minor route change questions you posed. 1). Can you confirm if you could support the proposed route using 330, 395, 461, 460 taking the line east and north along El Mirage Road? Yes, Luke AFB could support the proposed route using 330, 395, 461, 460 taking the line east and north along El Mirage Road. 2). If we could shorten these structures would Luke AFB be able to support this alignment? Or since these cross through the APZs are you still opposed to this route? Unfortunately, Luke would still take the position that alignment links 240 – 280 would cause the greatest risk to flight safety as compared to the alternatives.

Meeting Date	Stakeholder	Notes
		We, Luke AFB, cannot thank you and the APS team enough for allowing us to comment and provide best options for our mission. One last ask is that we would like a chance to make final comment on whichever route is chosen by APS to send to the Commission for approval. There is a good chance we have already commented on that route, but would just like to confirm. Thank you again for your partnership!
January 10, 2022	City of El Mirage	Randy Simpson presented the recommendation and associated considerations, along with next steps. The City inquired about potential ROW acquisition along the 127th Ave alignment; negotiation with property owner will occur upon route approval. The City asked how far segment 290 would be situated south of Peoria Avenue as there are concerns about the Dysart Ranchettes on the north side of Peoria Avenue--the City would like as big a buffer as possible between the 230kV facilities and residential development. Conversations with the property owner and Luke AFB will continue. The City asked for further clarification on which side of the road different segments are envisioned to be built. The City had questions about what the structures would look like and Randy shared photo simulations that are available on the project website at www.apswestvalleycentral.com. Kristin will email newsletter to the City. Newsletter estimated to hit mailboxes February 2, 2022.
January 11, 2022	City of Glendale	Randy Simpson presented the recommendation and associated considerations, along with next steps. APS confirmed for the City that MCDOT has been involved in the process (referencing Northern Parkway). Kristin will email newsletter to the City. Newsletter estimated to hit mailboxes February 2, 2022.
January 12, 2022	Flood Control District of Maricopa County	Randy Simpson presented the recommendation and associated considerations, along with next steps. FCDMC had no questions and noted that Patrick will be the person that APS will coordinate with during design and construction.

Meeting Date	Stakeholder	Notes
		Kristin will email newsletter to the City. Newsletter estimated to hit mailboxes February 2, 2022.
January 13, 2022	Maricopa County Department of Transportation	Randy Simpson presented the recommendation and associated considerations, along with next steps. MCDOT had questions about timing and the group discussed that further coordination will be needed related to Northern Parkway and Olive Avenue improvements. MCDOT acknowledged the many constraints that face the WVC project and mentioned a new development recently on their radar. The group agreed that continued coordination between APS and MCDOT will be valuable. Kristin will email newsletter to the City. Newsletter estimated to hit mailboxes February 2, 2022.
January 19, 2022	City of Peoria	Randy Simpson presented the recommendation and associated considerations, along with next steps. The City asked to confirm that the new 230kV facilities will be co-located with the existing 69kV facilities along Olive Ave, and noted that there are no existing poles along Northern Ave. There are Peoria communities near that Northern Ave alignment and this project presents no economic benefit for the City of Peoria. The City also asked if we have been coordinating with MCDOT, and Kristin described the coordination that has been ongoing with MCDOT. The City asked about a summary of public outreach and the team described the report and that it will be part of the CEC application being filed next week. Kristin will email newsletter to the City. Newsletter estimated to hit mailboxes February 2, 2022.
January 19, 2022	City of Surprise	Randy Simpson presented the recommendation and associated considerations, along with next steps. Both APS and the City expressed appreciation for the partnership throughout the project. Kristin will email newsletter to the City. Newsletter estimated to hit mailboxes February 2, 2022.
January 19, 2022	Town of Youngtown	Randy Simpson presented the recommendation and associated considerations, along with next steps. The Town had questions related pole

Meeting Date	Stakeholder	Notes
		heights, particularly in the area along Olive Avenue where there will be consolidation existing 69kV facilities. Town also had questions about the timing of construction impacts. Coordination will be ongoing throughout final design and construction, which cannot start without an approved route. The APS team for final design and construction has not yet been identified, and many details are not yet determined (e.g., staging areas, construction timing, etc.) It is reasonable to assume that the new taller poles will be farther apart than the existing poles along Olive. The new poles are not likely to be built where old poles once stood. Town reiterated access needs of Invenergy battery storage facility; and asked for clarification of intended tie in at east end of Olive. Town would prefer not to have 230kV lines/structures going north from Olive into El Sol substation. Both APS and the Town expressed appreciation for the partnership throughout the project. Kristin will email newsletter to the Town. Newsletter estimated to hit mailboxes February 2, 2022.

Table J-2
Open-ended Comments Received from the Public

Date/Source	Comment
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Please put it along Olive as this is commercial/industrial and not along Cactus as this is residential!
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	I would like to see the new transmission lines follow freeways and major roadways (like the 303 and Northern Pkwy) where possible. Also, would like placement of poles take into account future development of roads and property to minimize the need for the lines to have to move at a later date. Most development of large facilities like the Microsoft data center and Red Bull factory seem to be happening south of Surprise so it would make more sense to pick routes that service that area.
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Is there a reason why these power lines cannot be buried?
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Adding in additional power lines will lower the value of the homes in the path. Not good for surprise.
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	No transmission lines in residential areas
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Windmills and Solar to supplement this project ??? We need to consider renewable energy. This is extremely important
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if	Olive Ave is only path that should be used. Already commercial and will continue to be commercial.

Date/Source	Comment
you would like to identify additional issues for consideration.	
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	I appreciate the survey thank you
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Put the power lines under ground
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Please do not place these along private homes, we are already impacted by the lack of regard for placing huge commercial buildings right behind our homes, please consider running along Northern.
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Keep the lines along Northern Expressway to the extent possible. Avoid anything near residential subdivisions that are more densely populated.
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Hello, I'd like to make a comment on the new powerline project in the far West Valley. As a nearly 20-year resident of Surprise, living between Cactus and Peoria, I would strongly dislike having the power lines running through my neighborhood and down the streets that I drive everyday. Part of the reason I live here is the beautiful view of the White Tank mountains. To have that obstructed would be very disappointing. To the south of us there is much less by way of residential properties. With the new Northern Parkway, running the power lines along there or Olive makes much more sense. Thank you for your consideration.
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Please do not run the power lines down Cactus or Peoria where we have established homes.
November 2020/final question of online survey: We want to hear from you! Please provide us	Will any homeowner or business owner with APS provided services see an increase

Date/Source	Comment
with any additional comments or let us know if you would like to identify additional issues for consideration.	in their utility rates as a direct/indirect cause of this project? If there are additional costs, will Microsoft absorb them?
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	would like a by-monthly update to the progress
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	As long as the cost is absorbed by the business effected
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	I'm concerned about possible health issues caused by high voltage power lines (EMF), including leukemia, infertility, stress, headaches, reduced immune system, changes in DNA, rashes, etc. I probably would not have purchased a home in this area if I were aware of this project.
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Strongly suggest utilizing the Olive Avenue corridor for transmission line routing.
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	I encourage APS to select Olive Ave as the primary Route for the lines. Cactus Rd, and Peoria Ave to some extent, are high sensitivity areas as those two routes include a greater density of existing residential development. Nearly all of the Cactus Rd proposed route will impact existing residential development. The relevant area of Olive Ave is primarily agricultural and/or future industrial therefore minimizing the impact to residential development.
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	My preference would be for the installation to be along Olive. The TS 20 and 20 substations, plus apparently an additional Falco station under consideration, are all along Olive. In addition, it appears there is far less area covered in red or yellow on this route than via Cactus. Thanks for the

Date/Source	Comment
	opportunity to comment, for what it's worth.
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	I don't want this near my neighborhood. The stupid warehouses already are altering our views and landscape.
November 2020/final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	I do not want it to go across on Cactus. We live at Sarival and Cactus. This will drop our property value and will look awful.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I would like to comment on your possible projected path for your West Valley central 230kv connection project. I live in Copper Canyon Ranch (Olive and Litchfield). I am completely against power poles being placed near our community. We all pay a lot of money for our properties and our gated community. We purposely chose our property because we were not in close proximity to any large power poles. We have two young children and many other children live in this community. The potential health risks of living near large power poles is very concerning. I don't see why you cannot take your project more south towards Luke Air Force Base. There is a lot of open farmland and not near as many residential subdivisions. Think about your community and not just lining your pockets for once APS! There are many $600k -$900k homes in our community and I have already heard a lot of push back with your project and our community. I have a feeling you will be hearing from many of us!
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I do not want new high voltage power lines on either Cactus Road or Peoria Ave. My concern is that EMF exposure will be a serious issue in a high-density residential area where there are numerous schools. There is no reason that these lines can't be run underground to preserve the safety and beauty of the area. The high-power lines

Date/Source	Comment
	would greatly devalue the property values in the area for those two reasons. BOTH MY HUSVAND AND I PREAD WITH YOU TO NOT CONSTRUCT THE NEW POWER LINES!
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I know you are trying to get input from residents that this might affect, and my husband and I would love to see this go down Olive Avenue if at all possible. We already have some poles going down Cactus Rd. Thanks for your time and have a great day.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	Hello...I live at (*address redacted*) in Surprise, AZ. How will this project affect me? How close will the power lines/substation be from where I live? The answer to these questions is greatly appreciated.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	The power lines should run down Northern parkway. I understand that at Luke they will have to turn North due to height restrictions for approach and departure flight paths.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	It seems like power lines going down Olive would make sense and maybe an alternative might be down the Northern Parkway
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I do not want the power lines going down Peoria avenue
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I do not want the new power lines on cactus or Peoria.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I do not want bigger power lines to run down cactus rd. I would prefer not having them run down Peoria either, but definitely not cactus. Thank you.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I do not want new power lines run down Peoria in Surprise.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I would like them to NOT go down Cactus and prefer Olive
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	Our family does NOT want those power lines to go down cactus or Peoria...roads

Date/Source	Comment
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	We don't need a 195 feet tall, 230kv powerlines running down Cactus or Peoria in Surprise. This a neighborhood not commercial district.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	No power lines running down cactus or Peoria rds near any residential area
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	Are there any plans to use windmills to supplement this project?
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	Olive is my vote because it is 100% commercial and will continue to be 100% commercial. Peoria and Cactus have homes and should not be considered for this project. I fully understand the need but the only logical choice is Olive Ave from 303.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	A few years back when there was a fuel crisis APS asked for a large rate increase to overcome raised fuel costs, what happened when fuel prices dropped back to normal. Where did that money go...!!!
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	We oppose this project. They should be run along Northern where everything is industrial. As new residents of the area we left our area to get away from these power lines in our neighborhood.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	As a resident living adjacent to Cactus, I am very much opposed to locating this project in any of the residential areas being considered. I believe they are a safety hazard and will impact the value of my property.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I believe the planned transmission lines should be routed closer to Northern Parkway. These structures should be put as far south from existing residential areas as possible. Current plans will negatively impact the views and feel of the well-established and 15 year+ old communities such as Marley Park, Rancho Gabriella, Copper Canyon, and others. The further south the lines are run the better.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	Please do not put power lines down Cactus. I feel Olive is the perfect road and not quite developed yet.

Date/Source	Comment
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	Please consider running the lines in the southern most area of Surprise, Olive Rd. There are less established neighborhoods in that area. Thank you, Heather Shapiro
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	How do you decide that this customer needs to be fed from two 230KV lines. Wouldn't three 120kV lines be an alternative to consider? What is the projected load? Does the customer require being fed from 13kV rather than say 34.5kV which would have lower losses?
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I read your FAQ about putting the power line underground. While initially more expensive, wouldn't it be much more secure? With it buried and surrounded by the cooling slurry, wouldn't the line be better protected from not only terrorist attack on the poles but also at least some protection from both natural and man made EMPs? To say nothing of it being much more aesthetically pleasing.
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	Will this affect the rate we pay for electricity? I moved here 5 months ago and my house has solar power yet my summer bill was 3x higher than what I paid in the past living in a suburb of Chicago. Why are our bills so incredibly high?
November 2020/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	What is the proposed rate increase to the local home owner using APS power under this proposal.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Thank you for your time in considering our concerns.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Any lines west of Litchfield Rd. should be as far South of Olive Ave. and closer to Northern Ave. as possible. Anywhere North of that is WAY TOO CLOSE to nicer residential and Custom Home neighborhoods. Any lines close to those neighborhoods will significantly hurt the property values in those neighborhoods and in turn extremely hurt those landowners. I own a property at *(address redacted)*,

Date/Source	Comment
	Surprise, Az. 85379 and also a Custom Home property at *(address redacted)*, Waddell Az. 85355.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	I'm concerned about the funding for this project. Our rates are already outrageous. I can't imagine that you're just going to absorb the cost.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	If you want input on a project, PLEASE provide 1. easy access to the response email IE do not send a request via a no reply email, or have access in the email. 2. Provide maps large enough to be read.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Lots of choices here. My preference would be for the shortest route, that disrupts the fewest people, and puts these lines away from existing residential. And while you're at it, why don't you put them underground instead of giant eyesore towers with heavy power lines.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Maps are meaningless.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Arizona is a growing state and I agree we need these projects to provide for the people. My only concern is your peak hours really need to go from 5 hours to 3 hours.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Having been in real estate for many years, I know these large 230 KV power lines are a detriment to sales of homes near them. Health issues and the view of them are also something people do not like or care to have near their home. It is one thing if someone chooses to move into a neighborhood with large power lines already there and they know about and accept them. But it is another when you are not given much chose in the matter and now it will affect you, your family and your home value. Please keep these lines as far south of residential homes as possible.

Date/Source	Comment
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	I am available for any questions. Please do not use routes C or D...
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Please do not use routes C or D as they will be in a very bad location for our community and future development.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Power lines going over any existing community is not idea! We purchased our home away from power lines, specifically! Our concern for the health of our family impacts that choice. To run power lines over existing housing is simply poor planning and impedes on our human rights!
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Make sure they stay away from any residential areas!
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	About 2 to 3 times during the summer we loose power. We have commercial walk in freezers and if no one is there to turn off the breakers until the power comes back on it can ruin our freezer units if the power comes back on too soon. Also the problem if it is off for a long period of time food starts to thaw.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Keeping lines away from Peoria and Olive Aves. should be primary since these are main East to West traffic corridor . Route C sends the lines down land that is basically undeveloped and would impact the fewest homes and businesses. Route G also has these benefits but is a little more indirect.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Please consider not putting 230KV line with 195' poles in the flight path of Luke AFB. Trainee pilots have a lot to deal with in the most vulnerable times of their flight - take off and landing. Even though the 195' poles carrying 230KV lines are up to 3 land miles away, they are a hazard to a low

Date/Source	Comment
	flying plane. At 140 to 160 MPH landing speeds and take off speeds, the pilot has seconds to respond to a hazard. Some of the pilots have low proficiency in English, and may not recognize the hazard. I propose a 2 mile underground 230 KV line from TS-20 sub along W. Olive Ave., through Luke AFB APZ, and poles the rest of the way to TS-2 sub, using Route B.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Having read the presentation, my preferences would be for Routes C or D and Routes E of G. Routes C or D provide for minimal construction impacts, greater flexibility and diversity to future developments, and a natural buffer to between residential and commercial. Routes E or G offer the advantages as above but also take advantage of existing infrastructure corridors.
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	BURY'EM !!!
June 2021/ final question of online survey: We want to hear from you! Please provide us with any additional comments or let us know if you would like to identify additional issues for consideration.	Please keep the main power lines away from residential areas. I understand this is needed but there is plenty of room in the industrial area of Glendale. Peoria road is right next to residential.
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I live in Twelve Oaks Subdivision and have looked over the proposed 230 kv Connection routes. I understand the need for new power lines given the growth of the West Valley but would like to see these lines go underground. If that is not possible I have looked over the proposed lines and believe Route B would be the best choice for our neighborhood and also for the existing communities. There is a new housing development by Pulte that is planned for the land just East of us so housing growth will be expansive. Route B is one of the new lines proposed on W Olive where there isn't any housing (I don't believe there will be) and there are existing

Date/Source	Comment
	train tracks. I believe this will be less intrusive on all our communities. Also there isn't an exit off the freeway for Olive so the traffic will be minimal. Thank you.
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	My educated opinion is that the powerline route should definitely be C or D because they would run right along a very nice custom home neighborhood and MY PROPERTY. My educated opinion comes from having owned several properties in the past and being a full time Realtor. Having a powerline that close (almost right on top of the neighborhood) would single handedly obliterate the property values there and be extremely hurtful to those property owners. It would turn a very nice desirable Custom Home neighborhood into a not desirable neighborhood. I strongly think that the line should be UNDERGROUND, or RUN BETWEEN OLIVE AVE. & NORTHERN AVE., preferably closer to Northern Ave. as there are several other nice residential neighborhoods along Peoria and some new ones being built South of Peoria.
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I see it has been mentioned to NOT add lines to Cactus and Peoria AVE and for the possibility of going underground. I did not see any APS comments on these two statements. I would be concerned about any magnetic fields produced from this addition. Although the need is there, are there any other options available? Will my rates go up to help the cost? If so what amount since I'm on a fixed income.
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	You destroyed the desert and all wildlife in the desert surrounding this project. We don't see any more quail, coyotes, rabbits, hawks, reptiles...it's just bulldozed dirt.
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	Thank you for inviting me to attend this discussion, but as I am not in the proposed areas, my input would not be helpful.

Date/Source	Comment
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I think the whole project is complete bullshit! It's just another way for you people to line your pockets with the earnings of honest people. Giving you people more power is like tying a knot around a persons neck and telling them to stand on their tippy toes or they'll hang themselves. Eventually that's all you'll do, is kill the honest hardworking and woman. And all for what? Absolutely nothing but to have a bigger stake than what you've already got. APS is the most crooked utility in all 50 states. You've proven that year after year It's time you lose for once, and lose big!
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I live on Peoria and Sarival we paid alot of money for our home and we do not want to see powerlines in front of our neighborhood running east to west on Peoria and we do not want a substation near our neighborhood. This is unacceptable and it is unfair to our community. When we purchased our home the developer did not tell us that this would be powerlines or a substation new our community. We do not want this powerline .
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	We would like to express our opinion/request that the proposed 230 kv connection route be as far away from residential neighborhoods as possible. Therefore, we would prefer to see ROUTE D. Thank you.
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	I am hoping you choose route B. We have had so much construction going on at Reems and Peoria with new factories being built. Increased traffic, critters, loss of views of mountains, noise, etc. This seems to be the most distant one to us. Picking this route for above reasons; farthest from Reems and Peoria Avenues. Thank you.
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	We live right next to that park and do not want those powerlines near our neighborhood or near our children or pets. This is also where we take morning walks

Date/Source	Comment
	and use the park in our community which these lines will go right up against. This will significantly impact our quality of life in our neighborhood. We have six children and built a custom home that we intend on living in the rest of our lives. This will reduce the value of our homes and be a possible health concern. Please do not put these powerlines in this area along our neighborhood and along our park where our families and children spend so much time. We strongly oppose this project.
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	We'd appreciate knowing 1) when this is going to happen (El Mirage) 2) will there be outages - if so, let's hope it doesn't happen in the summer.
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	Hello, would like to comment on your proposed visual community unsightliness, and property value destruction by installing these ugly poles. When my wife and I moved to this area from Kansas City, Mo we looked at about 75 houses before purchasing in a neighborhood with underground utilities, as the biggest turnoff when browsing homes was ,to us, a home that has been smoked in, and a house with power lines dangling in sight. That said, in the 1800's they used wooden poles, in the 1900's wood and metal poles were used, this has gone on long enough, come-on man this is the 21st century, bury them safely UNDERGROUND--------LOOK AT YOUR BROCHURE-ARE THESE PICTURES APPEALING? Thanks for listening.
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	Highly opposed to Routes C and D as a resident of Twelve Oaks Estate. Please keep the route along Olive Avenue and let Microsoft pay for the underground the line through the APZ zones. This should have been something that they factored into the cost of constructing in that location. Thank you
June 2021/ Open-ended Comment via "Contact Us" Form at www.apswestvalleycentral.com	You also need to put up a stop light on 111th Ave & Northern takes forever to turn

Date/Source	Comment
	on to northern and to turn from northern on to 111th Ave. Especially when it is rush hour. You did it for the gravel company on northern why not for the subdivisions that have to deal with this on a daily basis.

