Leo Lew
County Manager

PINAL COUNTY
WIDE OPEN OPPORTUNITY

MEETING DATE: SEPTEMBER 25, 2024

TO: PLANNING AND ZONING COMMISSION

CASE NO(S): **PZ-PA-012-24 (SUNHILL)**

CASE COORDINATOR(s): PATRICK ZAIA-ROBERTS, SENIOR PLANNER

Executive Summary *Pinal County Comprehensive Plan Amendment request by Judd Ventures LLC, owner, Jordan Rose, Rose Law Group, and Greg Davis, Iplan Consulting Corp., agent/applicants, requesting a Major Comprehensive Plan Amendment to the Pinal County Comprehensive Plan to re-designate ±96 acres of land from Moderate Low Density Residential (1-3.5 du/ac) to ±80 Acres of Employment and ±16 Acres of Mixed Use-Residential Focused, to develop a data center, BESS, and mixed use residential developments, located on the southeast corner of N Felix Rd and E Judd Rd in the Arizona Farms region of San Tan Valley, Pinal County, AZ.*

If this request is approved by the Board of Supervisors:
If this major amendment to the Pinal County Comprehensive Plan is approved, the action will allow the applicant to pursue rezoning of the property to accommodate employment and Mixed use compatible land-uses associated with the site. This may include Commercial, Data Centers, and Battery Energy Storage Systems and other compatible uses on the total of the 96± acre site.

Citizens Advisory Committee:
Citizen's Advisory Committee voted 15-0 to recommend forwarding **approval** of case **PZ-PA-012-24** to the Planning and Zoning Commission.

Staff Recommendation:
Staff offers a recommendation of **approval.**

LEGAL DESCRIPTION: 96± acres, situated in Section 29, T03S, R09E of the Gila and Salt River Base and Meridian (legal on file)

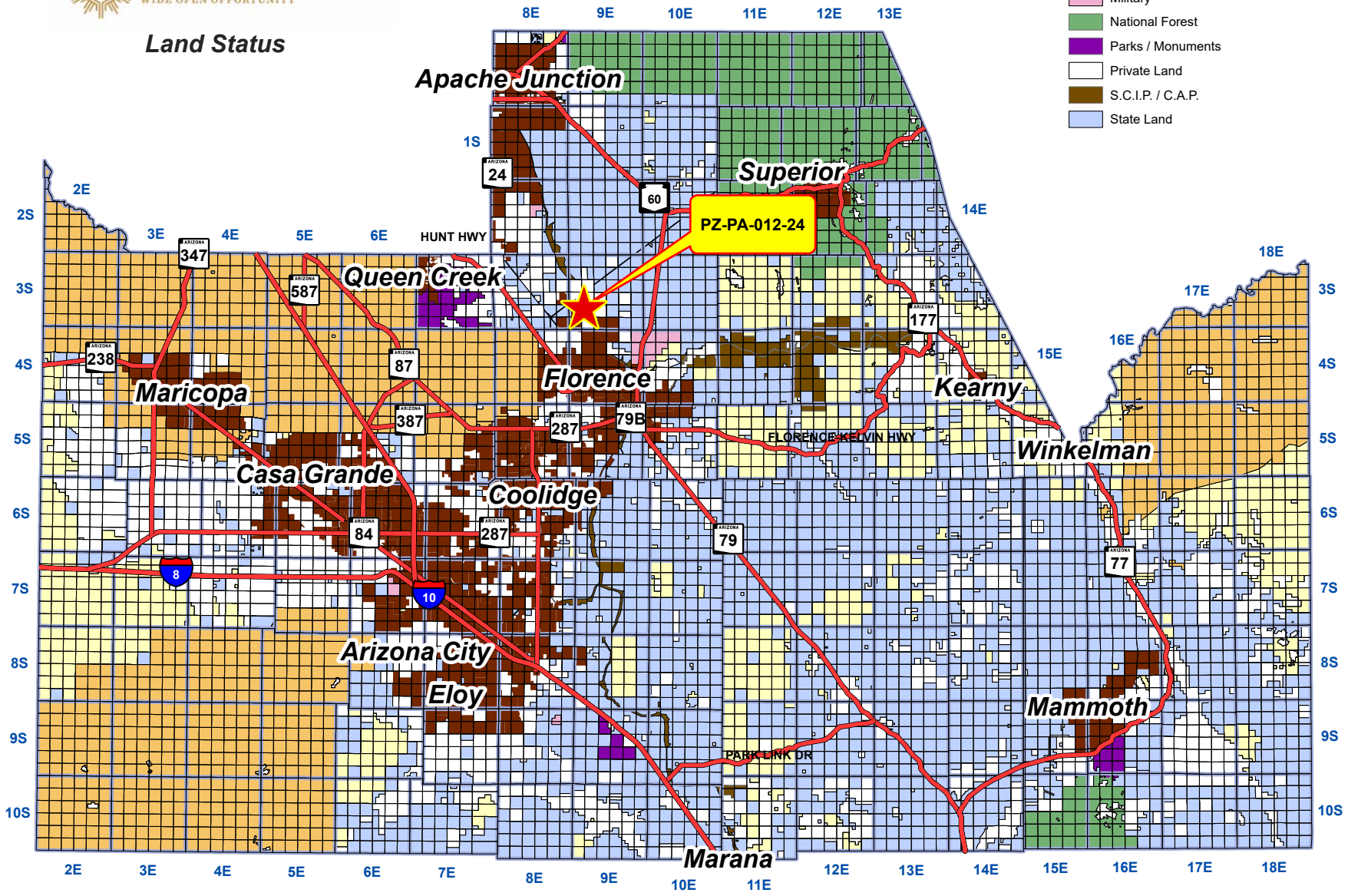
TAX PARCELS: 210-44-0020 & 210-44-0040

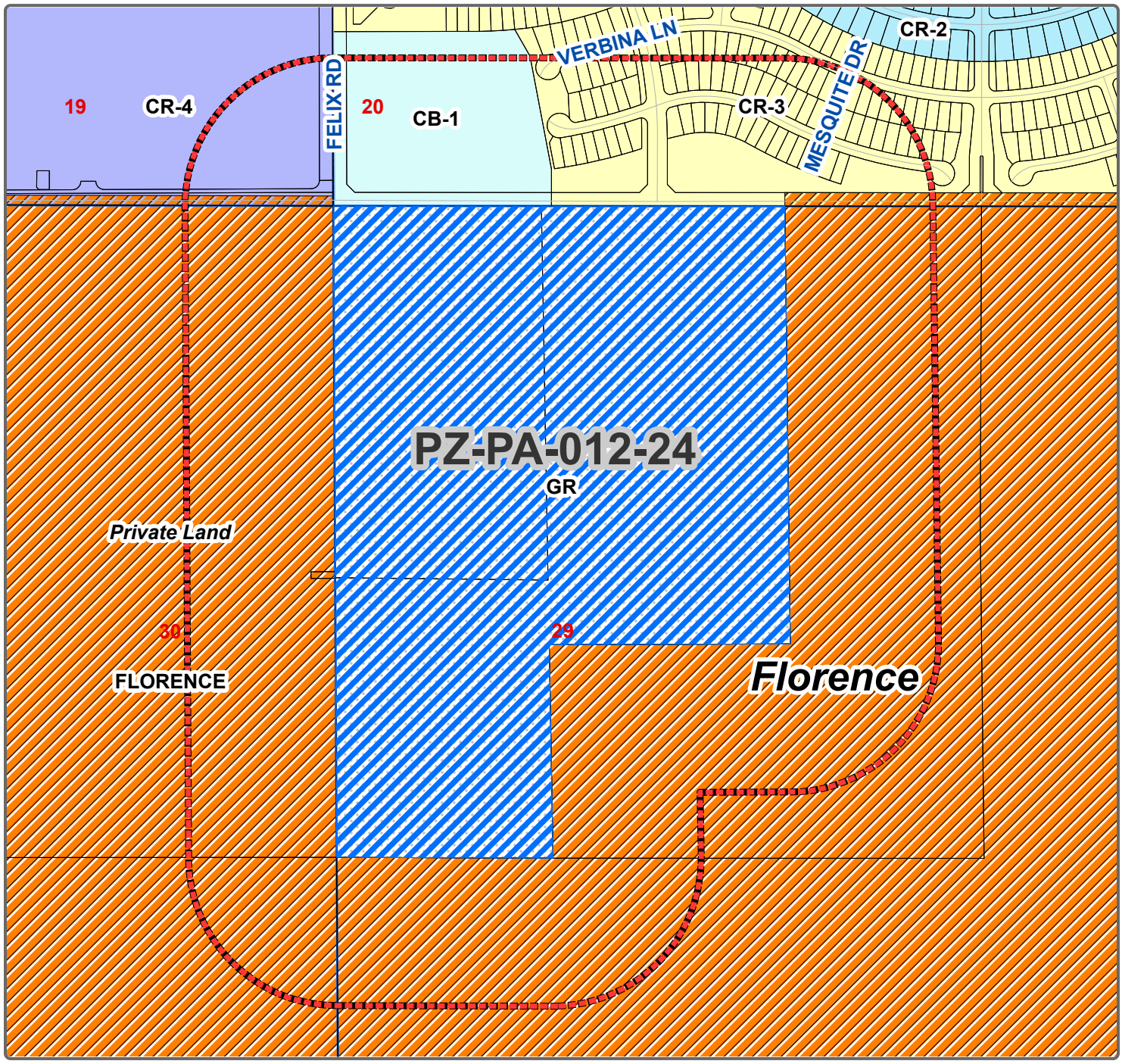
APPLICANT/AGENT: Greg Davis - Iplan Consulting, Jordan Rose - Rose Law Group, pc

REQUESTED ACTION & PURPOSE: **PZ-PA-012-24:** A Major Comprehensive Plan Amendment request by Judd Ventures LLC, applicant, Greg Davis, Iplan Consulting Corp., agent, requesting a Major Comprehensive Plan Amendment to the Pinal County Comprehensive Plan to re-designate ±96 acres of land from Moderate Low Density Residential (1-3.5 du/ac) to ±80 Acres of Employment and ±16 Acres of Mixed Use-Residential Focused, to develop a data center, BESS and mixed use residential developments, situated in section 29, T03S, R09E of the Gila and Salt River Baseline and Meridian (legal

PINAL COUNTY
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Land Status





Community Development

PZ-PA-012-24 – PUBLIC HEARING/ACTION: Judd Ventures LLC, applicant, Greg Davis, Iplan Consulting Corp., agent, requesting a Major Comprehensive Plan Amendment to the Pinal County Comprehensive Plan to re-designate ±96 acres of land from Moderate Low Density Residential (1-3.5 du/ac) to ±80 Acres of Employment and ±16 Acres of Mixed Use-Residential Focused, to develop a data center and mixed use residential developments, situated in section 29, T03S, R09E of the Gila and Salt River Baseline and Meridian (legal on file) tax parcels: 210-44-002 and 210-44-004 located on the southeast corner of N Felix Rd and E Judd Rd in the Arizona Farms region of San Tan Valley, Pinal County, AZ.

Current Zoning: GR

Requested Current Land Use: MLDR

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Legal Description:
Situated in section 29, T03S, R09E of the Gila and Salt River Baseline and Meridian (legal on file) tax parcels: 210-44-002 and 210-44-004 located on the southeast corner of N Felix Rd and E Judd Rd in the Arizona Farms region of San Tan Valley, Pinal County, AZ.

SEC 29, TWN 03S, RNG 09E

Sheet No. 1 of 1

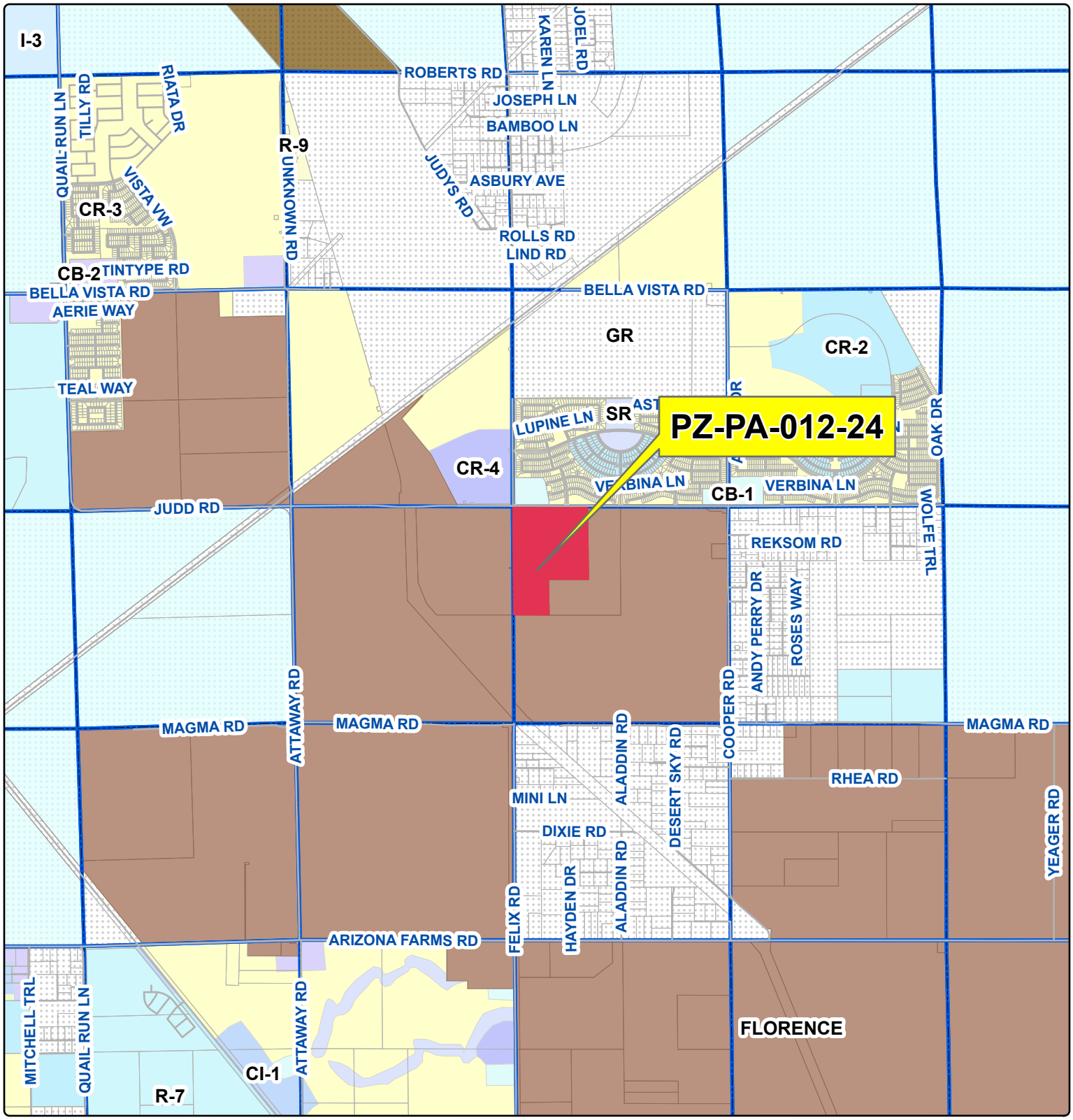
Owner/Applicant: JUDD VENTURES LLC
GREG DAVIS, IPLAN CONSULTING CORP

Drawn By: GIS / IT /LJT

Date: 07/10/2024

Section: 29 | Township: 03S | Range: 09E

Case Number: PZ-PA-012-24



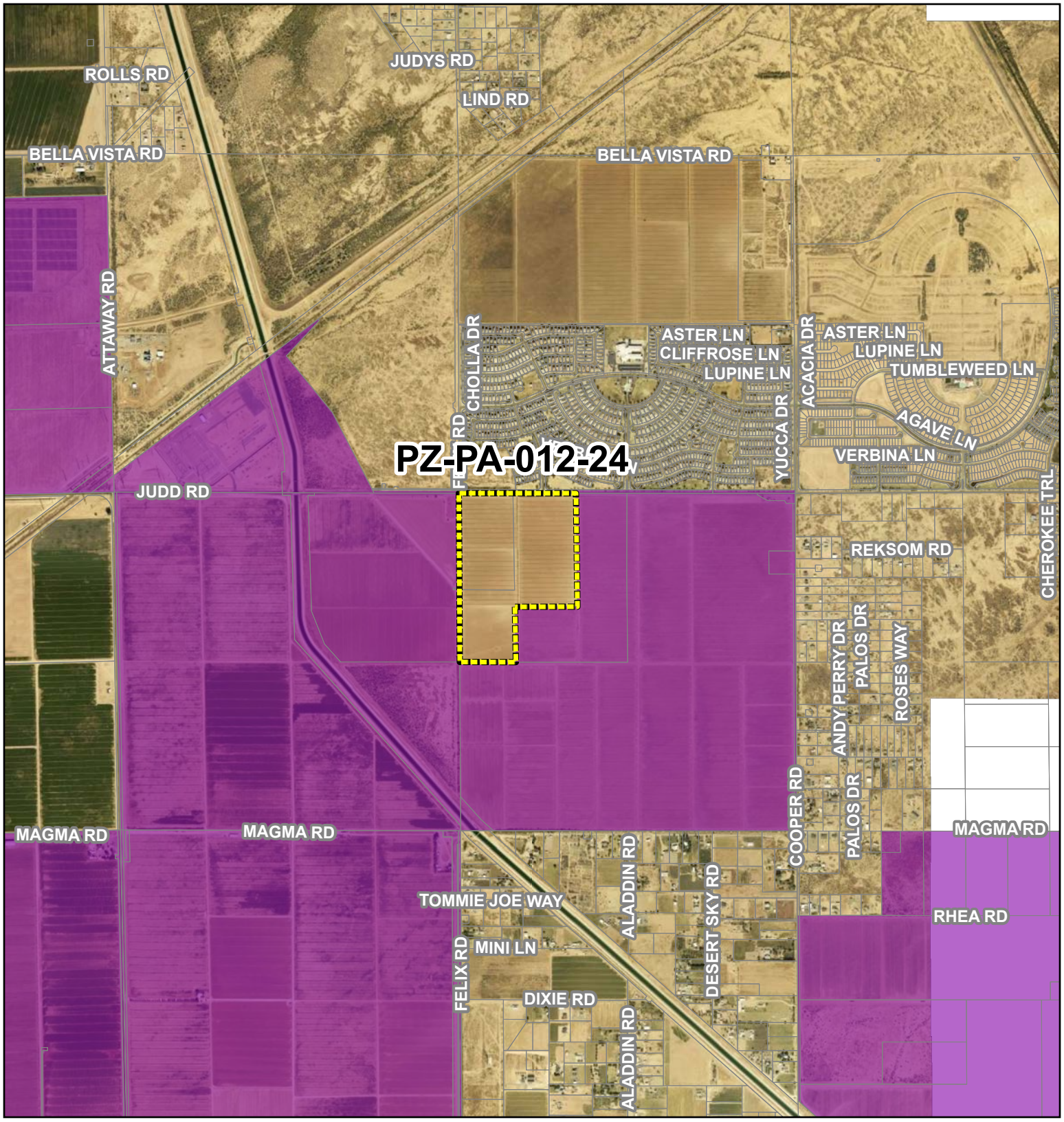
Community Development

PINAL COUNTY
WIDE OPEN OPPORTUNITY

Legal Description:
Situated in section 29, T03S, R09E of the Gila and Salt River Baseline and Meridian (legal on file) tax parcels: 210-44-002 and 210-44-004 located on the southeast corner of N Felix Rd and E Judd Rd in the Arizona Farms region of San Tan Valley, Pinal County, AZ.

SEC 29, TWN 03S, RNG 09E

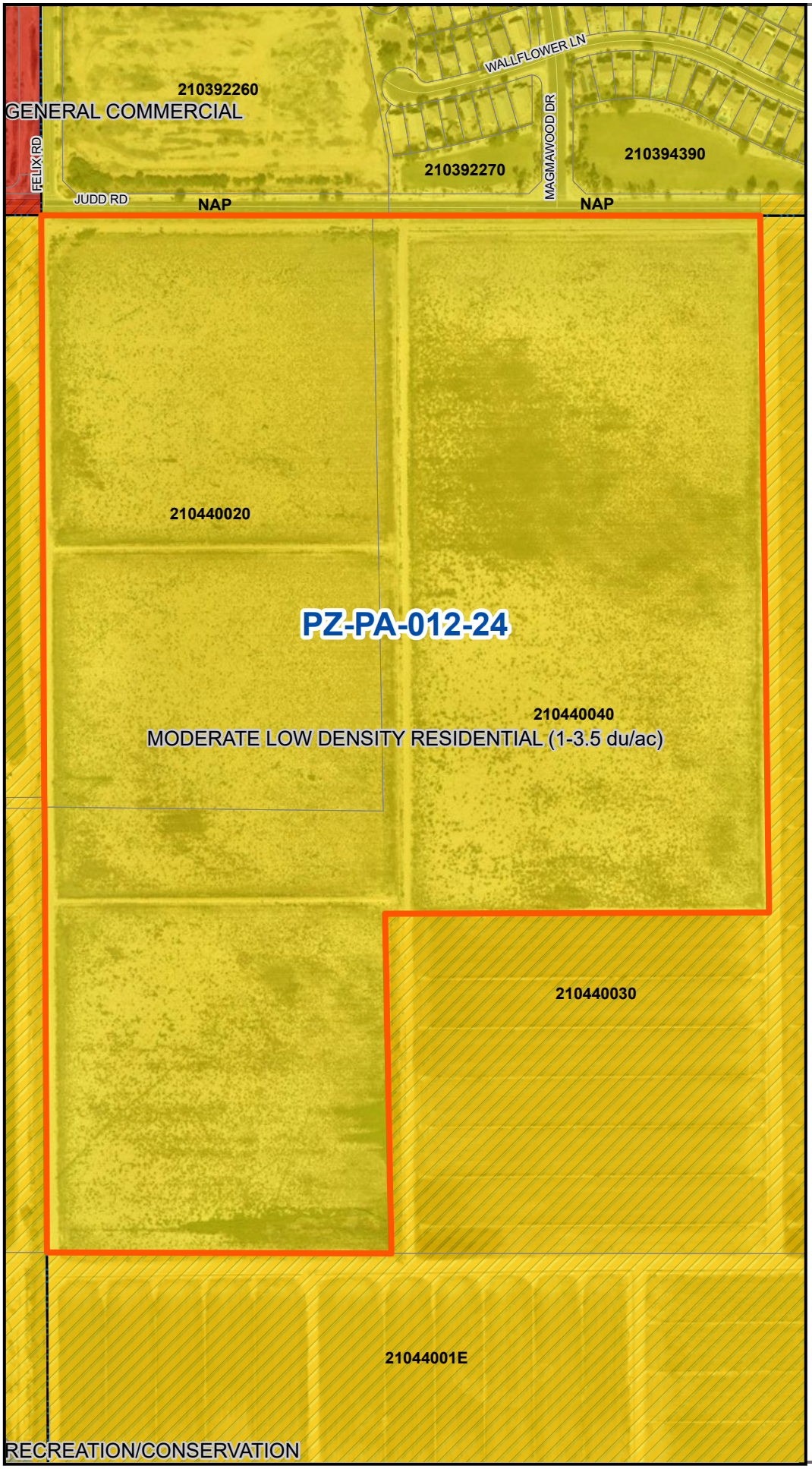
Owner/Applicant:	JUDD VENTURES LLC GREG DAVIS, IPLAN CONSULTING CORP		
Drawn By:	GIS / IT / LJT	Date:	07/10/2024
Sheet No.	1 of 1	Section: 29	Township: 03S
Range: 09E			
Case Number:	PZ-PA-012-24		



Community Development

PINAL COUNTY
WIDE OPEN OPPORTUNITY

PZ-PA-012-24



PINAL COUNTY
WIDE OPEN OPPORTUNITY

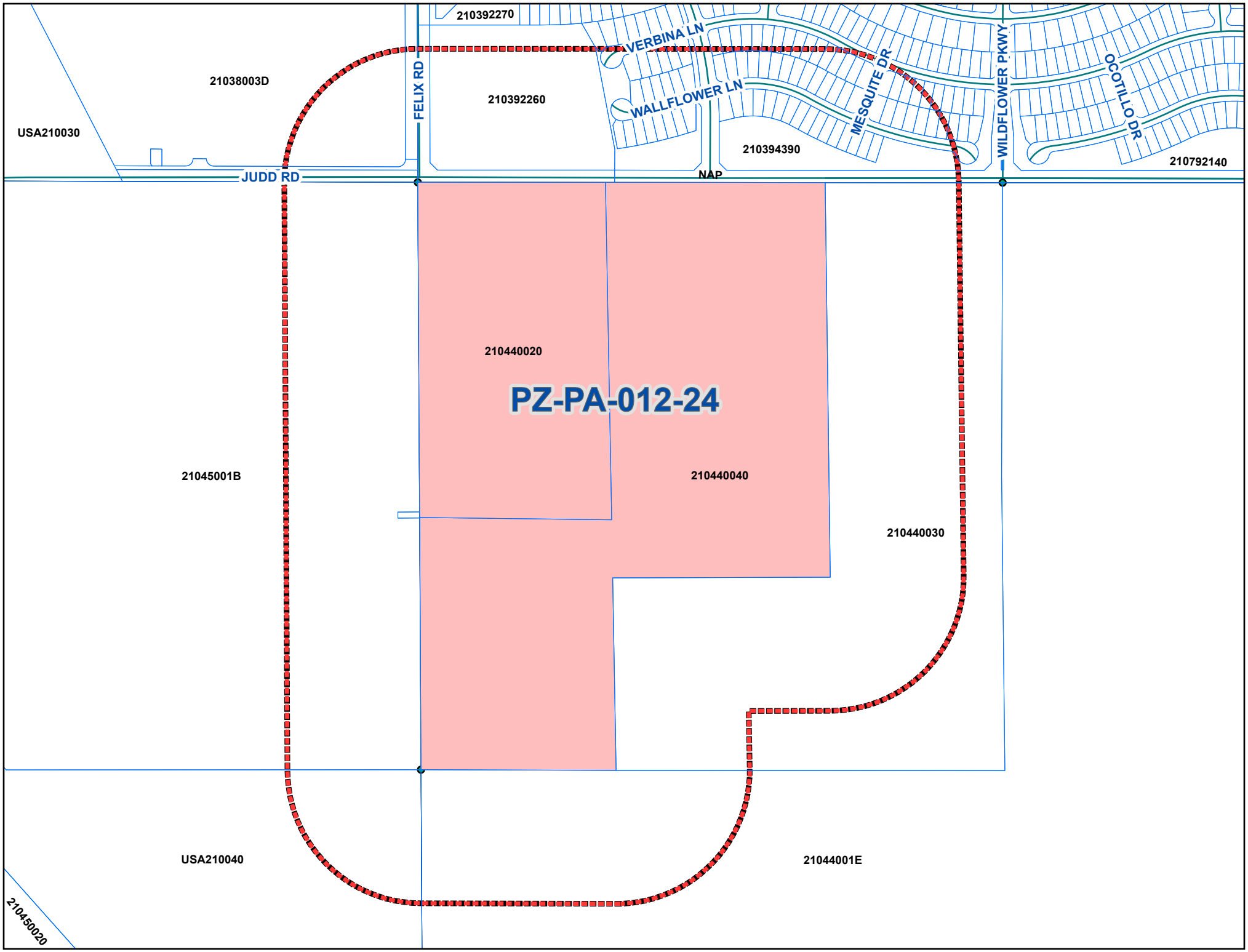
PZ-PA-012-24

FROM:

MODERATE
LOW DENSITY
RESIDENTIAL

TO:

EMPLOYMENT,
MIXED USE
RESIDENTIAL
FOCUSED


210392270
VERBINA LN
WALLFLOWER LN
MESQUITE DR
WILDFLOWER PKWY
OCOTILLO DR
FELIX RD
21038003D
210392260
210394390
210792140
USA210030
JUDD RD
NAP
210440020
PZ-PA-012-24
21045001B
210440040
210440030
USA210040
21044001E
210450020

on file) tax parcels: 210-44-002 and 210-44-004 located on the southeast corner of N Felix Rd and E Judd Rd in the Arizona Farms region of San Tan Valley, Pinal County, AZ.

LOCATION: located on the southeast corner of N Felix Rd and E Judd Rd in the Arizona Farms region of San Tan Valley, Pinal County, AZ.

SIZE: 96± acres

STAFF FINDINGS

Public Comment:

To date, the county has received one letter of opposition from members of the public. This letter of opposition described concerns that this project was incompatible with residential uses and is located too close to an existing subdivision. The letter further describes concerns that the project will lower property values, raise property taxes, and desire to be away from traffic, commercial development and closer to natural landscapes.

The applicant has also received seven letters of opposition that have been summarized and discussed in their neighborhood meeting report.

PUBLIC PARTICIPATION:

60 Day Review Period:	6/10/2024 to 8/10/2024
Newspaper Publication:	9/5/2024
Site Posting:	9/4/2024
Property Mail-out:	9/4/2024
Web Posting:	9/11/2024

AGENCY REVIEW COMMENTS:

As of time of publication, comments have been received from Arizona Game and Fish Department and Pinal County Open Space and Trails Department. These comments have been included in the packet, and discussed within the case analysis. No additional public agencies have provided comments at this time.

CITIZENS ADVISORY COMMITTEE SUMMARY:

On the evening of September 5th, the Citizen's Advisory Committee convened to discuss this case, provide a public hearing for neighbors to express opposition or support for this project and to vote to recommend the project to the Planning and Zoning Commission with either a recommendation of approval or denial. At this public meeting, one member of the public delivered a letter of opposition prior to the case being heard. This letter of opposition described concerns that this project was incompatible with residential uses and is located too close to an existing subdivision. The letter further describes concerns that the project will lower property values, raise property taxes, and desire to be away from traffic, commercial development and closer to natural landscapes.

During the meeting, members of the committee inquired regarding the potential land-uses that could be introduced as a product of this amendment. Staff provided detail of potential uses that could be included under Employment and Mixed Use Residential Focused respectively. Staff identified light industrial, Datacenters, Offices and Battery Energy Storage as potential employment land uses. Staff identified Staff also noted potential land uses for Mixed Use Residential Focused designations for

commercial, multi-family housing and professional offices. Staff also clarified that while certain land-uses provided in the case narrative are identified for development, the Comprehensive Plan process seeks amendment to goals for future development, and are not intrinsically a zoning entitlement. Specific land use designations must be determined through a rezoning process.

After a detailed discussion of the project, the Citizen's Advisory Committee **voted 15-0 to recommend approval of case PZ-PA-012-24.**

PLAN AMENDMENT DISCUSSION:

Background

The Pinal County Comprehensive Plan serves as a guiding framework for the growth and evolution of our community. In response to shifting growth patterns, we are pursuing a major amendment to this plan. This amendment centers on changes to the land use plan for an individual property, designating it for both employment and mixed-use purposes. The goal of this work-session is to provide the Board of Supervisors with valuable information and receive input on this plan to drive economic development, improve quality of life, and promote sustainable growth within Pinal County.

The proposed amendment focuses on optimizing land use to create a property that supports employment opportunities while integrating mixed-use components. The proposal seeks to blend residential, commercial, and recreational spaces, while offering improved regional infrastructure and introducing a local commerce center.

Project Proposal

This application is requesting a major amendment to the Pinal County Comprehensive Plan to amend ±96 acres of land from **Moderate Low Density Residential (1-3.5 du/ac)** to ±80 Acres of **Employment** and ±16 Acres of **Mixed Use-Residential Focused**, to develop a data center, BESS, and uses compatible with Mixed Use Residential Focus and Employment developments. The property is located on the southeast corner of N Felix Rd and E Judd Rd in the Arizona Farms region of San Tan Valley, Pinal County, AZ.

Location and Accessibility

The property is located at the southeast corner of W Judd Rd, and the N Felix Rd alignment in unincorporated Pinal County. The site is surrounded by the Town of Florence limits to the immediate south, east and west. Access to the site is proposed from Judd Rd to the North, and future Felix Rd improvements to the west.

Site Data

This site is currently vacant, but was previously utilized as agricultural farmland. The property lies immediately south of the Magma Ranch Subdivision, which holds predominantly CR-2, CR-3 and CB-1 zonings in conjunction with a PAD overlay. To the northwest of the site lies a parcel comprising of mixed CR-3 and CR-4 zoning. As a multi-residence zone, CR-4 zoning may accommodate residential development from single residence up to four-plex developments on lots at least 7,000 square feet in size. The three other sides of this property within Town of Florence jurisdiction are currently utilized for farming. To the east of these farms lies a region of GR properties the majority of which maintain 1.25 acre lots.

Flood Zone
The project is located on former farmland. The property possesses generally flat topography and lies within Flood Zone X, of minimal floodplain hazard.

Environmental Study
The comments from the Arizona Game and Fish Department (AZGFD) reflect significant concerns regarding the potential ecological impacts of the proposed developments within Pinal County. One of the primary issues raised is the lack of sufficient information provided to assess the full extent of the environmental impact, particularly concerning the identified trail, open space, and riparian habitats. The Department highlights the presence of sensitive species, such as the desert tortoise and the western burrowing owl, within these areas, which require careful consideration and protection. The absence of detailed biological surveys and impact mitigation strategies in the project proposals has hindered the AZGFD's ability to provide specific recommendations, underscoring the need for more comprehensive environmental assessments before proceeding with the projects.