Table J-3
Emails Received via contactus@apswestvalleycentral.com
(Names of members of the public are redacted)

Date	Content	Response
October 21, 2020	Hello. I've been reviewing the documentation regarding the upcoming project for the new TS20 substation for the data center in our community and have a couple quick questions. I didn't see this mentioned anywhere but apologize if I missed it. Is the preliminary plan to use 230kv single circuit, or 230Kv double circuits? Also, is it likely that redundant routes will be needed to support this center, and that both Cactus and Olive may see new power poles? Or is the goal to limit it to one or the other?	Thank you for your questions on our West Valley Central 230kV Connection Project and the power lines needed to serve the new data center located in El Mirage. We are in the early stages of our siting study and we don't know where the new lines may ultimately be located. You are correct that data centers do require some redundancy in their power sources. At this time we are looking to locate two possible single circuit 230kV lines from the data center connecting to our existing 230kV system that runs north and south along the Agua Fria River or directly to our existing El Sol substation. We are also planning one new power line going west from the data center to our planned TS2 substation located at the northeast corner of Olive Avenue and the 303 Freeway. The line going west will likely be built for double circuit capability however it may only carry one circuit to begin with. Due to some restrictions with Luke Air Force Base we may need to route the new line north and then west to make the connection to TS2 however until we analyze and discuss pole heights with Luke AFB we don't know if this is the case. We will look at all possible ways to tie the data center to both existing sources on the east and west and as we do further evaluations we will have a better indication of where the lines may be located. Keep in mind that we take in to account many different factors including public comment, engineering, permitting, environmental factors, regulatory approvals, and cost. We

Date	Content	Response
		encourage you to stay engaged, attend our virtual open houses and live town halls if you can. We welcome your feedback throughout the siting process and please let us know if you have further questions.
October 24, 2020	At this point I am diametrically opposed to everything. It doesn't bode well for public opinion when the invitation to a Public Information Virtual Open House arrives four days subsequent to the event. As you well know, the event was held October 20, 2020. I, and I'm sure many others, received the invitation the afternoon of October 24, 2020. It would appear that APS was derelict in mailing their announcements.	We are glad you received our newsletter and apologize for any confusion regarding public outreach. The October 20 date was the date that the Virtual Open House was launched on the website, and it remains available, including opportunities to comment, through the month of November. The Virtual Open House tab located at the top of the website is designed so that you review and comment at your leisure. Please use the Contact Us tab at the top of the website to comment directly. As for the Live Virtual Town Halls, those are scheduled for November 4 and November 10, both at 6:00 p.m. You can register for those live virtual events by visiting www.apswestvalleycantral.com, and clicking on the Virtual Live Town Hall tab at the top of the website. If you want to be contacted directly, we can set a time to go through the information with you individually if that would be more convenient for you. Please let me know if you have any additional questions.
November 11, 2020	Thank you in advance for your time in answering this. I'm not going to complain about anything, no one wants these things right next to them, but they have to go somewhere. I live in Granite Vista off the end	Thank you for contacting us on our West Valley Central 230kV Project. The planned substation (TS-2) to be located at approximately the north-west corner of Olive and the 303 Freeway will be a 230kV substation. This will be constructed on a 15-20-acre site although a portion of the property is for setbacks and landscaping around an approximate

Date	Content	Response
	of the Northern Parkway. In particular I'm curious what the proposed station at Olive and the 303 is going to look like and how it's going to affect the area. When is this planned to be completed?	10-foot-tall block wall. If you want to see a similar substation, there is one just south of this location at Camelback Road and west of the 303, net to Dick's Sporting Goods. Each substation is unique, and we try and blend it into the area by building similar walls to other facilities in the area. The new TS-2 substation is expected to be energized in 2023 although some construction may begin in 2022. It is my understanding that the area close to the planned substation will be planned commercial or light industrial land uses however I am not certain of that. The property we will be purchasing is still being used for agriculture I believe. I hope this answers your questions and don't hesitate to reach out to either of the emails listed here if you have further questions.
June 4, 2021	I live in an area near Cactus and 175th Ave. powerline. So the other powerlines don't impact me personally, but I think the further you stay away from Luke Air Force Base the better off you'll be. In fact, better off we all will be. So my preference would either be route A or C. That way we will be completely out of there landing zone.	[redacted] thank you for your input. We appreciate very much you taking the time to participate in this process. Kristin Darr Public Involvement Manager for the APS West Valley Central 230kV Connection Project Principal, Central Creative, LLC
June 5, 2021	Dear Sirs: Having studied your mailer with the proposed route options, here are my ideas and choices.	[redacted] thank you for your input. We appreciate very much you taking the time to participate in this process. Kristin Darr Public Involvement Manager for the APS West Valley Central 230kV Connection Project Principal, Central Creative, LLC

Date	Content	Response
	TS-20 230kV Substation to TS-2 230kV Substation: The simplest, most direct and least disruptive (especially on W. Olive which is busy enough now) would be Route C and Route C1(if needed to get around Luke). With the little "bumps" in the blue and orange proposals, you would have added costs. Green is partly running along Olive which I think should be avoided. Yellow is off the beaten path, straighter, running along a remoter part of W. Peoria, and can avoid the Luke AFB Zone. TS-20 230kV Substation east to the existing powerline : Again, the simplest, most direct line is the Route F (Red) choice. It may be the least disruptive also by staying away from either W. Olive and Northern. Route F looks like it is the shortest and the cost would be the least. So, my choices are Route F west to meet up with Route C (and C1). Thank you for allowing input	

Date	Content	Response
June 10, 2021	We'd appreciate knowing 1) when this is going to happen (El Mirage) 2) will there be outages - if so, let's hope it doesn't happen in the summer.	Hello [redacted]: Thank you for your inquiry submitted via the "Contact Us" form at www.apswestvalleycentral.com. You asked "When is this going to happen?" We are currently looking at starting construction in late 2022 and into 2023. Property owners and residents would be provided notice prior to any construction taking place. You also asked "Will there be outages?" There shouldn't be any outages required as part of the line construction. Anytime a planned outage is needed, it is coordinated very carefully in advance with notifications to anyone who will be impacted; planned outages would not be scheduled during the summer months. Thank you, and please let me know if you have any additional questions. Kristin Darr | Public Involvement Manager for the APS West Valley Central 230kV Connection Project
June 16, 2021	Hello, My name is [redacted] and I am interested in the west valley central 230kv connection project. I have a certificate in electrical utility technology from yavapai community college. I received a letter about connecting a new substation to the existing substation because I live in the area. If you can send me some more information that would be great. My address is [redacted] Peoria, AZ, 85345. My phone number is [redacted] and I am	Hello [redacted]: Thank you for your interest in this project. Please start by visiting www.apswestvalleycentral.com . There is a great deal of information available there. Once you have reviewed the information, please feel free to contact me with additional questions. Kristin Darr | Public Involvement Manager for the APS West Valley Connection 230 kV Connection Project

Date	Content	Response
	available to talk any time of the day. Thank you for your time.	
June 29, 2021	With the current drought issues that is growing in the west. With the increase demand for water to meet the demands for electricity. What is the plan for the future to address this issue? Will there be power outages during the upgrades?	Hello and thank you for taking the time to provide input to the APS West Valley Central Connection Project. While APS is not directly in control of water resource issues, we work closely with other agencies to coordinate infrastructure development. We have been actively working and coordinating throughout this siting study with the cities of Glendale, Surprise, El Mirage, and Peoria, along with the Town of Youngtown, Maricopa County Department of Transportation, Flood Control District of Maricopa County, and Luke Air Force Base. Regarding your second question, there are no planned outages associated with construction of the project. Please let me know if you have any additional questions. Kristin Darr | Public Involvement Manager for the APS West Valley Connection 230 kV Connection Project
July 8, 2021	To whom it may concern, My first choice I prefer, Route B 2nd choice, Route A Routes C and D cut to close to my neighborhood Twelve Oaks Estates. We have already dealing with Glendale annexation of industrial buildings along Reems Rd.	Good morning and thank you for your input. We appreciate very much you taking the time to participate in this process. Kristin Darr | Public Involvement Manager for the APS West Valley Connection 230 kV Connection Project

Date	Content	Response
	Please do not Routes C and D. Thank you for considering my input on this matter. [redacted] Waddell, AZ 85355	

Table J-4
Large Land Development Correspondence and Meetings

Date	Landowner/Representative	Notes
July 27, 2020	Email from Rose Law Group	I represent a company that owns a buried pipeline that runs from 14702 W OLIVE AVE, WADDELL AZ 85355 to the SEC of Northern Ave & Dysart. I am trying to find information on any current or planned projects that are along the pipeline or adjacent to the facilities. I have attached a map for better understanding of the area. The pipeline runs from 14702 W OLIVE AVE WADDELL 85355 East on Olive Ave. It turns South at Dysart to the property on the Southwest corner of Northern Ave & Dysart. Any information that you can provide of the area would be greatly appreciated.
February 19, 2021	Email from Rose Law Group	Please forgive the lapse as we have been retained once again to work on issues pertaining to any interaction with our LPG pipeline running from 14702 W OLIVE AVE, WADDELL AZ 85355 to the SEC of Northern Ave & Dysart Rd. Previously you stated there was a siting study for a 230KV transmission line in the area, has there been any progress made on this study? We would very much like to be added to any communication regarding this project or any potential projects in the area.
March 1, 2021	Email to Rose Law Group from Randy Simpson (study team)	Brad Larsen with APS asked me to provide you with information for the West Valley Central 230kV Connection Project that we are conducting north of Luke Air Force Base in the West Valley. Burns & McDonnell is assisting APS with the project and I am the Project Manager for the siting and permitting studies. We have been working on this project for the last several months and conducted our first round of public participation last November. We conducted a Virtual Open House and also a Live Town Hall Meeting to support the public outreach. There are maps, graphics, and technical information on the project website with all the information that we have presented to the public to date accessible via the links below. We have conducted preliminary engineering and environmental analyses that allowed us to identify all the potential route segments that may be feasible for the proposed project. In the next few months, APS will be selecting the preferred route and alternative route(s) they are considering bringing forward for approval by the Siting Committee and the Arizona Corporation Commission later this year.

Date	Landowner/Representative	Notes
		There will be a second round of agency and public meetings held in the 2Q of 2021, likely to be conducted virtually. If you would like to provide specific comments now regarding the routes that are shown on the Interactive Map in the Virtual Open House on the website, please feel free to provide them to Brad and I, so we can incorporate them into our analysis. We accept comments throughout the process and it is not limited to project meetings. https://apswestvalleycentral.com/ https://apswestvalleycentral.com/open-house/ I understand that you have a client proposing a gas pipeline in the area and we were provided a general map and descriptions. If you have any specific routes or ROW for the pipeline, we would like to exchange that information with you if it is not confidential. APS engineers are beginning to look at the routes and look at permitting, construction, and operations/maintenance issues for each route. It would be timely to coordinate discussions with your project, so that both parties can proceed successfully with the respective projects. For future reference, APS maintains a list of projects on their corporate website. This is a good reference for ongoing and past projects they have conducted. https://www.aps.com/en/About/Construction-and-Power-Line-Siting/Power-Line-Siting/Power-Line-Siting-Projects Please let us know if you need any additional information after reviewing the project website. Brad and I will be happy to assist you any way we can.
March 11, 2021	Email from Rose Law Group	Andrew from my office forwarded the email below to me. One of our clients (Plains LPG Services, L.P.) owns and operates LPG storage and distribution facilities in this study area. They own a distribution facility on the north side of Olive Avenue (APN 501-42-031A) and a storage facility on the east side of Dysart Road (APN's 501-53-001D & 501-52-001E) and operate 3 underground LPG pipelines that run down Olive Avenue and Dysart Road connecting the two facilities. Consequently, some of the routes APS is considering for this project have the potential to impact their facilities.

Date	Landowner/Representative	Notes
		Plains has asked me to engage in the process on their behalf. I'm still gathering some information I need but intend to provide your team with some feedback very soon. What is your timeline to evaluate the route alternatives and recommend a preferred route? I want to make sure I get you our feedback in plenty of time to consider it in your evaluation.
March 12, 2021	Email to Rose Law Group from Randy Simpson (study team)	Thank you for this additional information, we appreciate the continued correspondence. We are aware of the LPG facilities along Olive Avenue and were provided some preliminary information in July regarding a future pipeline that could be located along Olive Avenue and Dysart Road (attached). We will continue to evaluate this information and any new information that is provided in conjunction with our studies. APS has been conducting studies and public outreach since last fall and we are now focusing on detailed engineering and environmental studies for all the potential routes that APS could bring forward. As you are aware, we are evaluating routes along Olive Avenue and Dysart Road, among several others. You can view all this information on the project website at https://apswestvalleycentral.com/ . APS is specifically looking at construction and ROW considerations for all of these routes, so the more we can learn about the Plains LPG Services, L.P. infrastructure, the easier it will be to find solutions that we can incorporate into APS' plans. This information is very timely and if you can get us more specifics on the pipeline locations in the next couple of weeks, that would help us as we complete our detailed analysis and field work. APS is planning on bringing forward a series of routes for public and agency comments in the 2nd Quarter of 2021. After collecting comments and completing the detailed analysis, APS will select the routes that they intend to carry forward for review and approval by the Siting Committee and Arizona Corporation Commission, in the 3rd/4th Quarter of 2021.
March 12, 2021	Email from Rose Law Group	Thanks Randall. I can definitely get you some more detailed information regarding my client's facilities and their LPG pipelines along the Olive/Dysart routes. I'll be sure to get it to you in the next couple of weeks. Regarding APS's timeline, once you identify the routes you intend to take forward to the Siting Committee and the ACC, how much longer does that approval process take? And based

Date	Landowner/Representative	Notes
		on that, when do you anticipate construction of the new 230kV line starting?
March 12, 2021	Email to Rose Law Group from Randy Simpson (study team)	The approval timeline would be approximately 60-120 days from the time of the filing of the CEC Application with the ACC. Statutorily, the Siting Committee hearings are held between 30-60 days from filing. They will hear the case which may conclude in as little as a few days or could take longer if the case is more complex. They will make their recommendation to the ACC for approval and issue a draft Form of Order. The ACC will consider the project for approval typically at their next schedule open meeting or soon thereafter. If approved, the ACC will issue the CEC Final Form of Order. APS is anticipating a decision from the ACC in 4th Quarter of 2021. If the project is approved APS would design, acquire ROW, and procure materials in 2022, with construction and in-service in 2023.
May 3, 2021	Email from Rose Law Group	Sorry for the delay in getting back to you on this. We were hoping to get some better detailed information from MCDOT regarding its plans to widen Olive Avenue east of Reems Road, but everything seems to be preliminary at this stage. So, here's what I can share with you regarding my client's existing LPG pipelines and their concerns relative to your line siting study for the new 230kV line: As you know, Plains operates 3 existing LPG pipelines in Olive Avenue and Dysart Road. Plains is about to start a relocation project to move these pipelines out of the way of a future widening of Dysart Road by the City of El Mirage. The plans for this relocation are attached, which will show you both the existing and future location of these pipelines. The pipelines will still be located within the road ROW, but will be move outside of the pavement section. Note that the above project only affects a small run of the pipelines on Olive Avenue. The rest will stay in place for now. However, MCDOT is planning to widen Olive Avenue in the near future, and it is anticipated that Plains will soon need to relocate the pipelines in Olive Avenue further south, outside of the widened road but still inside of the expanded ROW. They will have to fit those 3 pipelines between the edge of the new road and the relocated 69kV lines that are also there. It will be a tight squeeze.

Date	Landowner/Representative	Notes
		Consequently, Plains is very much opposed to a route for the new 230kV line that would follow Olive Avenue and/or Dysart Road as it could further impact the location of their LPG pipelines and therefore the ability to operate their business. If there is any additional information I can provide you on this, please let me know. Also please keep me in the loop (email list, etc.) on any new developments, reports, meetings, etc. related to this project. Thanks!
May 6, 2021	Email to Rose Law Group from Randy Simpson (study team)	Thank you for this detailed information. We will be evaluating your plans as we continue to conduct our technical studies and complete our public outreach process. APS is intending to identify the routes to be carried forward for agency and public comment in the next couple of weeks. We plan to send out a newsletter and have another Virtual Open House and Virtual Public Meeting via our website in early June where you can review the latest route information and provide additional comments. I believe we will have some route options that will address Plains' concerns. A final decision on which route(s) will be carried forward for permitting with the Arizona Corporation Commission will be made in July/August. Hearings are anticipated in October/November, but have not been set yet. We look forward to continuing correspondence on this matter.
June 10, 2021	Email to Rose Law Group from Randy Simpson (study team)	Per our earlier discussions regarding the APS West Valley Central Project, I wanted to let you know that new information regarding the potential routes is available on the website at https://apswestvalleycentral.com/ for review. APS is anticipating some these routes will be carried forward for permitting in their Certificate of Environmental Compatibility later this year. The final decision will be made after public review this summer and then the application will be prepared and submitted later this year. You can use the website to submit comments if you would like, there are a couple of options including a general comment form and questionnaire, as well as using traditional means such as telephone or email. I am attaching the newsletter, which is also available on the website for reference. You will note one additional optional route segment for Route A that is on the website, which was added after an agency meeting, but did not make the newsletter because it was already printed.

Date	Landowner/Representative	Notes
		Thank you!
July 9, 2021	Email to Rose Law Group from Randy Simpson (study team)	I wanted to check in with you to see if you or Plains Energy had any question on the routes for the West Valley Central Project? We are nearing the end of our official comment period and will be compiling all the comments next week, so that APS can use that information to decide which routes will be carried forward for ACC review and approval. Do you plan to submit any written comments? We will continue to accept comments up to the start of hearings, but the earlier we can get input the better. Also as a reminder, if you want an easy way to reference the route options under consideration, we have all the maps on the project website both as downloadable .pdfs and as an interactive map where you can view the routes independently or collectively. I have provided the links below. Virtual Open House Station Four: Route Options Maps https://apswestvalleycentral.com/open-house/ Virtual Open House Station Four: interactive Map https://aps-wvcc.maps.arcgis.com/apps/webappviewer/index.html?id=332b1b3cb4e941e2add54094ea889076
July 13, 2021	Email from Rose Law Group	Thank you for the opportunity to provide additional comments. In the interest of time I'm providing these additional comments (see below) from Plains via email. If you also need them provided to you in a letter, just let me know and I can follow up with that. Plains additional comments on the refined route alternatives are as follows: Plains is adamantly opposed to Route A-1 as shown on the attached exhibit, specifically Links 76 & 78 which would be immediately adjacent to Plains' existing rail terminal facility on 2 sides. The rail terminal facility includes large above ground LPG storage tanks and other LPG processing equipment that could be in conflict with the proposed Route A-1 and therefore threaten Plains' operations which have been in place at this location for 40+ years. Additionally, Route A-1 would cross Plains' 3 existing LPG pipelines which is also undesirable. Plains is also opposed Route B as shown on the attached exhibit, given its proximity to Plains' existing rail terminal facility and its existing LPG pipelines in Olive Avenue. If

Date	Landowner/Representative	Notes
		Route B is ultimately selected, then the new 230kV line must be co-located with the existing 69kV line and moved further away from the road. Plains preferred route is Route A as shown on the attached exhibit (excluding A-1 as noted above). Please confirm receipt of these comments and let me know if you have any questions or required any additional information. Thanks!
July 13, 2021	Email to Rose Law Group from Randy Simpson (study team)	This email is adequate, and we will document it along with all the correspondence we have received. We are tracking many forms of communication in an overall database, so these comments will be treated the same as others. We will be reviewing these comments and using them for reference when APS is making its decision. We appreciate your participation and comments during the process, they have been helpful in identifying and your concerns. Thank you!
July 13, 2021	Email from Rose Law Group	Thank you! When do you anticipate a decision by APS on the route(s) that will be taken forward for final approval?
July 15, 2021	Email to Rose Law Group from Randy Simpson (study team)	We anticipate that APS will make a decision on the routes they carry forward to the ACC by September, with a CEC Filing in the fall. They will announce this via another newsletter. We have a tentative date for conducting the Siting Committee hearings in December with an ACC decision in early 2022. I have discussed your comments with APS and we were wondering if you and a representative from Plains Energy would be interested in having a virtual meeting to discuss the route options and your comments? APS would like to specifically talk about some of the routes that are in proximity to Plains facilities and how they would be constructed if those routes were to be carried forward. I think this would prove to be helpful and possibly eliminate some of the concern about those routes. If you are interested in in a follow up discussion, we could do this next Wednesday July 21, or sometime after that if you want to suggest alternative dates. Let me know if you would like to do this meeting and we'll get an invite sent out. Thank you!

Date	Landowner/Representative	Notes
July 21, 2021	Notes from Meeting: Plains Energy/Rose Law Group	Plains Energy provided an overview of the facility operations where LP gas is brought in by rail and offloaded at the facility and then transferred via pipelines to the area where they store the gas in underground salt caverns near the Morten Salt facility on Dysart Road south of Northern Parkway. Randall Simpson provided an overview of the project and the routes that being considered along Olive Avenue between Reems Road and Litchfield Road. We referenced the interactive map on the project website when discussing the route options. Randall described the location of the route along Olive Avenue as likely being on the south side of the road where the current 69kV is constructed and the possibility of consolidating the existing 69kV with the proposed 230kV line. We referenced the visual simulation near the Plains Energy Facility as shown on the project website. Rose Law Group mentioned a primary concern is not having conflict with the existing pipelines along Olive Avenue, as well as a future expansion and relocation of existing pipelines to accommodate road widening. Rose Law Group mentioned the widening of Olive Avenue and asked if the existing line would be moved. Randall stated it would likely be set back at approximately the "back of sidewalk" position and share overhead ROW with the road. Randall mentioned we had discussed this road widening with MCDOT during a briefing. The landowners would have some say in location during ROW acquisition. Rose Law Group mentioned that Plains Energy would be most concerned about the Link Segment 78 alignment, in particular the crossing of the railroad track where they turn into the offloading facility. Concerned about potential impacts to disruptions of the rail deliveries. Randall mentioned that we had been in touch with AMI Holdings/TKR Investments regarding the property to the east. They did not express opposition to any routes including Link Segments 78 and 100 that could cross their property. However, they did express more support for Link Segment 85, specifically along the east side of the tracks. Randall mentioned upcoming meeting with Woolf Logistics to discuss their development plans and sales of numerous parcels to the west of Plains Energy. Many of the routes North of Olive including Link Segments 55, 75, 77, 78 are now more difficult to construct because new facilities have been built and more are starting construction, as well as a couple that are

Date	Landowner/Representative	Notes
		supposed to start soon within the Woolf Logistics Park. This would make Link Segments 76, 85, 90 potentially easier to plan and construct in the future. Rose Law Group wanted to be clear that Plains Energy is opposing Link Segment 78 due to potential concerns, as expressed in their earlier email correspondence. Rose Law Group encouraged APS to discuss the project with Woolf Logistics as they had also been in contact with them regarding development plans. He thought they may be in agreement with keeping the route along Olive Avenue through their property. Randall stated that APS would continue landowner outreach as the finish up permitting and would work through all the design and construction details when doing ROW acquisition, including coordination with railroad and utilities that may be crossed. Plains Energy thanked us for taking the time to discuss the project and their concerns. Randall thanked them for the correspondence throughout the process and providing input on their operations and expansion plans of the pipelines along Olive Avenue and Dysart Road.
Sept 30, 2021	Email from Rose Law Group	I am just inquiring to see if there has been a narrowing down or finalization of the potential routing for the new lines.
Oct 1, 2021	Email to Rose Law Group from Kristin Darr (study team)	APS is close to making a decision and plans to announce their recommendation in the near future. We will provide more information as soon as it is available.
Dec 1, 2021	Email from Rose Law Group	Randall – just wanted to check in on this. Has a final route recommendation been determined and taken forward to the ACC?
Dec 3, 2021	Email to Rose Law Group from Randy Simpson (study team)	APS is getting very close to making their final route selection and announcing the route that will be carried forward to the public. We have been working with a couple of large landowners to resolve some of their concerns regarding portions of the route that cross through developments they are currently planning. This has taken longer than we anticipated, but it has been productive. I am attaching the anticipated Preferred Route map that also shows a couple of alternatives that may be carried forward in the application. The Preferred route is anticipated to be south of Olive Avenue where the existing 69kV is located and will be moved a little further south due to the road widening. We have been working with that landowner on some of the details with that location and right now they are in support of the route, so we anticipate this

Date	Landowner/Representative	Notes
		would address Plains Energy's concerns. Please note, these routes (not likely along Olive Avenue) may still change pending final landowner/agency discussions. Let me know if you have further questions. Right now APS is anticipating filing their CEC Application with the ACC end of January 2022 and hearings are tentatively scheduled for the last week of February and first week of March 2022. These hearing dates will be published on the APS Siting Projects website located here. https://www.aps.com/en/About/Construction-and-Power-Line-Siting/Power-Line-Siting/Power-Line-Siting-Projects/West-Valley-Central
Dec 3, 2021	Email from Rose Law Group	Thanks for sharing this. I think Plains is OK with Route A, given that it will be south of Olive Avenue generally where the existing 69kV line is located. But Plains remains adamantly opposed to the Route A-1 option. Is A-1 going to be part of the recommended route APS takes to the ACC?
Dec 3, 2021	Email to Rose Law Group from Randy Simpson (study team)	APS is still contemplating bringing that Alternative Route A-1 forward in the application. The rationale is that the Preferred Route A Link Segments 85 and 90 encroach into the Luke AFB height restricted areas due to 150 feet height of poles and will require lower height structures approximately 135 feet. APS has conducted preliminary engineering analysis that indicates lower height structures would be feasible for those link segments, but final engineering has to be conducted and then they will require approval of the FAA prior to construction. While it is likely that FAA will approve those structures at a lower height, there is still some possibility they could deny approval. If that were the case, APS would need to potentially fall back to the Alternative Route Link Segments 78 and 100.
Dec 6, 2021	Email from Rose Law Group	Understood. Thanks for the explanation. Please continue to note Plains objection to Alternative Route A-1 for the record.
January 11, 2022	Email to Rose Law Group from Randy Simpson (study team)	Hello, I hope your new year is going well! I wanted to provide this updated map that illustrates the final Preferred Routes that APS will be carrying forward in their Certificate of Environmental Compatibility Application to be filed with the Arizona Corporation commission on approximately January 26. The hearings are scheduled for February 28- March 4. I think you will find that this is the route along Olive Avenue that your client Plains Energy was supporting and we do

Date	Landowner/Representative	Notes
		anticipated the 230kV transmission line will be on the south side of Olive Avenue where the 69kV transmission line is currently located. It will be located approximately at the southern edge of the road right of way and APS has been having discussions with those landowners to make that work. We appreciate all your comments and consistent participation throughout the process, as it is helpful to understand current and future plans that businesses/landowners have in the area. We will be including these communications in our application and will discuss this in the hearings. APS would like to ask you to provide a letter of support for the Preferred Routes as shown on the map. If you would be willing to provide that it would be greatly appreciated. Let me know if you have any questions.
January 11, 2022	Email from Rose Law Group	Thanks for this Randall. It looks like Alternative Route A-1 has been removed from consideration. Is that correct?
January 11, 2022	Email to Rose Law Group from Randy Simpson (study team)	That is correct. We believe at this point we have all the landowners and Luke Air Force Base in agreement with this portion of the route, so the previous A-1 option is not being requested by APS.
June 17, 2021	Email to John F. Long Properties from Jessica Perry (APS)	As you may be aware, APS is in the process of locating a new 230kV line near the John F. Long property in El Mirage in order to support economic growth in the West Valley. I'm reaching out to provide you with the newsletter that has been shared with residents and stakeholders in the area which identifies the route options being considered. The newsletter also references a virtual open house for the West Valley Central 230kV Project that can be found at apswestvalleycentral.com. This website provides more information about the project and an opportunity to share feedback through July 10th. The APS project team and I are available to meet virtually or in-person to go through the alternate routes and to hear any feedback you may have. Please let us know if you are interested in meeting and when might be a good time in the next week or so.
June 29, 2021	Email from John F. Long Properties	We will most definitely need to discuss a few of the locations. To be honest, I was very surprised to see proposed areas running through the middle of our property and not along existing arterials. Before we discuss online and in order to save time with many questions, can you send us:

Date	Landowner/Representative	Notes
		Information on the type of poles to be considered in appearance and height. A photo of an existing would be fine. What APS requires for easements and the restrictions for improvements beneath or around. Are they exclusive or non-exclusive? Can they encroach over city right of way? How far can they be offset from center to minimize impact of onsite development? How does APS compensate the landowner for the large encumbrance and possible devaluation of the property based on appearance? Will APS plan on serving any other users from this line or it is specifically for the Microsoft project? Our understanding at this time is that this is a dedicated power supply to their project.
July 8, 2021	Email to John F. Long Properties from Jessica Perry (APS)	We are more than happy to set up an online or in-person meeting to ensure all of your questions and concerns are addressed. We certainly can provide some of the information that will assist in making our meeting more effective and productive, and we have addressed your questions below. As a bit of history, we started the project in the Summer of 2020 and public outreach began in Fall of 2020. All the study information conducted to date, including the project purpose and need statement, is available on the project website at https://apswestvalleycentral.com/. What APS requires for easements and the restrictions for improvements beneath or around. Are they exclusive or non-exclusive? Can they encroach over city right of way? How far can they be offset from center to minimize impact of onsite development? Although there are some restrictions beneath or within any easement we acquire, our easements are not exclusive and will allow for many uses that you may have planned for long term development of your properties. I have attached an example of a standard easement and we can discuss any specific concerns you may have during our meeting. We will have one of our Land Agents attend in order to address your concerns. There are times where we can use a portion of road right-of-way as part of our easement when no further widening of such road would be expected.

Date	Landowner/Representative	Notes
		How does APS compensate the landowner for the large encumbrance and possible devaluation of the property based on appearance? Once final routing of the line is determined and land acquisition has begun, an appraisal of your property would be completed. This is a transparent process, and the landowner will be notified and a part of the overall evaluations. Our land agent will be available to discuss this further during our meeting. Will APS plan on serving any other users from this line or it is specifically for the Microsoft project? Our understanding at this time is that this is a dedicated power supply to their project. Although the Microsoft facility is a driving force on the timing of this project and their ultimate plans do require a high voltage, 230kV source of power, this project in not solely for their benefit. As a matter of fact, this project ties the existing APS 230kV system west of the Loop 303 to the existing APS 230kV system running north/south along the Agua Fria River to the east. This project will enable APS to serve all the new manufacturing plants and development throughout this part of the west valley. This project enhances the overall APS reliability for the area and provides many operational benefits to the APS bulk electric system in the west valley. Completing this project allows for additional redundancies so that even if a major transmission line is out of service for some reason, we have back-up ability to keep the system operating. Please let us know if any of the following dates and times would work with your calendar(s) and if a virtual or in-person meeting is preferred. During the meeting, we will discuss the timeline for this project as well.
July 8, 2021	Email from John F. Long Properties	Thank you for the information and the meeting dates. Next Wednesday, July 14th at 1 pm will work for our team. In order to help make the time a little more efficient, here are my thoughts on the Preliminary Route exhibits that only impact Copperwing Logistics Center (our property): Route E on the north side of Olive is preferred if your intent is only to serve MS as Route F seriously compromises the depth

Date	Landowner/Representative	Notes
		challenged lots we have facing Alice and the RW is not great enough to offset the easement so that your crews could work safely. Routes B and D create challenges for both APS and Copperwing as the property along Joe R. Ramirez Rd. west of Dysart (link 180) has been sold to multiple users with projects currently under construction now. This would also remove link 280 from consideration. Routes A, A1, C and C1 appear to be the best options to support the greatest area with a much-needed industrial power source. Collectively, we will need to discuss the 127th ave alignment (links 330, 340) in a little more depth but overall, we may be able to work with it. A1 and C1 would be more expensive for APS, more than likely not be supported by El Mirage as it reduces the clean appearance of the frontage of City hall, Gateway park, the YMCA and Police station as well as the remaining length of El Mirage intended to be improved as an enhancement to those properties. I'm not sure if anyone in your portion of the transmission dept is aware or not, but we have let most everyone at APS we deal with know that we have set aside an area on the north side of Olive Avenue, 1/4 mi. east of Dysart specifically for the installation of a substation should it be needed. The area provided was based on the sizing recommendations from APS and along the current 69kV circuit.
July 14, 2021	Notes from Meeting: John F. Long Properties	Brad Larsen (APS) gave an overview of the project purpose and need and proposed facilities. Randall Simpson (study team) gave an overview of the siting process and data that has been collected and processed to date. Randall gave an overview of the preliminary link segments that were developed and how they were combined to get the route options being considered at this time. JFL provided an overview of the land that John F Long owns and is that which is currently under development or in escrow for sale. Land north of Olive Avenue between Dysart and El Mirage roads has a number of parcels that are currently in escrow with plans for industrial development including several parcels near the intersection of Peoria Avenue and Dysart Road including an extension of a railroad spur to serve the property. Additional parcels to further east could be served by this rail spur as well.

Date	Landowner/Representative	Notes
		There are a couple parcels south of the El Mirage City hall planned for commercial and light industrial development. Joe E Ramirez Drive could be extended from Dysart to El Mirage Road. Tippman Innovations has purchased land east of Consolidated Resources for new cold storage industrial development. A parcel has been set aside on the north side of Olive Avenue across the road from the Contrail Substation for a future APS substation to serve load. This was planned in conjunction with APS in recent years. They are concerned about having enough electrical infrastructure to serve the entire area as it develops rapidly. They want the 69kV transmission lines along Olive Avenue and Dysart Road to remain to help serve commercial/industrial load in the area. Land south of Olive Avenue includes plans for light industrial east of Contrail Substation and they are concerned about lines being in this area, because parcels are smaller with limited lot depth. Along Line 300 and 310, there is a 60' wide utility corridor planned and it may include water conveyance system from a lift station planned near SW corner of Butler and 127th Avenue. JFL said they would prefer to have a Route A option that uses Link Segments 240 and 280 to preserve development space along Link Segment 310. This would allow for underbuilding 69kV line on Dysart Road. JFL supports the Route E option as long as it remains on north side of Olive where the existing 69kV line would be. Route F would not be as desirable as it would affect lot depth on smaller parcel of land they own. JFL supports Route G as long as it can be planned with their utility corridor along Link Segment 310. Route H would not affect John F Long properties. JFL indicated they would send a drawing for the development associated with their Copper Crossing land use plans for this area.
July 27, 2021	Email to John F. Long Properties from Randy Simpson (study team)	I am wondering if you can provide us any more detailed information regarding the development plans and new railroad spur that is being planned for the parcel of your land south of Peoria Avenue and east of Dysart Road (Link Segment 290)? This was discussed in our meeting. If you have any maps or drawings that would illustrate this, it would be helpful.

Date	Landowner/Representative	Notes
		I want to make sure we have a good understanding of that development and can incorporate it into our maps and analysis appropriately. If you look at the project website, you will note that we added the Route Option A-3 based upon your comments. APS will be considering this along with the other Route options and comments. Thank you!
July 27, 2021	Email from John F. Long Properties	Exhibit attached: The dashed line is spur we are completing now. We will be working with the City of El Mirage to get our filing with the ACC to approve the crossing of Dysart when needed. Please feel free to reach out at anytime if we can help.
Sept 16, 2021	Notes from Meeting: John F. Long Properties	JFL indicated that they did not recall segments 340 and 330--these cut straight through their property and would preclude "rail served" status that is important to property value. Study team reiterated Luke AFB's concern related to the APZs as well as legal opinion that we cannot go through the APZs without Luke's approval. JFL will not back down; will not allow segments 330 or 340 to be used. Group discussed potential use of El Mirage Road as alternative and agreed to further joint coordination with the City of El Mirage.
Sept 16, 2021	Email from John F. Long Properties	This email is in reference to our meeting today to discuss preferred routes by APS for the 230kV transmission project that serves only Contrail. A great deal of discussion was regarding the proposed section North of Joe R. Ramirez rd. to Peoria avenue. John F. Long Properties LLLP (JFL) as a managing agent of the landowner, John F. Long Family Revocable Living Trust U/A dated 2-26-2008 (LFT), is very much opposed to this alignment proposition as it creates a significant encumbrance to the development of large, rail served manufacturing, distribution and other major employment-based uses of the parcel. As this is not the only possible route to serve the single user requiring the installation, we believe an alternative route should be utilized that does not create such a hardship on the owner's ability to develop one of the few remaining rail capable properties in the area.
Sept 21, 2021	Email to John F. Long Properties from Randy Simpson (study team)	Based upon our conversation last week and your concerns with Route Option A Link Segment 340 crossing through the future rail served property in your Copperwing development north of Joe E Ramirez Road, APS has reviewed the El Mirage Road Link Segment 460 again. As we discussed there are a number

Date	Landowner/Representative	Notes
		of right-of way and constructability concerns APS has along El Mirage Road including the City of El Mirage complex on the west side and the commercial development on the east side. The west side of El Mirage is not likely feasible due to the proximity of the City Hall building and the park to the edge of road. The east side is feasible, but there are a number of properties that would be directly impacted and may have loss of useable land/structures within those businesses, which would likely cause concern from those business owners. Because of the concerns with constructing along El Mirage Road, APS has identified one additional alternative shown as Link Segment 461 on the attached map that we would like you to consider. Link Segment 461 connects to Link Segment 395 heading west along the future Joe E Ramirez Road alignment and connects back to Link Segment 330 before heading south into the APS Contrail Substation at the Microsoft data center facility. Link Segment 461 would be at the extreme eastern edge of your rail served property and would provide a good balance between the concerns you have raised and the concerns APS has along El Mirage Road. If you would support this, I think we would have a route that does the best job of meeting the project purpose and need and addressing the environmental concerns (i.e., existing and future land use, Luke Air Force Base, visual impacts) that the Arizona Corporation Commission will evaluate when APS files it's Certificate of Environmental Compatibility in the near future. Could you please review this new alternative and let us know if you have any questions or if you can support this option? We are available for a call to discuss this or we can meet in the field if you desire. I know you are planning to be out later this week, so we would like to have another discussion today or tomorrow if that works for you. We appreciate your continued participation and look forward to hearing from you again.
Sept 22, 2021	Email from John F. Long Properties	Section 461 won't be considered for easements but APS and Contrail could purchase the route for the width of the encumbrance as long as they also purchased the 7 acre, "L-shaped" parcel behind City hall and the Police station. This may be the quickest and most cost-effective way to take care of the routing.

Date	Landowner/Representative	Notes
Sept 22, 2021	Email to John F. Long Properties from Brad Larsen (APS)	We are looking into your request to purchase the needed land for our transmission line as well as the additional 7-acre parcel in the vicinity of the City of El Mirage facilities. We will get back to you soon to discuss this in further detail. We thank you again for the continued communication and cooperation as we look to minimize the impact to your future land use plans and still meet the needs of our Project to serve the Contrail substation and the Microsoft facility.
Sept 29, 2021	Email to John F. Long Properties from Brad Larsen (APS)	We are still looking into the option of purchasing the land required for the new alternative #461 and the 7-acre parcel next to City Hall but I had a couple of questions. If we do purchase the area for alternative 461 would John F. Long Properties still consider easements for the other portions that are needed (330, 395, 460, 400, 290) or would this also require a purchase? Since you were proposing a future substation site on the north side of Olive Avenue would you consider the possibility of relocating the substation to the area next to City Hall east of and adjacent to 461? This would free up the property on the north side of Olive for other development by John F. Long. Could we possibly offset some of the cost of the 7-acre parcel since this saves your land along Olive? I hope you can answer my questions and I'm certainly open for any discussion. I'm needing some clarification as to what I am asking my Management to consider. Thanks again for your continued cooperation in this important project. I appreciate your time.
October 20, 2021	Notes from Meeting: John F. Long Properties/Dermody Properties	Brad Larsen welcomed everyone and made an initial comment regarding intent of meeting to review route options in El Mirage. Introductions were made for Dermody Properties, the developer that is planning for new industrial development on JFL land between Peoria Avenue and Glendale Olive Avenue between Dysart and El Mirage Road. Randall reviewed the project description and the routes that are currently being considered in the El Mirage area. This included a discussion about the recent routes that El Mirage had suggested south of Peoria Avenue and west of El Mirage Road. JFL indicated that they had heard from City of El Mirage regarding their suggested alternatives and that JFL was not in support of those alternatives as proposed. JFL further stated that the proposed park/green space along Peoria Avenue that was part of the City of El Mirage long range plans as shown in their approved PAD developed for the El Mirage Industrial Complex proposed by John F Long; and further elaborated that the planned park/green space along Peoria was negated when

Date	Landowner/Representative	Notes
		John F Long donated the property at the intersection of El Mirage/Joe E Ramirez for the new city complex which included the park as developed. JFL stated they did not want to have the routes within this area as it would potentially hinder development. JFL asked why the route could not be undergrounded along Olive Avenue through the Luke AFB APZs. Brad explained the preliminary studies APS had done to look at underground and that the costs could exceed $20 million vs overhead costs of $2 million. This was a very difficult and costly underground scenario with 2 circuits of 230kV and two circuits of 69kV requiring a very wide right-of-way. JFL asked again about the heights and spacing of the line and Brad explained they were estimated to be 130-150 feet tall and 700 feet average span similar to the recently constructed line along west side of Loop 303 Freeway. JFL asked if they could be lowered to 85 feet tall to be allowed through Luke airspace. Brad explained that the line would not be able to be designed at that height and meet electrical code, ground arcing concerns, and APS standard design requirements. Randall mentioned that the preferred route moving to the north along Peoria would also allow for the existing 69kV line to be relocated with the new route and Luke AFB supports removing the line from the APZs. JFL asked if Link 240 and 230 from south of Peoria Avenue along Dysart into Contrail Substation, and mentioned that the dedication of road right-of-way for Dysart Road expansion was completed. Brad indicated APS did not review undergrounding of this segment, but that it would essentially be a similar distance and cost, with same technical requirements. The need for the line was discussed and specifically if this was to only support the Microsoft Data Center. Brad said the Microsoft facility was an important part of the need, but the lines are needed to accommodate a wide range of future uses in the project area, including the rapidly developing industrial development. JFL asked if APS could request that Microsoft cover the costs of undergrounding. Brad indicated that their agreement with Microsoft was to cover some portion of the development costs of the line, which are reimbursed by APS over time and that no underground was considered. Right now there is no mechanism in place to cover the cost of undergrounding and it would not be proposed without a means to cover additional costs.