Another significant concern is the potential ecological impact of large-scale battery storage systems, particularly in relation to their proximity to sensitive wildlife areas such as the Lower San Pedro River Important Bird Area. While battery storage systems do not pose the same risks as solar photovoltaic systems, they can still have indirect effects on the local environment, including habitat disruption during construction and operation. The AZGFD emphasizes the importance of designing these systems in a way that minimizes disruption to wildlife, particularly avian species. The comments suggest the need for thorough environmental monitoring and adaptive management practices to mitigate any unforeseen impacts on the surrounding ecosystems. These concerns highlight the importance of integrating wildlife conservation strategies into the development of renewable energy infrastructure to ensure that ecological integrity is maintained.

Infrastructure
To the north of this property lies W Judd Rd. This road provides a primary point of access to the subject property and the Magma Ranch Subdivision. Due to the configuration of CAP Canal and the Magma Arizona Railroad, traffic in this area is either routed south down Attaway Rd or Cooper Rd. Traffic is then routed by Arizona Farms Rd which connects to Hunt Highway and Highway 79. Alternatively, traffic continuing down W Judd Rd is eventually routed north out of the area along N Quail Run Lane upon its connection to Bella Vista Rd.

Land Suitability and Constraints
The subject property has remained farmland up until recently. This property is located amongst similar farmland, but is also a notable pocket of residential activity in a largely remote location. Utilization of the Arizona Game and Fish Environmental Review Tool noted no environmentally sensitive areas to this property. No areas were identified as critical habitats.

Concern in this case is rather introduced by the human element of development. The proximity of residential subdivisions and rural housing regions introduces matters of concern for employment type uses to be introduced. One method of mitigation that the applicant seeks to introduce is the development of the Mixed Use-Residential Focused land area at the north of this property. This land use category would act as a buffer to restrict more hazardous land uses such as those presented in the BESS

concept from abutting residential uses. Rather, neighborhood commercial services and other compatible uses may front the north 16 acres of the property.

Impacts to the area along with analysis of the project alignment with the comprehensive plan goals and objectives will be evaluated in later sessions scheduled for the comprehensive plan process.

STAFF ANALYSIS:

The proposed amendment introduced by the Sunhill project intends to re-designate 96± acres from Moderate Low Density Residential (1-3.5 du/ac) to 80 acres of Employment and 16 acres of Mixed Use-Residential Focused aligns with Pinal County's objectives of promoting economic development while ensuring land use compatibility with surrounding areas. This transition reflects a strategic shift towards accommodating modern infrastructure needs, such as a data center and Battery Energy Storage Systems (BESS), which are essential for supporting the county's growing energy demands. The incorporation of a mixed-use residential area provides a balanced approach, ensuring that the new developments are not only economically viable but also residentially and environmentally considerate.

Environmental concerns have been raised by the Arizona Game and Fish Department (AZGFD), particularly regarding the potential impacts on local wildlife, including sensitive species like the desert tortoise and the western burrowing owl. While the site itself does not lie within any critical habitats or riparian areas, the development of a large-scale BES'S and other employment uses may still have indirect effects on nearby ecosystems. To address these concerns, it is recommended that detailed environmental impact assessments be conducted, alongside the implementation of mitigation strategies to minimize habitat disruption during both construction and operation phases.

One consideration for this amendment is the impact on local infrastructure. The site's proximity to W Judd Rd and the future improvements on N Felix Rd offer significant advantages in terms of accessibility for both the employment and residential components of the project. The location of this project benefits from the aspect of incorporating access onto both roadways. However, increased traffic associated with these developments will necessitate careful consideration to ensure that the surrounding road network can handle the additional load. This may involve upgrading nearby roads and intersections, as well as implementing traffic management strategies to maintain smooth connectivity with major highways such as Hunt Highway and Highway 79.

One of the concerns regarding the proposed amendment is the proximity of the development to the Magma Ranch Subdivision, a predominantly residential area. The introduction of employment and mixed-use designations adjacent to this established neighborhood raises potential issues related to noise, traffic, and overall compatibility with the existing residential character. While the Mixed Use-Residential Focused designation is intended to serve as a buffer, careful consideration must be given to mitigating any adverse impacts on the Magma Ranch community. This may include implementing additional landscaping, noise barriers, and traffic management strategies to preserve the quality of life for current residents while accommodating the new development.

The introduction of the Mixed Use-Residential Focused designation is intended to act as a transition zone between the employment area and surrounding residential developments. This buffer will help ensure that the new development integrates seamlessly with existing neighborhoods, promoting a cohesive community environment. The specific uses permitted within this mixed-use area should be carefully

considered to maintain harmony with the adjacent land uses while supporting the overall development goals of the project.

After a detailed review of the request, Pinal County Comprehensive Plan and Pinal County Development Services Code, staff recommends **approval** of this case. However, in addition to staff comments, should the Planning and Zoning Commission find, after the presentation of the applicant and together with the testimony and evidence presented at the public hearing, that this Major Comprehensive Plan amendment is needed and necessary at this location and time, will not negatively impact adjacent properties, will promote orderly growth and development of the County and will be compatible and consistent with the applicable goals and policies of the Pinal County Comprehensive Plan, then staff recommends that the Planning and Zoning Commission forward **PZ-PA-012-24**, to the Board of Supervisors with a favorable recommendation. If the Planning and Zoning Commission cannot find for all of the factors listed above, then staff recommends that the Planning and Zoning Commission forward this case to the Board of Supervisors with recommendation of denial.

Date Prepared: 9/17/24 PZR

Revised: 9/19/24 PZR

NOTICE OF PUBLIC HEARING BY THE PINAL COUNTY PLANNING AND ZONING COMMISSION AT 9:00 A.M. ON THE **25th** DAY OF **SEPTEMBER 2024**, AT THE PINAL COUNTY ADMINISTRATIVE COMPLEX, EMERGENCY OPERATIONS CENTER (EOC), 301 E 11TH ST, FLORENCE, ARIZONA, TO CONSIDER AN APPLICATION FOR **MAJOR COMPREHENSIVE PLAN AMENDMENT** TO THE PINAL COUNTY COMPREHENSIVE PLAN.

PZ-PA-012-24 – PUBLIC HEARING/ACTION: Judd Ventures LLC, owner, Rose Law Group & Iplan Consulting Corp., agent, requesting a Major Comprehensive Plan Amendment to the Pinal County Comprehensive Plan to re-designate ±96 acres of land from Moderate Low Density Residential (1-3.5 du/ac) to ±80 Acres of Employment and ±16 Acres of Mixed Use-Residential Focused, to develop a data center, BESS and mixed use residential developments, situated in section 29, T03S, R09E of the Gila and Salt River Baseline and Meridian (legal on file) tax parcels: 210-44-002 and 210-44-004 located on the southeast corner of N Felix Rd and E Judd Rd in the Arizona Farms region of San Tan Valley, Pinal County, AZ.

ALL PERSONS INTERESTED IN THIS MATTER MAY APPEAR AND SPEAK AT THE PUBLIC HEARING AT THE DATE, TIME, AND PLACE DESIGNATED ABOVE.

DOCUMENTS PERTAINING TO THIS CASE CAN BE FOUND ON THE NOTICE OF HEARING PAGE FOR THE P&Z COMMISSION AT:
https://www.pinal.gov/236/Notice-of-Hearings

DATED THIS **26th** DAY OF **AUGUST 2024**, by Pinal County Community Development Department.

TO QUALIFY FOR FURTHER NOTIFICATION IN THIS LAND USE MATTER YOU MUST FILE WITH THE PLANNING DEPARTMENT A WRITTEN STATEMENT OF SUPPORT OR OPPOSITION TO THE SUBJECT APPLICATION. YOUR STATEMENT **MUST** CONTAIN THE FOLLOWING INFORMATION:

1) Planning Case Number (see above)
2) Your name, address, telephone number and property tax parcel number **(Print or type)**
3) A brief statement of reasons for supporting or opposing the request
4) Whether or not you wish to appear and be heard at the hearing

WRITTEN STATEMENTS MUST BE FILED WITH:
PINAL COUNTY COMMUNITY DEVELOPMENT DEPARTMENT
PO BOX 749 (85 N. FLORENCE STREET)
FLORENCE, AZ 85132

Contact for this matter: Patrick Roberts, Senior Planner
E-mail address: Patrick.Roberts@pinal.gov
Phone # (520) 866-6409

[*Anything below this line is not for publication*.]

PUBLISHED ONCE:
Pinal Central Dispatch
Arizona Republic

Leo Lew
County Manager

PINAL COUNTY
WIDE OPEN OPPORTUNITY

APPLICATION FOR A COMPREHENSIVE PLAN AMENDMENT IN AN UNINCORPORATED AREA OF PINAL COUNTY, ARIZONA
(All Applications Must Be Typed or Written in Ink)

Comprehensive Plan Amendment unincorporated & Property Information:
(Feel free to include answers and to these questions in a Supplementary Narrative, when doing so write see narrative on the space provided)

1. The legal description of the property: See attached legal description

2. Parcel Number(s): 210-44-002 & 210-44-004 Total Acreage: 96

3. Current Land Use Designation: MLDR

4. Requested Land Use Designation: Employment (80 acres) & Mixed Use (16 acres)

5. Date of Concept Review: waived by B. Billinglsy Concept Review Number: waived by B. Billinglsy

6. Why is this Comprehensive Plan Amendment being requested? (You must provide a summary of the anticipated development on this page, if not provided, the application cannot be processed.):
In preparation for a data call center (or similar) use on the southern 80 acres and a mixed use residential use on the northern 16 acres.

7. Discuss any recent changes in the area that would support your application.
Continued development growth from the west has made this area attractive for more intense types of development. Infrastructure improvements in the area support the growth pattern into this area.

8. Explain why the proposed amendment is needed and necessary at this time.
THe existing MLDR is no longer the highest and best use potential for this property and in order for the site to develop as intended, a CPA is needed.

INV#: AMT: DATE: CASE: Xref:

COMMUNITY DEVELOPMENT
Planning Division

85 N. Florence, St, PO Box 2973, Florence, AZ 85132 T 520-866-6442 FREE 888-431-1311 F 520-866-6530
www.pinalcountyaz.gov

PINAL COUNTY COMPREHENSIVE PLAN AMENDMENT APPLICATION

IN ADDITION TO THIS APPLICATION, YOU WILL NEED TO SUBMIT:

- ☐ A. **Certified Boundary Survey**, including legal descriptions of the proposed designations
- ☐ B. Location map which identifies the property and its relationship to Pinal Countyenvirons.
- ☐ C. Map showing the topography of the property.
- ☐ D. Site map which specifically identifies the property including parcels under separate ownership.
- ☐ E. Property owner(s) authorization for the Comprehensive Plan Amendment.
- ☐ F. Other information as may be determined necessary by the Planning staff or other information the applicant feels is pertinent to this request.
- ☐ G. Non-refundable filing fee as shown on the cover page.
- ☐ H. Narrative in PDF format.
- ☐ I. Neighborhood meeting report

Your application must be submitted digitally via the online submittal portal site at https://citizenaccess.pinalcountyaz.gov/CitizenAccess/Default.aspx

Please call or email the Planning Division for more information.

I certify the information included in this application is accurate, to the best of my knowledge. I have read the application and I have included the information, as requested. I understand if the information submitted is incomplete, this application cannot be processed.

Judd Ventures LLC	10 Prag Blvd. #203 Monroe, NY 10950	
Name of Landowner (Applicant)	Address	Phone Number

Signature of Landowner (Applicant) — E-Mail Address

Iplan Consulting Corp.	3317 S. Higley Rd. Gilbert, AZ 85297	480=227-9850
Name of Agent	Address	Phone Number

Signature of Agent — greg@iplanconsulting.com (E-Mail Address)

The Agent has the authority to act on behalf of the landowner. The Agent will be the contact person for Planning staff and must be present at all hearings. Please use the attached Agency Authorization form, if applicable

AGENCY AUTHORIZATION

(To be completed by landowners of subject property when landowners do not represent themselves. Instructions for completing required information are in bold and brackets below lines. If applicant is a company, corporation, partnership, joint venture, trustee, etc., please use the corporate signature block and have the notary fill in the notarization section for corporations not individuals and cannot be submitted digitally)

TO: Pinal County Planning & Development Services
P.O. Box 2973
Florence, AZ 85132

Judd Ventures LLC (NY)
[Insert Name -- If a Corporation, Partnership or Association, Include State of Incorporation]

hereinafter referred to as "Owner," is/are the owner(s) of 96 acres located at the southeast corner of Felix and Judd, and further identified
[Insert Address of Property]

as assessor parcel number 210-44-002 & 210-44-004 and legally described as follows:
[Insert Parcel Number]

[Legal Description is attached hereto as Exhibit A]

Said property is hereinafter referred to as the "Property."

Owner hereby appoints Iplan Consulting Corporation
[Insert Agent's Name. If the Agent Is a Company, Insert Company Name Only]

hereinafter referred to as "Agent," to act on Owner's behalf in relation to the Property in obtaining approvals from Pinal County for any necessary amendment to Pinal County's Comprehensive Plan; zone changes; planned area development overlay districts; platting of the subject property; special use permit or industrial use permit; and to file applications and make the necessary submittals for such approvals.

Owner consents and agrees to be bound by all stipulations agreed to by this Agent in connection with any of above-referenced processes.

Corporate PROPERTY OWNER signature block and acknowledgment the appropriate corporate officer or trustee signs this signature block NOT the block on the previous page.

Judd venture LLC - moses werzberger
[Insert Company or Trustee's Name]

By: _____
[Signature of Authorized Officer or Trustee]

Its: manager / owner
[Insert Title]

Dated: 5/30/24

STATE OF New York)
) ss.
COUNTY OF Rockland)

The foregoing instrument was acknowledged before me, this 30th day of May, 2024, by Moses Werzberger, Manager of
[Insert Signor's Name] *[Insert Title]*
Judd Ventures LLC, an Arizona LLC
[Insert Name of Company or Trust] *[Insert State of Incorporation, if applicable]*

and who being authorized to do so, executed the foregoing instrument on behalf of said entity for the purposes stated therein.

_____
Notary Public

My commission expires: _____

KASSIDI WALLIS
NOTARY PUBLIC, STATE OF NEW YORK
NO. 01WA6441957
QUALIFIED IN ROCKLAND COUNTY
MY COMMISSION EXPIRES OCTOBER 3, 2026

_____
Printed Name of Notary

_____
Signature of Notary

Sunhill

Case: TBD

Major Comprehensive Plan Amendment Project Narrative

Submitted to:
Pinal County
Planning Department
31 N. Pinal Street – Building F
Florence, AZ 85132

Submitted on Behalf of:
Judd Ventures, LLC
10 Prag Blvd., Suite 203
Monroe, NY 10950

Prepared by:
IPLAN CONSULTING
3317 S. Higley Road, Suite 114-622
Gilbert, AZ 85297

JUNE 2024

Purpose of Request:

Judd Ventures, LLC is requesting to amend the Comprehensive Plan land use classification for an approximate 96.8 acre property which is located on the southeast corner of Judd Road and Felix Road in the San Tan Valley area of the County. The property APNs are 210-44-002 and 210-44-004.

The subject property is currently vacant and has a Comprehensive Plan land use classification of Medium Low Density Residential (MLDR) with underlying GR zoning. Our request is to change the Comprehensive Plan land use classification to Employment (80 acres) and Mixed Use (16 acres) which will support the future rezoning request for the property.

Site Aerial Map



Location and Accessibility:

The subject site is located along Judd Road which would provide the primary access point for the property. Judd is listed as a Primary Arterial Roadway by the County and is planned for a 140-foot total right-of-way with two lanes of travel on each side and a center turn lane. The site also has frontage along Felix Road which is unimproved currently but would provide additional access to the southern portions of the project. Felix Road is also an arterial level road with a future 110-foot right-of-way.

RELATIONSHIP TO SURROUNDING PROPERTIES:
The property is in agricultural use currently which will not change until the property is ready for development. As mentioned, the site fronts onto Judd Road to the north with the existing Magma Ranch subdivision beyond. Existing agricultural lands bound the site to the east and south. Felix Road comprises the western boundary with additional agricultural land beyond.

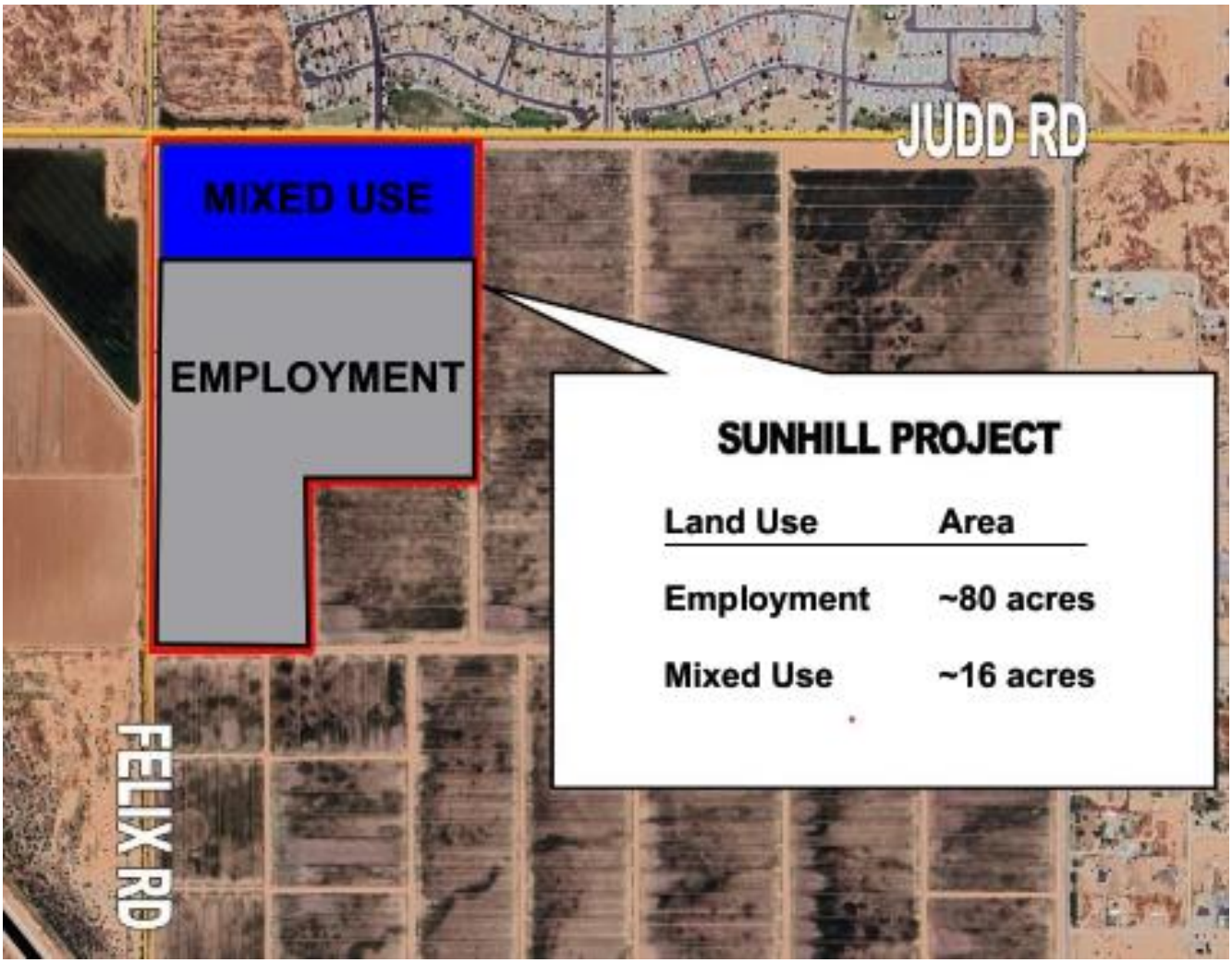
ADJACENT LAND USE TABLE

Direction	Comprehensive Plan Land Use Classification	Existing Zoning	Existing Use
On-Site	Employment & Mixed Use (proposed)	GR	Vacant/Agriculture
North	MLDR	CR-2 & CR-3	Residential
South	MLDR	GR	Vacant/Agriculture
East	MLDR	GR	Vacant/Agriculture
West	MLDR	GR	Vacant/Agriculture

PROJECT DESCRIPTION:
The development intent of the proposal is to allow for the majority of the property (~80 acres) to be developed under employment uses. These could include offices, data centers, warehousing, etc. but could also include more intense uses such as manufacturing, light industrial uses. One specific use that may be viable here is power storage due to the proximity to the recently constructed SRP power station. It is likely that multiple uses will occupy the southern portion of the project.

The northern ~16 acres of the property is intended to be a mix of uses including commercial, retail, professional offices, and potentially multi-family residential, all of which are supported under the Mixed-Use Comprehensive Plan category. The Mixed-Use designation was proposed for the northern area of the property to both help buffer the existing residential neighborhood to the north from the potentially more intensive Employment uses of the proposal, but also to provide a much more convenient location for many of the businesses that serve the residential community. At ~16 acres, we expect multiple uses to occupy the frontage and will be designed to be complimentary and compatible with the area.

LAND USE PLAN



APPLICATION FINDINGS:

The County application for a Comprehensive Plan Amendment includes three key questions/statements that need to be answered to justify the rationale for the proposal. These questions/statements and applicant provided responses should provide the County Staff, PZ Commissioners, and Supervisors with the justification for supporting or denying the requests. Below are our responses to those questions.

1. Why is the Comprehensive Plan Amendment being requested?

Response: The property is located in an opportunistic area for more intense development which needs both employment and commercial services which this amendment proposes.

2. Discuss any recent changes in the area that would support your application.

Response: The continued growth of development in the area warrants a re-examination of appropriate land uses in the area and more specifically the recent construction of a large power sub-station close to this site has opened up the opportunity to consider larger, more intense employment and commercial uses that would better serve the community than another residential subdivision.

3. Explain why the proposed amendment is needed and necessary at this time.

Response: The recent development of the power sub-station has produced a window of opportunity for employment and commercial development at this location which may diminish over time as other similar uses develop in the region. By locating these ypes of uses here now makes the most sense from a land planning perspective.

COMPREHENSIVE PLAN CONFORMANCE:

The property's current Comprehensive Plan land use classification of MLDR is consistent with the properties in the area which is expected given the overall rural/residential nature of the region which has not seen much urban or suburban growth to date. That is about to change however as there are multiple master plan communities underway in the area along with the recently developed power sub-station which affords the re-consideration of the area land uses.

Due to the nature of the request, the proposed amendment will be in conformance with both the goals and policies of the County Comprehensive Plan as well as the RSRSM – Access Management Manual. In fact, the project resulting from this amendment will further several of the goals and policies of the Comprehensive Plan as identified below:

- Growth Area: Although just outside of the San Tan Valley Area Plan, this region has been a targeted growth corridor for a long time in the County and projects like this for a more orderly and quality level of growth avoiding the pitfalls associated with "leap-frog" development.

- Land Use: The County Comprehensive Plan identifies the need for a more balanced inventory of land uses and this proposal will add more employment and commercial inventory to the this part of the County which is currently lacking it.

Furthermore, as is required by the County, we propose that the project meets the required Findings of Fact as described below:

<u>Findings of Fact:</u>

1. The current Comprehensive Plan inadequately provides appropriate optional sites for the use proposed in the amendment.

There are few, if any existing Employment designated properties in the proximate area to serve the residents in the area.

2. That the amendment constitutes an overall improvement to the Comprehensive Plan and is not solely for the good or benefit of a particular landowner or owners at a particular point in time.

The County Comprehensive Plan identifies the long-term need for a balance of land uses and the opportunity to add a significant area of Employment and Commercial land use to this area will certainly be an improvement to the Comprehensive Plan as well as the to the current and future residents in the area.

3. The amendment is consistent with the Comprehensive Plan.

The proposed amendment embodies the goals and intent of the Comprehensive Plan by incorporating important land uses that offer employment and retail opportunities for the region which benefit all of the local and regional County residents which is consistent with the goals and policies set forth in the County's Comprehensive Plan.

4. The amendment will promote the growth of the County in an orderly manner and protect the public health, safety, and welfare of the community.

In addition to providing new employment and commercial use to County residents, the proposed location of the project is appropriate as it is along existing roadways networks, and specifically utilities. This amendment will also shorten vehicular trips for area residents in need of retail shopping opportunities.

CONCLUSION:

A Major Amendment to the Comprehensive Plan is always a request that should be heavily considered. On the surface, the requested land uses might seem out of place in a sea of MLDR, but that is the point of this amendment, to introduce employment and commercial land uses that can actually provide opportunities and services for that sea of residential development. The property is large enough to be able to provide significant buffering to adequate transition the more intense uses envisioned for the project from both the existing Magma Ranch development to the north, but also the future possible residential developments to the east, south, and west. The Comprehensive Plan needs to be flexible to allow opportunities for change where it makes sense and the area growth patterns along the nearby power sub-station provide the opportunity for this property to be considered for the proposed land use change.

ALTA/NSPS LAND TITLE SURVEY

TWO PARCELS OF LAND, BEING SITUATED WITHIN THE NORTH HALF OF SECTION 20, AND THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 3 SOUTH, RANGE 9 EAST, OF THE GILA AND SALT RIVER MERIDIAN, PINAL COUNTY, ARIZONA

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREON BELOW IS SITUATED IN THE COUNTY OF PINAL, STATE OF ARIZONA, AND IS

DESCRIBED AS FOLLOWS: PARCEL NO. 1:

THE NORTH HALF OF SECTION 20, TOWNSHIP 3 SOUTH, RANGE 9 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA;

EXCEPT ALL OIL, GAS AND MINERALS AS RESERVED IN DEED RECORDED AS BOOK 81 OF DEEDS, PAGE 452, AND EXCEPT

THE FOLLOWING DESCRIBED PARCELS:

PARCEL A:

BEGINNING AT THE SOUTHEAST CORNER OF SECTION 20;

THENCE SOUTH 89 DEGREES 56 MINUTES 50 SECONDS WEST ALONG THE EAST LINE OF SECTION 20, A DISTANCE OF 2,663.63 FEET TO THE TRUE POINT OF BEGINNING;

THENCE NORTH 89 DEGREES 41 MINUTES 25 SECONDS WEST, A DISTANCE OF 801.73 FEET; THENCE SOUTH 00 DEGREES 03 MINUTES 43 SECONDS WEST, A DISTANCE OF 2,549.36 FEET; THENCE SOUTH 89 DEGREES 44 MINUTES 05 SECONDS EAST, A DISTANCE OF 340.30 FEET;

THENCE SOUTH 00 DEGREES 03 MINUTES 50 SECONDS WEST ALONG THE CENTER LINE OF ACTON CREEK IRRIGATION DITCH, A DISTANCE OF 295.69 FEET;

THENCE SOUTH 87 DEGREES 03 MINUTES 34 SECONDS EAST ALONG THE CENTER LINE OF SAID CONCRETE IRRIGATION DITCH, A DISTANCE OF 448.96 FEET;

THENCE SOUTH 00 DEGREES 34 MINUTES 15 SECONDS WEST, A DISTANCE OF 17.22 FEET; THENCE SOUTH 89 DEGREES 29 MINUTES 25 SECONDS EAST, A DISTANCE OF 466.67 FEET;

THENCE SOUTH 00 DEGREES 07 MINUTES 34 SECONDS WEST, A DISTANCE OF 2,220.75 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL B:

THAT AREA PATENTED TO MAGMA ARIZONA RAILROAD COMPANY IN BOOK X OF DEEDS, PAGE 445, DESCRIBED AS FOLLOWS:

BEGINNING AT ENGINEER'S STATION 168+05.95, A POINT ON THE WEST LINE OF SECTION 20, TOWNSHIP 3 SOUTH, RANGE 9 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA FROM WHENCE THE SOUTHWEST CORNER OF SECTION 20, TOWNSHIP 3 SOUTH, RANGE 9 EAST BEARS SOUTH 00 DEGREES 26 MINUTES 47 SECONDS WEST, 1634.75 FEET, MORE OR LESS;

THENCE NORTH 1960.6 FEET;

THENCE NORTH 52 DEGREES 46 MINUTES 30 SECONDS EAST, 643.82 FEET;

THENCE SOUTH 89 DEGREES 50 MINUTES EAST, 329.76 FEET;

THENCE SOUTH 52 DEGREES 46 MINUTES 30 SECONDS WEST, 1,055.74 FEET; THENCE NORTH 1960.42 FEET TO THE POINT OF BEGINNING.

PARCEL C:

THAT PORTION AS CONVEYED TO THE UNITED STATES OF AMERICA IN WARRANTY DEED RECORDED AS DOCKET 3986, PAGE 27, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION 29;

THENCE FROM SAID POINT OF BEGINNING AND ALONG THE NORTH BOUNDARY OF SAID SECTION 20, SOUTH 89 DEGREES 51 MINUTES 31 SECONDS EAST, A DISTANCE OF 452.65 FEET;

THENCE LEAVING SAID NORTH BOUNDARY, SOUTH 52 DEGREES 36 MINUTES 46 SECONDS WEST, 1866.36 FEET TO A POINT IN THE WEST BOUNDARY OF SAID SECTION 29;

THENCE ALONG SAID WEST BOUNDARY, NORTH 00 DEGREES 19 MINUTES 58 SECONDS WEST, 650.00 FEET TO SAID POINT OF BEGINNING.

PARCEL D:

BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION 20;

THENCE SOUTH 89 DEGREES 56 MINUTES 14 SECONDS EAST ALONG THE EAST LINE OF SAID SECTION 29 A DISTANCE OF 376.49 FEET;

THENCE NORTH 39 DEGREES 24 MINUTE 56 SECONDS WEST A DISTANCE OF 464.67 FEET, THENCE NORTH 00 DEGREES 34 MINUTES 15 SECONDS EAST A DISTANCE OF 17.22 FEET, THENCE NORTH 67 DEGREES 48 MINUTES 30 SECONDS WEST, A DISTANCE OF 64.94 FEET, THENCE SOUTH 00 DEGREES 03 MINUTES 50 SECONDS EAST, A DISTANCE OF 267.69 FEET; THENCE NORTH 89 DEGREES 41 MINUTES 05 SECONDS WEST, A DISTANCE OF 340.30 FEET;

THENCE NORTH 00 DEGREES 03 MINUTES 43 SECONDS WEST, A DISTANCE OF 2,549.36 FEET; THENCE NORTH 89 DEGREES 41 MINUTES 25 SECONDS WEST, A DISTANCE OF 801.73 FEET TO A POINT ON THE NORTH LINE OF SAID SECTION 20;

THENCE SOUTH 89 DEGREES 39 MINUTES 41 SECONDS EAST ALONG THE NORTH LINE OF SECTION 20, A DISTANCE OF 930.06 FEET TO THE POINT OF BEGINNING.

EXCEPT ALL OIL, GAS AND MINERALS AS RESERVED IN DEED RECORDED AS BOOK 81 OF DEEDS, PAGE 452. PARCEL NO. 2:

THAT PORTION OF THE NORTHEAST QUARTER OF SECTION 29, TOWNSHIP 3 SOUTH, RANGE 9 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION 29;

THENCE SOUTH 89 DEGREES 07 MINUTES 14 SECONDS EAST ALONG THE EAST LINE OF SAID SECTION 29, A DISTANCE OF 376.49 FEET;

THENCE NORTH 39 DEGREES 24 MINUTES 56 SECONDS WEST, A DISTANCE OF 464.67 FEET; THENCE NORTH 00 DEGREES 34 MINUTES 15 SECONDS EAST, A DISTANCE OF 17.22 FEET; THENCE NORTH 67 DEGREES 48 MINUTES 30 SECONDS WEST, A DISTANCE OF 64.94 FEET; THENCE SOUTH 00 DEGREES 03 MINUTES 50 SECONDS EAST, A DISTANCE OF 267.69 FEET; THENCE NORTH 89 DEGREES 41 MINUTES 05 SECONDS WEST, A DISTANCE OF 340.30 FEET;

THENCE NORTH 00 DEGREES 03 MINUTES 43 SECONDS WEST, A DISTANCE OF 67.27 FEET TO A POINT ON THE NORTH LINE OF SAID SECTION 20;

THENCE SOUTH 89 DEGREES 39 MINUTES 41 SECONDS EAST ALONG THE NORTH LINE OF SECTION 20, A DISTANCE OF 930.06 FEET TO THE POINT OF BEGINNING.

EXCEPT ALL OIL, GAS AND MINERALS AS RESERVED IN DEED RECORDED AS BOOK 81 OF DEEDS, PAGE 452. PARCEL NO. 3:

THAT PORTION OF THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 3 SOUTH, RANGE 9 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE WEST QUARTER CORNER OF SAID SECTION 29;

THENCE NORTH (BASIS OF BEARING, ALONG THE WESTERLY LINE OF SAID SECTION 29) A DISTANCE OF 1321.84 FEET TO A POINT FROM WHICH THE NORTHWEST CORNER OF SAID SECTION 29 BEARS NORTH, 1977.11 FEET DISTANT THEREFROM;

THENCE SOUTH 89 DEGREES 39 MINUTES 35 SECONDS EAST, 80.50 FEET PARALLEL WITH THE SOUTHERLY LINE OF THE NORTHWEST QUARTER OF SAID SECTION 29, A DISTANCE OF 952.77 FEET;

THENCE NORTH 00 DEGREES 09 MINUTES 06 SECONDS WEST, 317.32 FEET TO A POINT ON THE NORTHERLY LINE OF SAID SECTION 29 AND FROM WHICH POINT THE NORTHWEST CORNER OF SAID SECTION 29 BEARS NORTH 89 DEGREES 39 MINUTES 56 SECONDS WEST, 458.75 FEET DISTANT THEREFROM;

THENCE SOUTH 89 DEGREES 39 MINUTES 56 SECONDS EAST, ALONG THE SAID NORTHERLY LINE OF SECTION 29, A DISTANCE OF 966.00 FEET, TO A POINT FROM WHICH THE NORTH QUARTER CORNER OF SAID SECTION 29 BEARS SOUTH 89 DEGREES 39 MINUTES 56 SECONDS EAST, 759.00 FEET DISTANT THEREFROM;

THENCE SOUTH 0 DEGREES 20 MINUTES 05 SECONDS WEST, 1776.93 FEET;

THENCE NORTH 89 DEGREES 39 MINUTES 35 SECONDS WEST, BEING PARALLEL WITH AND 660.23 FEET NORTHERLY OF THE SOUTHERLY LINE OF SAID NORTHWEST QUARTER OF SECTION 29, A DISTANCE OF 946.30 FEET;

THENCE SOUTH 0 DEGREES 09 MINUTES 06 SECONDS EAST, 660.23 FEET TO A POINT ON THE SOUTHERLY LINE OF THE SAID NORTHWEST QUARTER OF SECTION 29 AND BEING WHICH POINT THE CENTER QUARTER CORNER OF SAID SECTION 29 BEARS SOUTH 89 DEGREES 39 MINUTES 35 SECONDS EAST, 1645.99 FEET DISTANT THEREFROM;

THENCE NORTH 89 DEGREES 39 MINUTES 35 SECONDS WEST, ALONG THE SOUTHERLY LINE OF THE SAID NORTHWEST QUARTER OF SECTION 29, A DISTANCE OF 959.74 FEET TO THE POINT OF BEGINNING.