Date	Landowner/Representative	Notes
		Dermody Properties asked when the projects are needed and if there will be enough power for all development in the area. Brad reviewed the timing of the lines and explained they first phase needs to be in service by 2023 and additional lines would be constructed to meet demand as the area grows. This would include three connections into the Microsoft facility, with the 3rd being a reliability line requested by Microsoft. APS needs all the lines as soon as land can be acquired, and the line built. Currently planned all three for 2023; APS is serving the 1st phase of Microsoft with 69kV and needs all the 230kV lines for their phase 2. Dermody Properties is potentially developing industrial land with up to 20 individual buildings in the area. They are in the conceptual phase of design and plan to move into more detailed planning and approval with the City of El Mirage soon. They indicated that they may be able to provide a site plan showing their development concept for this land. Dermody Properties requested an APS contact to request service to their planned industrial complex. Jessica indicated she would identify the contact and provide it to Dermody. Brad indicated that APS would take these discussions into account and expressed his appreciation for continued input. APS plans to make a final decision on which routes to include in their application, which may include routes that we have previously studied or potentially a new route based upon discussions with constituents.
Nov 16, 2021	Notes from Meeting: John F. Long Properties/Dermody Properties	Brad Larsen welcomed everyone and made an initial comment regarding intent of meeting to review route options and request to meet with Luke AFB and Microsoft to discuss routes and undergrounding in El Mirage. Introductions were made for a couple new attendees from Dermody Properties. Brad provided an overview of the discussions and response from Luke AFB regarding the use of Link Segments 240 and 280. Brad indicated that Luke AFB has again rejected this route as it would be in conflict with their APZs and potentially detrimental to operations and mission of base. He stated this has been their position for a year with respect to routes within the APZs. Brad indicated that APS intends to bring forward Route Option A including Link 290, 340, and 330 as the proposed alternative and also bring Route Option A-4 including Link Segments 400, 460, 461, and 395 as an alternative route in the CEC Application. Brad acknowledged that this would have some

Date	Landowner/Representative	Notes
		impacts on the land use development plans that are being considered for the area but felt based upon all competing environmental issues in the area including Luke AFB and El Mirage City Complex that this route would be considered the most compatible with the line because it is industrial development in the planning stages. Brad offered to continue to work with John F Long and Dermody Properties to develop the line in a way that would minimize direct impacts to future uses. Randall reviewed the planning process and discussed the siting criteria and how the routes were developed, emphasizing a higher level of compatibility for commercial, light industrial, and industrial areas. Randall also mentioned that many of the public comments received during the process emphasized keeping the lines south of Peoria Avenue where there are few residential areas that would be impacted. Randall indicated that in the siting application APS would typically ask for a corridor wider than the transmission line ROW which would allow flexibility to move the route to reduce impacts to land use. He said the line does not have to be directly along the ½ section line and could shift to avoid things like planned buildings. JFL asked if APS had further discussed undergrounding and if Microsoft was asked to support undergrounding of the line since it primarily serves them. Brad indicated that APS has completed preliminary studies on feasibility of undergrounding and determined it was cost prohibitive at +$20 million dollars and there is concerned about costs escalating due to materials shortages, supply chain disruptions, and inflation. Brad indicated that they do not ask customers to pay for underground lines and the costs are usually absorbed by the party proposing the undergrounding. JFL again asked if the line could be placed along Dysart Road where there is an existing 69kV and placed underground to reduce impacts to their property. Dermody Properties reinforced the idea of underground the transmission line along Dysart Road and felt it would be the least impact to their property, Luke AFB, and also the residences along Peoria Avenue. JFL asked if El Mirage has weighed in further on the alternatives. Randall mentioned that we had not had further discussions with them and that their position was the same that they did not like the route along Peoria or close to the city complex.

Date	Landowner/Representative	Notes
		JFL asked if City of Phoenix had weighed in on the routes specifically in areas where the aviation department owns land between Bullard Avenue and North Litchfield Road, between Peoria and Olive. Randall mentioned we had been in contact with Jordan Feld from the City of Phoenix Aviation Department on a couple of occasions, but they had not provided any specific comments to date. JFL asked about the purpose and need for three separate 230kV connections into Microsoft. They felt that triple redundancy was unnecessary and unprecedented and that it put the entire burden of the project on John F Long because each route crosses their land. JFL asked if the 69kV line currently along Olive Avenue was moved would they lose the ability to access power from that line, which they had assumed would be there to support development in their lands. Brad indicated that the discussion with Luke AFB had included that as mitigation. Randall stated that although it was discussed it may not be a requirement and may not be a condition that Luke AFB placed on their support for the route crossing a small portion of the APZ near Peoria Avenue. We had done something similar on a previous project as the southwest end of Luke AFB runway APZs. JFL and Dermody Properties both asked if the purpose of the proposed lines was primarily to serve Microsoft and that others would have to pay more money to gain access to power in the future. Brad explained that the project was for Microsoft in the near future to meet their needs, but that power would be available for development in the area. Randall mentioned that the density and patterns of the substations and power lines being planned was commensurate with similar locations throughout the Phoenix metro area. He mentioned that if future lines were determined to be needed, that a new study would be conducted to meet those needs. There was a question about the design of the line and we reviewed some of the conceptual images and photos on the project website, including the visual simulations. This provided a perspective of the design parameters and general viewing conditions along two of the routes crossing John F Long property. Brad concluded the meeting by stating the decision to move forward with the routes had been made considering more than a year of planning and that the CEC Application would be filed early 2022 with hearings expected in late February/early March. Brad discussed that the hearing process was open to

Date	Landowner/Representative	Notes
		public and anyone can participate in the proceedings or provide public comments. Brad thanked everyone for their participation and that they would like to continue to work on planning the route with their input.
July 21, 2021	Email from Kristin Darr (study team) to lross@rosspropertyadvisors.com Ross Property Advisors (Leyton Woolf Property)	Hi Lance My name is Kristin Darr and I am working on a project for APS—a siting study for the West Valley Central 230KV Connection Project to serve a commercial customer on the southeast corner of Olive Avenue and Dysart Road. Randy Huggins with the City of Glendale provided us your contact information. The project will include a new 230/69kV substation located on the customer's property, a new 230kV transmission line connecting the new substation to the east into the existing El Sol – White Tanks 230kV transmission line or the El Sol Substation; and a new 230kV transmission line connecting the new substation to the west into the planned TS-2 Substation previously permitted as part of the West Valley South Project. The study area is bounded by N. Citrus Road on the west, W. Thunderbird/Waddell Road on the north, and N. 103rd Avenue on the east. The southern boundary of the study area is W. Northern Avenue between N. Citrus Road and N. Litchfield Road, then drops south to W. Glendale Avenue between N. Litchfield Road and N. 103rd Avenue. I am attaching a copy of our most recent newsletter to help orient you to the alternative routes under consideration. There more detailed information available at www.apswestvalleycentral.com. I am reaching out to request a meeting to discuss the project. Copied here are Brad Larsen, the APS Engineering Project Manager; and Randy Simpson with Burns & McDonnell, the consultant team Project Manager. These team members also will attend the meeting. If you could provide some availability this week and next, we would like to get something scheduled with you as soon as possible. Thank you! We will look forward to working with you.
July 21, 2021	email from Randy Simpson (study team) to	Lance, I appreciate your time today to briefly discuss the project. As I mentioned, we have quite a bit of the project information on

Date	Landowner/Representative	Notes
	lross@rosspropertyadvisors.com Ross Property Advisors (Leyton Woolf Property)	our website located here: https://apswestvalleycentral.com/open-house/ I have also attached a file illustrating the routes APS is currently evaluating for permitting and construction. Once you have had more time to review this information, we can arrange another call to get more input from you and Mr. Woolf. We look forward to continued discussions. Thank you!
July 21, 2021	Notes of Meeting: Woolf Logistics/Ross Property Advisors	APS received the contact information for Ross Property Advisors (RPA) from City of Glendale. We reached out to Lance Ross to see if they had received information that was sent previously and to see if he would like a briefing on the project latest routes we are considering for permitting. RPA accepted the invitation and thought it was timely as he was going to have a meeting with Leyton Woolf the owner (based in California) of the Woolf Logistics development and associated properties in the project area. Randall provided a project overview including purpose and need, as well as potential locations where the transmission lines are needed. We referenced the interactive map on the project website when discussing the route options, as well as the Future Land Use map when discussing the Woolf Logistics development. RPA stated that all the properties in the Woolf Logistics development along the Mountain View Road alignment between Reems Road and Bullard Avenue alignment have been sold or are in escrow. Planning of lands south of Olive is continuing with consideration of some additional manufacturing/production facilities and some e-commerce sites. Production facilities would need a lot of power similar to Red Bull and White Claw. RPA indicated they are working on a large development near Northern Parkway called Raven. This development will require a 69kV connection along Reems Road from Falcon Substation to Varney Substation to serve the development. RPA mentioned they had been working with someone named Kelly at APS. RPA thanked us for the briefing and indicated he would be meeting with Mr. Woolf and would provide this information to him. He anticipated they would have some follow up questions and perhaps want another meeting. APS thanked RPA for the time to present the project and we look forward to more dialogue.

Date	Landowner/Representative	Notes
July 28, 2021	email from Randy Simpson (study team) to lross@rosspropertyadvisors.com Ross Property Advisors (Leyton Woolf Property)	I wanted to follow up with you and see if you had a chance to discuss the APS WVC Project with Mr. Woolf or if you had any further questions or comments? Also, I wanted to ask you if you can provide me any further information on the location and site development plans for the Raven development you mentioned in our call? I believe it is further south and we would not have any concerns, but I wanted to verify that information. Thank you!
August 8, 2021	Notes of Meeting: Woolf Logistics/Ross Property Advisors	RPA provided an update on his review of the project with Leyton Woolf based upon our previous discussion on July 21. Their biggest concern is existing agricultural land and operations south of Olive Avenue. Want to make sure that we account for widening of Olive Avenue and that no impacts to wells or irrigation occur along property edges. Would like more detail on design south of Olive as the project progresses. RPA indicated they had been in touch with APS regarding another potential transmission line to connect between the Falcon and Varney Substation. He inquired about the status of that improvements and if it would be affected by this project. Brad indicated that he did not think this project would have any effect on Varney Substation or lines coming from it, but he would talk internally with system planners and engineers to verify. Most of the land south of Olive is proposed for industrial development which they prefer over e-commerce or residential for this area. The land north or Olive Avenue has mostly been sold or is in escrow and will be developed soon. The next biggest development they are working on is a large manufacturing facility called Raven south of Northern Parkway along Reems Road. This will be approximately 450-500K square feet facility for manufacturing. In the past they have tried to work with adjacent landowners on some development plans including AMI/TKR Enterprises. They could not come to agreement on this plan north of Olive. RPA indicated he would like to stay in touch as the project progresses and wants for information on electrical infrastructure developing in the area.
Dec 17, 2021	Kevin Duncan (APS) call with Ross Property Advisors	I spoke to Mr. Ross. Basically, I explained that the site-specific design and right-of-way work all follows our siting process. I know this has been communicated before, but I reiterated that it is still too early a stage to perform site specific design work. He was very appreciative and gave high compliments to the past calls with you Randy and Brad. I did state that the best I could offer at this time is that we could agree to have the right-

Date	Landowner/Representative	Notes
		of-way and design teams, once they begin moving forward after the CEC grant, meet or speak with a fellow named Kevin (who is apparently with the developer) to help coordinate on their site-specific concerns and avoid having to move the line twice as he described it.
January 11, 2022	email from Randy Simpson (study team) to lross@rosspropertyadvisors.com Ross Property Advisors (Leyton Woolf Property)	Hello, I hope your new year is going well! I wanted to provide this updated map that illustrates the final Preferred Routes that APS will be carrying forward in their Certificate of Environmental Compatibility Application to be filed with the Arizona Corporation commission on approximately January 26. The hearings are scheduled for February 28- March 4. I think you will find that this is the route along Olive Avenue that you and your client Woolf Logistics were supporting and we do anticipated the 230kV transmission line will be on the south side of Olive Avenue where the 69kV transmission line is currently located. It will be located approximately at the southern edge of the road right of way and APS will continue having discussions with landowners to negotiate right of way and design details. We appreciate all your comments and consistent participation throughout the process, as it is helpful to understand current and future plans that businesses/landowners have in the area. We will be including these communications in our application and will discuss this in the hearings. APS would like to ask you to provide a letter of support for the Preferred Routes as shown on the map. If you would be willing to provide that it would be greatly appreciated. Let me know if you have any questions.
May 4, 2021	Email from Kristin Darr (study team) to Jordan Feld, Phoenix Aviation	Hello Jordan: I am a member of the consultant team for an APS siting study for the West Valley Central 230KV Connection Project to serve an industrial customer on the southeast corner of Olive Avenue and Dysart Road. In addition to new 230kV powerlines, the project also will include a new 230/69kV substation located on the customer's property, a new 230kV transmission line connecting the new substation to the east into the existing El Sol – White Tanks 230kV transmission line or the El Sol Substation; and a new 230kV transmission line connecting the new substation to the west into the planned TS-2 Substation previously permitted as part of the West Valley South Project. The study area is bounded by N. Citrus Road on the west, W. Cactus Road on the north, and N. 103rd Avenue on the east. The southern boundary of the study area is W.

Date	Landowner/Representative	Notes
		Northern Avenue between N. Citrus Road and N. Litchfield Road, then drops south to W. Glendale Avenue between N. Litchfield Road and N. 103rd Avenue. I am reaching out to request a meeting (Teams or Zoom) to discuss the project and provide a preview of alternative routes that will be presented to the public in June. Copied here are Brad Larsen, the APS Engineering Project Manager; Randy Simpson with Burns & McDonnell, the consultant team Project Manager; and Clay Allsop and Jessica Perry with APS Government Affairs. Some available times for our team are listed below: Tuesday, May 11, 1 pm – 2 pm or 4 pm – 5 pm Wednesday, May 12, 3 pm – 4 pm Thursday, May 13, noon – 5 pm Wednesday, May 19, 4 pm – 5 pm Friday, May 21, noon – 3 pm If none of these works for you, we will work together to find a time that does. Thank you! We will look forward to working with you.
May 6, 2021	email from Jordan Feld, Phoenix Aviation	Thanks Kristin, all of those I have a bit of conflict unfortunately. Is there any chance you could email me the materials? Perhaps your team can confirm you're not penetrating any Part 77 surfaces and/or preferred alternative is the same as that sent to me previously (Feb 2021)??
May 10, 2021	Email from Randy Simpson (study team) to Jordan Feld, Phoenix Aviation	Jordan, This project might be different than the one you mentioned that was reviewed in February 2021, as we have not yet identified a preferred route for this project. Nevertheless, we are getting close to that point and intend to have a preferred route identified for this project by July 2021. I have attached a file of the routes that APS is considering and will be bringing these forward for agency and public review over the next 6 weeks. Once that process is complete APS will make a decision on their preferred route considering all the engineering studies, environmental analysis, and agency/public input. Over the last several months, we have consulted closely with Luke AFB regarding the locations of the proposed transmission line, in particular we have discussed in detail both the Part 77 Surfaces and Accident Potential Zones (APZs). The only route we evaluated that Luke AFB indicated would likely

Date	Landowner/Representative	Notes
		result in penetrating the imaginary surfaces was a route along Olive Avenue. Their studies indicated the proposed structures that could be 150' high would penetrate the surfaces approximately 11-26 feet. Because of this, APS is no longer considering a route along Olive Avenue, but is intending to carry routes forward that are ½ to 1 mile further north. Luke AFB said they would support bringing these routes forward for agency and public review, but would prefer the route along Peoria Avenue which would have minimal to no concern with respect to their operations. They indicated they would be providing a formal response to these routes in the coming weeks during our official review period. I think Routes A-D in this file may be of most interest to you, as they are the routes that work within or around the Luke AFB APZs providing a transmission connection between the TS2 and Contrail substations. However, we do need to have two separate lines coming from the east connecting from the El Sol Substation to Contrail Substation and from the existing 230kV transmission line to Contrail Substation. Please review these maps and let us know if you have any specific comments and concerns. We will be collecting agency and public comments through the end of June, so any comments you provide can be factored into APS' decision. Our website is located at the following address and will be updated in the next few weeks to include new information regarding these routes and will be announced in a newsletter and through social media. https://apswestvalleycentral.com/ We appreciate your consideration of this information. Thank you!

Newsletters

Mail Station 3293
P.O. Box 53933, Phoenix, AZ 85072

IMPORTANT - NEW POWER LINES COMING TO YOUR AREA

Presorted
Standard Mail
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Permit No. 90

WEST VALLEY CENTRAL 230kV CONNECTION PROJECT

October 2020

The greater Phoenix region has emerged as one of the top markets in the western United States for attracting high-tech industries, including data center companies. The West Valley, in particular, is benefiting from economic development activity that will bring jobs and revenue to the area. We are dedicated to providing clean, reliable and affordable electric service to support our existing customers and future growth.

With the arrival of these high-tech companies and the load demand they bring comes a need for new 230 kilovolt (kV) power lines and a substation in the area to serve a new data center customer. This project will also benefit the overall area as it creates new 230kV connections which increases the reliability and flexibility of the west valley transmission system.

We are in the early stages of a public siting process to identify appropriate routes for new 230kV power lines that best meet the needs of the customer, the community, and regulatory agencies. These power lines will connect the new Contrail Substation (located on the customer's property on the southeast corner of Olive Avenue and Dysart Road) to existing 230kV transmission facilities. Specifically, these new lines will need to connect the Contrail Substation approximately two miles to the east into the existing 230kV transmission line or directly into the El Sol Substation, and approximately 5 miles to the west into the planned TS-2 Substation.

WHAT

New 230kV power lines will be needed to connect the new Contrail Substation to existing 230kV facilities. The project structures/ poles will be between 115 -195 feet tall, placed in new or existing rights-of-way or easements up to 120 feet in width.

WHY

New electrical infrastructure is needed to provide clean and reliable electric service to a new data center customer in the City of El Mirage and support the continuing economic growth and development in the West Valley.

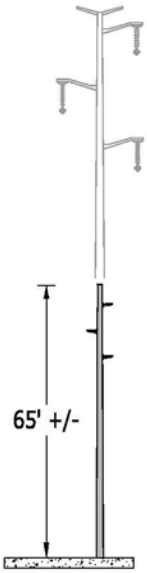
WHERE

The new Contrail Substation is located in El Mirage, near the southeast corner of Olive Avenue and Dysart Road. New 230kV power lines will be needed to connect this substation 1-2 miles to the east and approximately 5 miles to the west to existing 230kV transmission facilities (see included map).

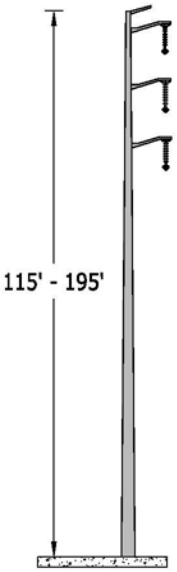
For more information, please visit our website at www.aps.com/westvalleycentral

PROJECT FEATURES

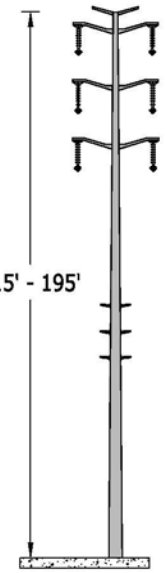
Steel monopole (single pole) structures are typically used for new 230kV transmission lines, but may include a variety of structure types, ranging in height from approximately 115 feet to 195 feet tall depending on routing, terrain and crossing of existing structures, including elevated roads and other power lines. The typical rights-of-way or easements will be approximately 120 feet wide (60 feet each side of the structure). Any opportunity to utilize existing 69kV power line routes for the new 230kV structures will be considered.*



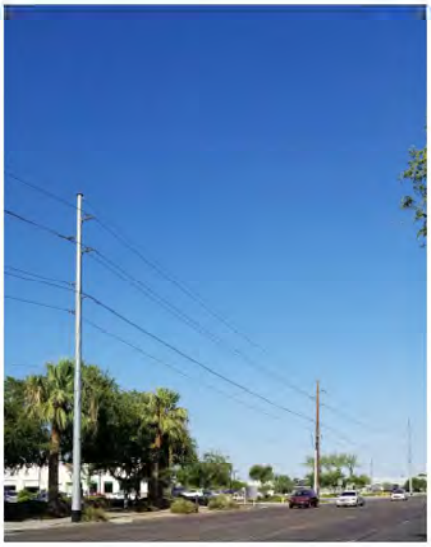
Typical Existing 69kV Single Circuit Monopole Structure
*Opportunity to rebuild to 230kV



Typical 230kV Single Circuit Monopole Structure



Typical 230kV Double Circuit with 69kV Double Circuit Underbuild Monopole Structure



69kV Single Circuit (example of 230kV rebuild opportunity)

230kV Single Circuit

230kV Double Circuit with 69kV Double Circuit Underbuild

PUBLIC INPUT

An important component of our siting process is to receive input from residents, property owners and businesses within the study area. Members of the public and all interested parties are invited to visit our virtual open house at any time online at www.apswestvalleycentral.com to learn more about the purpose and need for the project, the siting process and route alternatives. You will be able to provide input, sign up for a Live Virtual Town Hall event, or request a call from one of our subject matter experts. If you cannot access the site online, you can call or email a request for a hard copy of the open house materials to be mailed.