EXCEPT ALL OIL, GAS AND MINERALS AS RESERVED IN DEED RECORDED AS BOOK 81 OF DEEDS, PAGE 452. PARCEL NO. 4:

THAT PORTION OF THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 3 SOUTH, RANGE 9 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 29;

THENCE SOUTH (BASIS OF BEARING, 89 DEGREES 39 MINUTES 56 SECONDS EAST ALONG THE NORTHERLY LINE OF SAID SECTION 29, A DISTANCE OF 959.74 FEET TO A POINT FROM WHICH THE NORTH QUARTER CORNER OF SAID SECTION 29 BEARS SOUTH 89 DEGREES 39 MINUTES 56 SECONDS EAST 1,645.99 FEET DISTANT THEREFROM;

THENCE SOUTH 00 DEGREES 09 MINUTES 06 SECONDS EAST, 1,917.22 FEET;

THENCE NORTH 89 DEGREES 39 MINUTES 35 SECONDS WEST, BEING PARALLEL WITH AND 1,321.84 FEET NORTHERLY OF THE SOUTHERLY LINE OF THE NORTHWEST QUARTER OF SAID SECTION 29, A DISTANCE OF 952.77 FEET TO A POINT ON THE WESTERLY LINE OF THE NORTHWEST QUARTER OF SAID SECTION 29;

THENCE NORTH (BASIS OF BEARING) ALONG THE WESTERLY LINE OF SAID SECTION 29, A DISTANCE OF 1,317.11 FEET TO THE POINT OF BEGINNING.

EXCEPT ALL OIL, GAS AND MINERALS AS RESERVED IN DEED RECORDED AS BOOK 81 OF DEEDS, PAGE 452.

BASIS OF BEARING

S89°52'05"E ALONG THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 20, TOWNSHIP 3 SOUTH, RANGE 9 EAST OF THE GILA AND SALT RIVER MERIDIAN, PINAL COUNTY, ARIZONA.

OWNER INFORMATION

GUARDIAN ANGEL HOLDINGS LLC,
AN ARIZONA LIMITED LIABILITY COMPANY

REFERENCE DOCUMENTS

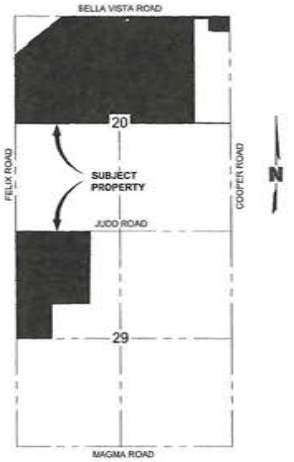
1. DEED #2012-112005, PCR
2. DOC. #2021-052790, PCR
4. DOC. #2021-076860, PCR

SURVEYOR'S CERTIFICATION:

TO: FIRST AMERICAN TITLE INSURANCE COMPANY,

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 3, 4, 6a, 8, 13, AND 16 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON ????????, 2021.

GARY L GREEN, L.S. 54334



T3S, R9E

VICINITY MAP

NOT TO SCALE

SURVEYOR'S NOTES:

1. THIS SURVEY IS BASED UPON A COMMITMENT FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY, ORDER NO. NCS-1089646-PHX1, EFFECTIVE DATE: SEPTEMBER 16, 2021 AT 8:00AM.
2. ALL BEARINGS AND DISTANCES REPORTED ON THIS SURVEY ARE MEASURED TO THE MONUMENTS FOUND OR SET AS SHOWN, UNLESS OTHERWISE NOTED. (TABLE 'A' ITEM No. 1)
3. THE ADDRESSES FOR THE SUBJECT PROPERTY AND DEPICTED ON THE MAP HEREON WERE OBTAINED AT THE TIME OF THE SURVEY AND VERIFIED WITH THE ASSESSOR'S PARCEL DETAIL WEB PAGE FOR PARCEL NUMBER _____, _____ COUNTY, ARIZONA. (TABLE 'A' ITEM NO. 2)
7. FLOOD ZONE CLASSIFICATION: ZONE X; AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OF WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD ACCORDING TO FLOOD INSURANCE RATE MAPS FOR MARICOPA COUNTY, ARIZONA, PANEL 2733M OF 4425, MAP NUMBER 04013C2733M, REVISED NOVEMBER 4, 2015. (TABLE 'A' ITEM NO. 3)
8. GROSS LAND AREA OF THE PARCEL'S SHOWN ARE: PARCEL IN SECTION 20 = 11,342,585 ± SQ. FT. PARCEL IN SECTION 29 = 4,173,399 ± SQ. FT. (TABLE 'A' ITEM NO. 4). — 260.4 Acres - 95.8
9. THE VERTICAL RELIEF, DEPICTED HEREON, WAS OBTAINED BY FIELD OBSERVATION, UTILIZING THE PUBLISHED BENCHMARK(S) SPECIFIED HEREON (TABLE 'A' ITEM NO. 5)
10. THE SUBJECT PROPERTY IS HAS A DESIGNATED USE CODE 1130, COMMERCIAL RETAIL STRIP CENTER, ACCORDING TO THE INFORMATION OBTAINED FROM THE ASSESSOR'S PARCEL DETAIL WEB PAGE FOR PARCEL NUMBER 512-04-9040, PINAL COUNTY, ARIZONA. (TABLE 'A' ITEM NO. 6)
11. THE EXTERIOR DIMENSIONS OF ALL BUILDINGS, TAKEN AT GROUND LEVEL, ARE DEPICTED HEREON. THE SQUARE FOOTAGE OF: (1) EXTERIOR FOOTPRINT OF ALL BUILDINGS AT GROUND LEVEL, (2) OTHER AREAS AS SPECIFIED BY THE CLIENT.
12. ALL FEATURES DEPICTED ON THE MAP HEREON ARE CURRENT AS OF THE DATE THE FIELD WORK WAS COLLECTED. (TABLE 'A' ITEM NO. 8)
13. BASED UPON FIELD OBSERVATION, THERE ARE "0 STANDARD AND 4 HANDICAPPED PARKING SPACES (154 SPACES TOTAL) WITHIN THE BOUNDS OF _____. (TABLE A' ITEM NO. 9)
14. THERE WERE NO OBSERVED PARTY WALLS WITH RESPECT TO THE ADJOINING PROPERTIES. NO BUILDING WERE FOUND ALONG ANY OF THE PROPERTY LINES. (TABLE 'A' ITEM NO. 10)
15. THE LOCATION OF UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES ONLY. (TABLE 'A' ITEM NO. 11)
16. AS SPECIFIED BY THE CLIENT, GOVERNMENTAL AGENCY SURVEY-RELATED REQUIREMENTS (E.G., HUD SURVEYS, SURVEYS FOR LEASES ON BUREAU OF LAND MANAGEMENT MANAGED LANDS). THE RELEVANT SURVEY REQUIREMENTS ARE TO BE PROVIDED BY THE CLIENT OR CLIENT'S DESIGNATED REPRESENTATIVE. (TABLE 'A' ITEM NO. 12)
17. THE ADJOINING OWNERS HAVE BEEN IDENTIFIED UTILIZING THE INFORMATION PUBLISHED ON THE COUNTY ASSESSOR'S WEB SITE AND DEPICTED HEREON. (TABLE 'A' ITEM NO. 13)
18. AS SPECIFIED BY THE CLIENT, DISTANCE TO THE NEAREST INTERSECTING STREET. (TABLE 'A' ITEM NO 14)
19. THE RECTIFIED ORTHOPHOTOGRAPHY, PHOTOGRAMMETRIC MAPPING USED WAS PROVIDED BY _____ USING TEMPORARY BENCHMARKS, SET AS AERIAL PANELS, WITH THE ELEVATION ESTABLISHED USING THE BENCHMARK INFORMATION STATED HEREON. (TABLE 'A' ITEM NO 15)
20. NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WERE OBSERVED AT THE TIME OF THIS SURVEY (TABLE 'A' ITEM NO. 16)
21. PROPOSED CHANGES IN STREET RIGHT OF WAY LINES OR EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK. (TABLE 'A' ITEM NO. 17)
22. ALL PLOTTABLE EASEMENTS, ONSITE OR OFFSITE, ARE DEPICTED ON THE MAP HEREON. (TABLE 'A' ITEM NO. 18)

PRELIMINARY

ALTA ARIZONA
SURVEY + ENGINEERING + CONTOH
1800 W. RIO SALADO PKWY, SUITE 5
TEMPE, ARIZONA 85282
(480) 656-1517

ALTA/NSPS LAND TITLE SURVEY

TWO PARCELS OF LAND, BEING SITUATED WITHIN THE NORTH HALF OF SECTION 20, AND THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 3 SOUTH, RANGE 9 EAST, OF THE GILA AND SALT RIVER MERIDIAN, PINAL COUNTY, ARIZONA

PINAL COUNTY, ARIZONA

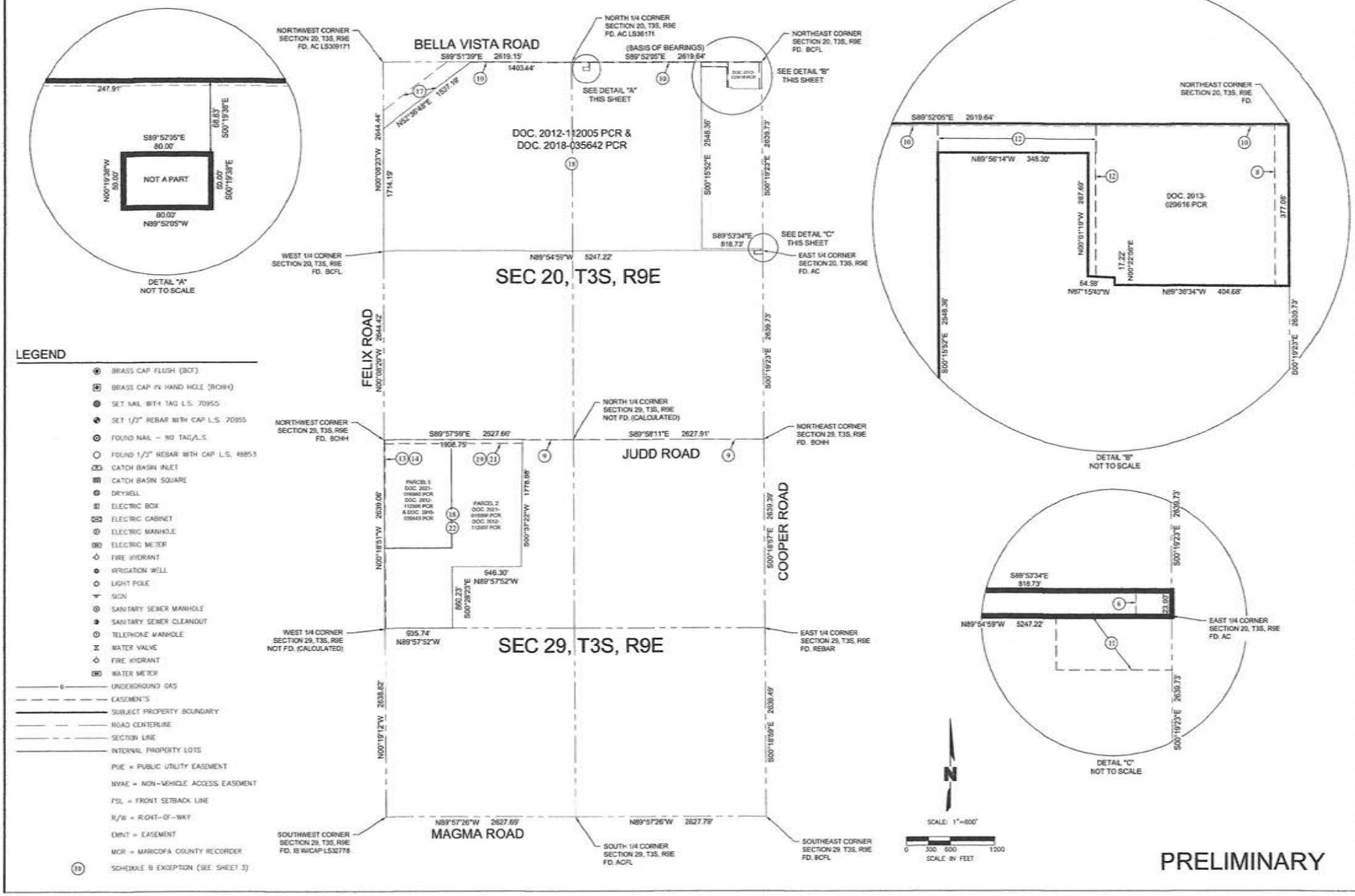
2021

drawn by:	CLG
checked by:	BG
approved by:	CLG
DAGC by	BG
project no:	210108
drawing no.:	251166 ALTA
date:	11/15/2021

SHEET 1 OF 3

ALTA/NSPS LAND TITLE SURVEY

TWO PARCELS OF LAND, BEING SITUATED WITHIN THE NORTH HALF OF SECTION 20, AND THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 3 SOUTH, RANGE 9 EAST, OF THE GILA AND SALT RIVER MERIDIAN, PINAL COUNTY, ARIZONA



LEGEND

- BRASS CAP FLUSH (BCF)
- BRASS CAP IN HAND HOLE (BCHH)
- SET NAIL WIT-1 TAG L.S. 70955
- SET 1/2" REBAR WITH CAP L.S. 70955
- FOUND NAIL – NO TAG/L.S.
- FOUND 1/2" REBAR WITH CAP L.S. 48853
- CATCH BASIN INLET
- CATCH BASIN SQUARE
- DRYWELL
- ELECTRIC BOX
- ELECTRIC CABINET
- ELECTRIC MANHOLE
- ELECTRIC METER
- FIRE HYDRANT
- IRRIGATION WELL
- LIGHT POLE
- SIGN
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- TELEPHONE MANHOLE
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- UNDERGROUND GAS
- EASEMENTS
- SUBJECT PROPERTY BOUNDARY
- ROAD CENTERLINE
- SECTION LINE
- INTERNAL PROPERTY LOTS
- PUE = PUBLIC UTILITY EASEMENT
- NVAE = NON-VEHICLE ACCESS EASEMENT
- FSL = FRONT SETBACK LINE
- R/W = RIGHT-OF-WAY
- EMNT = EASEMENT
- MCR = MARICOPA COUNTY RECORDER
- (10) SCHEDULE B EXCEPTION (SEE SHEET 3)

PRELIMINARY

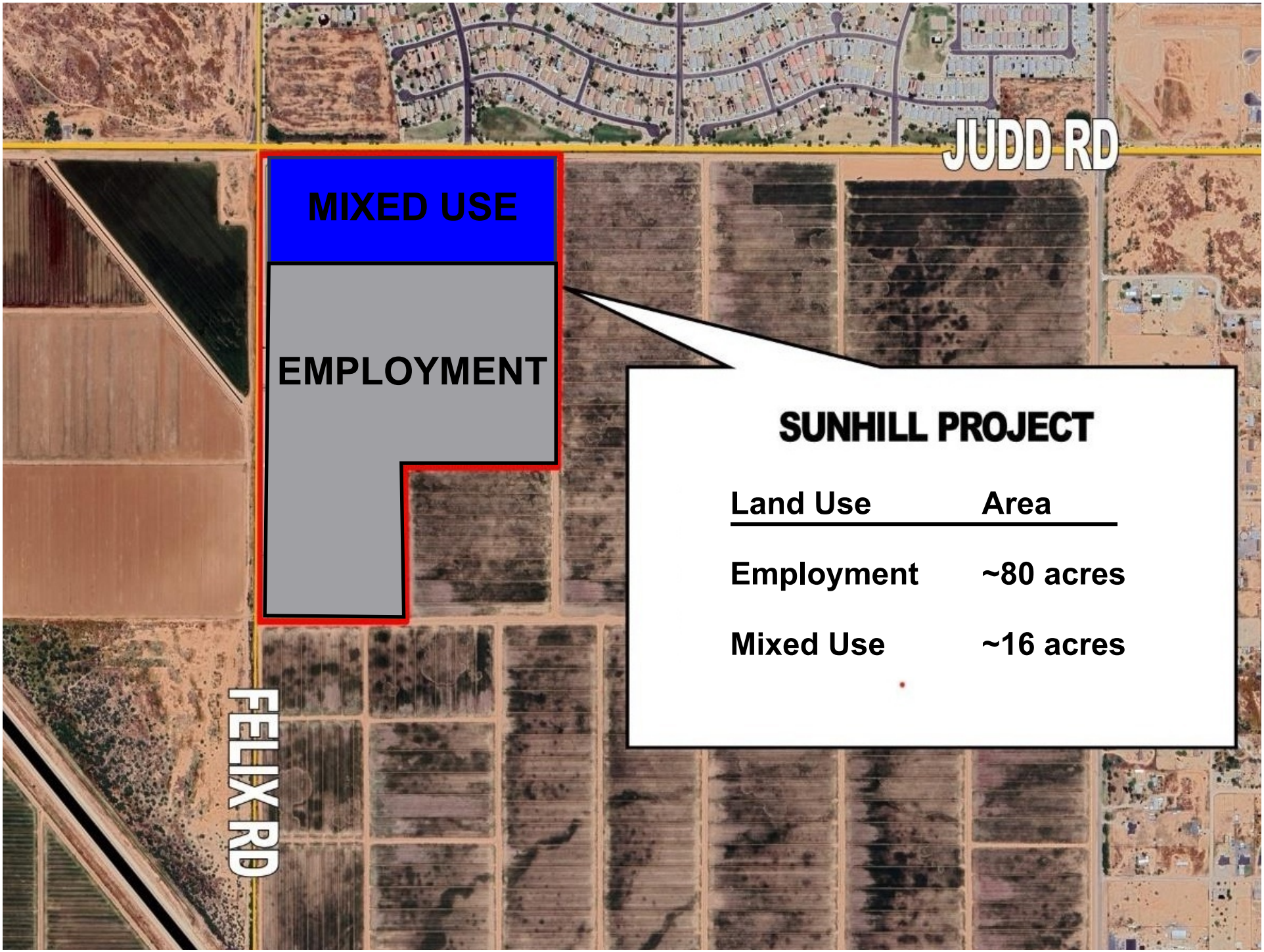
ALTA ARIZONA
SURVEY • ENGINEERING • ROSTEIN
1800 W. BROADWAY ROAD, SUITE 5
TEMPE, ARIZONA 85282
(480) 656-1517

ALTA/NSPS LAND TITLE SURVEY

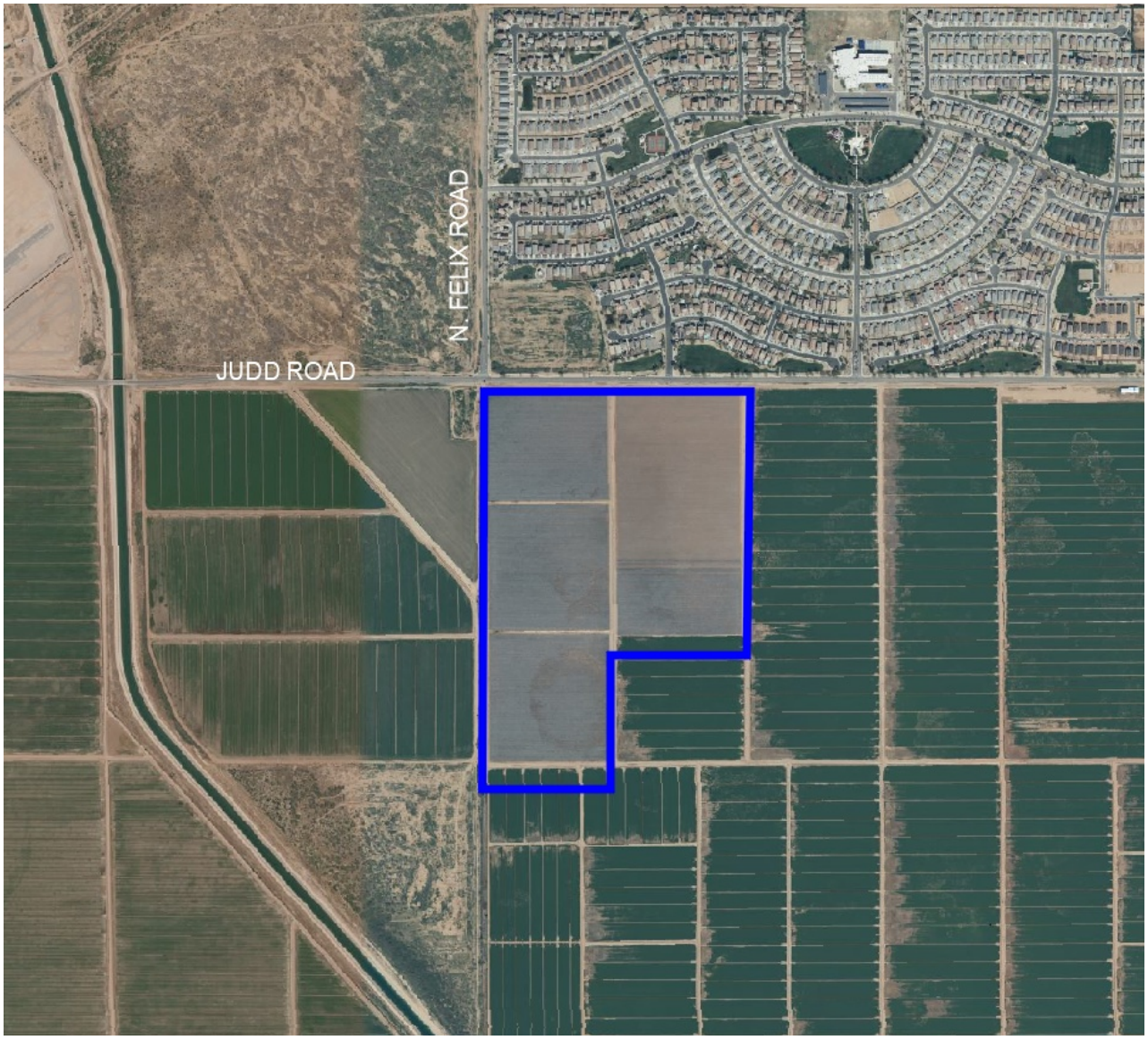
TWO PARCELS OF LAND, BEING SITUATED WITHIN THE NORTH HALF OF SECTION 20, AND THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 3 SOUTH, RANGE 9 EAST, OF THE GILA AND SALT RIVER MERIDIAN, PINAL COUNTY, ARIZONA

2021

drawn by:	
checked by:	
approved by:	
QA/QC by:	
project no.:	211156
drawing no.:	211156 ALTA
date:	11/11/2021


JUDD RD
MIXED USE
EMPLOYMENT
FELIX RD
SUNHILL PROJECT
Land Use
Area
Employment
~80 acres
Mixed Use
~16 acres

Project Site Aerial



ORDER NO. : 4711009313-PC

LEGAL DESCRIPTION EXHIBIT

PARCEL 1:

That portion of the Northwest quarter of Section 29, Township 3 South, Range 9 East of the Gila and Salt River Base and Meridian, Pinal County, Arizona, more particularly described as follows:

Beginning at the Northwest corner of said Section 29;

Thence South 89° 38' 50" East along the Northerly line of said Section 29, a distance of 928.75 feet to a point from which the North quarter corner of said Section 29 bears South 89° 38' 50" East, 1,699.00 feet distant therefrom;

Thence South 00° 09' 06" East, 1,517.22 feet;

Thence North 89° 38' 35" West, being parallel with and 1,121.84 feet Northerly of the Southerly line of the Northwest quarter of said Section 29, a distance of 932.77 feet to a point on the Westerly line of the Northwest quarter of said Section 29;

Thence North (assumed bearing) along the Westerly line of said Section 29, a distance of 1,517.11 feet to the point of beginning;

EXCEPT all oil, gas and minerals as reserved in Deed recorded in Book 81 of Deeds, Page 62.

PARCEL 2:

That portion of the Northwest quarter of Section 29, Township 3 South, Range 9 East of the Gila and Salt River Base and Meridian, Pinal County, Arizona, more particularly described as follows:

Beginning at the West quarter corner of said Section 29;

Thence North (assumed bearing), along the Westerly line of said Section 29, a distance of 1121.84 feet to a point from which the Northwest corner of said Section 29 bears North, 1517.11 feet distant therefrom;

Thence South 89° 38' 35" East, being parallel with the Southerly line of the Northwest quarter of said Section 29, a distance of 932.77 feet;

Thence North 0° 09' 06" West, 1517.22 feet to a point on the Northerly line of said Section 29 and from which point the Northwest corner of said Section bears North 89° 38' 50" West, 928.75 feet distant therefrom;

Thence South 89° 38' 50" East, along the said Northerly line of Section 29, a distance of 980.00 feet, to a point from which the North quarter corner of said Section 29 bears South 89° 38' 50" East, 719.00 feet distant therefrom;

Thence South 0° 56’ 02” West, 1778.93 feet;

Thence North 89° 38’ 35” West, being parallel with and 860.23 feet Northerly of the Southerly line of said Northwest quarter of Section 29, a distance of 946.30 feet;

Thence South 0° 09’ 06” East, 860.23 feet to a point on the Southerly line of the said Northwest quarter of Section 29 and from which point the center quarter corner of said Section 29 bears South 89° 38’ 35” East, 1692.00 feet distant therefrom;

Thence North 89° 38’ 35” West, along the Southerly line of the said Northwest quarter of Section 29, a distance of 935.74 feet to the point of beginning.

EXCEPT all oil, gas and minerals as reserved in Deed recorded in Book 81 of Deeds, Page 62.

Judd Ventures – Sunhill Project

Major Comprehensive Plan Amendment

Open House Meeting Summary

Cases #PZ-PA-012-24

Date:	August 15, 2024
Time:	5:30PM-6:30PM
Location:	Magma Ranch Elementary School 10980 E Desert Mountain Blvd. Florence, AZ 85132

Applicant Team:
Jennifer Hall, Sr. PM Rose Law Group
Patrick Hogan, Rose Law Group
Amber Knapp, Rose Law Group
Greg Davis, Iplan Consulting

The Applicant Team arrived at the meeting site at 5:00PM to set up the cafeteria with exhibit boards on easels. Neighbors began arriving at 5:15PM and were asked to sign into the meeting. The majority of the neighbors arrived around 5:30PM and the Applicant team provided an informal presentation that explained the proposed request, the Major Comprehensive Plan Amendment process and next steps.

17 neighbors signed into the meeting and sign in sheet is attached. Our team received 7 comment cards total that identified the need for Mixed Use and commercial in the area; but not the industrial uses.

The main concern expressed by neighbors was the placement of industrial uses so close to residential. They are concerned about safety issues, noises, and lighting issues.

The meeting adjourned at 6:30PM.

The Applicant Team has emailed all attendees and will continue to keep them updated on application status as we move through the process

Judd Ventures, LLC | Open House Meeting Sign-in Sheet

Located at Magma Ranch Elementary ***Thursday, August 15, 2024 – 5:30 to 6:30PM*** ***# PZ-PA-012-24***

Name	Address	Email	Phone	Y/N to receive project uPdates
Joe Gastelo	10874 E Wallflower		480 562 1876	Yes
Christine Perry	11624 E Marigold Ln		978-430-7610	Yes
Kim Vogel	11551 E Lupine Ln		480-313-3008	Yes
Flora Gonzalez	10361 N. Marigold Ln	Yzflo@Yahoo.com	(909)730-0444	No
STEVE			949.750-6478	Yes
Greg Davis	17769 Bronco Ct.		480 227 9850	—
ERICA SAYLOR	11201 E MAGMA		602 376 7727	Y
DAVE RICHARDSON	10611 E PRIMROSE CT		630-530-9364	Y
JEAN REMKES	10710 E WALLFLOWER LN			

Judd Ventures, LLC | Open House Meeting Sign-in Sheet

Located at Magma Ranch Elementary ***Thursday, August 15, 2024 – 5:30 to 6:30PM*** ***# PZ-PA-012-24***

Name	Address	Email	Phone	Y/N to receive project updates
Patrick Hait	11262 E Sunflower CT	p-hait@hotmail.com	480 735 4834	Y
Stacy Milam	10890 E Wallflower Ln	Stacymilam24@gmail.com	928-200-2944	Y
Jan Orzech	Verbena Ln	ashkoba@duck.com		Y
Cody Suprak	E Cliffrose Ln	csuprak@gmail		Y

Judd Ventures, LLC | Open House Meeting Sign-in Sheet

Located at Magma Ranch Elementary ***Thursday, August 15, 2024 – 5:30 to 6:30PM*** ***# PZ-PA-012-24***

Name	Address	Email	Phone	Y/N to receive project updates
DAKLA Cheves	10540 E. WallFlower Florence 85132		480 580 3287	Y
Heidi Johnson	10810 E Wallflower LN Florence AZ 85132	mirada11@juno.com		Y
Donna Reidhead	10536 E. Lupine Ln. Florence, AZ 85132	dreidhead@gmail.com		Y
Sean Rodvan	10527 E Wallflower LN Florence, AZ 85132	sean.rodvan@gmail.com	480-768-7343	Y

Judd Ventures, LLC | Open House Meeting Sign-in Sheet

Located at Magma Ranch Elementary ***Thursday, August 15, 2024 – 5:30 to 6:30PM*** ***# PZ-PA-012-24***

Name	Address	Email	Phone	Y/N to receive project updates
GREGORY SIVERLY	10461 E WALLFLOWER	GREGORYSIVERLY@GMAIL.COM	480 589 9625	Y

I am in SUPPORT / OPPOSITION (circle one)
of the project.

DAVE RICHARDSON
Name

6305369364
Phone

dave-richardson1105@gmail.com
Email

COMMENTS and/or QUESTIONS

We would love to hear your thoughts or questions.
Please feel free to leave them below.

MIXED USE IS NEEDED ALONG JUDD, BUT NO DATA OR BATTERY ENERGY OR SUCH IN THIS AREA. COMMERCIAL OFFICES MAYBE? NO INDUSTRIAL THIS CLOSE TO ESJ BOULEVARD

Cont. on reverse →

I am in SUPPORT / OPPOSITION (circle one)
of the project.

Stacy Miam
Name

925-200-2444
Phone

Stacymiam24@gmail.com
Email

COMMENTS and/or QUESTIONS

We would love to hear your thoughts or questions.
Please feel free to leave them below.

Cont. on reverse →

I am in SUPPORT / OPPOSITION (circle one)
of the project.

Christine Perry
Name

978-430-7610
Phone

cperry2523@gmail.com
Email

COMMENTS and/or QUESTIONS

We would love to hear your thoughts or questions.
Please feel free to leave them below.

I oppose this project due to the proposal of employment/ industrial zoning.

Cont. on reverse →

I am in SUPPORT / OPPOSITION (circle one)
of the project.

PAUL & ERICA Saylor
Name

602 376 7727
Phone

saylorej@gmail.com
Email

COMMENTS and/or QUESTIONS

We would love to hear your thoughts or questions.
Please feel free to leave them below.

- Out of character
- as residential develops, it will need commercial, not industrial
- water use / quality, contamination
- industrial all hours operation, lights

Cont. on reverse →

I am in SUPPORT / OPPOSITION (circle one)
of the project.

Name Kim Vogel

480-313-3008 JAZZIEDOGGIRL@GMAIL.COM
Phone Email

COMMENTS and/or QUESTIONS

We would love to hear your thoughts or questions.
Please feel free to leave them below.

I [redacted] oppose Employment &
& industrial

Cont. on reverse →

I am in SUPPORT / OPPOSITION (circle one)
of the project.

Dena Reidhead
Name

435-210-1523
Phone

dreidhead@gmail.com
Email

COMMENTS and/or QUESTIONS

We would love to hear your thoughts or questions.
Please feel free to leave them below.

I have SERIOUS concerns that, even though I am not within the 100 yards (or whatever the distance) required for letter

Cont. on reverse →

notification. I am a member of the community directly affected by what goes in across Judd Rd.

I ~~do~~ request notification of all further information mailed to me at

Donna Reidhead
10536 E. Lupine Ln
Florence, AZ 85132

I am in SUPPORT / OPPOSITION (circle one)
of the project.

Name: Cody Suprak

Phone: 602 577 0089

Email: csuprak@gmail.com

COMMENTS and/or QUESTIONS

We would love to hear your thoughts or questions.
Please feel free to leave them below.

We do not want/need industrial uses next to a residential neighborhood. If the investor wants to invest in the community - invest in uses that will

Cont. on reverse →

benefit the community. This area is residential. Medium - low density and has no room for data centers, BESS systems or other similar uses that can be better located to the west near other industrial uses. We need commercial uses. We need restaurants, fuel, grocery, real community uses in our area that is isolated and has no close-by resources. Please consider the community instead of your pocketbooks.

Kayla Amado

From: Jennifer Hall
Sent: Tuesday, August 6, 2024 4:13 PM
To: Stephen Gravely
Cc: Jennifer Hall; Kayla Amado
Subject: RE: Hi, my name is Stephen D. Gravely, I have questions concerning a letter received on Friday Aug. 2,2024. The Sunhill Project is of concern to me . I would like more information about it. I don't think I'll able to attend the meeting scheduled for8...

Hi Stephen,

Thanks for reaching out. Please see the map below which outlines the project site in red. At this time we are requesting to amend the County's Comprehensive Plan which is the future land use map from Moderate Density Residential to Mixed Use- Residential along Judd Rd with Employment tucked behind it. Mixed use will obviously allow for commercial and residential uses and Employment will allow for a variety of uses (ie warehousing, manufacturing, etc.). Since this is a major amendment we cannot propose a rezoning to a specific zoning category just yet. That will be the next step in the process after the Comprehensive Plan is decided. I would like to point out that there are commercial uses in blue on the north side of Judd Rd next to some CR-4 zoning in purple which allows for multi-family development. We feel that this amendment is compatible with other future uses in the area. Please let me know if you have specific questions and thanks!



Jennifer Hall
Senior Project Manager

7144 E Stetson Drive, Suite 300, Scottsdale, AZ 85251
Direct: 480.505.3938 F: 480.505.3925 Mobile: 602.369.0810
Subscribe to our newsletters!
roselawgroup.com roselawgroupreporter.com
@roselawgroup @roselawgroupmeta
RLG is Service :: Winner "Best places to work in Arizona"

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Think green, please don't print unnecessarily

From: Stephen Gravely <stephengravely85@gmail.com>
Sent: Monday, August 5, 2024 12:13 PM
To: Jennifer Hall <JHall@roselawgroup.com>
Subject: Fwd: Hi, my name is Stephen D. Gravely, I have questions concerning a letter received on Friday Aug. 2,2024. The Sunhill Project is of concern to me . I would like more information about it. I don't think I'll able to attend the meeting scheduled for8...

Sent from my iPhone

Begin forwarded message:

> **From:** Stephen Gravely <stephengravely85@gmail.com>
> **Date:** August 5, 2024 at 12:09:35 PM MST
> **To:** Jhall@roselawgroup.com
> **Subject: Hi, my name is Stephen D. Gravely, I have questions concerning a letter received on Friday Aug. 2,2024. The Sunhill Project is of concern to me . I would like more information about it. I don't think I'll able to attend the meeting scheduled for8/15/24 at Magma Ranch Elementary School.If you could explain what this project involves and if these changes will have an adverse affect to my property in Magma Ranch . Thank you SDG.**

Affidavit of Notification

Application No: # PZ-PA-012-24

Applicant Name: Judd Ventures, LLC

Location: SEC of Judd Road and Felix Road (APN 210-44-002 and APN 210-44-004)

I confirm that notice as required for the case noted above has been mailed or delivered to the attached list of property owners and neighborhood associations at the addresses noted.

Applicant/Representative Signature — **Date** 7/31/2024

This instrument was acknowledged before me on this 31st **day of** July,

20 24, **by** Kayla Amado. **In witness whereof**

I hereunto set my hand and official seal.

HOPI L SLAUGHTER
Notary Public, State of Arizona
Maricopa County
Commission # 599745
My Commission Expires
March 24, 2025

Notary Public

My commission expires MARCH 24, 2025

ROSE LAW GROUP pc
RICH ▪ CARTER ▪ FISHER

Jennifer Hall
7144 E. Stetson Drive, Suite 300
Scottsdale, AZ 85251
Phone 480.505.3938 Fax 480.505.3925
JHall@RoseLawGroup.com
www.RoseLawGroup.com

July 31, 2024

Dear Property Owner or Neighborhood Association Representative,

The purpose of this letter is to inform you that our firm (the "Applicant"), on behalf of Judd Ventures, LLC (the "Owner"), recently submitted an application to Pinal County to amend the Comprehensive Plan land use classification for an approximate 96.8-acre property located on the southeast corner of Judd Road and Felix Road in the San Tan Valley area (APN 210-44-002 and APN 210-44-004) (collectively, the "Sunhill Property").

The Sunhill Property is currently vacant and designated by Pinal County's Comprehensive Plan as Moderate Low Density Residential (MLDR). This request will amend the Comprehensive Plan land use classification to "Mixed Use – Residential focused" for ~16 acres along Judd Road and "Employment" for ~80 acres tucked behind the Mixed-Use portion. Please see the attached land use map with proposed designations.

Our team would like to invite you to an Open House Meeting to learn more about the future land use designations and answer any questions you may have about the request. There will be no formal presentation so please stop by at any time to speak with a member of our team.

OPEN HOUSE MEETING
Thursday, August 15, 2024
Anytime between 5:30 PM – 6:30 PM
Magma Ranch Elementary – in the Gym
10980 E Desert Mountain, Florence, AZ 85132

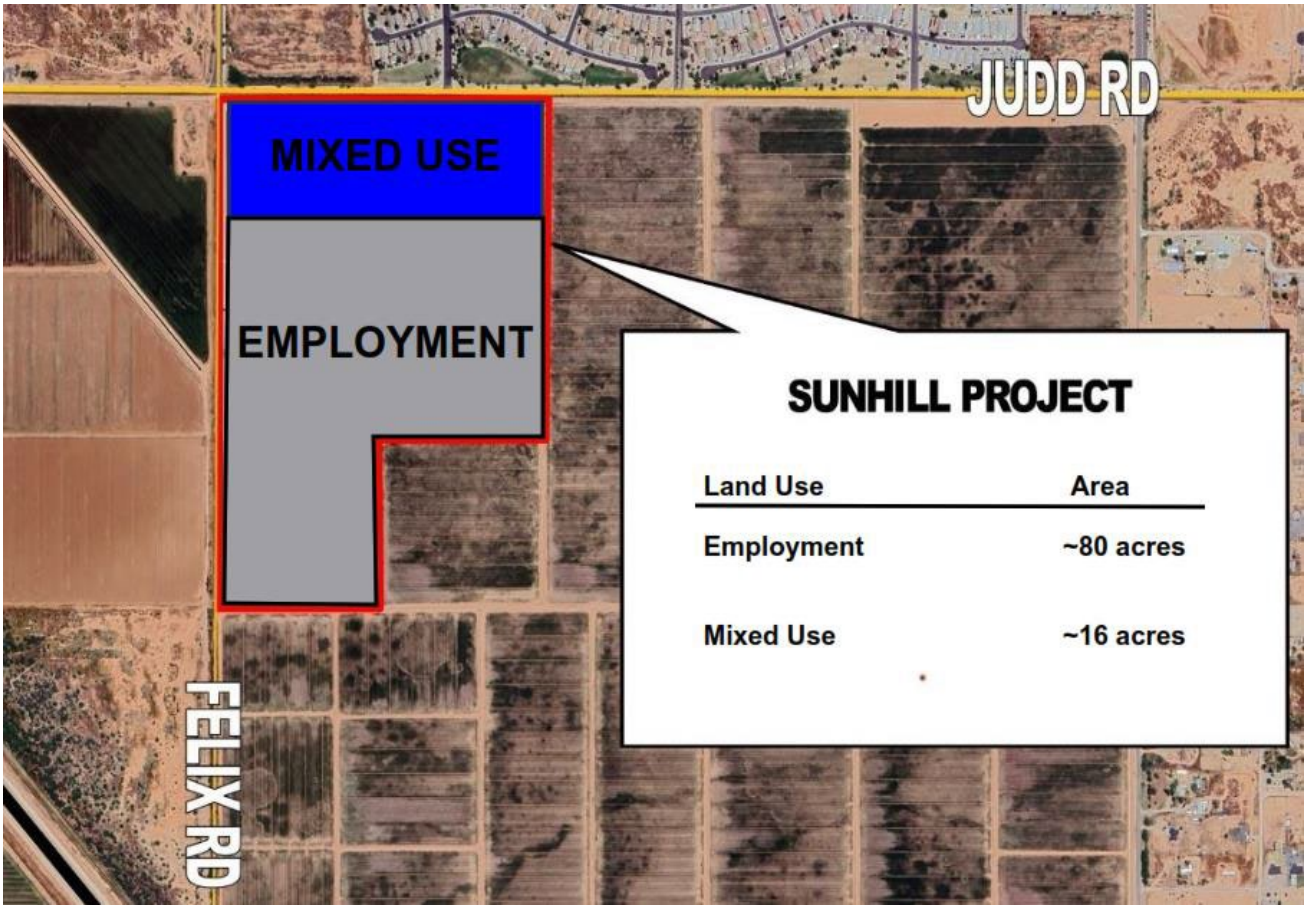
If you are unable to attend the Open House Meeting, please contact me directly at Jhall@roselawgroup.com or 480-505-3938. I would be happy to answer any questions or hear any comments you may have regarding this project. Or you may reach out to Pinal County Senior Planner Patrick Roberts at 520-866-6409 or Patrick.roberts@pinal.gov and please reference Case# PZ-PA-012-24.

Sincerely,

Jennifer Hall

Senior Project Manager

Future Land Use Plan:



,

WILLIAMS BAILEY CHRISTINA &...
10807 E WALLFLOWER LN
FLORENCE, AZ 85132

SILVERLY GREGORY
10461 E WALLFLOWER LN
FLORENCE, AZ 85132

,

OLSON AMY E
10793 E WALLFLOWER LN
FLORENCE, AZ 85132

FISHER KRISTEN C
10739 E WALLFLOWER LN
FLORENCE, AZ 85132

,

CHAN LIONEL & ALICE
1743 30TH AVE
SAN FRANCISCO, CA 94122

STANESCU LOAN & ASHLEY
11028 E WALLFLOWER LN
FLORENCE, AZ 85132

LANGLEY FREEDOM FARMS LL...
2783 E GUADALUPE RD
GILBERT, AZ 85234

PARKER DANIEL
10765 E WALLFLOWER LN
FLORENCE, AZ 85132

DOMINGUEZ RUBEN A
30900 N DESERT HONEYSUCKL...
SAN TAN VALLEY, AZ 85143

~~LANGLEY FREEDOM FARMS LL...~~
~~2783 E GUADALUPE RD~~
~~GILBERT, AZ 85234~~

HUNTER RORY M
10419 E WALLFLOWER LN
FLORENCE, AZ 85132

ADAMCZYK JERZY & ZOFIA CO...
10906 E WALLFLOWER LN
FLORENCE, AZ 85132

GUARDIAN ANGEL HOLDINGS ...
4261 S DANIELSON WAY
CHANDLER, AZ 85249

GORDON WILLIAM R & CHRISTI...
10433 E WALLFLOWER LN
FLORENCE, AZ 85132

DUKES JAMES F
11044 E WALLFLOWER LN
FLORENCE, AZ 85132

~~GUARDIAN ANGEL HOLDINGS ...~~
~~4261 S DANIELSON WAY~~
~~CHANDLER, AZ 85249~~

YARBROUGH GENE C & LENOR...
10753 E WALLFLOWER LN
FLORENCE, AZ 85132

SCHUCH FRANK & SHARON
2935 TANGLEWOOD DR
WAYNE, MI 48184

,

ANDERSON IAN & DANIELLE
10447 E WALLFLOWER LN
FLORENCE, AZ 85132

MILAM STACY & DIXON GABRIE...
PO BOX 2652
CLAYPOOL, AZ 85532

~~MAGAM RANCH HOMEOWNER...~~
~~MAIL RETURN~~
,

GOMEZ OSCAR RUIZ VELASCO
11010 E WALLFLOWER LN
FLORENCE, AZ 85132

CALDWELL JILL
11062 E WALLFLOWER LN
FLORENCE, AZ 85132

MAGMA RANCH HOMEOWNER...
17319 SAN PEDRO AVE STE 31...
SAN ANTONIO, TX 78232

MELANCON THEODORE A
10940 E WALLFLOWER LN
FLORENCE, AZ 85132

DECKER CHRISTOPHER B & SH...
10725 E WALLFLOWER LN
FLORENCE, AZ 85132

BARRERAS EMIGDIO JR & GAR...
10489 E WALLFLOWER LN
FLORENCE, AZ 85132

YOUNG MARTIN W
10697 E WALLFLOWER LN
FLORENCE, AZ 85132

BARRINGER DEREK WAYNE
11005 E VERBINA LN
FLORENCE, AZ 85132

GASTELO JOE ALBERT & DIAN...
10874 E WALLFLOWER LN
FLORENCE, AZ 85132

JOHNSON TERENCE A & HEIDI
10810 E WALLFLOWER LN
FLORENCE, AZ 85132

CARRILLO ROBERTO E
10643 E WALLFLOWER LN
FLORENCE, AZ 85132

BOZ DAMIAN & PERPHELIA
11080 E WALLFLOWER LN
FLORENCE, AZ 85132

COOK GAYLEN
10683 E WALLFLOWER LN
FLORENCE, AZ 85132

WARRAYAT REDA
10629 E WALLFLOWER LN
FLORENCE, AZ 85132

BOOTHE JAMES & JESSICA
10503 E WALLFLOWER LN
FLORENCE, AZ 85132

HERNANDEZ JOSE V & TRACY ...
10794 E WALLFLOWER LN
FLORENCE, AZ 85132

WISE STEVEN & KENDRA
10949 E VERBINA LN
FLORENCE, AZ 85132

DONALDSON ALICIA
11098 E WALLFLOWER LN
FLORENCE, AZ 85132

ROGAZ NATALIE & VEGA RAFA...
10669 E WALLFLOWER LN
FLORENCE, AZ 85132

CRUSE STEPHEN RAY
11023 E VERBINA LN
FLORENCE, AZ 85132

AH4R PROPERTIES TWO LLC
23975 PARK SORRENTO STE 30...
CALABASAS, CA 91302

HAYFORD KYLE J & NICOLE R
10601 E WALLFLOWER LN
FLORENCE, AZ 85132

DOOLING NEERA
10933 E VERBINA LN
FLORENCE, AZ 85132

WISSMAN ANGELA G & MICHAE...
10711 E WALLFLOWER LN
FLORENCE, AZ 85132

HARMON JANNA KAY & LORI
10655 E WALLFLOWER LN
FLORENCE, AZ 85132

SOUNDARARAJAN GOVINDARA...
3196 ALICE DR
NEWBURY PARK, CA 91320

MCKENNA JOSEPH & ANGELA
1515 640TH ST
STORM LAKE, IA 50588

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

MILE HIGH BORROWER 1 (VAL...
PO BOX 4090
SCOTTSDALE, AZ 85261

JAMES JASMINE DANEA & RAD...
10523 E WALLFLOWER LN
FLORENCE, AZ 85132

MILLER TAMMIE D
10615 E WALLFLOWER LN
FLORENCE, AZ 85132

WILSON BRYAN LLOYD & NATA...
11057 E VERBINA LN
FLORENCE, AZ 85132

ADAMS CASEY & JODY
10826 E WALLFLOWER LN
FLORENCE, AZ 85132

~~MAGAM RANCH HOMEOWNER...~~
~~MAIL RETURN~~
,

PERALES CANDACE B
10756 E WALLFLOWER LN
FLORENCE, AZ 85132

VELASQUEZ MARCOS MANUEL
10897 E VERBINA LN
FLORENCE, AZ 85132

HARRIS PHILLIP
10829 E VERBINA LN
FLORENCE, AZ 85132

SMITHSON ROBERT & RHOND...
10759 E VERBINA LN
FLORENCE, AZ 85132

QUIGLEY VIRGINIA G FAM TRU...
11077 E VERBINA LN
FLORENCE, AZ 85132

NETTLETON-MITCHELL STEVE...
10486 E WALLFLOWER LN
FLORENCE, AZ 85132

WILL RYON C
10672 E WALLFLOWER LN
FLORENCE, AZ 85132

MCEVOY MARGARET A
10881 E VERBINA LN
FLORENCE, AZ 85132

FKH SFR PROPO B-HLD LP
1850 PARKWAY PL SE STE 900
MARIETTA, GA 30067

REINHART KURT
10747 E VERBINA LN
FLORENCE, AZ 85132

JOHNSON SCOTT F & MARY JA...
247 PARADISO LN
CENTERVILLE, UT 84014

RENKKE JOHN R & ESTHER A
10710 E WALLFLOWER LN
FLORENCE, AZ 85132

THOMPSON JOSHUA J
10664 E WALLFLOWER LN
FLORENCE, AZ 85132

DANE PETER & LYNN
4405 NE 25TH CT
RENTON, WA 98059

KRAUSE ERIC & MCCABE MEG...
10502 E WALLFLOWER LN
FLORENCE, AZ 85132

SMITH STEPHEN & APRIL NOLE...
10594 E WALLFLOWER LN
FLORENCE, AZ 85132

WILSON THOMAS B & KATHLEE...
10863 E VERBINA LN
FLORENCE, AZ 85132

BRASFIELD BRADLEY O & DIAN...
3861 W DUBLIN ST
CHANDLER, AZ 85226

LEWIS DELBERT JAMES & GER...
10455 E VERBINA LN
FLORENCE, AZ 85132

FRENCH ALFRED & ANITA
10454 E WALLFLOWER LN
FLORENCE, AZ 85132

ELVERS LORI
10520 E WALLFLOWER LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE~~ 31...
SAN ANTONIO, TX 78232

HINTON GLENN E & GWENDOL...
10847 E VERBINA LN
FLORENCE, AZ 85132

LEWIS MORGAN LEIGH & TIMO...
10696 E WALLFLOWER LN
FLORENCE, AZ 85132

~~MAGAM RANCH HOMEOWNER...~~
~~MAIL RETURN~~
,

SALIN CHYRES
10470 E WALLFLOWER LN
FLORENCE, AZ 85132

CHEVES DARLA M LIV TRUST
10540 E WALLFLOWER LN
FLORENCE, AZ 85132

MOSSMAN ANDRE & HOLLY
10735 E VERBINA LN
FLORENCE, AZ 85132

GARCIA FRANCISCO
10726 E WALLFLOWER LN
FLORENCE, AZ 85132

BARKER KALEM
10684 E WALLFLOWER LN
FLORENCE, AZ 85132

SFR II BORROWER 2021-3 LLC
120 S RIVERSIDE PLZ STE 2000
CHICAGO, IL 60606

BLASER JASON WESLEY
10614 E WALLFLOWER LN
FLORENCE, AZ 85132

NAPIER JOHN
11040 E VERBINA LN
FLORENCE, AZ 85132

GURROLA HECTOR C JR & RA...
10711 E VERBINA LN
FLORENCE, AZ 85132

MASTERS YASMEA PENNIE VA...
10954 E VERBINA LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

BAKER LORI MICHEL & JARED ...
10517 E VERBINA LN
FLORENCE, AZ 85132

AUSICH KENNETH R & SHIRLE...
36817 N STONEWARE DR
SAN TAN VALLEY, AZ 85140

MCQUINN SHANE LEE & CHARI...
10898 E VERBINA LN
FLORENCE, AZ 85132

GARCIA MARTIN
10844 E VERBINA LN
FLORENCE, AZ 85132

SHV HOMES 4 LLC
3495 PIEDMONT RD NE BLDG 1...
ATLANTA, GA 30305

MUNDORF NANCY & CHARLES ...
11060 E VERBINA LN
FLORENCE, AZ 85132

MAGNATA FUNDING GROUP LL...
13001 W SAN JUAN AVE
LITCHFIELD PARK, AZ 85340

RASKOVIC ALEXSANDAR
210 LILAC LN
BREA, CA 92823

LEIDER CHRISTOPHER S
10487 E VERBINA LN
FLORENCE, AZ 85132

HALVORSON THOMAS KALANI
10699 E VERBINA LN
FLORENCE, AZ 85132

SKARWECKI MELANIE
10640 E WALLFLOWER LN
FLORENCE, AZ 85132

CASTILLO LUIS & BLANCA
10723 E VERBINA LN
FLORENCE, AZ 85132

CARMONA JORGE E RICO
1457 W SUSSEX ST
SAN TAN VALLEY, AZ 85143

SALAZAR MARTIN RODRIGUEZ
10934 E VERBINA LN
FLORENCE, AZ 85132

WIEDEN MICHAEL & JENNIFER
10880 E VERBINA LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

BARNES JOHN RUSSELL JR
2208 E GILLCREST RD
GILBERT, AZ 85298

BANKS TOMMY L II & ALISSA LE
11078 E VERBINA LN
FLORENCE, AZ 85132

FEENEY DOUGLAS RICHARD
10806 E VERBINA LN
FLORENCE, AZ 85132

ORZECH JOAN
10473 E VERBINA LN
FLORENCE, AZ 85132

PLISZKA STANISLAWA ANNA
10503 E VERBINA LN
FLORENCE, AZ 85132

LITTLE SEAN & TOLEDO ALEXA
10687 E VERBINA LN
FLORENCE, AZ 85132

PHASLEY ANNA M & JOE
485 E WINDSOR DR
GILBERT, AZ 85296

ATLAS 2005 LLC
3225 MCLEOD DR STE 100
LAS VEGAS, NV 89121

SFR II BORROWER 2021-3 LLC
120 S RIVERSIDE PLZ STE 2000
CHICAGO, IL 60606

LEE TIMOTHY & JODY
10675 E VERBINA LN
FLORENCE, AZ 85132

PAGAYA SMARTRESI F1 FUND ...
1950 E GREYHOUND PASS STE ...
CARMEL, IN 46033

PALKA VINCENT A
11047 E SUNFLOWER CT
FLORENCE, AZ 85132

COWART HEATHER
10772 E VERBINA LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

UNDERHILL JASON L LIV TRUS...
PO BOX 3513
ARIZONA CITY, AZ 85123

SHV HOMES 4 LLC
3495 PIEDMONT RD NE BLDG 1...
ATLANTA, GA 30305

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

HEISLER CYNTHIA ANN
10891 E SUNFLOWER CT
FLORENCE, AZ 85132

REZA JOEL
10661 E VERBINA LN
FLORENCE, AZ 85132

MCHENRY DAVID J FAM TR
1450 E INDIAN SCHOOL RD ST...
PHOENIX, AZ 85014

VESELY CHEYENNE
10448 E VERBINA LN
FLORENCE, AZ 85132

CLINE KENNETH & RITA
10587 E VERBINA LN
FLORENCE, AZ 85132

MYERS BRADLEY K & MELISSA ...
11015 E SUNFLOWER CT
FLORENCE, AZ 85132

HARRISON WESTON
10728 E VERBINA LN
FLORENCE, AZ 85132

AGUIRRE CHRISTOPHER JASO...
10649 E VERBINA LN
FLORENCE, AZ 85132

PATD JOSEPH & YESENIA
13240 E MARIGOLD LN
FLORENCE, AZ 85132

ROBINSON KEIAN & COURTNE...
10863 E SUNFLOWER CT
FLORENCE, AZ 85132

JOHNSON ADAM N & JENNIFER...
10601 E VERBINA LN
FLORENCE, AZ 85132

SCHEIFLA DARYL & REBECCA ...
11031 E SUNFLOWER CT
FLORENCE, AZ 85132

RS XII NM PHOENIX OWNER 1 ...
717 N HARWOOD ST STE 2800
DALLAS, TX 75201

MEGANEY RYAN
10637 E VERBINA LN
FLORENCE, AZ 85132

RAMIREZ DANNY J & CATHERIN...
10412 E VERBINA LN
FLORENCE, AZ 85132

MARTINEZ ADAM
10484 E VERBINA LN
FLORENCE, AZ 85132

MANN PAUL E & KEARA TRS
10625 E VERBINA LN
FLORENCE, AZ 85132

HOLLAND CYNTHIA J & LAWYE...
10913 E SUNFLOWER CT
FLORENCE, AZ 85132

FKH SFR PROPCO H LP
1850 PARKWAY PL STE 900
MARIETTA, GA 30067

SWANSON ANDREW JOHN
10613 E VERBINA LN
FLORENCE, AZ 85132

ALVARADO DISENIA
10742 E VERBINA LN
FLORENCE, AZ 85132

SHUTE JAMIE E & TANIA P
10716 E VERBINA LN
FLORENCE, AZ 85132

KOVARIK CHANG & KARL
10502 E VERBINA LN
FLORENCE, AZ 85132

MACIVER DANIEL C & PAMELA ...
10363 E SUNFLOWER LN
FLORENCE, AZ 85132

GORMAN KENNY & DIANA
10441 E SUNFLOWER LN
FLORENCE, AZ 85132

HEID MICHELLE
10827 E SUNFLOWER CT
FLORENCE, AZ 85132

ANDERSON PATRICK C
10375 E SUNFLOWER LN
FLORENCE, AZ 85132

BATES DERICK & REILLY NATAS...
10684 E VERBINA LN
FLORENCE, AZ 85132

SERDUTZ DANIEL & SHIRLEY
10520 E VERBINA LN
FLORENCE, AZ 85132

ARONSTEIN RICHARD & TOSH...
10696 E VERBINA LN
FLORENCE, AZ 85132

EDWARDS LINDA MAY & BAEZ ...
10759 E SUNFLOWER CT
FLORENCE, AZ 85132

~~FINNEGAN BENJAMIN & ELSA~~
~~MAIL RETURN~~
,

JOHNSTON BOBBY
29820 N MESQUITE CIR
FLORENCE, AZ 85132

JUAREZ JAMES J & CYNTHIA A
10574 E VERBINA LN
FLORENCE, AZ 85132

STANGEBY ELEXIS BREANNA A...
10803 E SUNFLOWER CT
FLORENCE, AZ 85132

REYES RODOLFO
10389 E SUNFLOWER LN
FLORENCE, AZ 85132

KURRAN GEORGE M
10586 E VERBINA LN
FLORENCE, AZ 85132

HIRALES ROSEMARY & EDMUN...
10540 E VERBINA LN
FLORENCE, AZ 85132

GULLATT LACRESHA
10401 E SUNFLOWER LN
FLORENCE, AZ 85132

ALVARADO MARK
10674 E VERBINA LN
FLORENCE, AZ 85132

DE LA ROSA DIANA MARIE
29819 N MESQUITE CIR
FLORENCE, AZ 85132

LANGFORD BRIAN & WENDY D...
10781 E SUNFLOWER CT
FLORENCE, AZ 85132

FIELDS STEPHEN C & CHERYL ...
10898 E SUNFLOWER CT
FLORENCE, AZ 85132

ZAUGG DONOVAN
10327 E SUNFLOWER LN
FLORENCE, AZ 85132

BEGAY AUBREY JEAN
10413 E SUNFLOWER LN
FLORENCE, AZ 85132

~~LAWRENCE RYAN & MARKOVIC...~~
~~MAIL RETURN~~
,

ULEP SHANNEL K
10339 E SUNFLOWER LN
FLORENCE, AZ 85132

TYRA-DAVIS JOSH
29824 N CHOLLA DR
FLORENCE, AZ 85132

PHILLIPS JORDAN K & DEJAH S...
29840 N CHOLLA DR
FLORENCE, AZ 85132

FKH SFR PROPCO G L P
1850 PARKWAY PL SE STE 900
MARIETTA, GA 30067

NELSON SHAWN ALCOTT & MY...
10427 E SUNFLOWER LN
FLORENCE, AZ 85132

TAYLOR CHARLES
10874 E SUNFLOWER CT
FLORENCE, AZ 85132

TARVER ERIC L
29833 N MESQUITE CIR
FLORENCE, AZ 85132

SOLIS MEDWIN
29850 N MESQUITE CIR
FLORENCE, AZ 85132

LAWLER WILLIAM & DAWN
10567 E SUNFLOWER LN
FLORENCE, AZ 85132

TORRES ELIZABETH FLORES
10598 E VERBINA LN
FLORENCE, AZ 85132

KLEIN DAVID E & DENISE H
10705 E SUNFLOWER CT
FLORENCE, AZ 85132

SCHAELER HEIDI
10360 E SUNFLOWER LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

CARLSON RONALD & ANA M
29870 N CHOLLA DR
FLORENCE, AZ 85132

PETERSON VALERIE R
10374 E SUNFLOWER LN
FLORENCE, AZ 85132

AUCIELLO LAURA
10850 E SUNFLOWER CT
FLORENCE, AZ 85132

VANDERPOL TRISTAN & ROCH...
10266 E SUNFLOWER LN
FLORENCE, AZ 85132

TRULL BRIAN & MARIA C
900 W 16TH ST
TEMPE, AZ 85281

HARDING KENNETH REILLY & V...
29834 N MESQUITE CIR
FLORENCE, AZ 85132

GALLEGOS RICHARD
10280 E SUNFLOWER LN
FLORENCE, AZ 85132

SALCEDO NAPOLEON & RAQU...
10388 E SUNFLOWER LN
FLORENCE, AZ 85132

QUINNELLL BRUCE A & VALERI...
10719 E SUNFLOWER CT
FLORENCE, AZ 85132

BOLDUC DYLAN JOSEPH & HA...
10294 E SUNFLOWER LN
FLORENCE, AZ 85132

MOORE JASON & TEASHA A
10782 E SUNFLOWER CT
FLORENCE, AZ 85132

EDSALL MICHAEL PAUL & PAME...
10830 E SUNFLOWER CT
FLORENCE, AZ 85132

LEYVAS ARTURO R
10308 E SUNFLOWER LN
FLORENCE, AZ 85132

BALL LAURINE 2015 FAM TRUS...
4634 PASEO DE LA VIS
BONITA, CA 91902

RODRIGUEZ HUGO G QUINTAN...
29854 N CHOLLA DR
FLORENCE, AZ 85132

TAPAHA BRIAN
10322 E SUNFLOWER LN
FLORENCE, AZ 85132

RUEDA-PALACIOS ARMIN
10416 E SUNFLOWER LN
FLORENCE, AZ 85132

RINGER BRIAN D & MAUD CAM...
10800 E SUNFLOWER CT
FLORENCE, AZ 85132

PATTERSON MAXINE
10336 E SUNFLOWER LN
FLORENCE, AZ 85132

LINDEN KEITH M & SIEFFERMA...
18899 E KENT PL
AURORA, CO 80013

BOWERS ALINA
10555 E SUNFLOWER LN
FLORENCE, AZ 85132

GRAVELY STEPHEN D
10348 E SUNFLOWER LN
FLORENCE, AZ 85132

JENCKS SUNFLOWER LLC
6428 S TROPHY CT
GILBERT, AZ 85298

BOLLER TERESA
10430 E SUNFLOWER LN
FLORENCE, AZ 85132

SINGER DANIEL R & BAMBI G
10685 E SUNFLOWER CT
FLORENCE, AZ 85132

MCKENNA PATRICK J
107 MALLARD AVE
STORM LAKE, IA 50588

JOHNSON JEREMIAH W & AND...
29856 N MESQUITE CIR
FLORENCE, AZ 85132

SMITH WAYNE C & YANITZA I NI...
10734 E SUNFLOWER CT
FLORENCE, AZ 85132

GRUNSTEAD ELYSE
10673 E SUNFLOWER CT
FLORENCE, AZ 85132

SKINNER KENT L
10444 E SUNFLOWER LN
FLORENCE, AZ 85132

PACHECO JULISSA
10825 E PRIMROSE CT
FLORENCE, AZ 85132

KROM ELIZABETH RENDE
10267 E PRIMROSE LN
FLORENCE, AZ 85132

MARTINEZ DAVID & ELIZABETH...
10883 E PRIMROSE CT
FLORENCE, AZ 85132

DENNISON BRANDI LEE & MIC...
10615 E SUNFLOWER LN
FLORENCE, AZ 85132

LESUEUR HAYLEY & HYRUM
10281 E PRIMROSE LN
FLORENCE, AZ 85132

HAIRSTON DAREN & SAMANTH...
10591 E SUNFLOWER LN
FLORENCE, AZ 85132

10490 SUNFLOWER LLC
9414 E MONUMENT DR
SCOTTSDALE, AZ 85262

~~MATUS JOSE CRIS & TAMMY J~~
~~MAIL RETURN~~
,

PANKEY MELINDA
10748 E SUNFLOWER CT
FLORENCE, AZ 85132

PEREZ JUAN
29900 N CHOLLA DR
FLORENCE, AZ 85132

RIEDERER JULIE ANN & JEFFR...
32721 N 23RD AVE
PHOENIX, AZ 85085

LAWSON RODNEY EUGENE & ...
29886 N CHOLLA DR
FLORENCE, AZ 85132

DEAL JAMES & JANINE
10510 E SUNFLOWER LN
FLORENCE, AZ 85132

SHAVER JON
10323 E PRIMROSE LN
FLORENCE, AZ 85132

MCCAULEY SHAWN & DESTINY
10458 E SUNFLOWER LN
FLORENCE, AZ 85132

HOUGH NICOLE
10631 E SUNFLOWER LN
FLORENCE, AZ 85132

SCHULTZ ROBERT & TAWNY M...
10337 E PRIMROSE LN
FLORENCE, AZ 85132

CHAPPELL CLARENCE E MYLE...
10849 E PRIMROSE CT
FLORENCE, AZ 85132

WALTON STACY E
10799 E PRIMROSE CT
FLORENCE, AZ 85132

LAWSON LACRESHA
10351 E PRIMROSE LN
FLORENCE, AZ 85132

BLACK JUSTINE
10603 E SUNFLOWER LN
FLORENCE, AZ 85132

SCHRAH SARAH
10528 E SUNFLOWER LN
FLORENCE, AZ 85132

CIOFALO MARY E & MICHAEL A
10365 E PRIMROSE LN
FLORENCE, AZ 85132

JOHNSON JOHN
10379 E PRIMROSE LN
FLORENCE, AZ 85132

LANDAU MARK
10449 E PRIMROSE LN
FLORENCE, AZ 85132

RIVAS RAVONA O
PO BOX 32173
MESA, AZ 85275

COX JOANNE H
2202 E 24TH ST N
SNOWFLAKE, AZ 85937

MEGAHEY JESSICA K & NORD ...
10570 E SUNFLOWER LN
FLORENCE, AZ 85132

BURNETT AMBER
10604 E SUNFLOWER LN
FLORENCE, AZ 85132

SONATY CHRISTOPHER M TRS
10761 E PRIMROSE CT
FLORENCE, AZ 85132

MARTIN JONATHAN GABRIEL & ...
10739 E PRIMROSE CT
FLORENCE, AZ 85132

THEORIN RACHEL & DAVIS HA...
10653 E SUNFLOWER CT
FLORENCE, AZ 85132

OSIFE MARCUS
10393 E PRIMROSE LN
FLORENCE, AZ 85132

ROTH CHERYL
10665 E SUNFLOWER CT
FLORENCE, AZ 85132

RAMIREZ ADRIAN & CHEYENN...
10505 E PRIMROSE LN
FLORENCE, AZ 85132

MENDOZA RICHARD EDWARD ...
10407 E PRIMROSE LN
FLORENCE, AZ 85132

DAIL RONALD E
10649 E SUNFLOWER LN
FLORENCE, AZ 85132

SORIA NANCY JACQUELINE & J...
10703 E PRIMROSE CT
FLORENCE, AZ 85132

JOHNSON ARTHUR & SHARLE...
10421 E PRIMROSE LN
FLORENCE, AZ 85132

SMITH COREY D & SUSAN S
10582 E SUNFLOWER LN
FLORENCE, AZ 85132

SIMARD JULIE
10519 E PRIMROSE LN
FLORENCE, AZ 85132

WILSON TIMOTHY T & TONI
10558 E SUNFLOWER LN
FLORENCE, AZ 85132

E PRIMROSE INVESTMENTS LL...
3272 GARFIELD ST
SAN BERNARDINO, CA 92407

CARTER ANDREW M & TONYA ...
10533 E PRIMROSE LN
FLORENCE, AZ 85132

MASON DANIEL K
29916 N CHOLLA DR
FLORENCE, AZ 85132

AMS REAL SERVICES LLC
6291 S TOPAZ PL
CHANDLER, AZ 85249

FRANCO SIRENA MARLEEN TR...
10641 E SUNFLOWER CT
FLORENCE, AZ 85132

ESTEVEZ ENRIQUE
10696 E SUNFLOWER CT
FLORENCE, AZ 85132

DEGRACE CAROLYNN FAMILY T...
10725 E PRIMROSE CT
FLORENCE, AZ 85132

ZAMBRANO KIMBERLY DIANA
10685 E PRIMROSE CT
FLORENCE, AZ 85132

HATCHER JASON A
10435 E PRIMROSE LN
FLORENCE, AZ 85132

PEREZ PETE J SR & MONICA
10684 E SUNFLOWER CT
FLORENCE, AZ 85132

NICHOLS COLTAN MATTHEW & ...
29932 N CHOLLA DR
FLORENCE, AZ 85132

ROMERO GLADYS FAM TRUST
10547 E PRIMROSE LN
FLORENCE, AZ 85132

ROMAN TAMMY S
10354 E PRIMROSE LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