We welcome your feedback for this project. To learn more, please visit our project website at www.aps.com/westvalleycentral, or scan the QR code below. Comments and questions may be submitted by clicking the comment link on the project website, or by phone or email to:

BRAD LARSEN
Senior Siting Consultant
wvc230kV@aps.com

KRISTIN DARR
Public Involvement Specialist
Project information phone number: (623)-241-5935
contactus@apswestvalleycentral.com

Project Website

Public Information Virtual Open House

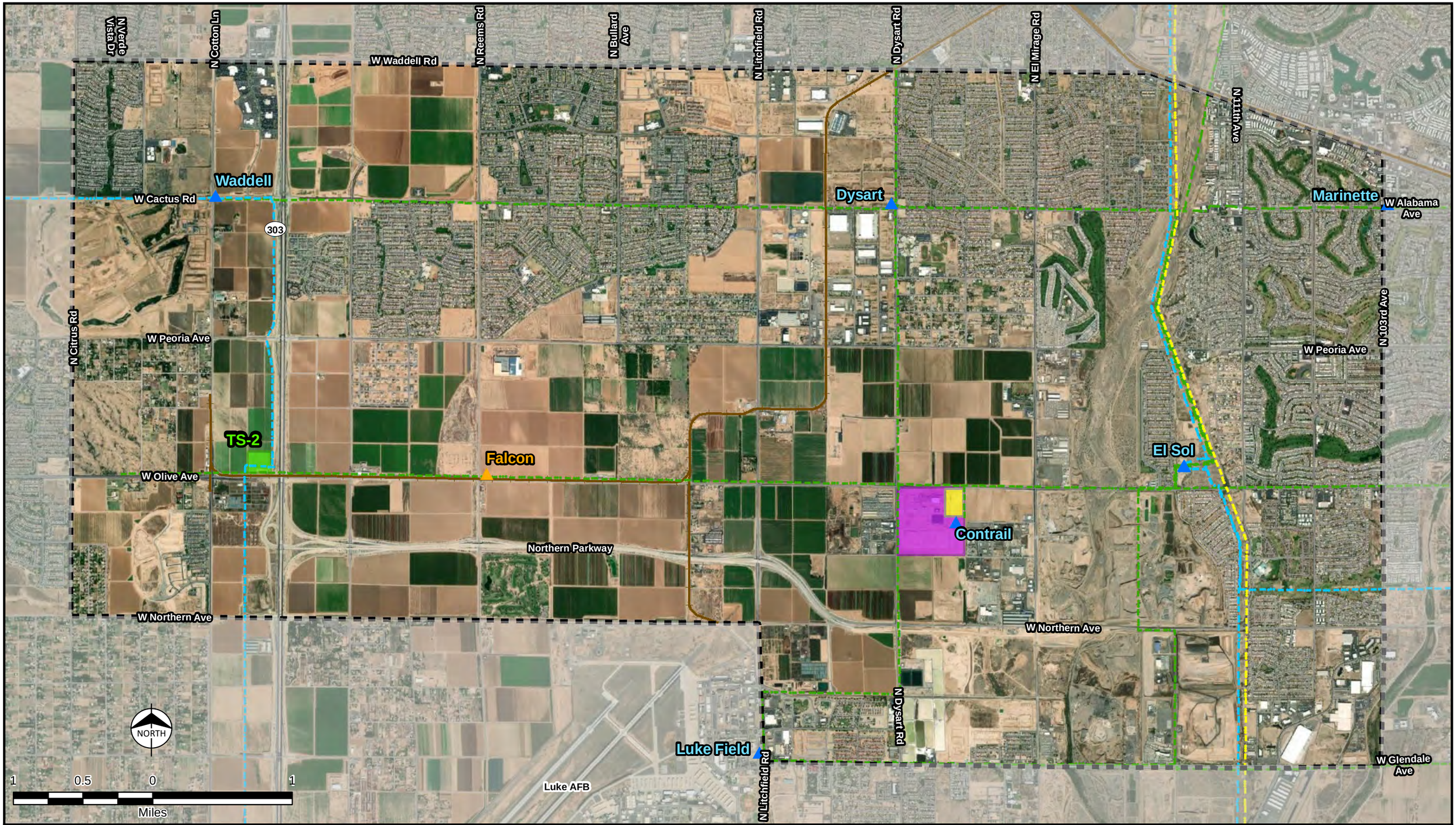
Launch Date:	**Tuesday, October 20, 2020**
Attend Online:	**www.apswestvalleycentral.com**
Comment Period:	**Oct. 20 - Nov. 20, 2020**

PROJECT SCHEDULE

2ND/3RD QUARTER 2020
- Preliminary engineering
- Environmental studies
- Agency briefings

3RD/4TH QUARTER 2020
- Environmental studies
- Public outreach activities
- Agency briefings

1ST/2ND QUARTER 2021
- Public outreach activities
- Route refinement
- CEC application preparation



Study Area
Road
Railroad
Existing Substation
Future Substation
Existing 69kV Transmission Line
Existing 230kV Transmission Line
Existing 345kV Transmission Line
Future TS-2 Substation
Future TS-20 Substation
PHX 80 Data Center Property

Project Study Area
West Valley Central
230kV Connection Project
Draft - Not for Construction

Source: Esri, EIA, USGS - PADUS

Issued: 9/17/2020

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P.O. Box 53933, Phoenix, AZ 85072

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IMPORTANT -
NEW POWER LINES COMING TO YOUR AREA

WEST VALLEY CENTRAL 230kV CONNECTION PROJECT

Public Information Virtual Open House: June 10 - July 10, 2021
Available 24/7: Attend online at **apswestvalleycentral.com**

Live Virtual Public Meeting: **Tuesday, June 15, at 6 pm**
Comment Period: **June 10 - July 10, 2021**
Register Online:
https://us02web.zoom.us/webinar/register/WN_mnBnhg7iQsWDpXmC-7SiuA

Please visit our website at **apswestvalleycentral.com**

Para más información, por favor visite nuestra página de internet **apswestvalleycentral.com**

WEST VALLEY CENTRAL 230kV CONNECTION PROJECT

May 2021

The greater Phoenix region has emerged as one of the top markets in the western United States for attracting high-tech industries. The West Valley in particular is benefiting from economic development activity that will bring jobs and revenue to the area. We are dedicated to providing clean, reliable, and affordable electric service to support our existing customers and future growth.

In the fall of 2020, we announced the need for this project to continue serving our customers with safe, clean and reliable electricity and to support overall growth in the West Valley. In October and November 2020, a map showing preliminary power line alternatives was presented to the community. Events included live virtual town hall meetings on November 4 and 10, 2020, along with a virtual public open house available 24/7.

WHAT WE HEARD

- The majority of responses indicated an understanding of the need for the proposed power line.
- Support for power line routes in agricultural or commercial/industrial areas between Peoria Avenue and Northern Avenue/Parkway.
- Support for placement of power line routes along existing power lines, utility corridors, and roadways.
- Opposition of new power lines routes along Cactus Road and Peoria Avenue near residential areas.
- Concerns about potential impacts on property values, views and health and safety effects due to electric and magnetic fields.
- Concerns about potential impacts to customer rates from the project.
- Understanding of the importance of Luke Air Force base and associated restrictions.
- Suggested placement of the power lines underground in the project area.

WE VALUE YOUR INPUT

We have continued to evaluate environmental impacts, engineering and construction feasibility, land acquisition, costs, and input from agencies and the public. Results of these studies have led to identifying preliminary route options as shown on the map. Three routes are needed to connect to the recently constructed Contrail Substation, with one route connecting from the Future TS-2 Substation, a second route connecting from the existing El Sol Substation, and a third route connecting from the El Sol White Tanks 230kV power line.

Your input will help us narrow down and identify the locations for the new power lines. At the conclusion of the environmental and engineering studies and the public process, APS will prepare an application for Certificate of Environmental Compatibility (CEC) and present the project to the Arizona Power Plant and Transmission Line Siting Committee. The Siting Committee will review the studies and hear the evidence from the Study Team as well as any stakeholders participating in the process. This hearing is open to the public, and there will be time allocated for public comments. If the Committee supports the application, they will recommend issuing a CEC and forward to the Arizona Corporation Commission for final approval.

PROJECT SCHEDULE

2ND/3RD QUARTER 2020

- Preliminary engineering
- Environmental studies
- Agency briefings

4TH/1ST QUARTER 2020/2021

- Environmental studies
- Public outreach activities
- Agency briefings

2ND/3RD QUARTER 2021

- Public outreach activities
- Route refinement
- CEC application preparation

For more information, please visit our website at apswestvalleycentral.com

PUBLIC INPUT

For your convenience, you are invited to attend the Public Information Virtual Open House online *any time during the public comment period*. You will be able to view project information, provide input, and if desired, request a call to speak with one of our subject matter experts. If you cannot access the site online, you can call or email a request for a printed copy of the open house materials to be mailed.

We welcome your feedback for this project. Comments are requested by July 10, 2021, to ensure review and consideration in this process. Comments and questions can be submitted to our public involvement team by clicking the comment form at https://apswestvalleycentral.com/contact-us/, by phone at (623) 241-5935, or by emailing contactus@apswestvalleycentral.com.

BRAD LARSEN
Siting Consultant Senior
APS Transmission and Facility Siting

mailto: wvc230kV@aps.com
apswestvalleycentral.com

Project Website

Public Information Virtual Open House
June 10 - July 10, 2021
Available 24/7: Attend online at
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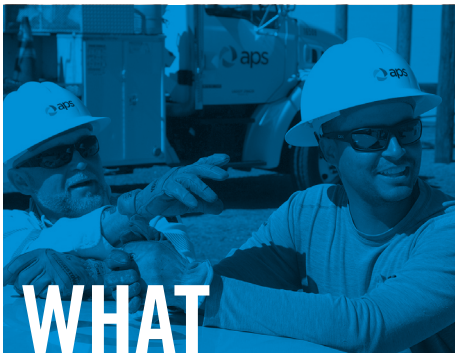


Your feedback will help determine the path of new power lines that are needed in your area. This project will connect the new Contrail Substation with existing power lines in the area fueling more reliable service for current and future APS customers.

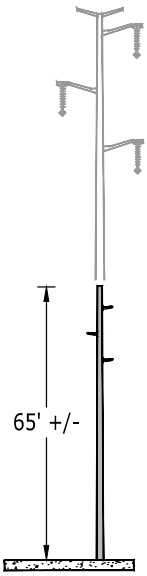
To continue providing our customers with safe, clean and reliable electricity, we need to add new power lines to both serve existing customers and support the economic growth and development in the West Valley.

The new Contrail Substation is located in El Mirage, near the southeast corner of Olive Avenue and Dysart Road. New power lines are needed to connect this substation to existing power lines in the area. (See included map)

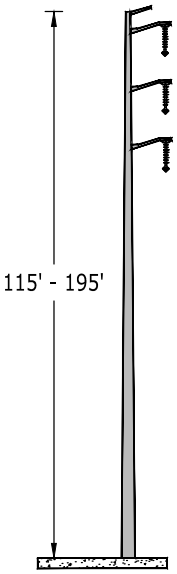
PROJECT FEATURES

Monopole (single pole) structures are typically used for new 230kV power lines, but may include a variety of steel structure types, ranging in height from approximately 115 feet tall to a maximum height of 195 feet depending on routing, terrain and crossing of existing structures, including elevated roads and other power lines. The typical rights-of-way or easements will be approximately 120 feet wide (60 feet each side of the structure). Any opportunity to utilize existing 69kV power line routes for the new 230kV structures will be considered.

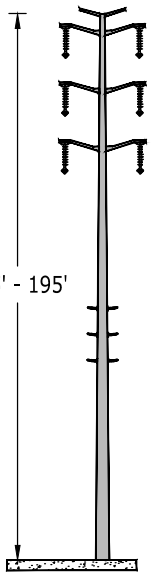
**Exact structure, height and right-of-way or easement width may vary.*



Typical Existing 69kV Single Circuit Monopole Structure
*Opportunity to rebuild to 230kV



Typical 230kV Single Circuit Monopole Structure

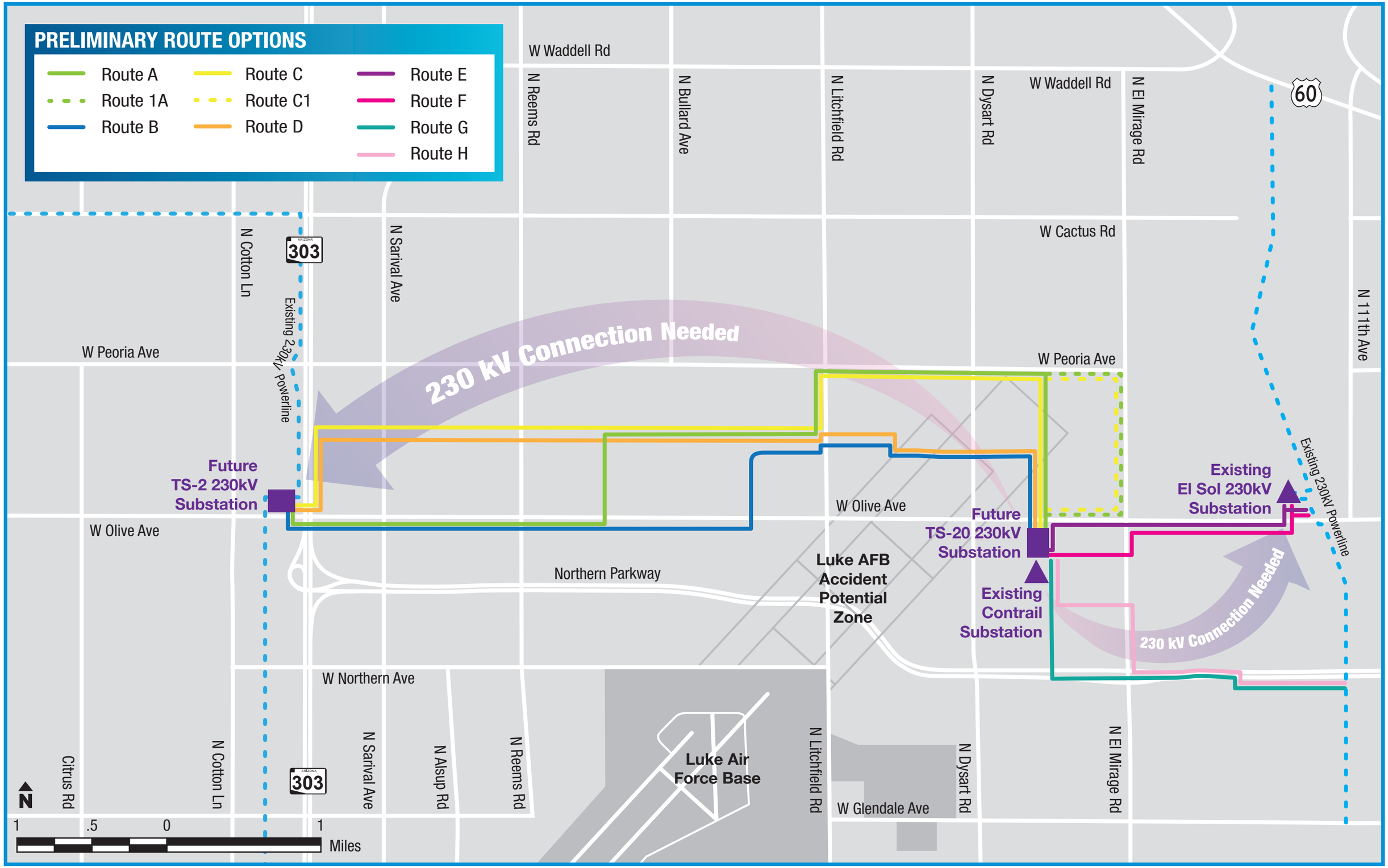


Typical 230kV Double Circuit with 69kV Double Circuit Underbuild Monopole Structure

69kV Single Circuit (example of 230kV rebuild opportunity)

230kV Single Circuit

230kV Double Circuit with 69kV Double Circuit Underbuild



Map can also be viewed online at apswestvalleycentral.com

Mail Station 3293
P.O. Box 53933, Phoenix, AZ 85072

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Phoenix, AZ.
Permit No. 90

IMPORTANT -
NEW POWER LINES COMING TO YOUR AREA

WEST VALLEY CENTRAL 230kV CONNECTION PROJECT

January 2022

In the Fall of 2020, APS announced the need for new electrical infrastructure to serve a new data center and support overall growth in the West Valley. Since then, we have conducted environmental studies and held multiple meetings with representatives from the cities and towns within the study area, as well as the Maricopa County Department of Transportation, the Flood Control District of Maricopa County, and several landowners to develop multiple route options for the new 230kV transmission lines.

In October 2020 we launched a month-long virtual open house to provide information and seek input. We also held a live virtual public meeting on November 4, 2020, to discuss the project with local community members, answer questions, and solicit feedback on the project.

In June 2021 we launched a second month-long virtual open house to share the results of the studies and once again gather public input, answer questions, and solicit feedback to determine optimal route options for the new transmission lines. A live virtual public meeting was held on June 15, 2021.

Community feedback during this process has helped us identify a Preferred Route (see included map).

NEXT STEPS

- **January 2022:** Application for a Certificate of Environmental Compatibility (CEC) to the Arizona Power Plant and Transmission Line Siting Committee
- **February 28, 2022:** Public Hearing
- **April 2022:** Arizona Corporation Commission (ACC) issues CEC

PROJECT SCHEDULE

4TH QUARTER 2021

- Complete environmental and preliminary engineering studies
- Public outreach activities
- Route selection
- CEC Application Preparation

1ST/2ND QUARTER 2022

- Agency briefings
- Public outreach activities
- File CEC application
- Conduct CEC application hearings
- ACC issues CEC

2022/2023

- Final engineering
- Right-of-way acquisition
- Construction
- In-service

Your feedback has helped determine the path of new power lines that are needed to connect the new Contrail Substation with existing power lines in the area and to provide more reliable service for current and future APS customers.

To continue providing our customers with safe, clean and reliable electricity, we need to add new power lines to serve existing customers and support the economic growth and development in the West Valley.

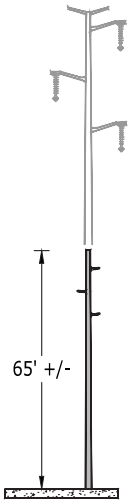
The new Contrail Substation is located in El Mirage, near the southeast corner of Olive Avenue and Dysart Road. New power lines are needed to connect this substation to existing power lines in the area. (See included map)

For more information, please visit our website at apswestvalleycentral.com
Para más información, por favor visite nuestra página de internet apswestvalleycentral.com

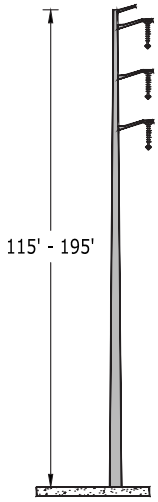
PROJECT FEATURES

Monopole (single pole) structures are typically used for new 230kV transmission lines, but may include a variety of steel structure types, ranging in height from approximately 115 feet tall to a maximum height of 195 feet depending on routing, terrain and crossing of existing structures, including elevated roads and other power lines. The typical rights-of-way or easements will be approximately 120 feet wide (60 feet each side of the structure). Any opportunity to utilize existing 69kV power line routes for the new 230kV structures will be considered.

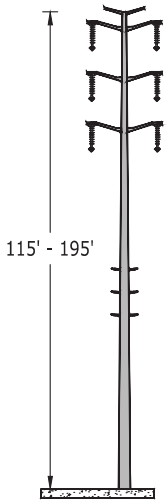
**Exact structure, height and right-of-way width may vary*



Typical Existing 69kV Single Circuit Monopole Structure
*Opportunity to rebuild to 230kV



Typical 230kV Single Circuit Monopole Structure



Typical 230kV Double Circuit with 69kV Double Circuit Underbuild Monopole Structure

CEC APPLICATION AND PUBLIC HEARING

We are preparing to file an Application for a CEC in Jan 2022. This CEC Application will be submitted to the APPTLSC presenting the results of the environmental studies and public outreach, and available for public review. This CEC Application will be submitted to the Arizona Power Plant and Transmission Line Siting Committee (Siting Committee), and available for public review.

A multi-day public hearing before the Siting Committee is scheduled to begin Monday, February 28, 2022 at 1 pm at the Glendale Civic Center, 5750 West Glenn Drive, Glendale, Arizona, 85301. Virtual attendance also will be available—updates will be provided as they become available, including the virtual link, at www.apswestvalleycentral.com.

The first day of the hearing will occur 1 pm – 5 pm and subsequent days will be 9 am – 4 pm. The hearing is scheduled to conclude on or before Friday, March 4. At the hearing, the Siting Committee will review evidence from the study team and other parties wishing to participate in the process. Public comment will be taken Monday, February 28 starting at 5:30 pm. The public is invited to comment either in person or virtually. If the Siting Committee approves our application, the Committee will issue a CEC, which will be submitted to the Arizona Corporation Commission for its consideration.

PUBLIC REPOSITORIES

The public is invited to review the document in hard copy by visiting any of the locations listed below between January 26 and March 4, 2022:

- **Glendale Public Library—Main Library**
  5959 W Brown St., Glendale, AZ 85302
- **City of Peoria—City Hall**
  8401 W. Monroe St., Peoria, AZ 85345
- **City of Surprise—City Hall**
  16000 N. Civic Center Plaza, Surprise, AZ 85374
- **El Mirage Library**
  14011 N. 1st Ave., El Mirage, AZ 85335

Additional repository locations are listed at apswestvalleycentral.com.

To learn more, please visit the WEST VALLEY CENTRAL 230kV CONNECTION PROJECT website at apswestvalleycentral.com

Comments and questions may be submitted to:

KEVIN C. DUNCAN
contactus@apswestvalleycentral.com
Senior Siting Consultant
APS Transmission and Facility Siting

Project Website

PREFERRED ROUTES

- Preferred Route A
- Preferred Route E
- Preferred Route G
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property
- Existing 230kV Transmission Line
- Existing Substation

aps

N

1 .5 0 1 Miles

Map can also be viewed online at apswestvalleycentral.com

Letters of Support

Maricopa County
Department of Transportation

Engineering
2901 W. Durango Street
Phoenix, AZ 85009
Phone: 602-506-4889
Fax: 602-506-5969
www.mcdot.maricopa.gov

January 21, 2022

Kevin C. Duncan
Arizona Public Service
PO Box 53933
Mail Station 3293
Phoenix, Arizona 85072

RE: West Valley Central 230kV Connection Project

Mr. Duncan:

Maricopa County Department of Transportation (MCDOT) appreciates the opportunity to be involved in the West Valley Central 230kV route selection process. Your efforts in reaching out to us to discuss potential corridors, impacts, and solutions is greatly appreciated.

MCDOT understands the importance of meeting the ever growing demands related to increased development throughout Maricopa County. MCDOT generally supports this project with the understanding that MCDOT will continue to be kept informed and/or included in the process of design and construction minimizing impact to, and reviewing permits as necessary for, existing and future roadways.

Sincerely,

Denise Lacey
Systems Planning Branch Manager

January 20, 2022

APS
Attn: Kevin C. Duncan
PO Box 53933
Phoenix, Arizona 85072

RE: APS West Valley 230 KV Connection Project

Dear Mr. Kevin C. Duncan:

On behalf of the City of Glendale, we would like to express our gratitude for allowing us to participate in the APS 230 KV line siting process.

The timeline and format of the process allowed us to understand the need for the new infrastructure, its impact on future economic growth, and then share the information with businesses, stakeholders, and local property owners that may be affected. These stakeholders shared their questions, future plans, and concerns, which were addressed in the siting process and led to the preferred and ultimate proposed route selected.

Often, we read about projects of this nature in a newsletter or similar, but we learn and benefit a tremendous amount more when our transportation, engineering, planning, and economic development teams are engaged to participate in the process. Teamwork makes the dream work.

On behalf of the team, thank you for taking the time to include the City of Glendale in this process. If you need additional information, the City stands ready to assist. Please feel free to contact me directly at (623) 930-2985 or Rhuggins@glendaleaz.com .

Sincerely,

Randy Huggins

Randy Huggins
Economic Development Officer
City of Glendale

5850 W. Glendale Ave. 623.930.2983
Glendale, AZ 85301

DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

30 July 2021

Mr. Christopher P. Toale
Director, Community Initiatives Team
56th Fighter Wing
14185 West Falcon Street
Luke AFB AZ 85309-1629

Mr. Randall L. Simpson
Senior Project Manager, Environmental Services
Burns and McDonnell
1850 North Central Avenue, Suite 800
Phoenix, AZ 85004

Re: Arizona Public Service Application for a Certificate of Environmental Compatibility for the APS West Valley Central 230kV Connection Project

Dear Mr. Simpson

Thank you for the opportunity to provide comments on the Arizona Public Service Application for a Certificate of Environmental Compatibility for the APS West Valley Central 230kV Connection Project. The proposed project will connect three routes to the recently constructed Contrail Substation near the intersection of Olive Avenue and Dysart Road. One proposed route will connect the substation to the future TS-2 Substation (Loop 303 and Olive Ave), a second route connecting to the existing El Sol Substation (114th Ave and Olive Ave), and a third route connecting to an existing 230kV power line (Northern Pkwy and 111th Ave). The routes will be utilizing transmission poles approximately 150 feet in height above ground elevation.

After analyzing the preliminary route options for possible impact to Luke AFB operations, there are route options that have greater negative impact to the base. If only one route is required for this project, the routes from El Sol or Northern Pkwy and 111th Ave are of least impact to Luke AFB. The below identifies our areas of concern:

a. Contrail Substation to future TS-2 Substation (*in order*): Route A2, A, A1, C1, C
   NOTE 1: Routes A2, A and A1 will have the least impact for Luke AFB because it allows for removal of the 69kV poles that currently run through APZ 2 along Olive Ave. However, Luke does have concerns over the height of structure numbers: 251, 252, 253 & 254. If those structures were lowered below 1235' MSL (Mean Sea Level) that would ensure it does not impact the airfield surface area.
   NOTE 2: Routes A3, B, C3 & D would have poles that cross into APZ 1 & 2 and therefore create the greatest negative impact.
b. Contrail Substation to existing El Sol Substation: Route E or F
c. Contrail Substation to existing 230kV power line at Northern Pkwy and 111th Ave: Route G or H

Luke AFB appreciates the efforts APS has taken to include us in the planning process to evaluate the different route proposals for mission impacts. We request that this open dialogue with APS continue as design phases produce more specifics, particularly regarding transmission pole placement and heights. Lastly, it is important to state that our comments do not imply approval; therefore, developers must still coordinate with the Federal Aviation Administration and submit an FAA Form 7460-1, Notice of Proposed Construction or Alteration for proper approval.

If you have any questions, please contact my Community Planner, Mr. Mark James, at (623) 856-9981.

Sincerely

CHRISTOPHER P. TOALE

cc:
Colonel Luke B. Casper, Vice Commander, 56th Fighter Wing
Ms. Cindy L. Allen, GS-13, General and Environmental Law Attorney, 56th Fighter Wing

DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

21 January 2022

Mr. Christopher P. Toale
Director, Community Initiatives Team
56th Fighter Wing
14185 West Falcon Street
Luke AFB AZ 85309-1629

Mr. Randall L. Simpson
Senior Project Manager, Environmental Services
Burns and McDonnell
1850 North Central Avenue, Suite 800
Phoenix, AZ 85004

Re: Arizona Public Service (APS) Application for a Certificate of Environmental Compatibility (CEC) for West Valley Central 230kV Connection Project

Dear Mr. Simpson

Thank you for the opportunity to provide comments on the APS Application for a Certificate of Environmental Compatibility for the West Valley Central 230kV Connection Project. The proposed project will connect three routes to the recently constructed Contrail Substation near the intersection of Olive Avenue and Dysart Road. One route will connect the substation to the future TS-2 Substation (Loop 303 and Olive Ave), a second route connecting to the existing El Sol Substation (114th Ave and Olive Ave), and a third route connecting to an existing 230kV power line (Northern Pkwy and 111th Ave).

After analyzing the route options to be presented for Certificate of Environmental Compatibility (CEC) to the Arizona Corporate Commission, we have prepared the below comments:

a. Contrail Substation to future TS-2 Substation: Route A on the attached Figure 1 Proposed Routes, dated January 2022, has no negative mission impact as structure numbers: 251, 252, 253 and 254 (Links 90 and 85) are to be lowered below 1235' Mean Sea Level per APS, thus ensuring it will not interfere with the airfield surface area. *NOTE*: Proposed Route A is beneficial to Luke AFB's mission because it allows for removal of the 69kV poles that currently run through Accident Potential Zone (APZ) 2 along Olive Ave. In addition, this route only enters APZ 2 in the northeast corner thereby minimizing negative impact to that zone.
b. Contrail Substation to existing El Sol Substation: Route E, no negative mission impact.
c. Contrail Substation to existing 230kV line at Northern Pkwy: Route G, no negative mission impact.

Luke AFB greatly appreciates the efforts APS has taken to include us in the planning process to evaluate the different route proposals for mission impacts. Lastly, it is important to state that our comments do not imply approval; therefore, developers must still coordinate with the Federal Aviation Administration and submit an FAA Form 7460-1, Notice of Proposed Construction or Alteration for proper approval.

If you have any questions, please contact my Community Planner, Mr. Mark James, at (623) 856-9981.

Sincerely

CHRISTOPHER P. TOALE

Attachment:
Figure 1 Proposed Routes, dated January 2022

cc:
Colonel Luke B. Casper, Vice Commander, 56th Fighter Wing
Mr. Anthony C. Avitable, GS-13, General Law Attorney, 56th Fighter Wing

ROSE LAW GROUP pc
RICH ▪ CARTER ▪ FISHER

CHRIS WEBB
7144 E. Stetson Drive, Suite 300
Scottsdale, AZ 85251
Phone 480.240.5648 Fax 480.505.3925
CWebb@RoseLawGroup.com
www.RoseLawGroup.com

January 14, 2022

Sent via email only

Mr. Randall L. Simpson
Burns & McDonnel
rlsimpson@burnsmcd.com

Re: APS West Valley Central 230kV Connection Project

Dear Mr. Simpson,

Please accept this letter on behalf of my client, Plains LPG Services, L.P. ("Plains"), the owner of APN's 501-42-031A and 501-42-002H located at the northwest corner of Olive Avenue and the Bullard Avenue alignment. Plains would like to express its appreciation for the opportunity to engage with APS and its consultants during the process of developing the "Preferred Routes" for the APS West Valley Central 230kV Connection Project, and hereby expresses its support for the Preferred Routes as shown on the attached map dated January 2022.

Sincerely,

Chris K. Webb

Director of Land Development Solutions

W Waddell Rd
N Verde Vista Dr
N Cotton Ln
N Litchfield Rd
N Dysart Rd
N El Mirage Rd
N 111th Ave
W Alabama Ave
W Cactus Rd
Waddell
Dysart
303
N Reems Rd
N Bullard Ave
N Citrus Rd
W Peoria Ave
N 103rd Ave
TS-2
Falcon
El Sol
W Olive Ave
Northern Parkway
Contrail
W Northern Ave
Luke AFB
Luke Field
N Litchfield Rd
N Dysart Rd
W Glendale Ave
Glendale

10 20 35 76 90 85 105 140 150 190 290 340 330 380 500 570 630 650 320 310 300 350 480 550 625

NORTH

1 0.5 0 1 Miles

4,000 2,000 0 4,000 Feet

1 Inch = 4,000 Feet
When Plotted at 11x17

1:48,000

Reference Features
- Study Area
- Road
- Railroad

Existing Transmission Facilities
- Existing 69kV Transmission Line
- Existing 230kV Transmission Line
- Existing 345kV Transmission Line
- Existing Substation
- Future Substation

Project Features
- Future TS-2 Substation
- Future TS-20 Substation
- PHX 80 Data Center Property

Luke AFB Accident Potential Zones
- Clear Zone
- APZ I
- APZ II

Preferred Routes
- Preferred Route A
- Preferred Route E
- Preferred Route G
- 100 Route Link Number
- Route Link Node

aps

Figure 1
Preferred Routes
West Valley Central
230kV Connection Project

January 2022

Advertisements

THE ARIZONA REPUBLIC

PO Box 194, Phoenix, Arizona 85001-0194
Phone 1-602-444-7315 Fax 1-877-943-0443

AFFIDAVIT OF PUBLICATION

STATE OF WISCONSIN } SS.

COUNTY OF BROWN

APS-CORPORATE C/O LAVIDGE
2777 E CAMELBACK RD. STE 300
PHOENIX, AZ 85016

I, being first duly sworn, upon oath deposes and says: That I am the legal clerk of the Arizona Republic, a newspaper of general circulation in the counties of Maricopa, Coconino, Pima and Pinal, in the State of Arizona, published weekly at Phoenix, Arizona, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates indicated.

Publication: Arizona Republic

Ad number: GCI0526866

PO Field: APS Virtual Open House

Published Date(s):

11/11/2020, 11/13/2020,
11/14/2020

Sworn to before me this

14th day of
December, 2020

Notary Public
My Commission Expires on 9-19-21

VICKY FELTY
Notary Public
State of Wisconsin

A PUBLIC INVITATION FROM APS

aps

APS Virtual Open House

The West Valley Central 230kV Connection Project will identify locations of new 230-kilovolt (kV) power lines. These lines are needed to serve a new data center customer located on the southeast corner of Olive Avenue and North Dysart Road and to support electrical service reliability for new high-tech industries and current customers in the West Valley. We have identified several preliminary links for routes for the new 230kV lines and need your help in finding locations that will minimize impacts to the community, be acceptable to utility regulators and be most cost effective for our customers.

All interested parties are invited to attend our virtual open house online at their convenience (scan QR code below) to learn more about the project and provide input to help us identify the ultimate locations for the new 230kV lines. You will be able to comment, submit questions and, if desired, request to speak with one of our subject matter experts. Mailed copies of open house materials are available upon request. Please provide your input by November 20, 2020, to ensure its consideration.

Information about the West Valley Central 230kV Connection Project can also be found on our project webpage by going to aps.com/westvalleycentral or by scanning the QR code below. Comments and questions may be submitted within the virtual open house by clicking the comment form link on the project website, or by phone or email to:

Kristin Darr—Public Involvement Specialist
Project information phone number: (623) 241-5935
contactus@apswestvalleycentral.com

West Valley Central Virtual Open House
apswestvalleycentral.com

APS West Valley Central Project Website
aps.com/westvalleycentral

aps.com

AR-GCI0526866-01

THE ARIZONA REPUBLIC

PO Box 194, Phoenix, Arizona 85001-0194
Phone 1-602-444-7315 Fax 1-877-943-0443

AFFIDAVIT OF PUBLICATION

STATE OF WISCONSIN } SS.

COUNTY OF BROWN

APS-CORPORATE C/O LAVIDGE
2777 E CAMELBACK RD. STE 300
PHOENIX, AZ 85016

I, being first duly sworn, upon oath deposes and says: That I am the legal clerk of the Arizona Republic, a newspaper of general circulation in the counties of Maricopa, Coconino, Pima and Pinal, in the State of Arizona, published weekly at Phoenix, Arizona, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates indicated.

Publication: Arizona Republic Zone 1

Ad number: GCI0660225

PO Field: APS Virtual Open House

Published Date(s):

06/11/2021, 06/12/2021,
06/30/2021, 07/02/2021,
07/03/2021

Sworn to before me this

3rd day of
July, 2021

Notary Public
My Commission Expires on 9-9-21

VICKY FELTY
Notary Public
State of Wisconsin

A PUBLIC INVITATION FROM APS

APS Virtual Open House

The West Valley Central 230kV Connection Project will identify locations of new 230-kilovolt (kV) power lines. These lines are needed to support electrical service reliability for new high-tech industries and current customers in the West Valley. We have identified several preliminary links for routes for the new 230kV lines and need your help in finding locations that will minimize impacts to the community, be acceptable to utility regulators and be most cost effective for our customers.

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Kristin Darr—Public Involvement Specialist
Project information phone number: (623) 241-5935
contactus@apswestvalleycentral.com

APS West Valley Central Project Website
aps.com/westvalleycentral

aps.com

aps

AR-GCI0660225-02

*Discount is applied to the regular price of select styles of Carpet, Hardwood, Vinyl Plank, and Laminate, basic installation, standard padding, and materials. Excludes upgrades, stairs, take-up of permanently affixed flooring, non-standard furniture moving, other miscellaneous charges, and prior purchases. Product may not be sold separately from installation. Residential installations only. Not available in all areas. Valid through 07/18/21. Subject to change. Details at EmpireToday.com.

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A PUBLIC INVITATION FROM APS

APS Virtual Open House

The West Valley Central 230kV Connection Project will identify locations of new 230-kilovolt (kV) power lines. These lines are needed to support electrical service reliability for new high-tech industries and current customers in the West Valley. We have identified several preliminary links for routes for the new 230kV lines and need your help in finding locations that will minimize impacts to the community, be acceptable to utility regulators and be most cost effective for our customers.

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Kristin Darr—Public Involvement Specialist
Project information phone number: (623) 241-5935
contactus@apswestvalleycentral.com

APS West Valley Central Project Website
aps.com/westvalleycentral

aps.com

aps

AR-GCI0660225-01

Life-changing hearing care starts here.

June is Alzheimer's and Brain Awareness Month. A recent study[1] shows that hearing loss is the largest modifiable risk factor against dementia. **Moderate hearing impairment may increase one's risk for developing dementia by three times.**[2]

There is good news! Hearing aids have been recommended as a way to help protect against cognitive decline.[3] The all-new **Oticon More™** with BrainHearing™ technology gives the brain more of the relevant information it needs to make better sense of sound. You may have better speech understanding with less effort and the ability to remember more.

Schedule an appointment today and receive the following COMPLIMENTARY SERVICES:

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[1]The Lancet Commission, Volume 396, Issue 10248, P413-446, August 8, 2020 [2]https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4075051/citedby/; https://pubmed.ncbi.nlm.nih.gov/21320988/ [3]G Livingston, Jonathan Huntley, Andrew Sommerlad, et al. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. The Lancet. July 30, 2020. *See office for details. †Buyer must purchase two (2) hearing aids for their own use. Purchase one hearing aid at standard list price and receive 50% off the standard list price on a second hearing aid of equal or lesser value. One offer per purchase. Offer cannot be combined with any other offer or discount. Not valid on prior purchases. Offer not available to any consumer who has private or federal health insurance coverage. Other terms may apply, see office for details. Offer expires 7/10/21. Information within this offer may vary or be subject to change.

AR-GCI0656867-04

Tempest DuJour performs during Miss Gay Arizona 2016 in Phoenix. Tempest DuJour would finish runner-up in the competition. PATRICK BREEN/THE REPUBLIC

Famous

Continued from Page 21

ment each year across the country. They host rallies, parades, marches and festivals in the month of June, many on or around the 28th," Phoenix Pride's website says. "These activities keep the spirit alive and allow us to renew our energies toward educating the general public about our Pride in ourselves and our right to exist."

In the meantime, check out these 11 Instagram accounts to celebrate the spectrum of people who make up Arizona's LGBTQ community.

Astrud Elizabeth Aurelia, @astrudaurelia

Musician and singer/songwriter Astrud Elizabeth Aurelia found drag a way to "liberate myself from the traditional, sometimes suffocating nature of music school, where I studied jazz music," according to a 2019 feature on Aurelia on World of Wonder Productions' website.

"I've found the perfect way to blend my love of music, fashion, performance art and all things punk in one spot," reads Aurelia's bio.

You can find Astrud Elizabeth Aurelia performing for the Queer Agenda at Stacy's @ Melrose on Tuesdays.

Where to find them:
https://www.instagram.com/astrudaurelia.

Diné Pride, @navajo_nation_pride

Diné Pride, which bills itself as the "largest Indigenous LGBTQIA+ Pride Celebration in the country," takes place June 14-20 in Window Rock on the Navajo Nation. Last year, the Navajo Nation Council formally recognized the third week of June as Diné Pride Week.

"Diné Pride will reintroduce traditional knowledge & teachings that kept our LGBTQIA+ relatives safe and revered — the way our culture recognized at one point in history," the organization's website says.

The organization's Instagram account shares upcoming roundtable discussions, panels and drag shows, many of which are accessible virtually, that highlight Indigenous members of the LGBTQIA+ community. Since 2005, same-sex marriage has been prohibited on the Navajo Nation.

Co-founders Brennen Yonnie and Alray Nelson are also founders of Diné Equality.

Where to find them:
https://www.instagram.com/navajo_nation_pride, https://www.navajonationpride.com.

Gay Pride Apparel, @gayprideapparel

Sergio Aragon and Jesus Gutierrez are the West Valley-raised Arizonans behind Gay Pride Apparel.