SCHROEDER DAVID & CHELCI
10664 E SUNFLOWER CT
FLORENCE, AZ 85132

PONCE ABEL
PO BOX 1197
FLORENCE, AZ 85132

GM GABRYCH FAMILY LTD PSHI...
2006 OLD HIGHWAY 395
FALLBROOK, CA 92028

FREESE TROY EUGENE & NICK...
10234 E PRIMROSE LN
FLORENCE, AZ 85132

~~RUIZ ESTEVAN J~~
~~MAIL RETURN~~
,

GM GABRYCH FAMILY LTD PSHI...
2006 OLD HIGHWAY 395
FALLBROOK, CA 92028

CLARK DAMON KD & DANA MA...
10254 E PRIMROSE LN
FLORENCE, AZ 85132

MACIAS FERNANDA
10561 E PRIMROSE LN
FLORENCE, AZ 85132

PINAL COUNTY
PO BOX 827
FLORENCE, AZ 85132

SIMONIN RICHARD
10270 E PRIMROSE LN
FLORENCE, AZ 85132

LUNA MARIA
6804 E HERITAGE RD
FLORENCE, AZ 85132

PINAL COUNTY
PO BOX 827
FLORENCE, AZ 85132

BROKAW NATALIE
10284 E PRIMROSE LN
FLORENCE, AZ 85132

PUGH DOROTHY
10418 E PRIMROSE LN
FLORENCE, AZ 85132

MAGMA RANCH III - PHOENIX L...
3808 N SULLIVAN RD BLDG N15...
SPOKANE VALLEY, WA 99216

PETERSON MATTHEW R & CHE...
10298 E PRIMROSE LN
FLORENCE, AZ 85132

RESIDENTIAL HOME BUYER PH...
PO BOX 4090
SCOTTSDALE, AZ 85261

,

GRAHAM DAVID & KANDRA
10312 E PRIMROSE LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

~~MAGMA RANCH III - PHOENIX L...~~
~~3808 N SULLIVAN RD BLDG N15...~~
~~SPOKANE VALLEY, WA 99216~~

HUNTER HARRISON & KIRI
10326 E PRIMROSE LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

FUNK FAMILY EDUCATION FUN...
3644 PIUTE DR
PROVO, UT 84604

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

Affidavit of Notification

Application No: # PZ-PA-012-24

Applicant Name: Judd Ventures, LLC

Location: SEC of Judd Road and Felix Road (APN 210-44-002 and APN 210-44-004)

I confirm that notice as required for the case noted above has been mailed or delivered to the attached list of property owners and neighborhood associations at the addresses noted.

Applicant/Representative Signature — **Date** 7/31/2024

This instrument was acknowledged before me on this 31st **day of** July,

20 24, **by** Kayla Amado. **In witness whereof**

I hereunto set my hand and official seal.

HOPI L SLAUGHTER
Notary Public, State of Arizona
Maricopa County
Commission # 599745
My Commission Expires
March 24, 2025

Notary Public

My commission expires MARCH 24, 2025

ROSE LAW GROUP pc
RICH ▪ CARTER ▪ FISHER

Jennifer Hall
7144 E. Stetson Drive, Suite 300
Scottsdale, AZ 85251
Phone 480.505.3938 Fax 480.505.3925
JHall@RoseLawGroup.com
www.RoseLawGroup.com

July 31, 2024

Dear Property Owner or Neighborhood Association Representative,

The purpose of this letter is to inform you that our firm (the "Applicant"), on behalf of Judd Ventures, LLC (the "Owner"), recently submitted an application to Pinal County to amend the Comprehensive Plan land use classification for an approximate 96.8-acre property located on the southeast corner of Judd Road and Felix Road in the San Tan Valley area (APN 210-44-002 and APN 210-44-004) (collectively, the "Sunhill Property").

The Sunhill Property is currently vacant and designated by Pinal County's Comprehensive Plan as Moderate Low Density Residential (MLDR). This request will amend the Comprehensive Plan land use classification to "Mixed Use – Residential focused" for ~16 acres along Judd Road and "Employment" for ~80 acres tucked behind the Mixed-Use portion. Please see the attached land use map with proposed designations.

Our team would like to invite you to an Open House Meeting to learn more about the future land use designations and answer any questions you may have about the request. There will be no formal presentation so please stop by at any time to speak with a member of our team.

OPEN HOUSE MEETING
Thursday, August 15, 2024
Anytime between 5:30 PM – 6:30 PM
Magma Ranch Elementary – in the Gym
10980 E Desert Mountain, Florence, AZ 85132

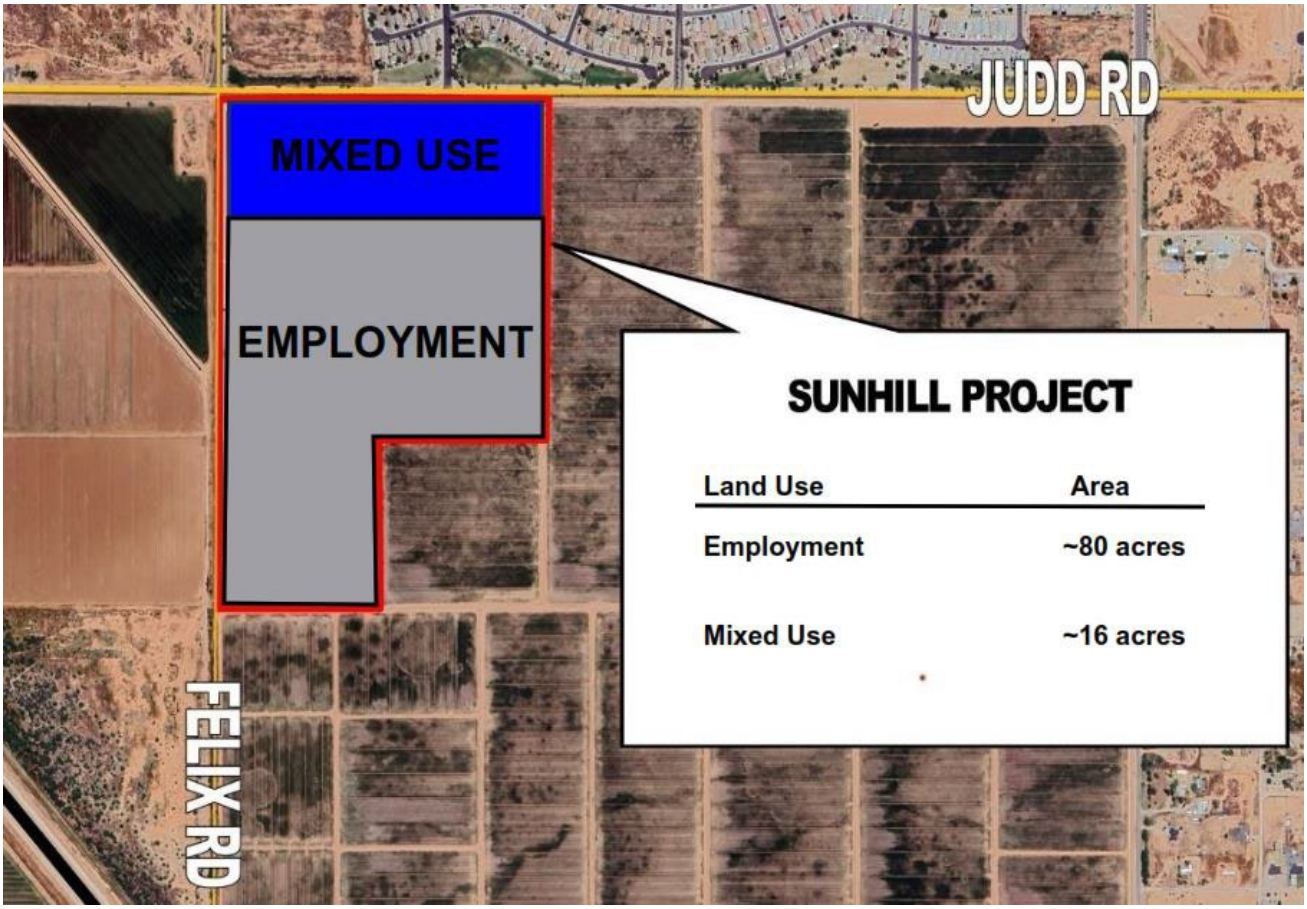
If you are unable to attend the Open House Meeting, please contact me directly at Jhall@roselawgroup.com or 480-505-3938. I would be happy to answer any questions or hear any comments you may have regarding this project. Or you may reach out to Pinal County Senior Planner Patrick Roberts at 520-866-6409 or Patrick.roberts@pinal.gov and please reference Case# PZ-PA-012-24.

Sincerely,

Jennifer Hall

Senior Project Manager

Future Land Use Plan:



,

WILLIAMS BAILEY CHRISTINA &...
10807 E WALLFLOWER LN
FLORENCE, AZ 85132

SILVERLY GREGORY
10461 E WALLFLOWER LN
FLORENCE, AZ 85132

,

OLSON AMY E
10793 E WALLFLOWER LN
FLORENCE, AZ 85132

FISHER KRISTEN C
10739 E WALLFLOWER LN
FLORENCE, AZ 85132

,

CHAN LIONEL & ALICE
1743 30TH AVE
SAN FRANCISCO, CA 94122

STANESCU LOAN & ASHLEY
11028 E WALLFLOWER LN
FLORENCE, AZ 85132

LANGLEY FREEDOM FARMS LL...
2783 E GUADALUPE RD
GILBERT, AZ 85234

PARKER DANIEL
10765 E WALLFLOWER LN
FLORENCE, AZ 85132

DOMINGUEZ RUBEN A
30900 N DESERT HONEYSUCKL...
SAN TAN VALLEY, AZ 85143

~~LANGLEY FREEDOM FARMS LL...~~
~~2783 E GUADALUPE RD~~
~~GILBERT, AZ 85234~~

HUNTER RORY M
10419 E WALLFLOWER LN
FLORENCE, AZ 85132

ADAMCZYK JERZY & ZOFIA CO...
10906 E WALLFLOWER LN
FLORENCE, AZ 85132

GUARDIAN ANGEL HOLDINGS ...
4261 S DANIELSON WAY
CHANDLER, AZ 85249

GORDON WILLIAM R & CHRISTI...
10433 E WALLFLOWER LN
FLORENCE, AZ 85132

DUKES JAMES F
11044 E WALLFLOWER LN
FLORENCE, AZ 85132

~~GUARDIAN ANGEL HOLDINGS ...~~
~~4261 S DANIELSON WAY~~
~~CHANDLER, AZ 85249~~

YARBROUGH GENE C & LENOR...
10753 E WALLFLOWER LN
FLORENCE, AZ 85132

SCHUCH FRANK & SHARON
2935 TANGLEWOOD DR
WAYNE, MI 48184

,

ANDERSON IAN & DANIELLE
10447 E WALLFLOWER LN
FLORENCE, AZ 85132

MILAM STACY & DIXON GABRIE...
PO BOX 2652
CLAYPOOL, AZ 85532

~~MAGAM RANCH HOMEOWNER...~~
~~MAIL RETURN~~
,

GOMEZ OSCAR RUIZ VELASCO
11010 E WALLFLOWER LN
FLORENCE, AZ 85132

CALDWELL JILL
11062 E WALLFLOWER LN
FLORENCE, AZ 85132

MAGMA RANCH HOMEOWNER...
17319 SAN PEDRO AVE STE 31...
SAN ANTONIO, TX 78232

MELANCON THEODORE A
10940 E WALLFLOWER LN
FLORENCE, AZ 85132

DECKER CHRISTOPHER B & SH...
10725 E WALLFLOWER LN
FLORENCE, AZ 85132

BARRERAS EMIGDIO JR & GAR...
10489 E WALLFLOWER LN
FLORENCE, AZ 85132

YOUNG MARTIN W
10697 E WALLFLOWER LN
FLORENCE, AZ 85132

BARRINGER DEREK WAYNE
11005 E VERBINA LN
FLORENCE, AZ 85132

GASTELO JOE ALBERT & DIAN...
10874 E WALLFLOWER LN
FLORENCE, AZ 85132

JOHNSON TERENCE A & HEIDI
10810 E WALLFLOWER LN
FLORENCE, AZ 85132

CARRILLO ROBERTO E
10643 E WALLFLOWER LN
FLORENCE, AZ 85132

BOZ DAMIAN & PERPHELIA
11080 E WALLFLOWER LN
FLORENCE, AZ 85132

COOK GAYLEN
10683 E WALLFLOWER LN
FLORENCE, AZ 85132

WARRAYAT REDA
10629 E WALLFLOWER LN
FLORENCE, AZ 85132

BOOTHE JAMES & JESSICA
10503 E WALLFLOWER LN
FLORENCE, AZ 85132

HERNANDEZ JOSE V & TRACY ...
10794 E WALLFLOWER LN
FLORENCE, AZ 85132

WISE STEVEN & KENDRA
10949 E VERBINA LN
FLORENCE, AZ 85132

DONALDSON ALICIA
11098 E WALLFLOWER LN
FLORENCE, AZ 85132

ROGAZ NATALIE & VEGA RAFA...
10669 E WALLFLOWER LN
FLORENCE, AZ 85132

CRUSE STEPHEN RAY
11023 E VERBINA LN
FLORENCE, AZ 85132

AH4R PROPERTIES TWO LLC
23975 PARK SORRENTO STE 30...
CALABASAS, CA 91302

HAYFORD KYLE J & NICOLE R
10601 E WALLFLOWER LN
FLORENCE, AZ 85132

DOOLING NEERA
10933 E VERBINA LN
FLORENCE, AZ 85132

WISSMAN ANGELA G & MICHAE...
10711 E WALLFLOWER LN
FLORENCE, AZ 85132

HARMON JANNA KAY & LORI
10655 E WALLFLOWER LN
FLORENCE, AZ 85132

SOUNDARARAJAN GOVINDARA...
3196 ALICE DR
NEWBURY PARK, CA 91320

MCKENNA JOSEPH & ANGELA
1515 640TH ST
STORM LAKE, IA 50588

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

MILE HIGH BORROWER 1 (VAL...
PO BOX 4090
SCOTTSDALE, AZ 85261

JAMES JASMINE DANEA & RAD...
10523 E WALLFLOWER LN
FLORENCE, AZ 85132

MILLER TAMMIE D
10615 E WALLFLOWER LN
FLORENCE, AZ 85132

WILSON BRYAN LLOYD & NATA...
11057 E VERBINA LN
FLORENCE, AZ 85132

ADAMS CASEY & JODY
10826 E WALLFLOWER LN
FLORENCE, AZ 85132

~~MAGAM RANCH HOMEOWNER...~~
~~MAIL RETURN~~
,

PERALES CANDACE B
10756 E WALLFLOWER LN
FLORENCE, AZ 85132

VELASQUEZ MARCOS MANUEL
10897 E VERBINA LN
FLORENCE, AZ 85132

HARRIS PHILLIP
10829 E VERBINA LN
FLORENCE, AZ 85132

SMITHSON ROBERT & RHOND...
10759 E VERBINA LN
FLORENCE, AZ 85132

QUIGLEY VIRGINIA G FAM TRU...
11077 E VERBINA LN
FLORENCE, AZ 85132

NETTLETON-MITCHELL STEVE...
10486 E WALLFLOWER LN
FLORENCE, AZ 85132

WILL RYON C
10672 E WALLFLOWER LN
FLORENCE, AZ 85132

MCEVOY MARGARET A
10881 E VERBINA LN
FLORENCE, AZ 85132

FKH SFR PROPO B-HLD LP
1850 PARKWAY PL SE STE 900
MARIETTA, GA 30067

REINHART KURT
10747 E VERBINA LN
FLORENCE, AZ 85132

JOHNSON SCOTT F & MARY JA...
247 PARADISO LN
CENTERVILLE, UT 84014

RENKKE JOHN R & ESTHER A
10710 E WALLFLOWER LN
FLORENCE, AZ 85132

THOMPSON JOSHUA J
10664 E WALLFLOWER LN
FLORENCE, AZ 85132

DANE PETER & LYNN
4405 NE 25TH CT
RENTON, WA 98059

KRAUSE ERIC & MCCABE MEG...
10502 E WALLFLOWER LN
FLORENCE, AZ 85132

SMITH STEPHEN & APRIL NOLE...
10594 E WALLFLOWER LN
FLORENCE, AZ 85132

WILSON THOMAS B & KATHLEE...
10863 E VERBINA LN
FLORENCE, AZ 85132

BRASFIELD BRADLEY O & DIAN...
3861 W DUBLIN ST
CHANDLER, AZ 85226

LEWIS DELBERT JAMES & GER...
10455 E VERBINA LN
FLORENCE, AZ 85132

FRENCH ALFRED & ANITA
10454 E WALLFLOWER LN
FLORENCE, AZ 85132

ELVERS LORI
10520 E WALLFLOWER LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE~~ 31...
SAN ANTONIO, TX 78232

HINTON GLENN E & GWENDOL...
10847 E VERBINA LN
FLORENCE, AZ 85132

LEWIS MORGAN LEIGH & TIMO...
10696 E WALLFLOWER LN
FLORENCE, AZ 85132

~~MAGAM RANCH HOMEOWNER...~~
~~MAIL RETURN~~
,

SALIN CHYRES
10470 E WALLFLOWER LN
FLORENCE, AZ 85132

CHEVES DARLA M LIV TRUST
10540 E WALLFLOWER LN
FLORENCE, AZ 85132

MOSSMAN ANDRE & HOLLY
10735 E VERBINA LN
FLORENCE, AZ 85132

GARCIA FRANCISCO
10726 E WALLFLOWER LN
FLORENCE, AZ 85132

BARKER KALEM
10684 E WALLFLOWER LN
FLORENCE, AZ 85132

SFR II BORROWER 2021-3 LLC
120 S RIVERSIDE PLZ STE 2000
CHICAGO, IL 60606

BLASER JASON WESLEY
10614 E WALLFLOWER LN
FLORENCE, AZ 85132

NAPIER JOHN
11040 E VERBINA LN
FLORENCE, AZ 85132

GURROLA HECTOR C JR & RA...
10711 E VERBINA LN
FLORENCE, AZ 85132

MASTERS YASMEA PENNIE VA...
10954 E VERBINA LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

BAKER LORI MICHEL & JARED ...
10517 E VERBINA LN
FLORENCE, AZ 85132

AUSICH KENNETH R & SHIRLE...
36817 N STONEWARE DR
SAN TAN VALLEY, AZ 85140

MCQUINN SHANE LEE & CHARI...
10898 E VERBINA LN
FLORENCE, AZ 85132

GARCIA MARTIN
10844 E VERBINA LN
FLORENCE, AZ 85132

SHV HOMES 4 LLC
3495 PIEDMONT RD NE BLDG 1...
ATLANTA, GA 30305

MUNDORF NANCY & CHARLES ...
11060 E VERBINA LN
FLORENCE, AZ 85132

MAGNATA FUNDING GROUP LL...
13001 W SAN JUAN AVE
LITCHFIELD PARK, AZ 85340

RASKOVIC ALEXSANDAR
210 LILAC LN
BREA, CA 92823

LEIDER CHRISTOPHER S
10487 E VERBINA LN
FLORENCE, AZ 85132

HALVORSON THOMAS KALANI
10699 E VERBINA LN
FLORENCE, AZ 85132

SKARWECKI MELANIE
10640 E WALLFLOWER LN
FLORENCE, AZ 85132

CASTILLO LUIS & BLANCA
10723 E VERBINA LN
FLORENCE, AZ 85132

CARMONA JORGE E RICO
1457 W SUSSEX ST
SAN TAN VALLEY, AZ 85143

SALAZAR MARTIN RODRIGUEZ
10934 E VERBINA LN
FLORENCE, AZ 85132

WIEDEN MICHAEL & JENNIFER
10880 E VERBINA LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

BARNES JOHN RUSSELL JR
2208 E GILLCREST RD
GILBERT, AZ 85298

BANKS TOMMY L II & ALISSA LE
11078 E VERBINA LN
FLORENCE, AZ 85132

FEENEY DOUGLAS RICHARD
10806 E VERBINA LN
FLORENCE, AZ 85132

ORZECH JOAN
10473 E VERBINA LN
FLORENCE, AZ 85132

PLISZKA STANISLAWA ANNA
10503 E VERBINA LN
FLORENCE, AZ 85132

LITTLE SEAN & TOLEDO ALEXA
10687 E VERBINA LN
FLORENCE, AZ 85132

PHASLEY ANNA M & JOE
485 E WINDSOR DR
GILBERT, AZ 85296

ATLAS 2005 LLC
3225 MCLEOD DR STE 100
LAS VEGAS, NV 89121

SFR II BORROWER 2021-3 LLC
120 S RIVERSIDE PLZ STE 2000
CHICAGO, IL 60606

LEE TIMOTHY & JODY
10675 E VERBINA LN
FLORENCE, AZ 85132

PAGAYA SMARTRESI F1 FUND ...
1950 E GREYHOUND PASS STE ...
CARMEL, IN 46033

PALKA VINCENT A
11047 E SUNFLOWER CT
FLORENCE, AZ 85132

COWART HEATHER
10772 E VERBINA LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

UNDERHILL JASON L LIV TRUS...
PO BOX 3513
ARIZONA CITY, AZ 85123

SHV HOMES 4 LLC
3495 PIEDMONT RD NE BLDG 1...
ATLANTA, GA 30305

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

HEISLER CYNTHIA ANN
10891 E SUNFLOWER CT
FLORENCE, AZ 85132

REZA JOEL
10661 E VERBINA LN
FLORENCE, AZ 85132

MCHENRY DAVID J FAM TR
1450 E INDIAN SCHOOL RD ST...
PHOENIX, AZ 85014

VESELY CHEYENNE
10448 E VERBINA LN
FLORENCE, AZ 85132

CLINE KENNETH & RITA
10587 E VERBINA LN
FLORENCE, AZ 85132

MYERS BRADLEY K & MELISSA ...
11015 E SUNFLOWER CT
FLORENCE, AZ 85132

HARRISON WESTON
10728 E VERBINA LN
FLORENCE, AZ 85132

AGUIRRE CHRISTOPHER JASO...
10649 E VERBINA LN
FLORENCE, AZ 85132

PATD JOSEPH & YESENIA
13240 E MARIGOLD LN
FLORENCE, AZ 85132

ROBINSON KEIAN & COURTNE...
10863 E SUNFLOWER CT
FLORENCE, AZ 85132

JOHNSON ADAM N & JENNIFER...
10601 E VERBINA LN
FLORENCE, AZ 85132

SCHEIFLA DARYL & REBECCA ...
11031 E SUNFLOWER CT
FLORENCE, AZ 85132

RS XII NM PHOENIX OWNER 1 ...
717 N HARWOOD ST STE 2800
DALLAS, TX 75201

MEGANEY RYAN
10637 E VERBINA LN
FLORENCE, AZ 85132

RAMIREZ DANNY J & CATHERIN...
10412 E VERBINA LN
FLORENCE, AZ 85132

MARTINEZ ADAM
10484 E VERBINA LN
FLORENCE, AZ 85132

MANN PAUL E & KEARA TRS
10625 E VERBINA LN
FLORENCE, AZ 85132

HOLLAND CYNTHIA J & LAWYE...
10913 E SUNFLOWER CT
FLORENCE, AZ 85132

FKH SFR PROPCO H LP
1850 PARKWAY PL STE 900
MARIETTA, GA 30067

SWANSON ANDREW JOHN
10613 E VERBINA LN
FLORENCE, AZ 85132

ALVARADO DISENIA
10742 E VERBINA LN
FLORENCE, AZ 85132

SHUTE JAMIE E & TANIA P
10716 E VERBINA LN
FLORENCE, AZ 85132

KOVARIK CHANG & KARL
10502 E VERBINA LN
FLORENCE, AZ 85132

MACIVER DANIEL C & PAMELA ...
10363 E SUNFLOWER LN
FLORENCE, AZ 85132

GORMAN KENNY & DIANA
10441 E SUNFLOWER LN
FLORENCE, AZ 85132

HEID MICHELLE
10827 E SUNFLOWER CT
FLORENCE, AZ 85132

ANDERSON PATRICK C
10375 E SUNFLOWER LN
FLORENCE, AZ 85132

BATES DERICK & REILLY NATAS...
10684 E VERBINA LN
FLORENCE, AZ 85132

SERDUTZ DANIEL & SHIRLEY
10520 E VERBINA LN
FLORENCE, AZ 85132

ARONSTEIN RICHARD & TOSH...
10696 E VERBINA LN
FLORENCE, AZ 85132

EDWARDS LINDA MAY & BAEZ ...
10759 E SUNFLOWER CT
FLORENCE, AZ 85132

~~FINNEGAN BENJAMIN & ELSA~~
~~MAIL RETURN~~
,

JOHNSTON BOBBY
29820 N MESQUITE CIR
FLORENCE, AZ 85132

JUAREZ JAMES J & CYNTHIA A
10574 E VERBINA LN
FLORENCE, AZ 85132

STANGEBY ELEXIS BREANNA A...
10803 E SUNFLOWER CT
FLORENCE, AZ 85132

REYES RODOLFO
10389 E SUNFLOWER LN
FLORENCE, AZ 85132

KURRAN GEORGE M
10586 E VERBINA LN
FLORENCE, AZ 85132

HIRALES ROSEMARY & EDMUN...
10540 E VERBINA LN
FLORENCE, AZ 85132

GULLATT LACRESHA
10401 E SUNFLOWER LN
FLORENCE, AZ 85132

ALVARADO MARK
10674 E VERBINA LN
FLORENCE, AZ 85132

DE LA ROSA DIANA MARIE
29819 N MESQUITE CIR
FLORENCE, AZ 85132

LANGFORD BRIAN & WENDY D...
10781 E SUNFLOWER CT
FLORENCE, AZ 85132

FIELDS STEPHEN C & CHERYL ...
10898 E SUNFLOWER CT
FLORENCE, AZ 85132

ZAUGG DONOVAN
10327 E SUNFLOWER LN
FLORENCE, AZ 85132

BEGAY AUBREY JEAN
10413 E SUNFLOWER LN
FLORENCE, AZ 85132

~~LAWRENCE RYAN & MARKOVIC...~~
~~MAIL RETURN~~
,

ULEP SHANNEL K
10339 E SUNFLOWER LN
FLORENCE, AZ 85132

TYRA-DAVIS JOSH
29824 N CHOLLA DR
FLORENCE, AZ 85132

PHILLIPS JORDAN K & DEJAH S...
29840 N CHOLLA DR
FLORENCE, AZ 85132

FKH SFR PROPCO G L P
1850 PARKWAY PL SE STE 900
MARIETTA, GA 30067

NELSON SHAWN ALCOTT & MY...
10427 E SUNFLOWER LN
FLORENCE, AZ 85132

TAYLOR CHARLES
10874 E SUNFLOWER CT
FLORENCE, AZ 85132

TARVER ERIC L
29833 N MESQUITE CIR
FLORENCE, AZ 85132

SOLIS MEDWIN
29850 N MESQUITE CIR
FLORENCE, AZ 85132

LAWLER WILLIAM & DAWN
10567 E SUNFLOWER LN
FLORENCE, AZ 85132

TORRES ELIZABETH FLORES
10598 E VERBINA LN
FLORENCE, AZ 85132

KLEIN DAVID E & DENISE H
10705 E SUNFLOWER CT
FLORENCE, AZ 85132

SCHAELER HEIDI
10360 E SUNFLOWER LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

CARLSON RONALD & ANA M
29870 N CHOLLA DR
FLORENCE, AZ 85132

PETERSON VALERIE R
10374 E SUNFLOWER LN
FLORENCE, AZ 85132

AUCIELLO LAURA
10850 E SUNFLOWER CT
FLORENCE, AZ 85132

VANDERPOL TRISTAN & ROCH...
10266 E SUNFLOWER LN
FLORENCE, AZ 85132

TRULL BRIAN & MARIA C
900 W 16TH ST
TEMPE, AZ 85281

HARDING KENNETH REILLY & V...
29834 N MESQUITE CIR
FLORENCE, AZ 85132

GALLEGOS RICHARD
10280 E SUNFLOWER LN
FLORENCE, AZ 85132

SALCEDO NAPOLEON & RAQU...
10388 E SUNFLOWER LN
FLORENCE, AZ 85132

QUINNELLL BRUCE A & VALERI...
10719 E SUNFLOWER CT
FLORENCE, AZ 85132

BOLDUC DYLAN JOSEPH & HA...
10294 E SUNFLOWER LN
FLORENCE, AZ 85132

MOORE JASON & TEASHA A
10782 E SUNFLOWER CT
FLORENCE, AZ 85132

EDSALL MICHAEL PAUL & PAME...
10830 E SUNFLOWER CT
FLORENCE, AZ 85132

LEYVAS ARTURO R
10308 E SUNFLOWER LN
FLORENCE, AZ 85132

BALL LAURINE 2015 FAM TRUS...
4634 PASEO DE LA VIS
BONITA, CA 91902

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29854 N CHOLLA DR
FLORENCE, AZ 85132

TAPAHA BRIAN
10322 E SUNFLOWER LN
FLORENCE, AZ 85132

RUEDA-PALACIOS ARMIN
10416 E SUNFLOWER LN
FLORENCE, AZ 85132

RINGER BRIAN D & MAUD CAM...
10800 E SUNFLOWER CT
FLORENCE, AZ 85132

PATTERSON MAXINE
10336 E SUNFLOWER LN
FLORENCE, AZ 85132

LINDEN KEITH M & SIEFFERMA...
18899 E KENT PL
AURORA, CO 80013

BOWERS ALINA
10555 E SUNFLOWER LN
FLORENCE, AZ 85132

GRAVELY STEPHEN D
10348 E SUNFLOWER LN
FLORENCE, AZ 85132

JENCKS SUNFLOWER LLC
6428 S TROPHY CT
GILBERT, AZ 85298

BOLLER TERESA
10430 E SUNFLOWER LN
FLORENCE, AZ 85132

SINGER DANIEL R & BAMBI G
10685 E SUNFLOWER CT
FLORENCE, AZ 85132

MCKENNA PATRICK J
107 MALLARD AVE
STORM LAKE, IA 50588

JOHNSON JEREMIAH W & AND...
29856 N MESQUITE CIR
FLORENCE, AZ 85132

SMITH WAYNE C & YANITZA I NI...
10734 E SUNFLOWER CT
FLORENCE, AZ 85132

GRUNSTEAD ELYSE
10673 E SUNFLOWER CT
FLORENCE, AZ 85132

SKINNER KENT L
10444 E SUNFLOWER LN
FLORENCE, AZ 85132

PACHECO JULISSA
10825 E PRIMROSE CT
FLORENCE, AZ 85132

KROM ELIZABETH RENDE
10267 E PRIMROSE LN
FLORENCE, AZ 85132

MARTINEZ DAVID & ELIZABETH...
10883 E PRIMROSE CT
FLORENCE, AZ 85132

DENNISON BRANDI LEE & MIC...
10615 E SUNFLOWER LN
FLORENCE, AZ 85132

LESUEUR HAYLEY & HYRUM
10281 E PRIMROSE LN
FLORENCE, AZ 85132

HAIRSTON DAREN & SAMANTH...
10591 E SUNFLOWER LN
FLORENCE, AZ 85132

10490 SUNFLOWER LLC
9414 E MONUMENT DR
SCOTTSDALE, AZ 85262

~~MATUS JOSE CRIS & TAMMY J~~
~~MAIL RETURN~~
,

PANKEY MELINDA
10748 E SUNFLOWER CT
FLORENCE, AZ 85132

PEREZ JUAN
29900 N CHOLLA DR
FLORENCE, AZ 85132

RIEDERER JULIE ANN & JEFFR...
32721 N 23RD AVE
PHOENIX, AZ 85085

LAWSON RODNEY EUGENE & ...
29886 N CHOLLA DR
FLORENCE, AZ 85132

DEAL JAMES & JANINE
10510 E SUNFLOWER LN
FLORENCE, AZ 85132

SHAVER JON
10323 E PRIMROSE LN
FLORENCE, AZ 85132

MCCAULEY SHAWN & DESTINY
10458 E SUNFLOWER LN
FLORENCE, AZ 85132

HOUGH NICOLE
10631 E SUNFLOWER LN
FLORENCE, AZ 85132

SCHULTZ ROBERT & TAWNY M...
10337 E PRIMROSE LN
FLORENCE, AZ 85132

CHAPPELL CLARENCE E MYLE...
10849 E PRIMROSE CT
FLORENCE, AZ 85132

WALTON STACY E
10799 E PRIMROSE CT
FLORENCE, AZ 85132

LAWSON LACRESHA
10351 E PRIMROSE LN
FLORENCE, AZ 85132

BLACK JUSTINE
10603 E SUNFLOWER LN
FLORENCE, AZ 85132

SCHRAH SARAH
10528 E SUNFLOWER LN
FLORENCE, AZ 85132

CIOFALO MARY E & MICHAEL A
10365 E PRIMROSE LN
FLORENCE, AZ 85132

JOHNSON JOHN
10379 E PRIMROSE LN
FLORENCE, AZ 85132

LANDAU MARK
10449 E PRIMROSE LN
FLORENCE, AZ 85132

RIVAS RAVONA O
PO BOX 32173
MESA, AZ 85275

COX JOANNE H
2202 E 24TH ST N
SNOWFLAKE, AZ 85937

MEGAHEY JESSICA K & NORD ...
10570 E SUNFLOWER LN
FLORENCE, AZ 85132

BURNETT AMBER
10604 E SUNFLOWER LN
FLORENCE, AZ 85132

SONATY CHRISTOPHER M TRS
10761 E PRIMROSE CT
FLORENCE, AZ 85132

MARTIN JONATHAN GABRIEL & ...
10739 E PRIMROSE CT
FLORENCE, AZ 85132

THEORIN RACHEL & DAVIS HA...
10653 E SUNFLOWER CT
FLORENCE, AZ 85132

OSIFE MARCUS
10393 E PRIMROSE LN
FLORENCE, AZ 85132

ROTH CHERYL
10665 E SUNFLOWER CT
FLORENCE, AZ 85132

RAMIREZ ADRIAN & CHEYENN...
10505 E PRIMROSE LN
FLORENCE, AZ 85132

MENDOZA RICHARD EDWARD ...
10407 E PRIMROSE LN
FLORENCE, AZ 85132

DAIL RONALD E
10649 E SUNFLOWER LN
FLORENCE, AZ 85132

SORIA NANCY JACQUELINE & J...
10703 E PRIMROSE CT
FLORENCE, AZ 85132

JOHNSON ARTHUR & SHARLE...
10421 E PRIMROSE LN
FLORENCE, AZ 85132

SMITH COREY D & SUSAN S
10582 E SUNFLOWER LN
FLORENCE, AZ 85132

SIMARD JULIE
10519 E PRIMROSE LN
FLORENCE, AZ 85132

WILSON TIMOTHY T & TONI
10558 E SUNFLOWER LN
FLORENCE, AZ 85132

E PRIMROSE INVESTMENTS LL...
3272 GARFIELD ST
SAN BERNARDINO, CA 92407

CARTER ANDREW M & TONYA ...
10533 E PRIMROSE LN
FLORENCE, AZ 85132

MASON DANIEL K
29916 N CHOLLA DR
FLORENCE, AZ 85132

AMS REAL SERVICES LLC
6291 S TOPAZ PL
CHANDLER, AZ 85249

FRANCO SIRENA MARLEEN TR...
10641 E SUNFLOWER CT
FLORENCE, AZ 85132

ESTEVEZ ENRIQUE
10696 E SUNFLOWER CT
FLORENCE, AZ 85132

DEGRACE CAROLYNN FAMILY T...
10725 E PRIMROSE CT
FLORENCE, AZ 85132

ZAMBRANO KIMBERLY DIANA
10685 E PRIMROSE CT
FLORENCE, AZ 85132

HATCHER JASON A
10435 E PRIMROSE LN
FLORENCE, AZ 85132

PEREZ PETE J SR & MONICA
10684 E SUNFLOWER CT
FLORENCE, AZ 85132

NICHOLS COLTAN MATTHEW & ...
29932 N CHOLLA DR
FLORENCE, AZ 85132

ROMERO GLADYS FAM TRUST
10547 E PRIMROSE LN
FLORENCE, AZ 85132

ROMAN TAMMY S
10354 E PRIMROSE LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

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FLORENCE, AZ 85132

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FLORENCE, AZ 85132

GM GABRYCH FAMILY LTD PSHI...
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FALLBROOK, CA 92028

FREESE TROY EUGENE & NICK...
10234 E PRIMROSE LN
FLORENCE, AZ 85132

~~RUIZ ESTEVAN J~~
~~MAIL RETURN~~
,

GM GABRYCH FAMILY LTD PSHI...
2006 OLD HIGHWAY 395
FALLBROOK, CA 92028

CLARK DAMON KD & DANA MA...
10254 E PRIMROSE LN
FLORENCE, AZ 85132

MACIAS FERNANDA
10561 E PRIMROSE LN
FLORENCE, AZ 85132

PINAL COUNTY
PO BOX 827
FLORENCE, AZ 85132

SIMONIN RICHARD
10270 E PRIMROSE LN
FLORENCE, AZ 85132

LUNA MARIA
6804 E HERITAGE RD
FLORENCE, AZ 85132

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PO BOX 827
FLORENCE, AZ 85132

BROKAW NATALIE
10284 E PRIMROSE LN
FLORENCE, AZ 85132

PUGH DOROTHY
10418 E PRIMROSE LN
FLORENCE, AZ 85132

MAGMA RANCH III - PHOENIX L...
3808 N SULLIVAN RD BLDG N15...
SPOKANE VALLEY, WA 99216

PETERSON MATTHEW R & CHE...
10298 E PRIMROSE LN
FLORENCE, AZ 85132

RESIDENTIAL HOME BUYER PH...
PO BOX 4090
SCOTTSDALE, AZ 85261

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GRAHAM DAVID & KANDRA
10312 E PRIMROSE LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

~~MAGMA RANCH III - PHOENIX L...~~
~~3808 N SULLIVAN RD BLDG N15...~~
~~SPOKANE VALLEY, WA 99216~~

HUNTER HARRISON & KIRI
10326 E PRIMROSE LN
FLORENCE, AZ 85132

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

FUNK FAMILY EDUCATION FUN...
3644 PIUTE DR
PROVO, UT 84604

~~MAGMA RANCH HOMEOWNER...~~
~~17319 SAN PEDRO AVE STE 31...~~
~~SAN ANTONIO, TX 78232~~

Pinal Central Dispatch

AFFIDAVIT OF PUBLICATION

State of New Jersey, County of Hudson, ss:

Bailee Liston, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Pinal Central Dispatch, a newspaper published at Casa Grande, Pinal County, Arizona,Thursday of each week; that a notice, a full, true and complete printed copy of which is hereunto attached, was printed in the regular edition of said newspaper, and not in a supplement thereto, for 1 issues. The publications thereof having been on the following dates:

PUBLICATION DATES:
Sep. 5, 2024

NOTICE ID: CPVXICI9aOHMy3or4KAR
NOTICE NAME: PZ-PA-012-24 Judd PZC NOH

Bailee Liston

(Signed)_____

SHANNEA H HOLMES
NOTARY PUBLIC
STATE OF NEW JERSEY
My Commission Expires August 1, 2026

VERIFICATION

State of New Jersey
County of Hudson

Subscribed in my presence and sworn to before me on this: 09/06/2024

Shannea H Holmes

Notary Public
Notarized remotely online using communication technology via Proof.

NOTICE OF PUBLIC HEARING BY THE PINAL COUNTY PLANNING AND ZONING COMMISSION AT 9:00 A.M. ON THE 25th DAY OF SEPTEMBER 2024, AT THE PINAL COUNTY ADMINISTRATIVE COMPLEX, EMERGENCY OPERATIONS CENTER (EOC), 301 E 11TH ST, FLORENCE, ARIZONA, TO CONSIDER AN APPLICATION FOR MAJOR COMPREHENSIVE PLAN AMENDMENT TO THE PINAL COUNTY COMPREHENSIVE PLAN.
PZ-PA-012-24 – PUBLIC HEARING/ACTION: Judd Ventures LLC, owner, Rose Law Group & Iplan Consulting Corp., agent, requesting a Major Comprehensive Plan Amendment to the Pinal County Comprehensive Plan to re-designate ±96 acres of land from Moderate Low Density Residential (1-3.5 du/ac) to ±80 Acres of Employment and ±16 Acres of Mixed Use-Residential Focused, to develop a data center, BESS and mixed use residential developments, situated in section 29, T03S, R09E of the Gila and Salt River Baseline and Meridian (legal on file) tax parcels: 210-44-002 and 210-44-004 located on the southeast corner of N Felix Rd and E Judd Rd in the Arizona Farms region of San Tan Valley, Pinal County, AZ.
ALL PERSONS INTERESTED IN THIS MATTER MAY APPEAR AND SPEAK AT THE PUBLIC HEARING AT THE DATE, TIME, AND PLACE DESIGNATED ABOVE.
DOCUMENTS PERTAINING TO THIS CASE CAN BE FOUND ON THE NOTICE OF HEARING PAGE FOR THE P&Z COMMISSION AT: https://www.pinal.gov/236/Notice-of-Hearings
DATED THIS 26th DAY OF AUGUST 2024, by Pinal County Community Development Department.
TO QUALIFY FOR FURTHER NOTIFICATION IN THIS LAND USE MATTER YOU MUST FILE WITH THE PLANNING DEPARTMENT A WRITTEN STATEMENT OF SUPPORT OR OPPOSITION TO THE SUBJECT APPLICATION. YOUR STATEMENT MUST CONTAIN THE FOLLOWING INFORMATION:
1) Planning Case Number (see above)
2) Your name, address, telephone number and property tax parcel number (Print or type)
3) A brief statement of reasons for supporting or opposing the request
4) Whether or not you wish to appear and be heard at the hearing
WRITTEN STATEMENTS MUST BE FILED WITH:
PINAL COUNTY COMMUNITY DEVELOPMENT DEPARTMENT
PO BOX 749 (85 N. FLORENCE STREET)
FLORENCE, AZ 85132
Contact for this matter: Patrick Roberts, Senior Planner
E-mail address: Patrick.Roberts@pinal.gov

Phone # (520) 866-6409
No. of publications: 1: date of publication: Sep 05, 2024

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Arizona
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AFFIDAVIT OF PUBLICATION

Rose Law Group
7144 E. Stetson Dr. Suite 300
Scottsdale AZ 85251

STATE OF WISCONSIN, COUNTY OF BROWN

The Arizona Republic, a newspaper published in the city of Phoenix and general circulation in the counties of Maricopa, Coconino, Pima and Pinal, State of Arizona, and personal knowledge of the facts herein state and that the notice hereto annexed was Published in said newspapers in the issue:

09/06/2024

and that the fees charged are legal.
Sworn to and subscribed before on 09/06/2024

Legal Clerk

Notary, State of WI, County of Brown

5·15·27

My commission expires

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NANCY HEYRMAN
Notary Public
State of Wisconsin

NOTICE OF PUBLIC HEARING BY THE PINAL COUNTY PLANNING AND ZONING COMMISSION AT 9:00 A.M. ON THE 25th DAY OF SEPTEMBER 2024, AT THE PINAL COUNTY ADMINISTRATIVE COMPLEX, EMERGENCY OPERATIONS CENTER (EOC), 301 E 11TH ST, FLORENCE, ARIZONA, TO CONSIDER AN APPLICATION FOR MAJOR COMPREHENSIVE PLAN AMENDMENT TO THE PINAL COUNTY COMPREHENSIVE PLAN.

PZ-PA-012-24 – PUBLIC HEARING/ ACTION: Judd Ventures LLC, owner, Rose Law Group & Iplan Consulting Corp., agent, requesting a Major Comprehensive Plan Amendment to the Pinal County Comprehensive Plan to re-designate ±96 acres of land from Moderate Low Density Residential (1-3.5 du/ac) to ±80 Acres of Employment and ±16 Acres of Mixed Use-Residential Focused, to develop a data center, BESS and mixed use residential developments, situated in section 29, T03S, R09E of the Gila and Salt River Baseline and Meridian (legal on file) tax parcels: 210-44-002 and 210-44-004 located on the southeast corner of N Felix Rd and E Judd Rd in the Arizona Farms region of San Tan Valley, Pinal County, AZ.

ALL PERSONS INTERESTED IN THIS MATTER MAY APPEAR AND SPEAK AT THE PUBLIC HEARING AT THE DATE, TIME, AND PLACE DESIGNATED ABOVE.

DOCUMENTS PERTAINING TO THIS CASE CAN BE FOUND ON THE NOTICE OF HEARING PAGE FOR THE P&Z COMMISSION AT:
https://www.pinal.gov/236/Notice-of-Hearings

DATED THIS 26th DAY OF AUGUST 2024, by Pinal County Community Development Department.

TO QUALIFY FOR FURTHER NOTIFICATION IN THIS LAND USE MATTER YOU MUST FILE WITH THE PLANNING DEPARTMENT A WRITTEN STATEMENT OF SUPPORT OR OPPOSITION TO THE SUBJECT APPLICATION. YOUR STATEMENT MUST CONTAIN THE FOLLOWING INFORMATION:

1) Planning Case Number (see above)
2) Your name, address, telephone number and property tax parcel number (Print or type)
3) A brief statement of reasons for supporting or opposing the request
4) Whether or not you wish to appear and be heard at the hearing

WRITTEN STATEMENTS MUST BE FILED WITH:
PINAL COUNTY COMMUNITY DEVELOPMENT DEPARTMENT
PO BOX 749 (85 N. FLORENCE STREET)
FLORENCE, AZ 85132

Contact for this matter: Patrick Roberts, Senior Planner
E-mail address: Patrick.Roberts@pinal.gov
Phone # (520) 866-6409
September 6 2024
LAZS0151151

Pinal County
AFFIDAVIT OF POSTING BROADCAST SIGN

I, the applicant's representative for case # PZ-PA-012-24, personally caused at least one sign to be posted in a visible place on or near the proposed project site at SEC Judd Rd and N Felix Rd, at least 28 days before the Planning and Zoning Commission Public Hearing, in Pinal County.

See attached photo exhibit.

Dynamite Signs
Sign Company Name

Meghan Liggett
Sign Company Representative

Subscribed and sworn to be on 08/13/24 by Meghan Liggett.

IN WITNESS WHEREOF, I Hereto set my hand and official seal.

Mary Beth Conrad
Notary Public

MARYBETH CONRAD
Notary Public - Arizona
Maricopa County
Commission # 591461
My Comm. Expires Oct 25, 2024

My Commission expires: 10.25.24

PINAL COUNTY
Public Hearings

Case Number: PZ-PA-012-24

Existing Comprehensive Plan Designation:
Moderate Low Density Residential (MLDR)

Proposed Comprehensive Plan Designation:
Mixed Use – Residential for ~16 acres; Employment for ~80 acres

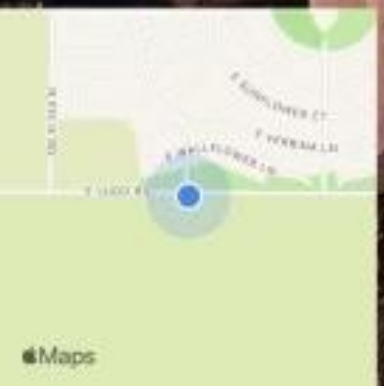
Acreage: 96.8

Applicant Name: Rose Law Group - Jennifer Hall

Applicant Phone Number: 480-505-3938

Case Information Available at Pinal County Planning & Development Services
(520) 866-6442





August 13, 2024 at 5:16 AM
+33.147520,-111.452157
E Judd Rd
Florence AZ 85132
United States


NOTICE
PLANNING & ZONING
PINAL COUNTY
PUBLIC HEARING
Any person who is interested may file written comments, in favor or in opposition, with Community Development Department in Pinal County or appear in person at the hearing.
Date Posted: 08/13/24
POST COPY OF ACTUAL NOTICE BELOW.
Maps
August 13, 2024 at 5:12 AM
+33.147509,-111.454918
E Judd Rd
Florence AZ 85132
United States

TRAFFIC IMPACT ANALYSIS
FOR

Sunhill

Southeast Corner of Felix Road & Judd Road
Pinal County, Arizona

Prepared for:

Judd Ventures, LLC
10 Prag Blvd #203
Monroe, NY 10950

Prepared by:

UCG
United Civil Group

Traffic Impact Analysis
For

Sunhill

Southeast Corner of Felix Road & Judd Road
Pinal County, Arizona

July 15, 2024

Prepared for:
Judd Ventures, LLC
10 Prag Blvd
Monroe, NY 10950

Prepared by:

2803 N. 7th Avenue
Phoenix, Arizona 85007

UCG Project Number: TR24078



Conducted by: Keith A. Winney, P.E.

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I. EXECUTIVE SUMMARY

A. PURPOSE OF THE REPORT

United Civil Group (UCG) was retained by Judd Ventures, LLC to perform this Traffic Impact Analysis (TIA) associated with the Sunhill Major Comprehensive Plan Amendment ("The Development" or "Subject Site"). The request for the approximate 96.8-acre overall Subject Site, located on the southeast corner of Felix Road & Judd Road, is for a land use classification amendment to Employment (approximately 80 acres) and Mixed-Use (approximately 16 acres).

UCG performed this TIA in general accordance with the Pinal County *Traffic Impact Assessment Guidelines & Procedures*, locally accepted standards, and industry practice.

B. STUDY OBJECTIVES

This study is intended to investigate the existing and future traffic conditions and identify the future roadway needs necessary to serve the forecasted traffic generated by the Development. Major study objectives of this study are as follows:

- Determine the estimated trip generation of the Development for its planned land uses.

- Estimate the total daily traffic volumes on the planned future roadway network within the study area.

- Evaluate the planned study area roadways and intersections with respect to capacity and forecasted levels of service.

- Where applicable, recommend any safety, intersection and/or roadway improvements, sufficient to meet the needs of the development and adjacent roadway network due to the addition of the site generated traffic volumes.

Further detailed traffic analyses, Traffic Statements, and/or TIA updates may be required as part of future applications for the future development stages of the project.

C. CONCLUSIONS AND RECOMMENDATIONS

The Sunhill Project is currently being planned to consist of Employment (approximately 80 acres) and Mixed-Use (approximately 16 acres) uses on an approximate 120.4-acre overall Subject Site. The opening year of the Development is planned for 2026 consisting of the Employment portion of the site; full build out is planned approximately 5 years after opening.

The locations of access points for the Sunhill Project were assumed based on the *Pinal County Access Management Manual* as detailed site planning for the Development

currently unknown. Based on this criterion, two access points were assumed on Felix Road with the northern access (Access A) serving both the Employment and Mixed-Use uses of the site and the southern access (Access B) serving the Employment portion of the site. Access A is planned as a ¾ movement access (no left out) and Access B is planned as a full movement access. Two access points were also assumed on Judd Road serving the Mixed-Use portion of the site. The western access (Access C) is planned as a ¾ movement access (no left out) and the eastern access (Access D) is planned as a full movement access aligning with Magmawood Drive.

On a typical weekday upon full building out, the Sunhill Project is estimated to generate 361 net new trips in the AM peak hour, 853 net new trips in the PM peak hour, and 10,650 net new daily trips.

In the existing conditions, the study area intersections currently operate at LOS B or better during the AM and PM peak hours.

For background (non-site) traffic conditions in the horizon years of 2026 and 2031, the study area intersections are forecasted to operate at LOS D or better during the AM and PM peak hours.

Traffic signal volume warrants are met at the study area intersections of Felix Road/Judd Road and Magmawood Drive-Access D/Judd Road utilizing full buildout 2031 total traffic volumes.

Considering total traffic conditions in horizon year 2026, the study area intersections and site accesses are forecasted to operate at LOS D or better during the AM and PM peak hours. The exception to this is the intersection of Felix Road/Judd Road that is forecasted to operate at LOS F in the PM peak hour due to the northbound left-turn movement. Exiting movements (especially left-turn and through movements) on stop-controlled minor roads and driveways that intersect with major streets typically experience greater delay for short periods of time in the peak hours due to the wait for acceptable gaps in the major street, while free-flowing major streets experience minimal delay.

Considering total traffic conditions in horizon year 2031, the signalized intersections of Felix Road/Judd Road and Magmawood Drive-Access D/Judd Road are forecasted to operate at LOS C or better in the AM and PM peak hours. The remaining study area intersections and assumed site accesses are forecasted to operate at LOS C or better in the AM and PM peak hours.

Based on this Traffic Impact Analysis, the following recommendations for the Development apply:

- Provide the half-street right-of-way dedication adjacent to the Subject Site and construct Felix Road between Judd Road and the southern property line per

input at coordination with Pinal County Engineering staff upon opening of Phase 1 of the Development.

- Provide the half-street right-of-way dedication adjacent to the Subject Site and construct Judd Road between Felix Road and the eastern property line per input at coordination with Pinal County Engineering staff upon full buildout of the Development.
- Provide a left-turn lane on southbound Felix Road at Access A, having a storage length of 125-feet.
- Provide a left-turn lane on southbound Felix Road at Access B, having a minimum storage length of 100-feet.
- Provide left-turn lanes on westbound Judd Road at Accesses C and D, having a minimum storage length of 100 feet.
- Provide right-turn lanes on eastbound Judd Road at Accesses C and D, having a minimum storage length of 100 feet.
- Provide a northbound left turn lane on Felix Road at Judd Road, having a storage length of 200 feet.
- Provide a westbound left turn lane on Judd Road at Felix Road, having a minimum storage length of 100 feet.
- Provide an eastbound right turn lane on Judd Road at Felix Road, having a storage length of 125 feet.
- Adequate sight distances and sight distance triangles at the site access points should be provided per AASHTO's *A Policy on Geometric Design of Highways and Streets* and the Pinal County *Subdivision and Infrastructure Design Manual*.
- The Development will be required to provide subsequent TIAs or TIA update(s) as part of future site plan applications for the future development stages of the project. The subsequent TIA(s) should provide re-analysis of the study area roadway segments and intersections, traffic signal warrants, right and left-turn lane needs, and other traffic impacts and recommendations as necessary and per Pinal County input/direction.

II. PROPOSED DEVELOPMENT

A. SITE LOCATION

The approximate 96.8-acre overall Subject Site is located on the southeast corner of Felix Road & Judd Road. *Figure 1: Vicinity Map* and *Figure 2: Aerial View* present the location of the Subject Site within the context of the immediate area and its location within Pinal County.

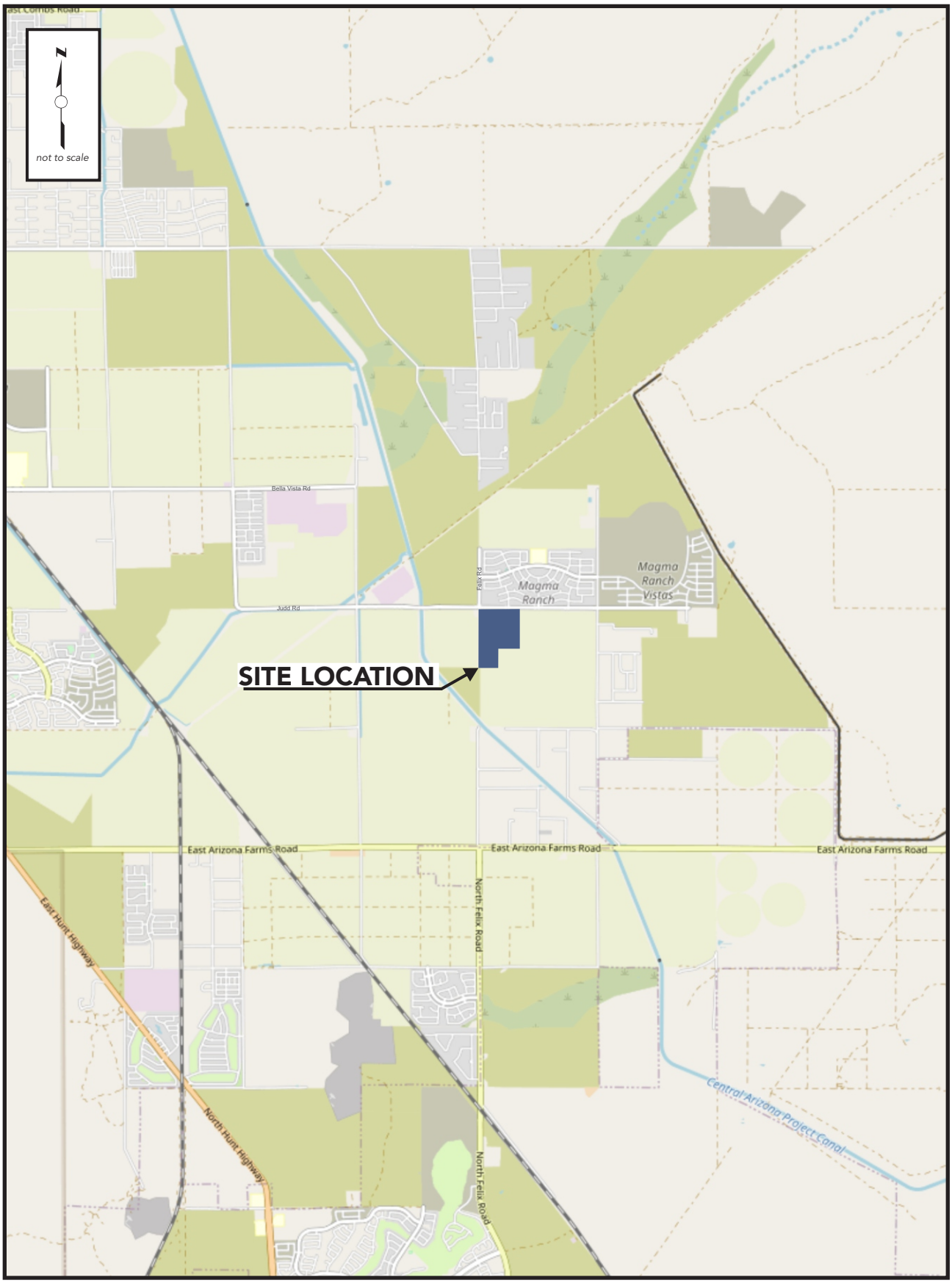
B. LAND USES

The land uses being planned for the Development include Employment (approximately 80 acres) and Mixed-Use (approximately 16 acres). Per information from project representatives, the specific uses of the Employment component will likely be warehousing, data centers, or battery storage buildings; specific uses of the Mixed-Use component may be commercial/retail, professional offices, and/or multi-family residential. *Table 1: Sunhill Land Use Summary* details the assumed land use and the size assumed for each component for the purposes of this study. These land uses and sizes have been utilized as the most likely uses, and as a conservative approach. Actual land use and detailed associated building sizes may be refined during the subsequent site planning processes.

TABLE 1: SUNHILL LAND USE SUMMARY

Land Use Classification	Acreage	Specific Land Use Assumption	Approximate Size
Employment	~ 80 acres	Warehousing	700,000 square feet (0.2 FAR)
Mixed-Use	~ 16 acres	Retail Shopping Plaza	140,000 square feet (0.2 FAR)

Figure 3: Conceptual Land Use Plan depicts the conceptual land uses and their associated acreage of the Subject Site.



ArcGIS 2023

Figure 1: Vicinity Map

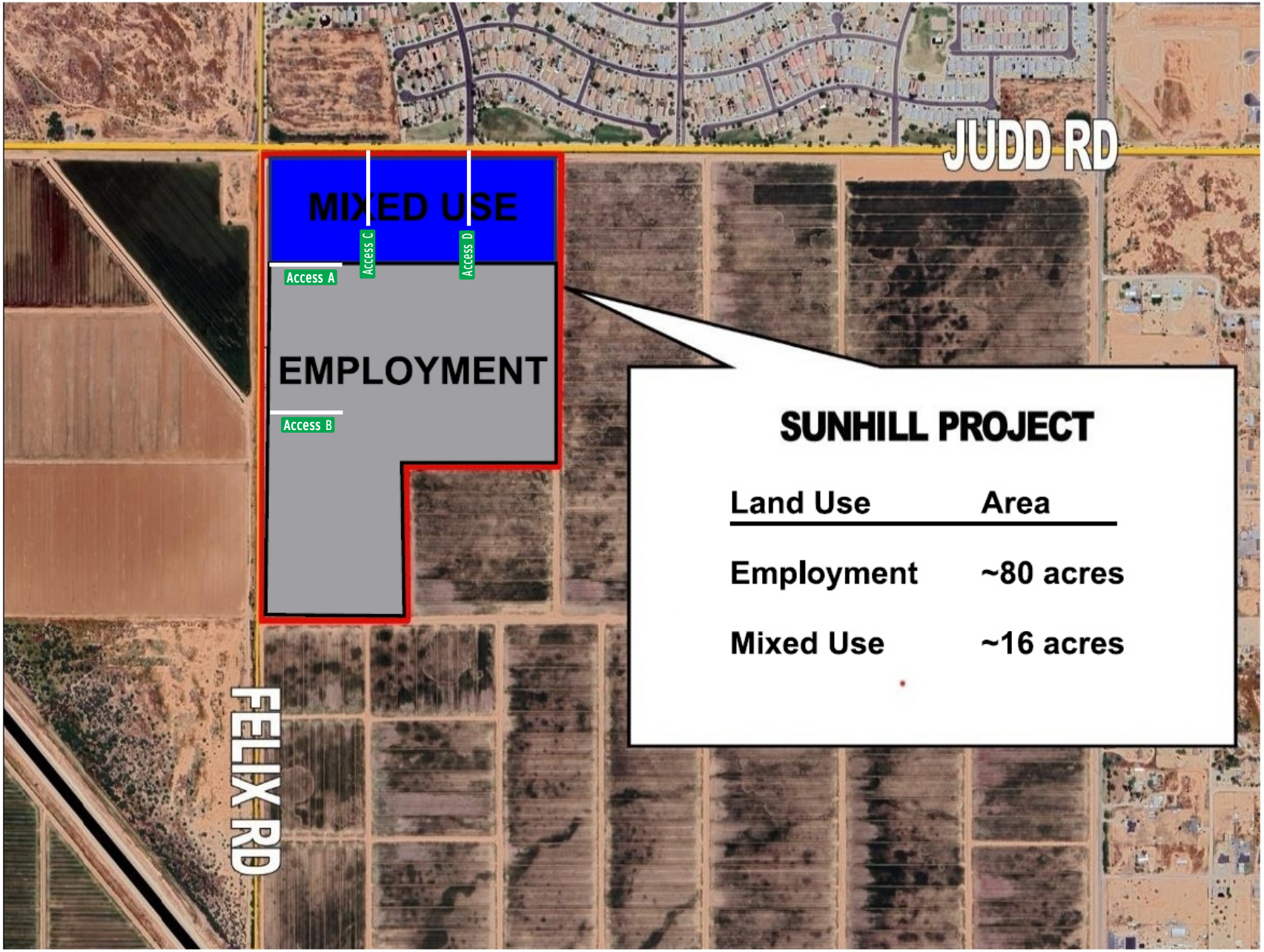
United Civil Group



Permission for commercial use granted by Google Earth

Figure 2: Aerial View

UCG
United Civil Group



*Assumed site access points shown.

not to scale

Figure 3: Conceptual Land Use Plan

United Civil Group

C. Phasing and Timing

Ultimately this project will be developed in phases, dependent on market forces. The following is the planned phasing as provided by the development team:

- Employment Component – Opening year of 2026
- Mixed-Use Component – Potential completion in year 2030.

For the purposes of this TIA and per the Pinal County *Traffic Impact Assessment Guidelines & Procedures*, the analysis horizon years of this study include the opening year (2026), and a 5-year horizon after opening (2031), which is expected to encompass full build out of the site.