The couple developed the "LGBT-owned and minority-owned" brand with designs such as "Sounds gay; I'm in" while living in New York City. Among their successes so far as a business is seeing "Riverdale" actress Lili Reinhart wear that design in a picture she posted

See FAMOUS, Page 23

A PUBLIC INVITATION FROM APS

APS Virtual Open House

The West Valley Central 230kV Connection Project will identify locations of new 230-kilovolt (kV) power lines. These lines are needed to support electrical service reliability for new high-tech industries and current customers in the West Valley. We have identified several preliminary links for routes for the new 230kV lines and need your help in finding locations that will minimize impacts to the community, be acceptable to utility regulators and be most cost effective for our customers.

All interested parties are invited to attend our virtual open house online at their convenience (scan QR code below) to learn more about the project and provide input to help us identify the ultimate locations for the new 230kV lines. You will be able to comment, submit questions and, if desired, request to speak with one of our subject matter experts. Mailed copies of open house materials are available upon request. Please provide your input by July 10, 2021, to ensure its consideration.

Information about the West Valley Central 230kV Connection Project can also be found on our project webpage by going to aps.com/westvalleycentral. Comments and questions may be submitted within the virtual open house by clicking the comment form link on the project website, or by phone or email to:

Kristin Darr—Public Involvement Specialist
Project information phone number: (623) 241-5935
contactus@apswestvalleycentral.com

APS West Valley Central Project Website
aps.com/westvalleycentral

aps.com

aps

AR-GCI0660225-02

CALENDAR

Continued from Page 2

sions by appointment on Tuesdays and Thursdays, from 10:30am to 1:30pm. If you want a pet reading, please bring a photo of your pet, living or deceased. The cost of a reading is $30.00 for 15 minutes, $55.00 for 30 minutes, $75.00 for 45 minutes, $95.00 for 60 minutes. Paula will also be teaching classes in Reiki, Tarot Card Reading, Twin Flames, and Manifestation in the near future. For more information about Paula or to book an appointment, please call 623-583-1330. Thursday, Nov. 5, through Thursday, Nov. 19. 11 am Thursdays. The Place of Spiritual Wisdom, 12630 N. 103rd Ave. Ste. 244, Sun City. $30 for 15 minute reading, $55 for 30 minutes, $75 for 45 minutes, $95 for 60 minutes. 623-583-1330.

Psychic Readings with Paula: Paula is a Psychic Medium, Channel, Intuitive, Tarot and Oracle Card Reader, Pet Psychic and Animal Communicator, Twin Flames Facilitator, Evolutionary Astrologer, Reiki Practitioner, Sound and Crystal Energy Practitioner. She is available for private readings and sessions by appointment on Tuesdays and Thursdays, from 10:30am to 1:30pm. Paula will also be teaching classes in Reiki, Tarot Card Reading, Twin Flames, and Manifestation in the near future. For more information about Paula or to book an appointment, please call 623-583-1330. Thursday, Nov. 5, through Tuesday, Nov. 24. Call for times. The Place of Spiritual Wisdom, 12630 N. 103rd Ave. Ste. 244, Sun City. $55 for 30 minutes. 623-583-1330.

A Food Truck PopUP by the Lake - GRAND REOPENING!: GRAND RE-OPENING CELEBRATION of Food Trucks @ Kimberly Park in Avondale AA! Grab a blanket, a chair and your family & friends for the GRAND RE-OPENING CELEBRATION of Food Trucks @ Kimberly Park! Are you tired of the same old food or just need a break from cooking?? We are too! So take the night off from cooking and let these awesome food trucks do the cooking for you! There's always something tasty for everyone in the whole family to enjoy! Kimberly Park's semi-monthly Food Truck Picnic is under New Event Management & you're invited to the GRAND RE-OPENING CELEBRATION of the 2020/2021 season! Enjoy Dinner & Dessert for the whole family, get out in the glorious fall fresh air, say HI to your neighbors, support local small businesses all while enjoying some tasty, cooked to order & always flavorful food truck food!! ! Bring the kiddos because the Grand Re-Opening Celebration will also feature Awesome Family Friendly Music by DJ Jonny, Balloon Twister, Kids Tattoos & Lawn Games to entertain all ages. Kimberly Park is one of the many community parks located the beautiful Garden Lakes Community @ 3325 W Garden Lakes Pkwy, Avondale, Az, 85392 (please remember to social distance where needed) Don't worry about dinner or dessert - food truck lineup to be announced, stay tuned! FB event link: www.facebook.com/TimesTwoEntertainment **Food food/beverage info please email TimesTwoEvents@gmail.com** 5-8 pm Thursday, Nov. 12. Kimberly Park - Garden Lakes, 3325 W. Garden Lakes Pkwy., Avondale. Free. 480-406-1200.
Listings are subject to change without notice. Contact event organizers to confirm details.

Let's be battle-ready but not battle-weary

Veterans' Voice
Paula Pedene
Guest columnist

When not deployed, service members and their units undergo traditional training to prepare for military duties. During this phase, service members go through routine training and medical evaluations that maintain their personal and team readiness level

They also take time to think about what enemies may be lurking around the corner. Retired U.S. Army Lt. Gen. H.R. McMaster says, "Our enemies are going to employ traditional countermeasures: dispersion, concealment, intermingling with civilian populations, deception."

Like our enemies, COVID-19 uses similar deceptive tactics. The dispersion of COVID-19 is widespread, and it tends to spread in clusters. The disease is a master at concealment, disguising itself to hide inside our cells and replicate. COVID-19 is intermingling with every population around the world. And its deception is magnificent. BBC health and science correspondent James Gallagher put it bluntly: "In the early stages of infection, the virus can deceive the body. Coronavirus can be running rampant in our lungs and airways, and yet our immune system thinks everything is A-OK."

As our numbers begin to climb across the country, I hope we can all join the battle and fight this together. According to the Centers for Disease Control and Prevention's website:

- Wash your hands often with soap and water for at least 20 seconds, especially after being in a public place or after blowing your nose, coughing or sneezing.
- Avoid close contact. Maintain six feet of distance between yourself and people who don't live in your household.
- Cover your mouth and nose with a mask when around others. You could spread COVID-19 to others even if you do not feel sick. The mask is meant to protect other people in case you are infected.
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow.
- Clean AND disinfect frequently touched surfaces daily. This includes tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, and sinks.
- Monitor your health daily. Be alert for symptoms. Watch for fever, cough, shortness of breath or other signs of COVID-19.

The principal mode of infection from COVID-19 is through exposure to respiratory droplets carrying the infectious virus. The best armament in this battle may likely be resilience. Resilient people are aware of situations, their emotional reactions and the behavior of those around them, including the understanding that life is full of challenges.

Paula Pedene is a retired federal employee and former U.S. Navy journalist. You can reach her at paula@pedene.com and follow her on Twitter at @PaulaPedene.

Scottsdale is getting an Italian drive-thru from popular Phoenix restaurant

Shaena Montanari
Arizona Republic
USA TODAY NETWORK

Eggplant parmigiana may not be a staple of most drive-thru menus, but the owner of a popular Phoenix pizzeria is looking to change that.

Luca Gagliano, owner of Forno 301, is set to serve wood-fired pizza and Italian food to Valley customers in the comfort of their cars at his new drive-thru concept, Slice Eat, in Scottsdale.

Gagliano is from Sanremo, Italy, and has owned Forno 301, located on Central Avenue and McDowell Road in downtown Phoenix, for five years.

Slice Eat will serve up individual slices of pizza, whole wood-fired pizzas, pasta dishes and other Italian favorites such as eggplant parmigiana via drive-thru or counter service.

The restaurant will open for the first time on National Fast Food Day, Nov. 16. During the grand opening week, customers will be able to snag freebies and deals. The first 100 customers in line on Nov. 16 will get free pizza slices, and the rest of the week will feature discounts and deals on pizza, pasta and more.

The restaurant will serve hearty Italian fare, ranging from single-slice and full-size wood-fired pizzas to classic fettuccine pasta, eggplant parmigiana and gelato. COURTESY OF SLICE EAT

Slice Eat

When: Grand opening Nov. 16.

Location: 7111 E. Thomas Road, Scottsdale.

INDEPENDENT
NEWSMEDIA
Celebrating & Connecting Our Communities

17220 N. Boswell Blvd., Ste. 101, Sun City, AZ 85373 623-445-2814 legals@newszap.com

Affidavit of Publication

I, Kevin Mahoney, National Sales Manager of Independent NewsMedia USA, am authorized by the publisher as agent to make this affidavit of publication. Under oath, I state that the following is true and correct.

The Surprise Independent, which is a newspaper published weekly, is of general circulation and is in compliance with the Arizona Revised Statutes 10-140.34 & 39-201.A & B. I solemnly swear that the advertisements were published in the regular and entire section of the said newspaper and not in any supplement. The below listed advertisement appeared in the following issue (s):

Arizona Public Service Virtual Open House

DATES OF PUBLICATION:

1. June 16, 2021
2. June 30, 2021

Legal Advertising Specialist

State of Arizona

County of Maricopa

On this 21th day of July, 2021, before me personally appeared Kevin Mahoney, whose identity was proven to me on the basis of satisfactory evidence to be the person whose name is subscribed to this document and who acknowledged that he/she signed the above/attached document.

State of Arizona County of Maricopa
Subscribed and sworn before me on 7/21/21 (Date)
(Notary Signature)

JOSHUA NIELSEN, NOTARY PUBLIC
COMM. NO. 571983
COMM. EXP. 09-14-2023
MARICOPA CO., AZ

Reserve Your 2022 Arizona Scenic Wall Calendar

Are you happy you live in beautiful Arizona?

Then you will want one - or more - of our great 2022 Wall Calendars featuring scenic photos of Arizona.

Purchasing a 2022 calendar will help support our nonpartisan journalistic mission.

To reserve your calendar just fill out the coupon with payment and tell us if you want to pick up your calendar or have us mail it to you. Then, return it to Independent Newsmedia's office by August 4, 2021.

Calendars will be available September 15th

$3.50 ea. or 2 for $5 or 5 for $10!

INDEPENDENT NEWSMEDIA
Celebrating & Connecting Our Communities
YourValley.net

PLEASE ADD POSTAGE PRICES
to your payment for mailed calendars
1 Calendar…**$1.45** • **2** Calendars…**$3.20**
3 Calendars…**$4.30** • **4** Calendars…**$5.40**
5 Calendars…**$10**

Independent Newsmedia's 2022 AZ Scenic Calendar Order Form

Name _____

Email **or** Ph.# _____

*Address _____

_____ Number of Calendars _____
Only if we are mailing your calendars

❑ **Please mail my calendars** ❑ **I'll pick mine up** ❑ **Yes, I have included my payment (including postage)**

Return coupon and payment to: **Independent Newspapers • 17220 N. Boswell Blvd., Ste. 101, Sun City, AZ 85373**

INDEPENDENT
NEWSMEDIA
Celebrating & Connecting Our Communities

17220 N. Boswell Blvd., Ste. 101, Sun City, AZ 85373 623-445-2814 legals@newszap.com

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DATES OF PUBLICATION:

1. November 11, 2020

National Sales Manager

State of Arizona

County of Maricopa

On this 14th day of December 2020, before me personally appeared Kevin Mahoney, whose identity was proven to me on the basis of satisfactory evidence to be the person whose name is subscribed to this document and who acknowledged that he/she signed the above/attached document.

TERRI L RODGERS
Notary Public, State of Arizona
Maricopa County
Commission # 588644
My Commission Expires
September 26, 2024

A PUBLIC INVITATION FROM APS

aps

APS Virtual Open House

The West Valley Central 230kV Connection Project will identify locations of new 230-kilovolt (kV) power lines. These lines are needed to serve a new data center customer located on the southeast corner of Olive Avenue and North Dysart Road and to support electrical service reliability for new high-tech industries and current customers in the West Valley. We have identified several preliminary links for routes for the new 230kV lines and need your help in finding locations that will minimize impacts to the community, be acceptable to utility regulators and be most cost effective for our customers.

All interested parties are invited to attend our virtual open house online at their convenience (scan QR code below) to learn more about the project and provide input to help us identify the ultimate locations for the new 230kV lines. You will be able to comment, submit questions and, if desired, request to speak with one of our subject matter experts. Mailed copies of open house materials are available upon request. Please provide your input by November 20, 2020, to ensure its consideration.

Information about the West Valley Central 230kV Connection Project can also be found on our project webpage by going to aps.com/westvalleycentral or by scanning the QR code below. Comments and questions may be submitted within the virtual open house by clicking the comment form link on the project website, or by phone or email to:

Kristin Darr—Public Involvement Specialist
Project information phone number: (623) 241-5935
contactus@apswestvalleycentral.com

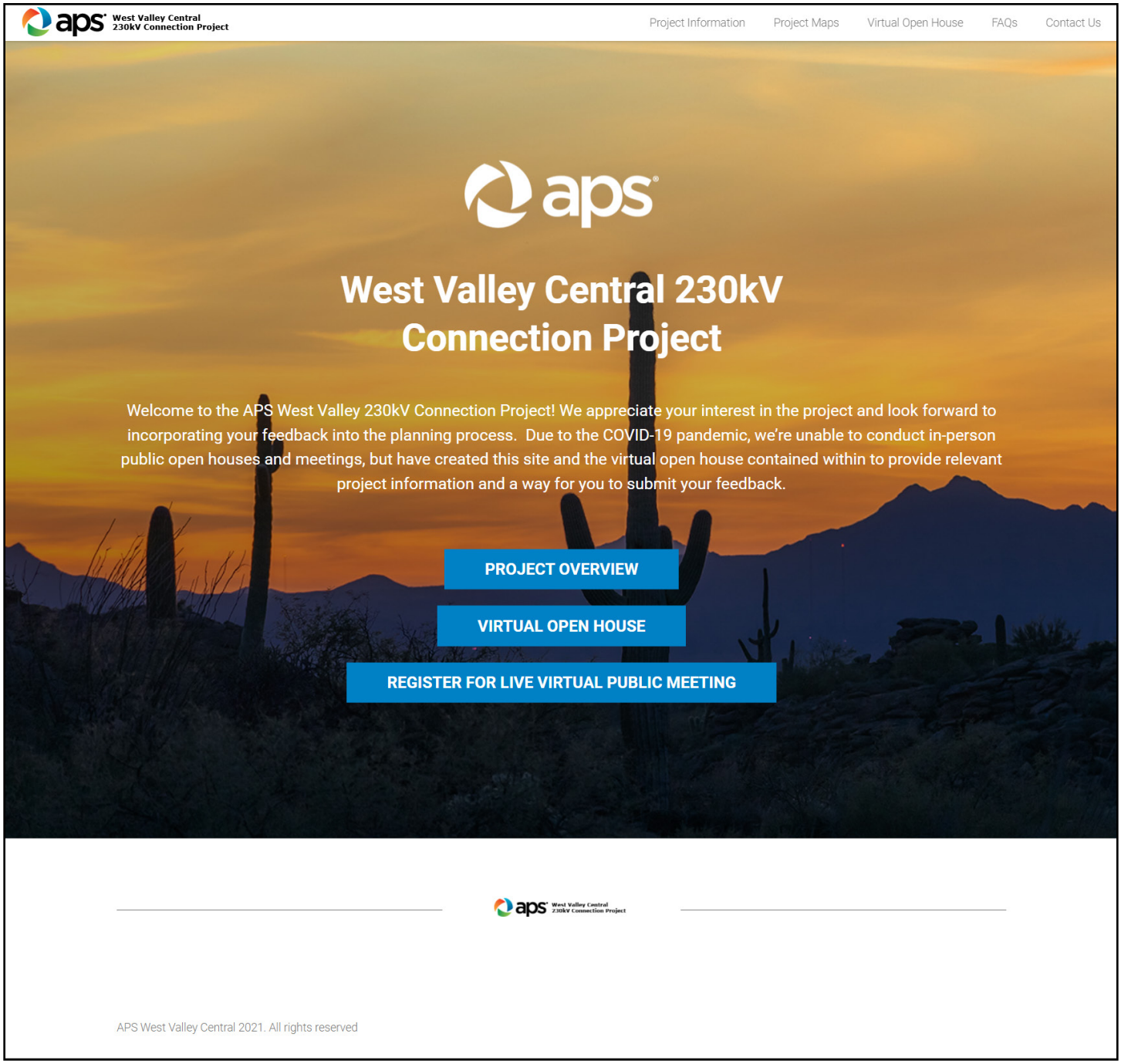
West Valley Central
Virtual Open House
apswestvalleycentral.com

APS West Valley Central
Project Website
aps.com/westvalleycentral

aps.com

J-128

Virtual Open House Website Content



aps West Valley Central 230kV Connection Project

Project Purpose and Overview

The greater Phoenix region has emerged as one of the top markets in the western United States for attracting high-tech industries. The West Valley, in particular, is benefiting from economic development activity that will bring jobs and revenue to the area. With strong growth in the area and increased electrical load demand, comes a need for new 230 kilovolt (kV) power lines and a substation in the area to serve new customers.

Scroll down to learn more.

We are in the early stages of a public siting process to identify appropriate routes for new 230kV power lines that best meet the needs of the customer, the community, and regulatory agencies. These power lines will connect the new Contrail Substation (located on the customer's property on the southeast corner of Olive Avenue and Dysart Road) to existing 230kV transmission facilities. Specifically, these new lines will need to connect the Contrail Substation approximately two miles to the east into the existing 230kV transmission line or directly into the El Sol Substation, and approximately 5 miles to the west into the planned TS-2 Substation.

Your feedback will help determine the path of new power lines that are needed in your area. This project will connect the new Contrail Substation with existing power lines in the area fueling more reliable service for current and future APS customers.

To continue providing our customers with safe, clean and reliable electricity, we need to add new power lines to both serve existing customers and support the economic growth and development in the West Valley.

The new Contrail Substation is located in El Mirage, near the southeast corner of Olive Avenue and Dysart Road. New power lines are needed to connect this substation to existing power lines in the area.

MAY 2021 PROJECT NEWSLETTER

Project Schedule

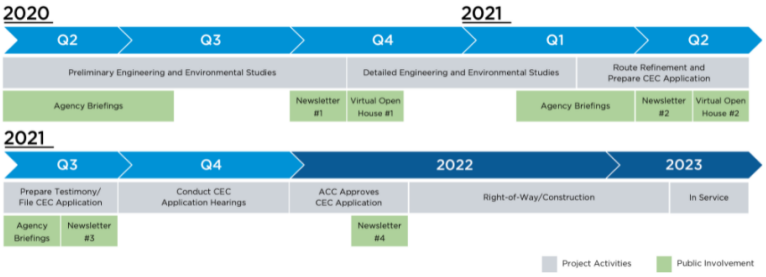
While the time required to site transmission lines varies by project, the time frames outlined below reflect our current schedule.

2ND/3RD QUARTER 2020
- Preliminary engineering
- Environmental studies
- Agency briefings

4TH/1ST QUARTER 2020/2021
- Environmental studies
- Public outreach activities
- Agency briefings

2ND/3RD QUARTER 2021
- Public outreach activities
- Route refinement
- CEC application preparation

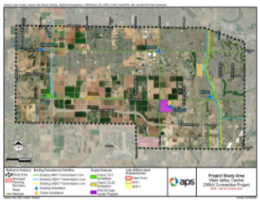
Detailed Schedule



Project Study Area

The study area was identified by the engineering and planning team based on an evaluation of preliminary electrical system requirements and land use data. The area is bounded by N. Citrus Road on the west, W Thunderbird Road on the north, and N. 103rd Avenue on the east. The southern boundary of the study area is W. Northern Avenue between N. Citrus Road and N. Litchfield Road, then drops south to W. Glendale Avenue between N. Litchfield Road and N. 103rd Avenue. The area is adjacent to the northeast edge of Luke Air Force Base and includes a portion of the Loop 303 and Northern Parkway; and consists of residential, commercial, industrial, and agricultural uses.