D. Site Accessibility

At the time of actual site planning, the external access points of the Subject Site should be located per the *Pinal County Access Management Manual*. Potential site access points on Felix Road and Judd Road have been assumed for this study per these guidelines and are shown on Figure 3.

III. STUDY AREA

A. STUDY AREA

The following are the study area intersections included as part of this TIA:

- Felix Road & Judd Road
- Magmawood Drive & Judd Road
- Wildflower Parkway & Judd Road
- Felix Road & Desert Mountain Boulevard
- The assumed site access points

B. STUDY AREA LAND USE

The following describes the existing land uses of the subject site and surrounding area:

SUBJECT SITE: Existing fallow agricultural land. Existing Land Use Classification: Medium Low Density Residential (MLDR) with underlying GR zoning.

NORTH: Judd Road followed by vacant unimproved land and single-family homes.
SOUTH: Agricultural land.
EAST: Agricultural land.
WEST: Felix Road alignment followed by agricultural land.

C. ANTICIPATED FUTURE DEVELOPMENT AND PLANNED IMPROVEMENTS

C.1. PINAL COUNTY CAPITAL IMPROVEMENT PROJECTS

No transportation Capital Improvement Projects containing roadway capacity traffic control changes are planned within the study area per the Pinal County *5-Year Capital Improvement Plan* (2023 – 2028).

C.2. TOWN OF FLORENCE CAPITAL IMPROVEMENT PROJECTS

No transportation Capital Improvement Projects are included within the study area per the Town of Florence Capital Improvement Plan.

C.3. ADJACENT PRIVATE DEVELOPMENT PROJECTS

Three private development projects have been identified within or adjacent to the study area having an approved TIA and requiring inclusion in the background traffic volumes and overall analysis for this study. These include the *Magma Ranch II* mixed-use community, *North Florence 80* residential community, and the *Rock Creek* residential community.

Magma Ranch II mixed-use community development is planned on the northeast corner of Cooper Road/Judd Road. Ultimately the site is planned to consist of 2,060 single-family homes, an elementary school, and approximately 12.5 acres of commercial uses. Per the TIA completed for Magma Ranch II (*Traffic Impact Study for Magma Ranch II,* March 2006, TASK Engineering, Inc.) build out was initially planned

for 2020. As of 2024, the site is currently under construction, and it is assumed to be approximately half built and occupied. For the purposes of this Sunhill TIA, full build out of the remaining half of the Magma Ranch II will be assumed by 2026. The remaining traffic volumes for this adjacent private development are included in the background traffic for this study and provided in *Appendix F: Traffic Volumes of Adjacent Developments.*

The *North Florence 80* residential community development is planned for the northwest corner of the Hiscox Lane/Magma Road alignments. Ultimately the site is planned to consist of 298 single-family homes. Per the TIA completed for North Florence 80 (*North Florence 80 Traffic Impact Analysis,* February 2023, United Civil Group) build out is planned for 2025. The traffic volumes for this adjacent private development are included in the background traffic for this study and provided in *Appendix F: Traffic Volumes of Adjacent Developments.*

The *Rock Creek* residential community development is planned for the southeast corner of Cypress Drive/Judd Road. Ultimately the site is planned to consist of 346 single-family homes. Per the TIA completed for Rock Creek (*Rock Creek Traffic Impact Analysis,* October 2023, United Civil Group) build out is planned for 2025. The traffic volumes for this adjacent private development are included in the background traffic for this study and provided in *Appendix F: Traffic Volumes of Adjacent Developments.*

IV. EXISTING ROADWAY CONDITIONS

A. PHYSICAL CHARACTERISTICS

Felix Road is not classified within the Pinal County *Regional Significant Routes for Safety & Mobility, 2017 Update*, nor is it located along a section line. However, it is on the mile grid and generally acts as a Minor Arterial in the general region, and is classified as a Minor Arterial north of Judd Road according to the Town of Florence *General Plan 2020*. Adjacent to the Subject Site south of Judd Road, Felix Road is an unimproved dirt road. North of Judd Road, the eastern half-street has been constructed with curb/gutter and sidewalk; the interim section includes 1 northbound lane, 1 southbound lane, and a center two-way left-turn lane. The posted speed limit on Felix Road north of Judd Road is 35 miles per hour.

Judd Road is not classified within the Pinal County *Regional Significant Routes for Safety & Mobility, 2017 Update*, nor is it located along a section line. However, it is on the mile grid and is classified as a Minor Arterial according to the Town of Florence *General Plan 2020*. Generally from Felix Road to approximately 2 miles to the east, the northern half-street has been constructed with curb/gutter and sidewalk; the interim section includes 1 eastbound lane, 1 westbound lane, and a center two-way left-turn lane. The posted speed limit on Judd Road adjacent to the subject site is 45 miles per hour.

Magmawood Drive, Wildflower Parkway, and Desert Mountain Boulevard are fully-improved Minor Collectors within the *Magma Ranch* development. Magmawood Drive and Wildflower Parkway are each a two-lane section (1 northbound, 1 southbound lane) with a posted speed limit of 25 miles per hour. Desert Mountain Boulevard is a three-lane section (1 eastbound, 1 westbound, 1 center two-way left-turn lane) with a posted speed limit of 35 miles per hour.

The Felix Road & Judd Road intersection operates as an unsignalized intersection with stop-control on the Felix Road southbound approach.

The Felix Road & Desert Mountain Boulevard intersection operates as an unsignalized intersection with stop-control on the Desert Mountain Boulevard westbound approach.

The Magmawood Drive & Judd Road intersection operates as an unsignalized intersection with stop-control on the Magmawood Drive southbound approach.

The Wildflower Parkway & Judd Road intersection operates as an unsignalized intersection with stop-control on the Wildflower Parkway southbound approach.

B. Existing Traffic Volumes

Existing traffic volumes in 15-minute intervals were collected by United Civil Group at the study area intersections for a period of 24-hours on Thursday, June 27, 2024. Complete traffic count data can be found in *Appendix A: Traffic Data.*

Figure 4: Existing Conditions presents the existing intersection roadway geometries and the existing traffic volumes (AM peak hour, PM peak hour, average daily traffic) of the study area roadway segments and intersections within the study area.

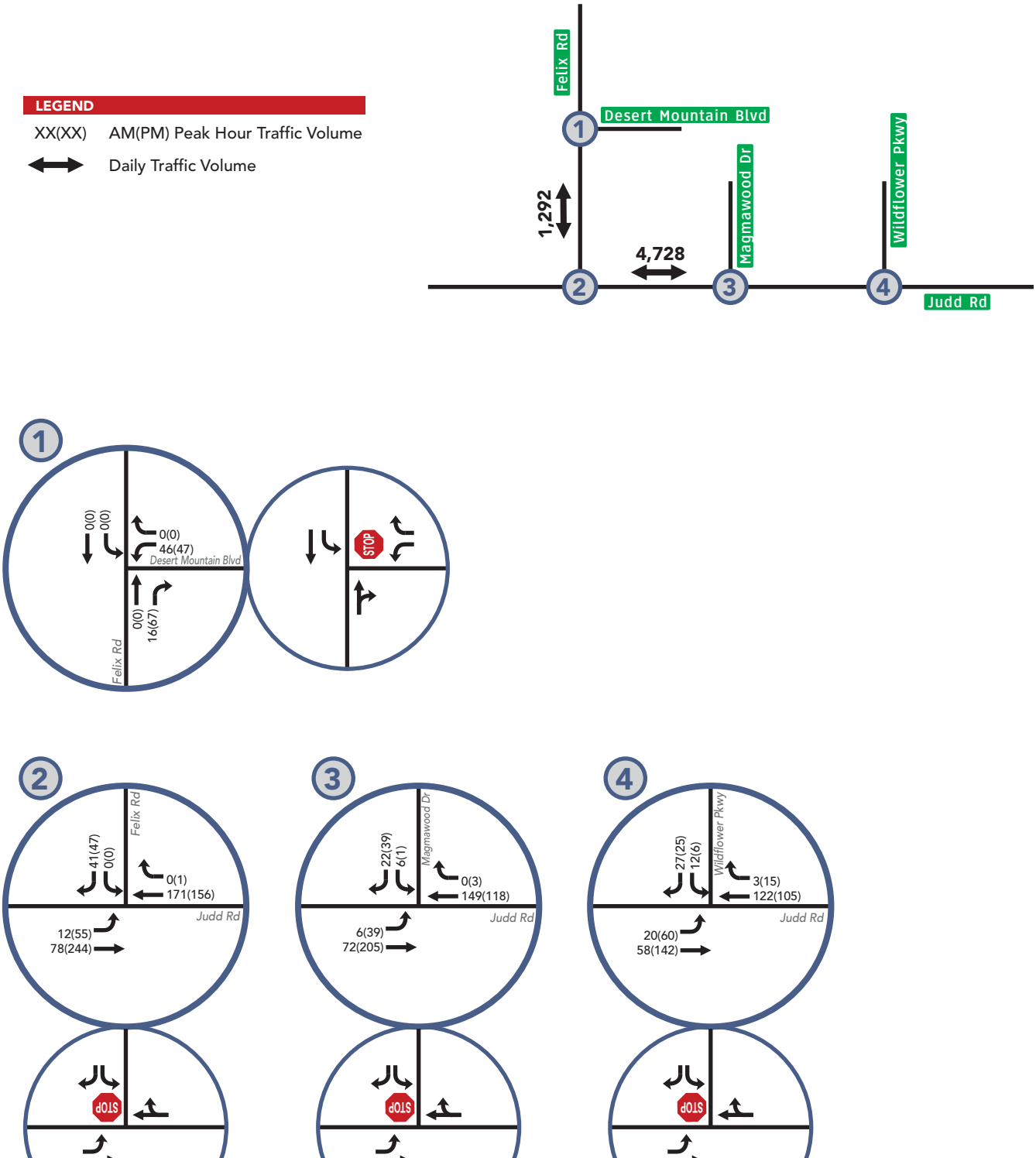


Figure 5: Existing Conditions - Year 2023

C. Existing Intersection Level of Service Analyses

The level of service (LOS) and overall average delay at the existing study area intersections were evaluated using the existing volumes and lane geometry. Traffic modeling software, employing the methodologies as presented in the Highway Capacity Manual, was utilized for the capacity analyses to obtain the levels of service. The output reports are included in *Appendix B: Capacity Analyses*. The results of the existing levels of service analysis are presented in *Table 2: Existing Conditions Intersection Levels of Service*.

Table 2: Existing Conditions Intersection Levels of Service

Intersection Location	NB LOS				SB LOS				EB LOS				WB LOS				Overall Intersection
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	AvgDelay/ LOS
Felix Road & Desert Mountain Boulevard – One-way stop-controlled																	
AM Peak Hour	-	-	A	A	-	-	-	-	-	-	-	-	A	-	-	A	8.74 *
PM Peak Hour	-	-	A	A	-	-	-	-	-	-	-	-	A	-	-	A	8.89 *
Felix Road & Judd Road – Two-way stop-controlled																	
AM Peak Hour	-	-	-	-	-	-	A	A	A	A	-	A	-	A	-	A	9.44 *
PM Peak Hour	-	-	-	-	-	-	A	A	A	A	-	A	-	A	A	A	9.38 *
Magmawood Drive & Judd Road – One-way stop-controlled																	
AM Peak Hour	-	-	-	-	A	-	A	A	A	A	-	A	-	A	-	A	9.97 *
PM Peak Hour	-	-	-	-	B	-	A	A	A	A	-	A	-	A	A	A	11.43 *
Wildflower Parkway & Judd Road – One-way stop-controlled																	
AM Peak Hour	-	-	-	-	A	-	A	A	A	A	-	A	-	A	A	A	9.92 *
PM Peak Hour	-	-	-	-	B	-	A	A	A	A	-	A	-	A	A	A	10.87 *

* Per HCM, overall LOS letter grade not assigned for two-way stop-controlled intersections. Average delay reported for the overall intersection is for the worst-case movement.

At the existing stop-controlled study area intersections, all movements currently operate at Level of Service (LOS) B or better.

D. Crash Data

The most recent three years of available crash data (1/1/2021 – 12/31/2023) for the study area intersections were obtained from the Arizona Department of Transportation (ADOT) Arizona Crash Information System (ACIS). The detailed reports, including collision manner and injury severity, as provided by the ADOT ACIS are provided in *Appendix C: Crash Data*. A summary of the crash data is provided below. Note: zero crashes were reported during the analysis period at the study area intersections of Felix Road/Desert Mountain Boulevard, Magmawood Drive/Judd Road, and Wildflower Parkway/Judd Road.

D.1. CRASHES BY YEAR

Table 3: Crashes by Year summarizes the total number of crashes at the study intersections for each year of the three-year analysis period.

TABLE 3: CRASHES BY YEAR

Intersection	2021	2022	2023	Total Crashes
Felix Road & Judd Road	2	1	1	4

D.2. CRASHES BY TYPE

Table 4: Crashes by Type summarizes the total number of crashes at the intersection by type over the three-year period. Crash type categories include Rear End, Left Turn, Angle (front to side, other than left turn), and Other. "Other" crashes included 1 Single Vehicle crash, and 1 unknown crash type.

TABLE 4: CRASHES BY TYPE

Intersection	Rear End	Left Turn	Angle	Other	Total Crashes
Felix Road & Judd Road	0	2	0	2	4

D.3. CRASHES BY SEVERITY

Table 5: Crashes by Severity summarizes the total number of crashes at the intersection by severity over the three-year period. Crash severity is determined by the reporting officer at the time of the crash or soon thereafter based on the most severe injury sustained by an involved party. Crashes are ranked from most severe (Fatal) to least severe (No Injury).

TABLE 5: CRASHES BY SEVERITY

Intersection	A	B	C	D	E	Total Crashes
Felix Road & Judd Road	0	0	2	1	1	4

A=Fatal B=Suspected Serious Injury C=Suspected Minor Injury D=Possible Injury E=No Injury

For the most recent 3-year period, a total of 4 crashes were reported at the Felix Road & Judd Road intersection. None of the crashes involved a fatality. Of the 4 total crashes at the intersection, the most common crash type was Left Turn (50%, 2 total). The second most common crash type was Other – Single Vehicle (25%, 1 total); Overall, based on the low number of reported crashes and differing circumstances between the two left turn crashes, no unusual crash patterns or roadway condition issues contributing to excessive crash types or severity are apparent.

V. BACKGROUND CONDITIONS

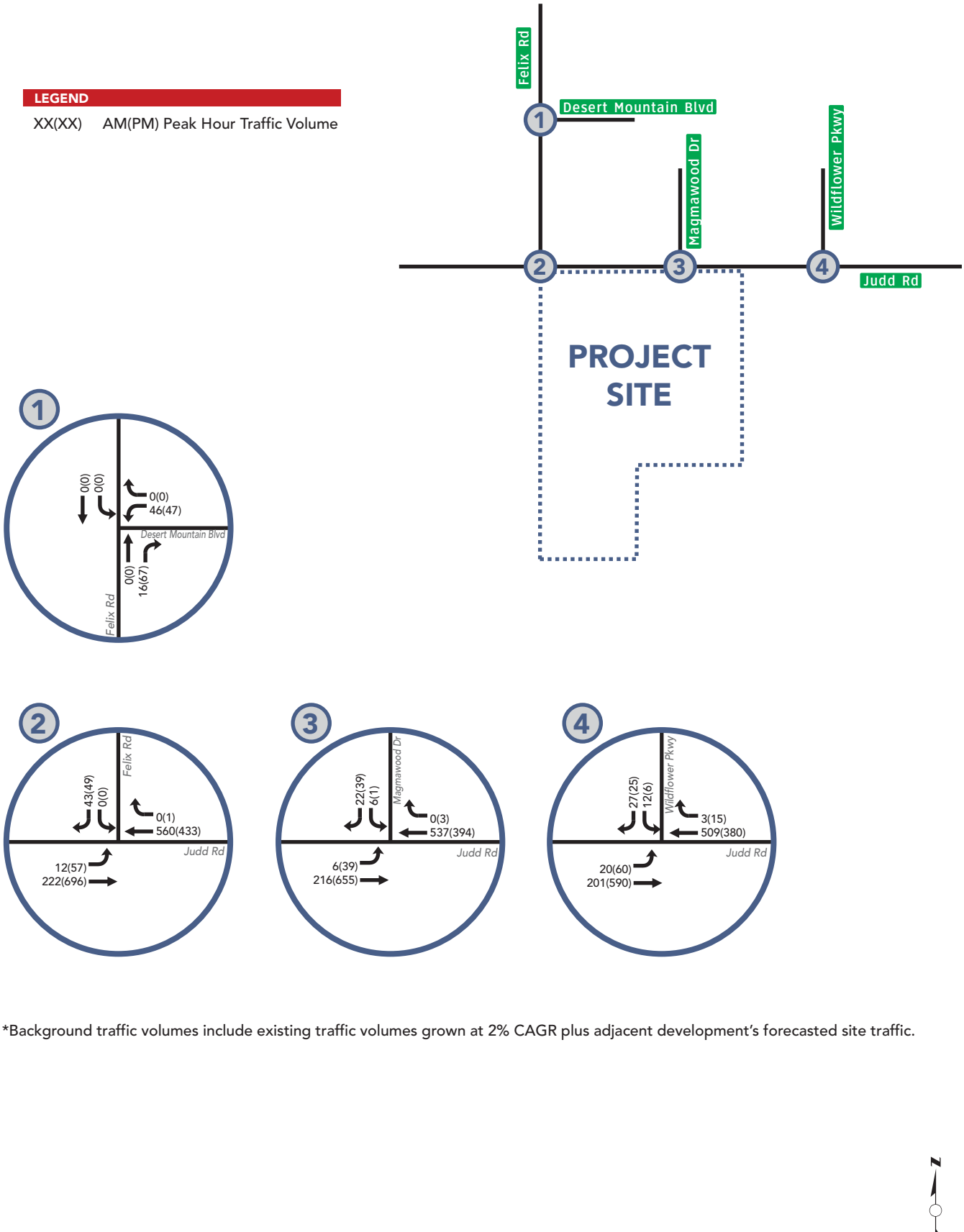
A. PROJECTED FUTURE BACKGROUND TRAFFIC

"Non-site"/"No-build" or "background" traffic volumes representing the amount of traffic estimated to be on the area roadway network within the study area without the proposed development are projected for the opening year (2026) and five-year horizon after opening (2031) of this study, during which the full build out of the site is planned to occur.

A compound annual growth rate (CAGR) of 2% is to be utilized yearly through the horizon year 2031 to account for ambient growth or future developments within or adjacent to the study area; additionally, traffic volumes from the nearby developments are included in the background traffic, as discussed above in Section III.C.

Figure 5: Background Traffic Volumes – Year 2026 presents the projected background traffic volumes for the study area in horizon year 2026 (opening year), which includes the existing volumes grown at a 2% CAGR and the adjacent developments' site traffic.

Figure 6: Background Traffic Volumes – Year 2031 presents the projected background traffic volumes for the study area in horizon year 2031 (five-year horizon after opening year), which includes the existing volumes grown at a 2% CAGR and the adjacent developments' site traffic.

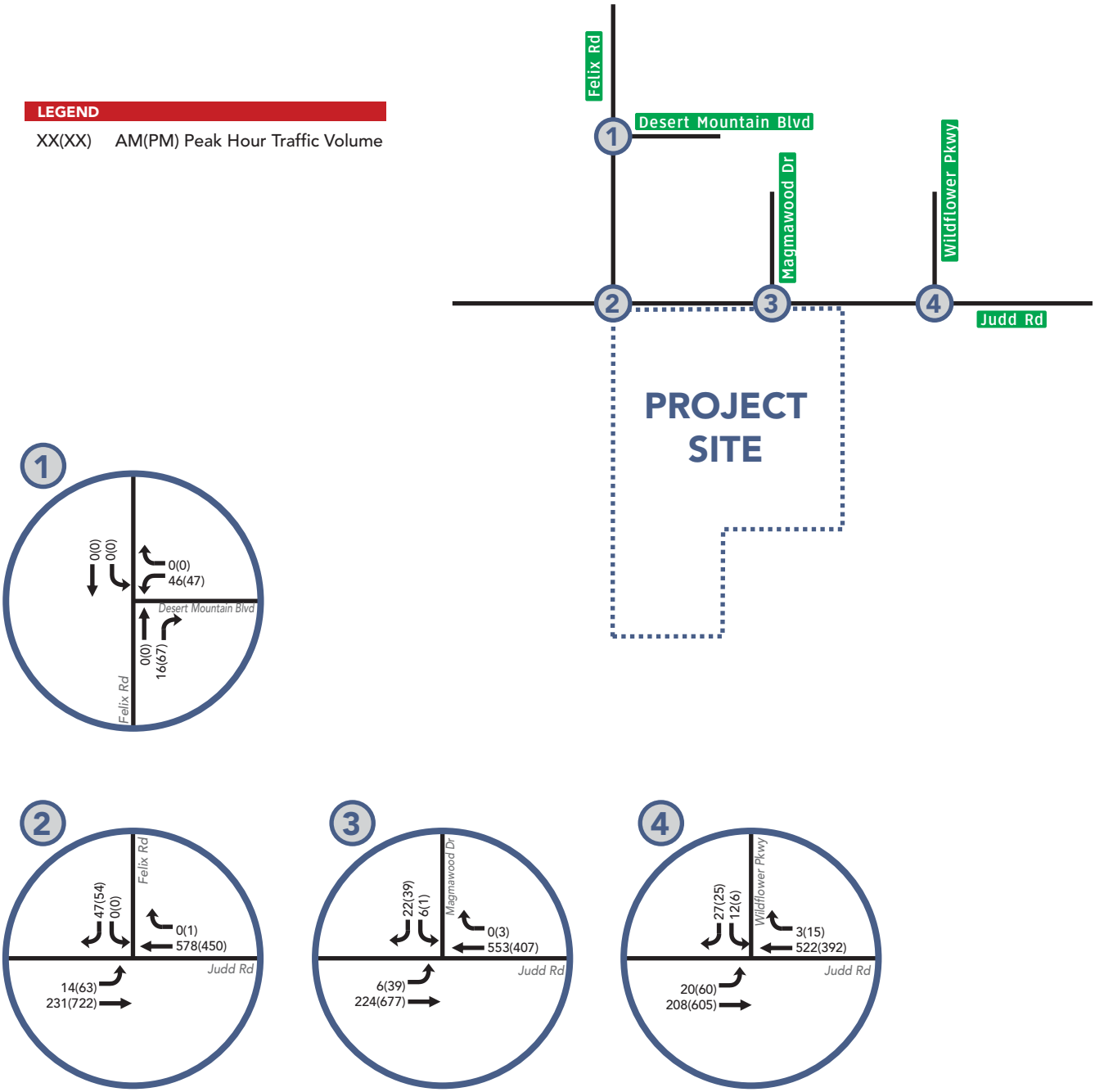


*Background traffic volumes include existing traffic volumes grown at 2% CAGR plus adjacent development's forecasted site traffic.

not to scale

Figure 9: Background Traffic - Year 2026

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*Background traffic volumes include existing traffic volumes grown at 2% CAGR plus adjacent development's forecasted site traffic.

not to scale

Figure 10: Background Traffic - Year 2031

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B. Intersection Level of Service Analyses – Background Traffic

Capacity analyses at the existing study area intersections were performed for the forecasted background traffic conditions utilizing the background traffic volumes (without the Development, i.e. "no build") with applied CAGR. *Table 6: 2026 Background Traffic Levels of Service* and *Table 7: 2031 Background Traffic Levels of Service* present the results.

Table 6: 2026 Background Traffic Levels of Service

Intersection Location	NB LOS				SB LOS				EB LOS				WB LOS				Overall Intersection
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	AvgDelay/ LOS
Felix Road & Desert Mountain Boulevard – One-way stop-controlled																	
AM Peak Hour	-	-	A	A	-	-	-	-	-	-	-	-	A	-	-	A	8.74 *
PM Peak Hour	-	-	A	A	-	-	-	-	-	-	-	-	A	-	-	A	8.89 *
Felix Road & Judd Road – Two-way stop-controlled																	
AM Peak Hour	-	-	-	-	-	-	B	B	A	A	-	A	-	A	-	A	13.03 *
PM Peak Hour	-	-	-	-	-	-	B	B	A	A	-	A	-	A	A	A	11.67 *
Magmawood Drive & Judd Road – One-way stop-controlled																	
AM Peak Hour	-	-	-	-	C	-	B	B	A	A	-	A	-	A	-	A	15.94 *
PM Peak Hour	-	-	-	-	C	-	B	B	A	A	-	A	-	A	A	A	24.05 *
Wildflower Parkway & Judd Road – One-way stop-controlled																	
AM Peak Hour	-	-	-	-	B	-	B	B	A	A	-	A	-	A	A	A	13.28 *
PM Peak Hour	-	-	-	-	C	-	B	B	A	A	-	A	-	A	A	A	16.48 *

* Per HCM, overall LOS letter grade not assigned for two-way stop-controlled intersections. Average delay reported for the overall intersection is for the worst-case movement.

For horizon year 2026 background traffic conditions, at the two-way stop-controlled study area intersections, all movements are forecasted to operate at LOS C or better.

TABLE 7: 2031 BACKGROUND TRAFFIC LEVELS OF SERVICE

Intersection Location	NB LOS				SB LOS				EB LOS				WB LOS				Overall Intersection
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	AvgDelay/ LOS
Felix Road & Desert Mountain Boulevard – One-way stop-controlled																	
AM Peak Hour	-	-	A	A	-	-	-	-	-	-	-	-	A	-	-	A	8.74 *
PM Peak Hour	-	-	A	A	-	-	-	-	-	-	-	-	A	-	-	A	8.89 *
Felix Road & Judd Road – Two-way stop-controlled																	
AM Peak Hour	-	-	-	-	-	-	B	B	A	A	-	A	-	A	-	A	13.33 *
PM Peak Hour	-	-	-	-	-	-	B	B	A	A	-	A	-	A	A	A	11.93 *
Magmawood Drive & Judd Road – One-way stop-controlled																	
AM Peak Hour	-	-	-	-	C	-	B	B	A	A	-	A	-	A	-	A	16.32 *
PM Peak Hour	-	-	-	-	D	-	B	B	A	A	-	A	-	A	A	A	25.10 *
Wildflower Parkway & Judd Road – One-way stop-controlled																	
AM Peak Hour	-	-	-	-	B	-	B	B	A	A	-	A	-	A	A	A	13.43 *
PM Peak Hour	-	-	-	-	C	-	B	B	A	A	-	A	-	A	A	A	16.76 *

* Per HCM, overall LOS letter grade not assigned for two-way stop-controlled intersections. Average delay reported for the overall intersection is for the worst-case movement.

For horizon year 2031 background traffic conditions, at the two-way stop-controlled study area intersections, all movements are forecasted to operate at LOS D or better.

VI. PROJECTED SITE TRAFFIC

A. TRIP GENERATION

Estimates of the traffic volumes that will be generated by the planned uses of the Development at full build out were determined from transportation planning data provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition, 2021*. The land use and size assumptions from Table 1 above were utilized. The most similar land use codes from the ITE *Trip Generation Manual* are Land Use Code (LUC) 150 – Warehousing and LUC 821 – Shopping Plaza (40 – 150k). The following are the LUC descriptions:

> *LUC 150 – Warehousing*: A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas.
>
> *LUC 821 – Shopping Plaza (40 – 150k)*: A shopping plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit… A shopping plaza typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants. For the trip generation estimation purposes of this report, the supermarket land use subcategory is not used. A supermarket is unlikely to be a future user of the commercial portion due to the location and lack of sufficient area.

Table 8: Trip Generation presents the estimated daily and peak hour trips generated by the Development for a typical weekday.

TABLE 8: TRIP GENERATION

Land Use	ITE Code	Units	Total Size	Daily	AM Peak			PM Peak		
					In	Out	Total	In	Out	Total
Warehousing	150	1000s Sq Ft	700	1,197	92	27	119	35	91	126
Shopping Plaza	821	1000s Sq Ft	140	9,453	150	92	242	356	371	727
Total at Full Build Out				**10,650**	**242**	**119**	**361**	**391**	**462**	**853**

Warehousing – ITE LUC 150		
AM Peak Hour	T = 0.17 x (X)	77% entering, 23% exiting
PM Peak Hour	T = 0.18 x (X)	28% entering, 72% exiting
Daily	T = 1.71 x (X)	50% entering, 50% exiting
Shopping Plaza (40 – 150k) without Supermarket – ITE LUC 821		
AM Peak Hour	T = 1.73 x (X)	62% entering, 38% exiting
PM Peak Hour	T = 5.19 x (X)	49% entering, 51% exiting
Daily	T = 67.52 x (X)	50% entering, 50% exiting

On a typical weekday the proposed development is estimated to generate 361 trips in the AM peak hour, 853 trips in the PM peak hour, and 10,650 daily trips.

B. Trip Distribution and Assignment

For a development of this type and its planned uses, overall percentages are based on the connectivity to the region's major roadway corridors adjacent to the site and in the vicinity of the study area. The assumed trip distribution percentages for the development are shown in *Table 9: Trip Distribution Percentages*.

The trip distribution and assignment procedures determine the general pattern of travel for vehicles entering and leaving the subject site and the study area. For a development of this type, overall distribution is mainly based on the type of land uses of the development; the location of the site within the general area; the connectivity of the site to the major roadway corridors of the area; and the location of residential areas.

Differences are expected in the trip distribution patterns of each component of the site (employment vs commercial/retail). For the employment components, distribution and assignment is generally based on the roadway connectivity to major travel corridors and population areas of the region. The commercial/retail component is anticipated to primarily serve the closer existing and future residential areas. The distribution percentages for the development are shown in *Table 9: Trip Distribution Percentages*.

Table 9: Trip Distribution Percentages

Direction	Trip Distribution Arriving From and Departing To
Employment Component	
Judd Road west of Felix Road	75%
Judd Road east of Subject Site	25%
Commercial/Retail Component	
Judd Road east of Subject Site	45%
Judd Road west of Felix Road	40%
Desert Mountain Boulevard east of Felix Road	5%
Magmawood Drive north of Judd Road	5%
Wildflower Parkway north of Judd Road	5%

Figure 7: Site Generated Traffic – Opening Year 2026 presents the assigned site generated traffic to and from the site for the opening year, which is planned to include only the Employment component per input from representatives of the Development.

Figure 8: Site Generated Traffic – Full Build Out presents the assigned site generated traffic to and from the site after full overall build out of the Development.