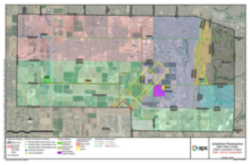
Project Study Area Map

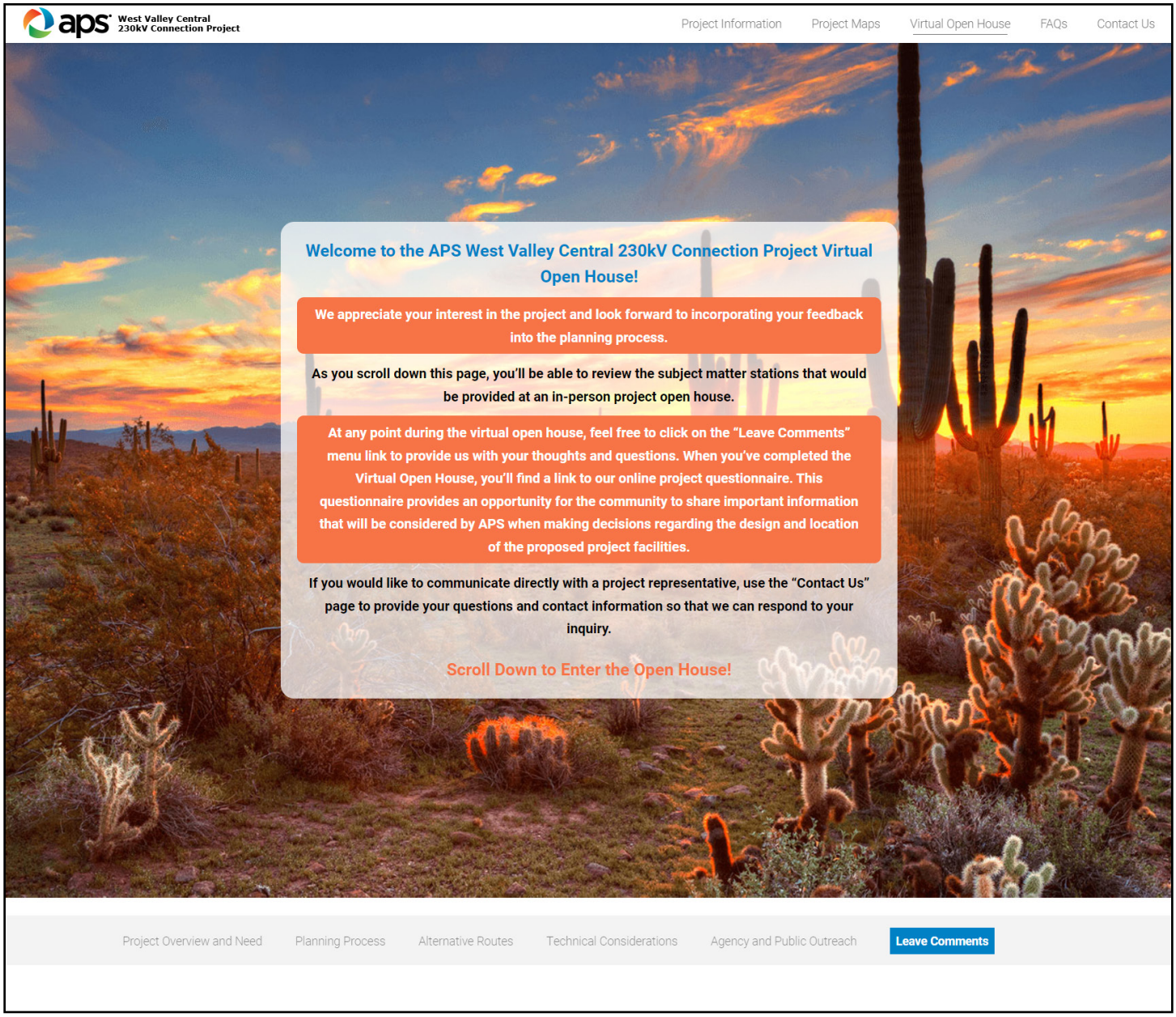


Project Jurisdiction

Along with El Mirage, the project study area also includes the City of Glendale, Town of Youngtown and City of Peoria located along the Northern Parkway between the Agua Fria River and the Loop 303 Bob Stump Memorial Freeway. The Town of Surprise is located north of Peoria Avenue and Maricopa County has jurisdiction in the northeast portion of the study area. The attached area map illustrates the general location of the project.

Project Jurisdiction Map



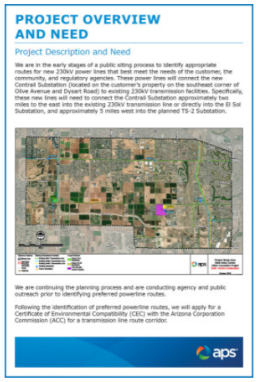

aps West Valley Central 230kV Connection Project
Project Information
Project Maps
Virtual Open House
FAQs
Contact Us
Welcome to the APS West Valley Central 230kV Connection Project Virtual Open House!
We appreciate your interest in the project and look forward to incorporating your feedback into the planning process.
As you scroll down this page, you'll be able to review the subject matter stations that would be provided at an in-person project open house.
At any point during the virtual open house, feel free to click on the "Leave Comments" menu link to provide us with your thoughts and questions. When you've completed the Virtual Open House, you'll find a link to our online project questionnaire. This questionnaire provides an opportunity for the community to share important information that will be considered by APS when making decisions regarding the design and location of the proposed project facilities.
If you would like to communicate directly with a project representative, use the "Contact Us" page to provide your questions and contact information so that we can respond to your inquiry.
Scroll Down to Enter the Open House!
Project Overview and Need
Planning Process
Alternative Routes
Technical Considerations
Agency and Public Outreach
Leave Comments

STATION ONE: **PROJECT OVERVIEW AND NEED**

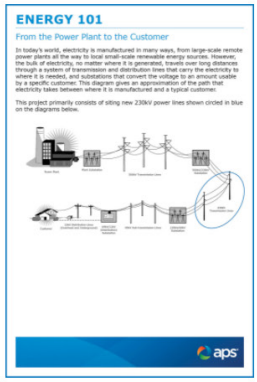
APS is planning to construct and operate new 230 kilovolt (kV) power lines and substations to provide adequate and reliable power to the rapidly growing West Valley communities. The information provided below will help the community understand the need for the project and the type of facilities APS is proposing to meet our customers' energy needs.

Click on the informational boards below to learn more:

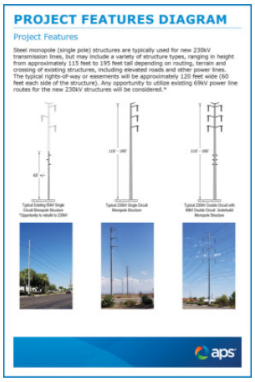
PROJECT OVERVIEW AND NEED



ENERGY 101



PROJECT FEATURE DIAGRAMS



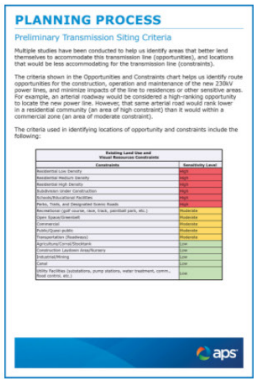
STATION TWO: **PLANNING PROCESS**

APS considers several factors in detail prior to making decisions related to constructing and operating 230kV power lines and substations. There are detailed engineering and environmental studies that are completed during the planning process. Throughout the planning process, APS will also collect input from key agencies and the public (e.g., landowners, residents, business owners, etc.) prior to selecting final locations for the proposed facilities. The information provided below will help the community understand the important data that will be evaluated during the planning process.

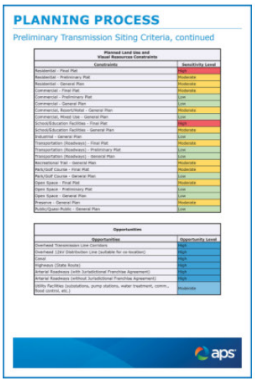
Click on the informational boards below to learn more:

STEPS IN THE PLANNING PROCESS

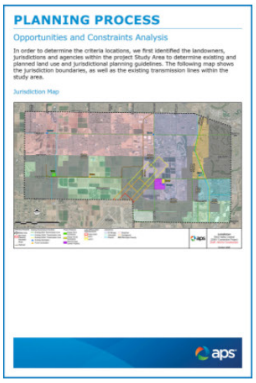
TRANSMISSION LINE SITING CRITERIA 1



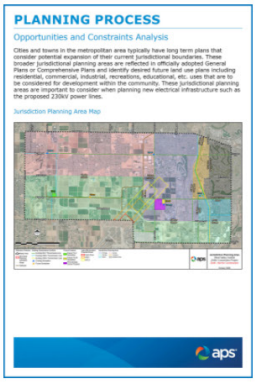
TRANSMISSION LINE SITING CRITERIA 2



JURISDICTION MAP

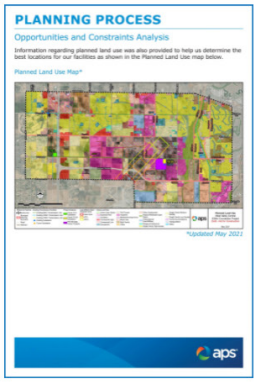


JURISDICTION PLANNING AREA MAP



EXISTING LAND USE MAP

PLANNED LAND USE MAP



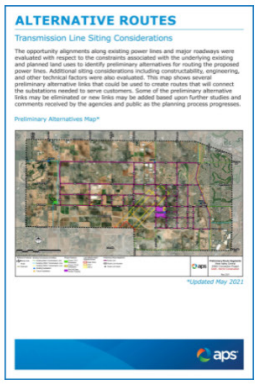
STATION THREE: **PRELIMINARY ALTERNATIVES**

APS will consider a broad range of design and locational alternatives for the 230kV power lines during the planning process. Each of the preliminary alternatives will need to adequately serve the purpose and need for the project, while balancing the impacts to environmental resources and agency/public input received during the planning process. The information provided below will help the community understand the preliminary alternatives that are being considered for the project, as well as key decision factors that APS will evaluate prior to making a final decision regarding which power line routes to consider for permitting and construction.

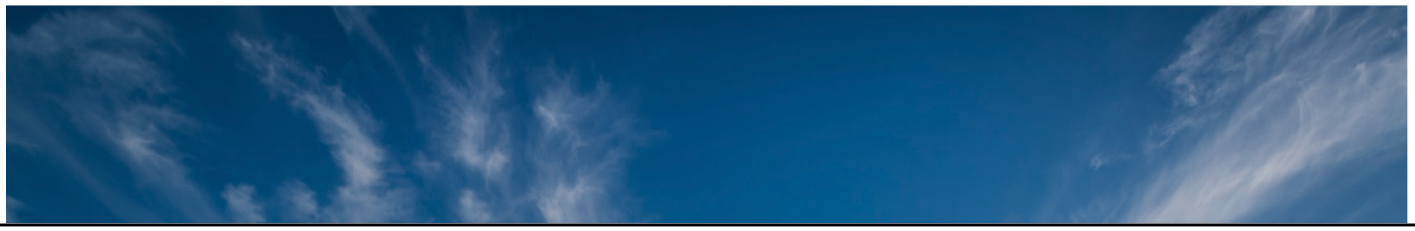
Click on the informational boards below to learn more:

OPPORTUNITIES AND CONSTRAINTS

PRELIMINARY ROUTE ALTERNATIVES



DECISION FACTORS



STATION FOUR: **ROUTE OPTIONS**

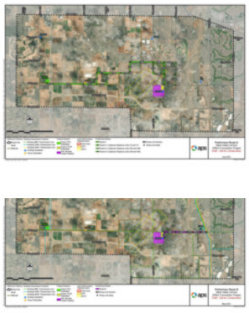
APS has identified several potential route options that would meet the project purpose and need for the 230kV power lines. During the planning process, APS identified the need to construct and operate three separate 230kV power line routes to connect to the recently constructed Contrail Substation.

1. A route connecting from the Future TS-2 Substation near the intersection of Loop 303 Freeway and Olive Avenue.
2. A route connecting from the existing El Sol Substation near the intersection of Olive Avenue and North 114th Avenue.
3. A route connecting from the existing El Sol White Tanks 230kV power line near the intersection of Northern Avenue and North 111th Avenue.

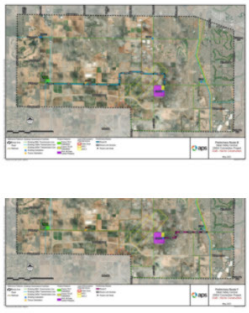
APS will identify the final routes that will be carried forward for permitting and construction from the options shown on the maps in the illustrations below.

Click on the informational boards below to learn more:

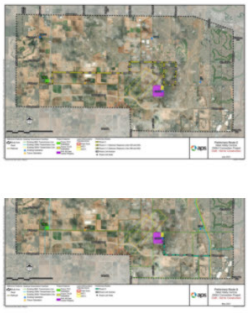
PRELIMINARY ROUTE A - REV. 7/21



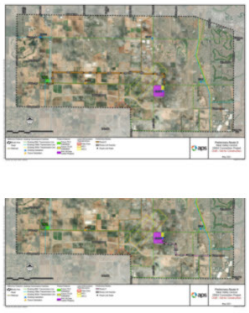
PRELIMINARY ROUTE B



PRELIMINARY ROUTE C - REV. 7/21



PRELIMINARY ROUTE D



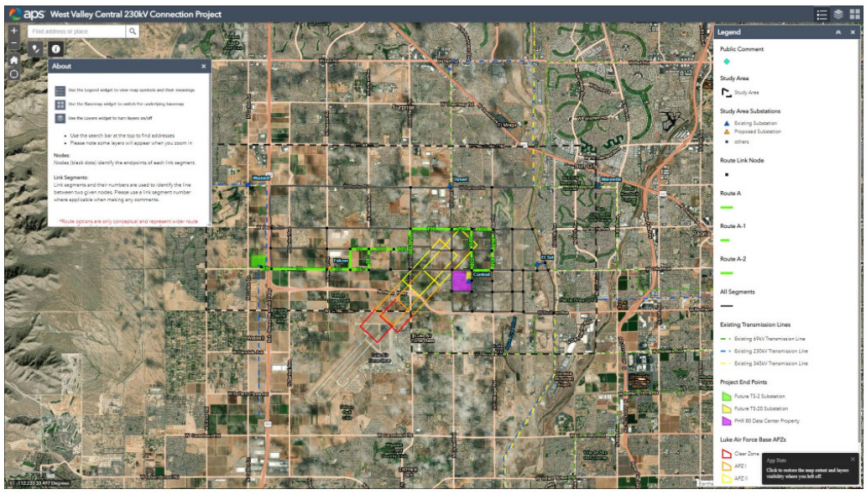
CLICK HERE FOR THE PROJECT QUESTIONNAIRE

The following Interactive Map uses geographic information system (GIS) technology to allow the agencies and public to view the project interactively. Each of the preliminary alternatives links that are being considered for power line routes can be viewed on aerial imagery illustrating the existing landscape within the study area. Please note, these preliminary link alternatives are only conceptual and do not represent final locations or design.

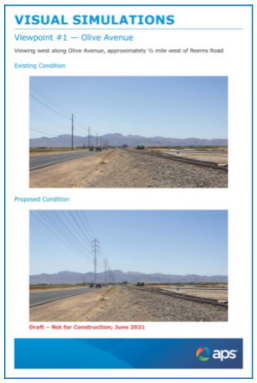
CLICK HERE FOR THE INTERACTIVE MAP

The following Interactive Map uses geographic information system (GIS) technology to allow the agencies and public to view the project interactively. Each of the preliminary alternatives links that are being considered for power line routes can be viewed on aerial imagery illustrating the existing landscape within the study area. Please note, these preliminary link alternatives are only conceptual and do not represent final locations or design.

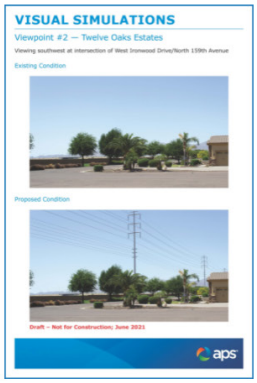
CLICK HERE FOR THE INTERACTIVE MAP



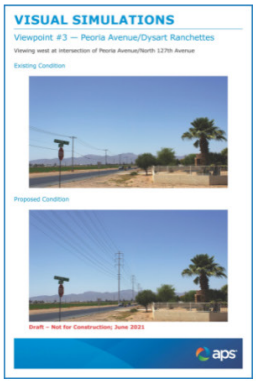
VISUAL SIMULATION ONE



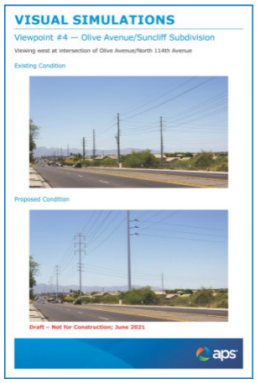
VISUAL SIMULATION TWO



VISUAL SIMULATION THREE



VISUAL SIMULATION FOUR

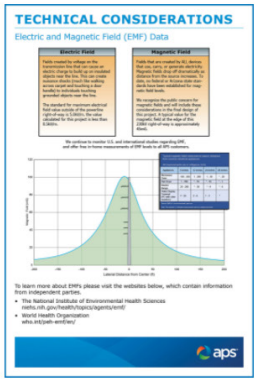


STATION FIVE: **TECHNICAL CONSIDERATIONS**

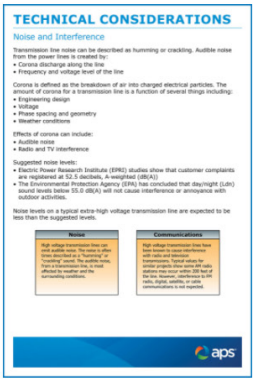
APS takes into account additional technical considerations when evaluating design and locational alternatives for the 230kV power lines. These technical consideration help address health and safety concerns while satisfying regulatory approval requirements. The information provided below will help the community understand information related to Electric and Magnetic Fields (EMF) and Noise/Interference related to the proposed facilities.

Click on the boards below to learn more:

EMF DATA



NOISE AND INTERFERENCE



STATION SIX: **AGENCY AND PUBLIC OUTREACH**

APS has been conducting extensive agency and public outreach for all of its major power line and substation projects for more than two decades. Input from the agencies and public is critical to the success of each new project we propose to construct and operate to serve our customers. The information provided below will help the community understand how they can participate in the planning process, which includes proposed outreach activities, registration for a live town hall meeting, the project questionnaire, and additional ways to contact APS with your important comments.

Click on the informational board below to learn more:

Now that you've attended our virtual open house, we'd appreciate your feedback. Our project questionnaire is designed to give you the opportunity to identify the routing factors and considerations you feel are most important. Questionnaire results will be reviewed by the project team prior to the selection of a preferred route.

PROJECT QUESTIONNAIRE

Got questions? Check out our Frequently Asked Questions (FAQs) page.

FAQS PAGE

If you don't find your specific question, please use the "Contact Us" link to submit your inquiry to the project team.

CONTACT US

If you'd like this information to-go, use the link below to download and print our project newsletter.

MAY 2021 PROJECT NEWSLETTER

OCTOBER 2020 PROJECT NEWSLETTER

REGISTER FOR LIVE VIRTUAL PUBLIC MEETING

Frequently Asked Questions

Click on the questions you're interested in to expand the field and see the answer. If you have a question that is not listed, please use the "Contact Us" page to submit your inquiry to the project team.

What is the West Valley Central Project?

APS is working to identify locations for a new 230kV substation and three transmission line interconnections to continue providing our customers with safe, clean and reliable electricity. The power lines are needed to serve existing customers and support the economic growth and development in the West Valley. The new substations and power lines would be built in the general area of Northern Parkway between Loop 303 and the Agua Fria River.

We are considering:

- A new 230/69kV substation (e.g., TS-20 or Contrail Substation) located on the customer's property on the southeast corner of Olive Avenue and Dysart Road.
- Two new 230kV transmission lines connecting the new substation east into the existing El Sol – White Tanks 230kV transmission line or El Sol Substation.
- A new 230kV transmission line connecting the new substation west into the planned TS-2 Substation previously permitted as part of the West Valley South Project.

Who will this project serve?

The new facilities are intended to further our commitment to clean, high quality, and reliable electric service for all of our customers. These new facilities are needed to serve APS customers, including new commercial customers, which promotes economic development for the West Valley.

Why is this power line project necessary?

Although we have the necessary infrastructure to meet current energy needs in this area, the amount of power needed to serve the new commercial customer requires new 230kV infrastructure and will also provide the energy needs for future growth in the surrounding area.

How does this project benefit me?

This project will bring direct and indirect benefits to individuals and the community as a whole. Providing safe and reliable electric service enables economic growth, bringing high-end jobs and revenue to the area. This project will improve the power infrastructure in the West Valley, which benefits economic development for surrounding cities in the long term, including:

- The ability to better meet the growing energy needs, and increase the reliability to residents
- Help create new businesses and job opportunities
- Help sustain a larger tax base to better support the communities

When will these lines and substations be built?

Construction is anticipated to begin in the second half of 2022 and the powerlines and substations will be energized in 2023.

How many miles of new power lines are needed?

Approximately 7-10 miles of new power lines are needed, depending on final route selection.

Can this line be constructed on existing power poles?

Existing power lines are often considered opportunities to locate new power lines. Although the existing power poles in this area are not large enough to support the new 230kV power lines for this project, we would take this opportunity to consider rebuilding existing power lines with larger poles that would enable us to consolidate the new 230kV power lines with the existing power lines.

Contact Us

APS welcomes your feedback for this project! Comments and questions may be submitted by clicking the comment form link below, by phone at **(623) 241-5935,** or by emailing contactus@apswestvalleycentral.com. If you would prefer to print and mail the project questionnaire, please click here. Please submit printed comments to:

WVC Project
PO Box 13863
Scottsdale, AZ 85267

CLICK HERE FOR THE PROJECT QUESTIONNAIRE

(asterisk indicates a required field)

First*

Last*

Email*

Phone*

Comments or Questions*

SUBMIT

REGISTER FOR LIVE VIRTUAL PUBLIC MEETING

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