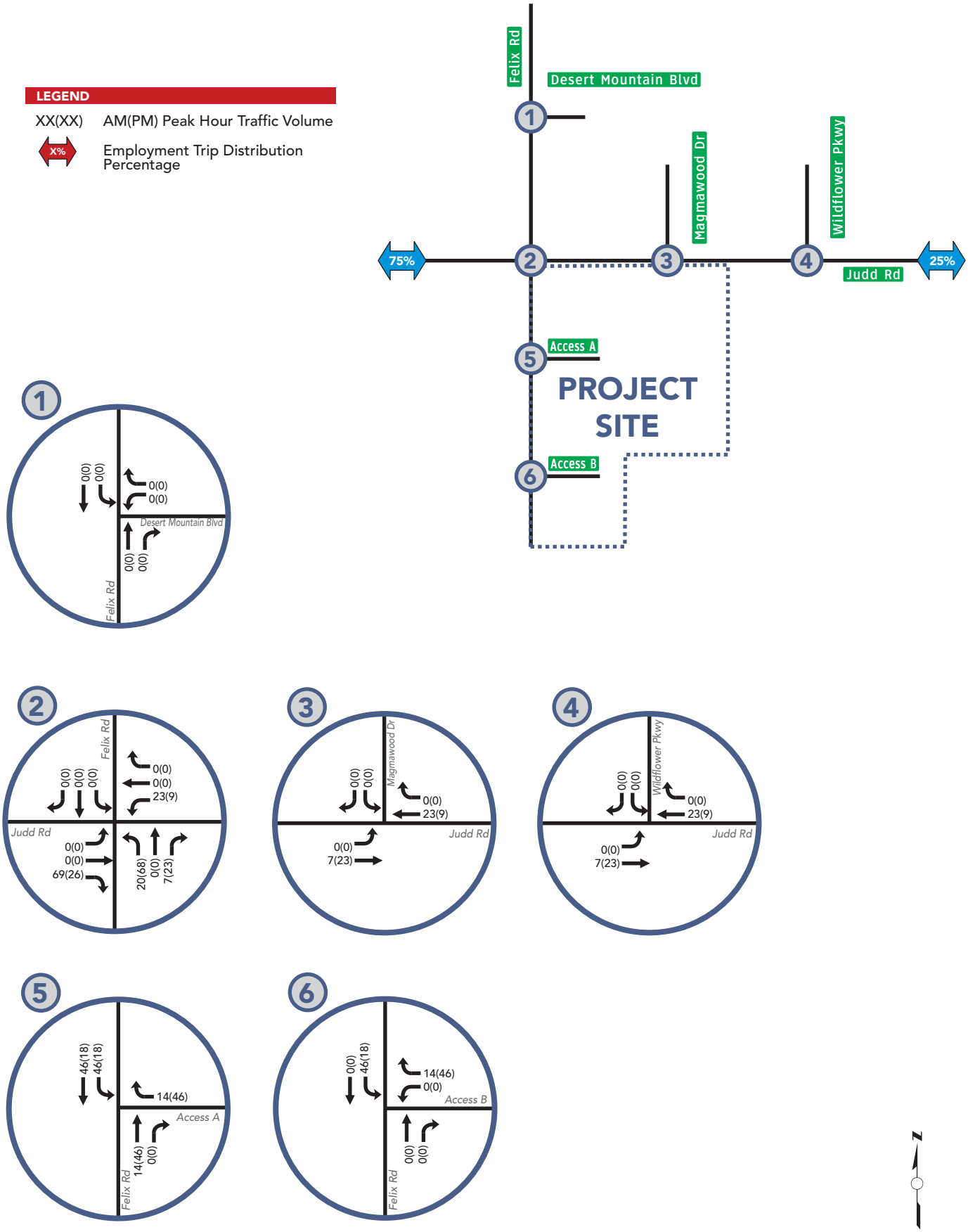


Figure 7: Site Generated Traffic and Distribution Opening Year

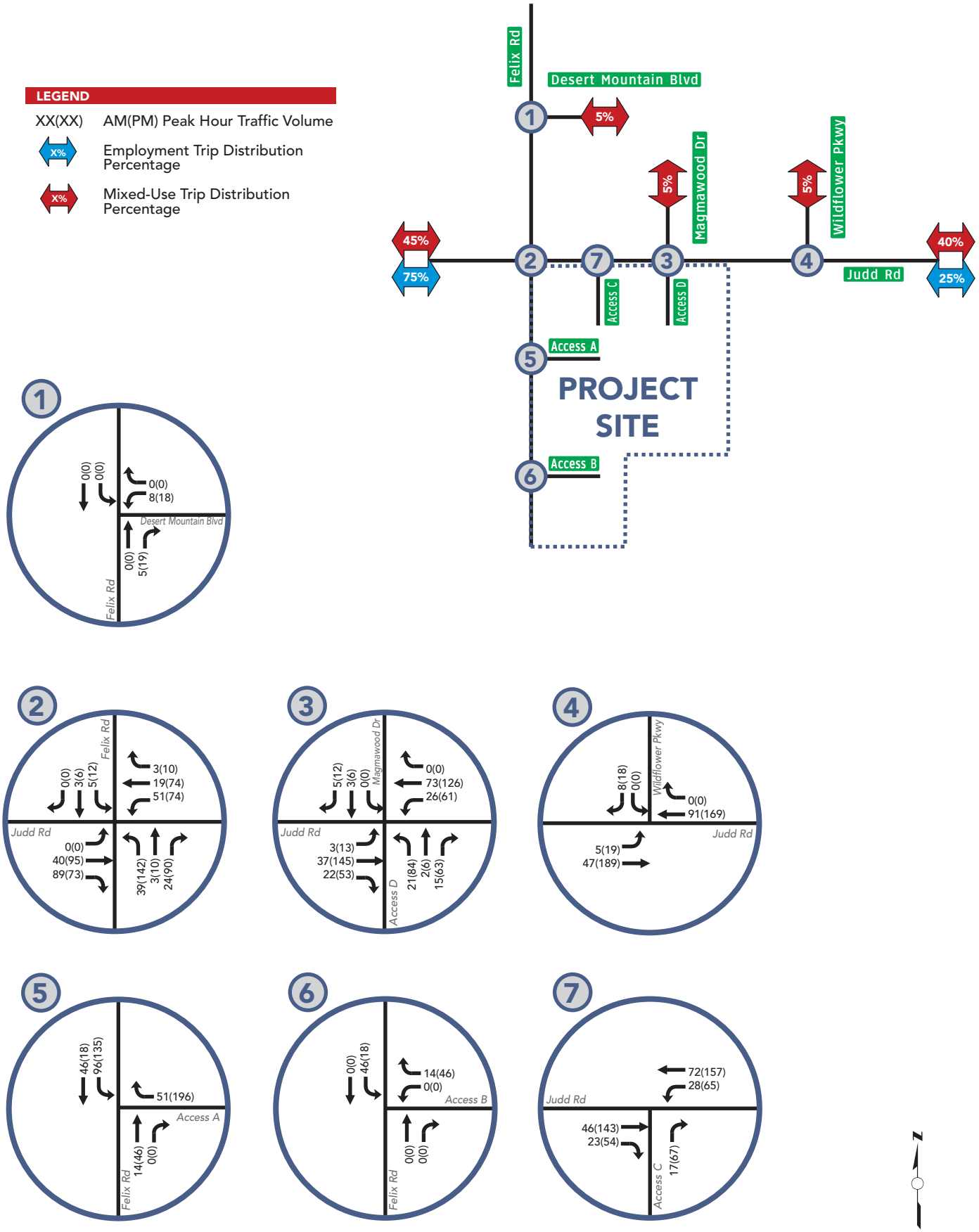


Figure 8: Site Generated Traffic and Distribution Full Buildout

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VII. TOTAL TRAFFIC CONDITIONS AND ANALYSIS

The purpose of this section is to forecast the estimated total traffic volumes in the study horizon years of 2026 (opening year) and 2031 (five years after initial opening; after full build out of the Development); evaluate the planned study area roadway network with respect to forecasted future traffic volumes and capacity/levels of service; and identify roadway improvement recommendations for consideration to mitigate the projected future traffic volumes on the roadway network.

A. TOTAL TRAFFIC VOLUMES

Total traffic projections for the horizon years of the study were determined by adding the Development's site generated traffic to the forecasted horizon background traffic volumes. The total traffic volumes for year 2026 (opening year) are shown in *Figure 9: Total Traffic – Year 2026* and the total traffic volumes for year 2031 (5 years after opening; full build out) are presented in *Figure 10: Total Traffic – Year 2031*.

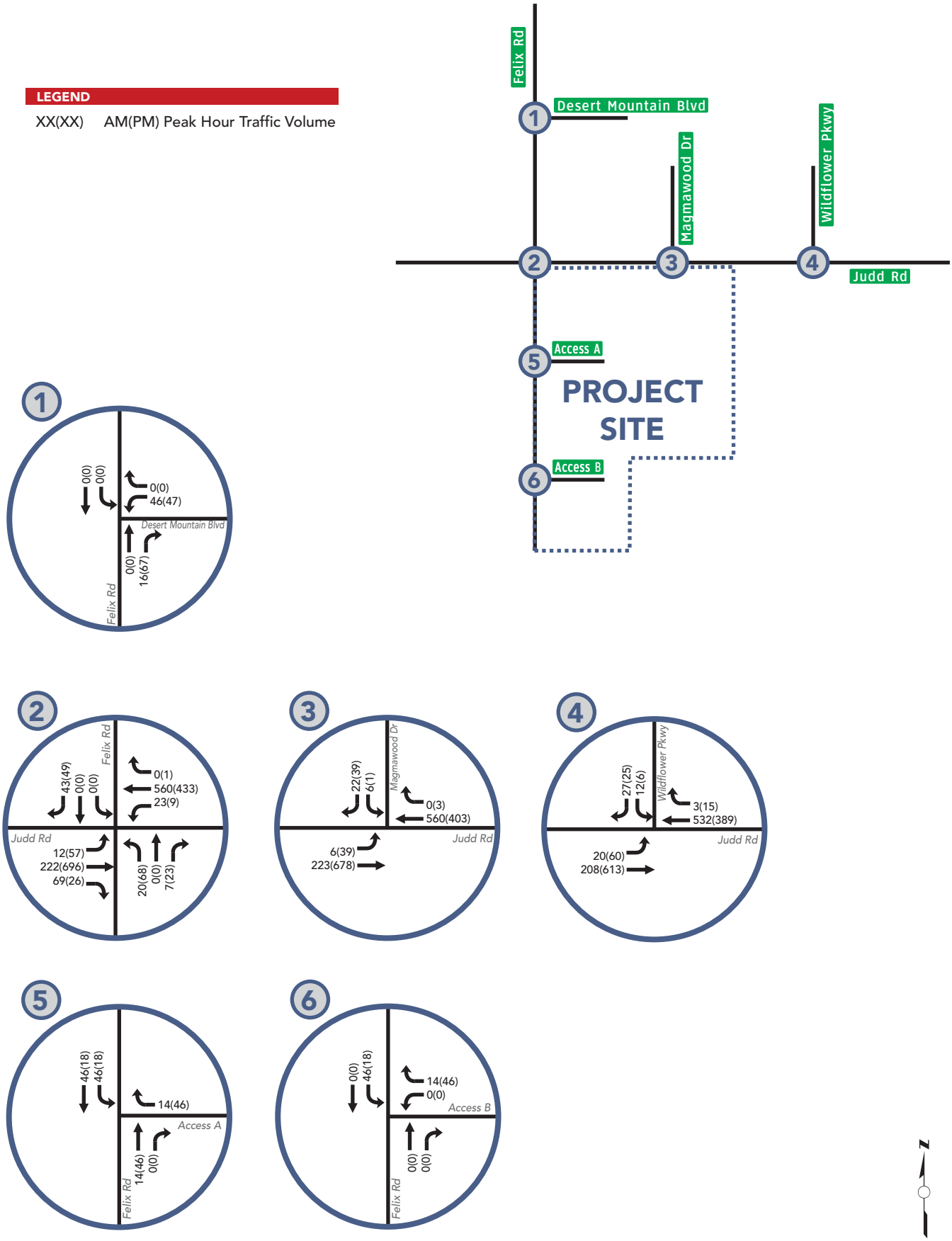


Figure 11: Total Traffic - Year 2026

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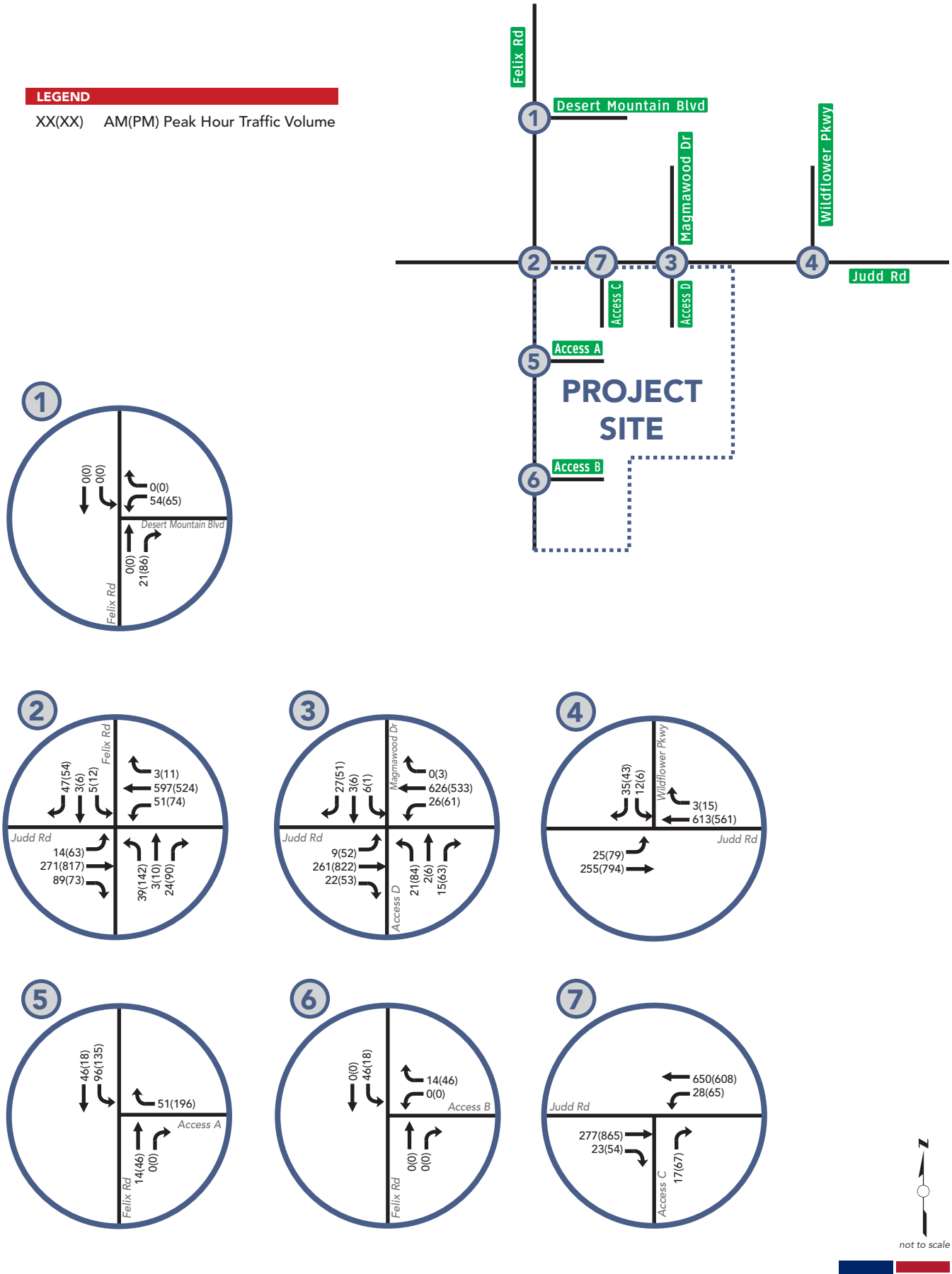


Figure 12: Total Traffic - Year 2031

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B. Site Accessibility

The following summary presents the site accessibility assumed for the Development for the purposes of this study. The site access points of the Subject Site should ultimately be generally located per the *Pinal County Access Management Manual* at the time of actual site planning.

- On Felix Road, beginning at Judd Road heading south:
  - Access A: 3/4 movement access (no left out) shared between the Employment and Mixed Use (commercial/retail) components; located approximately 660 feet south of Judd Road (centerline to centerline).
  - Access B: Full access into the Employment component, located approximately ¼ mile (1,320 feet) south of Judd Road (centerline to centerline).
- On Judd Road, beginning at Felix Road heading east:
  - Access C: 3/4 movement access (no left out) for the Mixed Use (commercial/retail) component; located approximately 660 feet east of Felix Road (centerline to centerline).
  - Access D: full movement access for the Mixed Use (commercial/retail) component; located approximately ¼ mile (1,320 feet) east of Felix Road (centerline to centerline) and aligning with Magmawod Drive.

B.1. Intersection Sight Distance

Proper intersection sight distance and sight visibility triangles shall be provided and maintained at the site access driveways of the proposed development to give drivers exiting the site a clear view of Felix Road and Judd Road. The landscape and hardscape within the sight triangles must not obstruct the driver's view of the adjacent travel lanes. To ensure adequate sight distances and sight distance triangles are provided, AASHTO's *A Policy on Geometric Design of Highways and Streets* and the Pinal County *Subdivision and Infrastructure Design Manual* should be followed.

C. Roadway Improvements

The required half street right-of-way dedication and roadway improvements for Felix Road along the property's western frontage should be provided by the Development per input and coordination with Pinal County Engineering staff. Appropriate right-of-way should be provided and account for any required auxiliary right-turn lanes at proposed intersections. Appropriate right-of-way should be provided and account for any required turn lanes at the Felix Road/Judd Road intersection.

The required half street right-of-way dedication and roadway improvements for Judd Road along the property's western frontage should be provided by the Development per input and coordination with Pinal County Engineering staff. Appropriate right-of-way should be provided and account for any required auxiliary right-turn lanes at

proposed intersections. Appropriate right-of-way should be provided and account for any required turn lanes at the Felix Road/Judd Road intersection.

D. Traffic Signal Needs

The 2009 *Manual on Uniform Traffic Control Devices* (MUTCD) was used as the primary tool to determine if a traffic signal is warranted at the intersection of Felix Road/Judd Road and Magmawood Drive-Access D/Judd Road for existing, background, and total traffic volume conditions.

There are nine specific signal warrants in the MUTCD, however, not all warrants are applicable. The warrants as part of this analysis include:
Warrant 1 – Eight-Hour Vehicular Volume
Warrant 2 – Four-Hour Vehicular Volume
Warrant 3 – Peak Hour Volume

The highest hourly volumes utilized in the warrants were determined by applying hourly adjustment factors to the peak hour volumes based on the 24-hour count collected at the Felix Road/Judd Road intersection by United Civil Group. The results of the traffic signal warrant analyses are provided in *Appendix D: Traffic Signal Warrant Analyses.*

Traffic Signal Warrant Results

Felix Road & Judd Road:

- Warrant 1, Warrant 2, and Warrant 3 are not met for total traffic conditions in opening year 2026.
- Warrant 1, Warrant 2, and Warrant 3 are met for total traffic conditions in year 2031.

Magmawood Drive-Access D & Judd Road:

- Warrant 1, Warrant 2, and Warrant 3 are not met for total traffic conditions in opening year 2026.
- Warrant 1, Warrant 2, and Warrant 3 are met for total traffic conditions in year 2031.

As shown above, the traffic signal volume warrants are met at the study area intersections of Felix Road/Judd Road and Magmawood Drive-Access D/Judd Road utilizing total traffic year 2031 volume conditions. At the time of actual site planning of the Subject Site, subsequent TIA(s) should provide updated signal warrants based on actual building uses and square footages, locations of the future proposed site accesses, and refined forecasted traffic volumes.

E. AUXILIARY TURN LANE ANALYSIS

E.1. RIGHT-TURN LANE WARRANTS

Per the Pinal County *Traffic Impact Assessment Guidelines & Procedures* dated January 2007, right-turn lanes are warranted based on the right turn lane warrant chart which takes into account design hourly volume on the roadway, the peak hour right turn volume at the access intersection and the posted speed. Utilizing this chart for the 2031 design year volumes at the access points on Felix Road (35 mph), and Judd Road (45 mph posted speed), right-turn lanes are recommended at the following locations:

- Eastbound Judd Road
    - At Felix Road
    - At Access C
    - At Access D

E.2. LEFT-TURN LANES WARRANTS

Per the Pinal County *Traffic Impact Assessment Guidelines & Procedures* dated January 2007, left-turn lanes are warranted based on the left-turn lane warrant chart which takes into account design hourly volume on the roadway, the peak hour left-turn volume at the access intersection and the posted speed. Utilizing this chart for the 2031 design year volumes at the access points on Felix Road (35 mph), and Judd Road (45 mph posted speed), left-turn lanes are recommended at the following locations:

- Westbound Judd Road
    - At Felix Road
    - At Access C
    - At Access D
- Southbound Felix Road
    - At Access A
    - At Access B
- Northbound Felix Road
    - At Judd Road

E.3. AUXILIARY TURN LANE QUEUE AND STORAGE LENGTH ANALYSIS

To determine the required storage lengths for the proposed/recommended right and left-turn lanes at the proposed new site accesses and the new legs at the Felix Road/Judd Road intersection, storage length analyses were performed for year 2031 forecasted traffic volumes (using the higher of the forecasted AM and PM peak hour volumes) per Section 5.12 of the *Pinal County Traffic Impact Assessment Guidelines & Procedures, 2007*.

Table 10: Auxiliary Turn Lane Storage Length Analysis presents the calculated and recommended storage lane lengths for the recommended right and left-turn lanes. Detailed calculations are provided in *Appendix E: Queue Analyses*.

TABLE 10: AUXILIARY TURN LANE STORAGE LENGTH ANALYSIS

Location	Peak Hour Turning Volume (2031)	Calculated Storage Length (Pinal County TIA Guidelines Section 5.12)	Recommended Turn Lane Storage Length
Potential Signalized Intersections			
Felix Road/Judd Road			
NB Left-Turn Lane	142	**178 feet**	**200 feet**
EB Right-Turn Lane	89	**111 feet**	**125 feet**
WB Left-Turn Lane	74	**93 feet**	**100 feet**
Magmawood Drive-Access D/Judd Road			
EB Right-Turn Lane	53	**66 feet**	**100 feet**
WB Left-Turn Lane	61	**76 feet**	**100 feet**
Unsignalized Intersections			
Felix Road/Access A			
SB Left-Turn Lane	135	**113 feet**	**125 feet**
Felix/Access B			
SB Left-Turn Lane	46	**38 feet**	**100 feet**
Judd Road/Access C			
EB Right-Turn Lane	54	**45 feet**	**100 feet**
WB Left-Turn Lane	65	**54 feet**	**100 feet**

For each right-turn lane and left-turn lane, a turn lane taper (opening) of 120 feet minimum should be planned to be provided. At the time of actual site planning of the Subject Site, subsequent TIA(s) should provide updated turn lane warrants and storage length analyses based on actual building uses and square footages, location of the future proposed site accesses, refined forecasted traffic volumes, and take into consideration any potential physical constraints.

F. Intersection Level of Service Analyses – Total Traffic

Capacity analyses at the study area intersections were performed for the forecasted total traffic conditions. *Table 11: 2026 Total Traffic Levels of Service* and *Table 12: 2031 Total Traffic Levels of Service* present the results.

Table 11: 2026 Total Traffic Levels of Service

Intersection Location	NB LOS				SB LOS				EB LOS				WB LOS				Overall Intersection
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	AvgDelay/ LOS
Felix Road & Desert Mountain Boulevard – One-way stop-controlled																	
AM Peak Hour	-	-	A	**A**	-	-	-	**-**	-	-	-	**-**	A	-	-	**A**	**8.74 ***
PM Peak Hour	-	-	A	**A**	-	-	-	**-**	-	-	-	**-**	A	-	-	**A**	**8.89 ***
Felix Road & Judd Road – Two-way stop-controlled																	
AM Peak Hour	C	-	A	**C**	-	-	B	**B**	A	A	A	**A**	A	A	-	**A**	**24.13 ***
PM Peak Hour	F	-	B	**F**	-	-	B	**B**	A	A	A	**A**	A	A	A	**A**	**106.39 ***
Magmawood Drive & Judd Road – One-way stop-controlled																	
AM Peak Hour	-	-	-	**-**	C	-	B	**B**	A	A	-	**A**	-	A	-	**A**	**16.43 ***
PM Peak Hour	-	-	-	**-**	D	-	B	**B**	A	A	-	**A**	-	A	A	**A**	**25.01 ***
Wildflower Parkway & Judd Road – One-way stop-controlled																	
AM Peak Hour	-	-	-	**-**	B	-	B	**B**	A	A	-	**A**	-	A	A	**A**	**13.53 ***
PM Peak Hour	-	-	-	**-**	C	-	B	**B**	A	A	-	**A**	-	A	A	**A**	**16.82 ***
Felix Road & Access A – One-way stop-controlled																	
AM Peak Hour	-	A	-	**A**	A	A	-	**A**	-	-	-	**-**	-	-	A	**A**	**8.43 ***
PM Peak Hour	-	A	-	**A**	A	A	-	**A**	-	-	-	**-**	-	-	A	**A**	**8.72 ***
Felix Road & Access B – One-way stop-controlled																	
AM Peak Hour	-	-	-	**-**	A	-	-	**A**	-	-	-	**-**	-	-	A	**A**	**8.36 ***
PM Peak Hour	-	-	-	**-**	A	-	-	**A**	-	-	-	**-**	-	-	A	**A**	**8.48 ***

* Per HCM, overall LOS letter grade not assigned for two-way stop-controlled intersections. Average delay reported for the overall intersection is for the worst-case movement.

For horizon year 2026 total traffic conditions, all of the study area intersections and site accesses are forecasted to operate at LOS D or better. The exception to this is the intersection of Felix Road/Judd Road that is forecasted to operate at LOS F in the PM peak hour due to the northbound left turn movement. Exiting movements (especially left-turn and through movements) on stop-controlled minor roads and driveways that intersect with major streets typically experience greater delay for short periods of time in the peak hours due to the wait for acceptable gaps on the major street, while the free-flowing major streets experience minimal delay. Signalization would improve the northbound left-turn movement level of service, although as shown above in Section VII.D, signal warrants are not met for year 2026 total traffic conditions. This intersection should be monitored for signalization as actual future traffic volumes and operations are realized.

TABLE 12: 2031 TOTAL TRAFFIC LEVELS OF SERVICE

Intersection Location	NB LOS				SB LOS				EB LOS				WB LOS				Overall Intersection
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	AvgDelay/ LOS
Felix Road & Desert Mountain Boulevard – One-way stop-controlled																	
AM Peak Hour	-	-	A	A	-	-	-	-	-	-	-	-	A	-	-	A	8.79 *
PM Peak Hour	-	-	A	A	-	-	-	-	-	-	-	-	A	-	-	A	9.03 *
Felix Road & Judd Road – Signalized																	
AM Peak Hour	B	C	C	C	B	C	C	C	B	B	B	B	A	C	C	C	22.39 C
PM Peak Hour	C	D	D	D	C	D	D	D	A	B	A	B	B	B	B	B	19.86 B
Magmawood Drive-Access D & Judd Road – Signalized																	
AM Peak Hour	B	C	C	C	B	C	C	C	B	B	B	B	A	C	C	C	23.05 C
PM Peak Hour	C	D	D	C	C	D	D	D	A	C	A	C	B	B	B	B	22.12 C
Wildflower Parkway & Judd Road – One-way stop-controlled																	
AM Peak Hour	-	-	-	-	B	-	B	B	A	A	-	A	-	A	A	A	14.69 *
PM Peak Hour	-	-	-	-	C	-	B	B	A	A	-	A	-	A	A	A	21.84 *
Felix Road & Access A – One-way stop-controlled																	
AM Peak Hour	-	A	-	A	A	A	-	A	-	-	-	-	-	-	A	A	8.57 *
PM Peak Hour	-	A	-	A	A	A	-	A	-	-	-	-	-	-	A	A	9.47 *
Felix Road & Access B – One-way stop-controlled																	
AM Peak Hour	-	-	-	-	A	-	-	A	-	-	-	-	-	-	A	A	8.36 *
PM Peak Hour	-	-	-	-	A	-	-	A	-	-	-	-	-	-	A	A	8.48 *
Access C & Judd Road – One-way stop-controlled																	
AM Peak Hour	-	-	A	A	-	-	-	-	-	A	A	A	A	A	-	A	10.00 *
PM Peak Hour	-	-	C	C	-	-	-	-	-	A	A	A	B	A	-	A	19.56 *

* Per HCM, overall LOS letter grade not assigned for two-way stop-controlled intersections. Average delay reported for the overall intersection is for the worst-case movement.

For horizon year 2031 total traffic conditions, all of the study area intersections and site accesses are forecasted to operate at LOS C or better. At the intersections of Felix Road & Judd Road and Magmawood Drive-Access D & Judd Road, the intersections were analyzed with their signal-warranted condition. These intersections should be monitored for signalization as actual future traffic volumes and operations are realized.

VIII. CONCLUSIONS AND RECOMMENDATIONS

The Sunhill Project is currently being planned to consist of Employment (approximately 80 acres) and Mixed-Use (approximately 16 acres) uses on an approximate 120.4-acre overall Subject Site. The opening year of the Development is planned for 2026 consisting of the Employment portion of the site; full build out is planned approximately 5 years after opening.

The locations of access points for the Sunhill Project were assumed based on the *Pinal County Access Management Manual* as detailed site planning for the Development currently unknown. Based on this criterion, two access points were assumed on Felix Road with the northern access (Access A) serving both the Employment and Mixed-Use uses of the site and the southern access (Access B) serving the Employment portion of the site. Access A is planned as a ¾ movement access (no left out) and Access B is planned as a full movement access. Two access points were also assumed on Judd Road serving the Mixed-Use portion of the site. The western access (Access C) is planned as a ¾ movement access (no left out) and the eastern access (Access D) is planned as a full movement access aligning with Magmawood Drive.

On a typical weekday upon full building out, the Sunhill Project is estimated to generate 361 net new trips in the AM peak hour, 853 net new trips in the PM peak hour, and 10,650 net new daily trips.

In the existing conditions, the study area intersections currently operate at LOS B or better during the AM and PM peak hours.

For background (non-site) traffic conditions in the horizon years of 2026 and 2031, the study area intersections are forecasted to operate at LOS D or better during the AM and PM peak hours.

Traffic signal volume warrants are met at the study area intersections of Felix Road/Judd Road and Magmawood Drive-Access D/Judd Road utilizing full buildout 2031 total traffic volumes.

Considering total traffic conditions in horizon year 2026, the study area intersections and site accesses are forecasted to operate at LOS D or better during the AM and PM peak hours. The exception to this is the intersection of Felix Road/Judd Road that is forecasted to operate at LOS F in the PM peak hour due to the northbound left-turn movement. Exiting movements (especially left-turn and through movements) on stop-controlled minor roads and driveways that intersect with major streets typically experience greater delay for short periods of time in the peak hours due to the wait for acceptable gaps in the major street, while free-flowing major streets experience minimal delay.

Considering total traffic conditions in horizon year 2031, the signalized intersections of Felix Road/Judd Road and Magmawood Drive-Access D/Judd Road are forecasted to operate at LOS C or better in the AM and PM peak hours. The remaining study area intersections and assumed site accesses are forecasted to operate at LOS C or better in the AM and PM peak hours.

Based on this Traffic Impact Analysis, the following recommendations apply:

- Provide the half-street right-of-way dedication adjacent to the Subject Site and construct Felix Road between Judd Road and the southern property line per input at coordination with Pinal County Engineering staff upon opening of Phase 1 of the Development.
- Provide the half-street right-of-way dedication adjacent to the Subject Site and construct Judd Road between Felix Road and the eastern property line per input at coordination with Pinal County Engineering staff upon full buildout of the Development.
- Provide a left-turn lane on southbound Felix Road at Access A, having a storage length of 125-feet.
- Provide a left-turn lane on southbound Felix Road at Access B, having a minimum storage length of 100-feet.
- Provide left-turn lanes on westbound Judd Road at Accesses C and D, having a minimum storage length of 100 feet.
- Provide right-turn lanes on eastbound Judd Road at Accesses C and D, having a minimum storage length of 100 feet.
- Provide a northbound left turn lane on Felix Road at Judd Road, having a storage length of 200 feet.
- Provide a westbound left turn lane on Judd Road at Felix Road, having a minimum storage length of 100 feet.
- Provide an eastbound right turn lane on Judd Road at Felix Road, having a storage length of 125 feet.
- Adequate sight distances and sight distance triangles at the site access points should be provided per AASHTO's *A Policy on Geometric Design of Highways and Streets* and the Pinal County *Subdivision and Infrastructure Design Manual*.
- The Development will be required to provide subsequent TIAs or TIA update(s) as part of future site plan applications for the future development stages of the project. The subsequent TIA(s) should provide re-analysis of the study area roadway segments and intersections, traffic signal warrants, right and left-turn lane needs, and other traffic impacts and recommendations as necessary and per Pinal County input/direction.

IX. LIMITATIONS

Our professional services have been performed using the degree of skill ordinarily exercised, under similar circumstances, by reputable transportation engineering firms practicing in this locality. No other warranty, expressed or implied, is made.

The contents of this report are intended for the sole use of the addressee and his/her designees. In completing this report, data was obtained from a variety of sources (i.e. City, County, State and Federal sources); United Civil Group has assumed these sources to be reliable and accurate. Should deviations from this report be noted, this firm shall be contacted for review of the area of concern.

An attempt was made to acquire recent traffic impact studies, traffic projections and/or data that may be helpful in more accurately projecting traffic volumes. United Civil Group is not responsible for incorporating data made available after this document has been finalized.

This report is issued with the understanding that it is the responsibility of the owner to see that its provisions are carried out or brought to the attention of those concerned. In the event that any changes of the proposed project are planned, the conclusions and recommendations contained in this report shall be reviewed and the report shall be modified or supplemented as necessary.

X. SOURCES

A Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials, 2018.

Highway Capacity Manual (HCM), Transportation Research Board.

Manual on Uniform Traffic Control Devices, Federal Highway Administration, MUTCD 2009.

Pinal County Subdivision & Infrastructure Design Manual.

Pinal County Traffic Impact Assessment Guidelines & Procedures, January 2007.

Trip Generation, 11th Edition, Institute of Transportation Engineers, 2021.

APPENDIX A

Traffic Data

Project Name: **Sunhill Site**
Location: Felix Road and Judd Road
Location ID: -
Intersection Control: Unsignalized
Count Start Date: June 27, 2024 (Thursday)

		Felix Road					Felix Road					Judd Road					Judd Road						
		Northbound			NB Crosswalk		Southbound			SB Crosswalk		Eastbound			EB Crosswalk		Westbound			WB Crosswalk		Total Veh	Hourly Veh
	Start Time	Left	Thru	Right	Peds	Bikes	Left	Thru	Right	Peds	Bikes	Left	Thru	Right	Peds	Bikes	Left	Thru	Right	Peds	Bikes		
6/27/2024	12:00 AM	0	0	0	0	0	0	0	1	0	0	1	8	0	0	0	0	0	0	0	0	10	
	12:15 AM	0	0	0	0	0	0	0	1	0	0	1	5	0	0	0	0	2	0	0	0	9	
	12:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	
	12:45 AM	0	0	0	0	0	0	0	3	0	0	2	2	0	0	0	0	1	0	0	0	8	29
	1:00 AM	0	0	0	0	0	0	0	2	0	0	0	4	0	0	0	0	2	0	0	0	8	27
	1:15 AM	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	0	0	4	22
	1:30 AM	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	0	3	0	0	0	8	28
	1:45 AM	0	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	3	0	0	0	7	27
	2:00 AM	1	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	4	0	0	0	9	28
	2:15 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	4	0	0	0	8	32
	2:30 AM	0	0	0	0	0	0	0	2	0	0	1	5	0	0	0	0	3	0	0	0	11	35
	2:45 AM	0	0	0	0	0	0	0	1	0	0	1	4	0	0	0	0	8	0	0	0	14	42
	3:00 AM	0	0	0	0	0	0	0	3	0	0	3	7	0	0	0	0	7	0	0	0	20	53
	3:15 AM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	10	0	0	0	24	69
	3:30 AM	0	0	0	0	0	0	0	2	0	0	0	4	0	0	0	0	31	0	0	0	37	95
	3:45 AM	0	0	0	0	0	0	0	5	0	0	2	3	0	0	0	0	15	0	0	0	25	106
	4:00 AM	0	0	0	0	0	0	0	7	0	0	0	5	0	0	0	0	24	0	0	0	36	122
	4:15 AM	0	0	0	0	0	0	0	3	0	0	0	4	0	0	0	0	32	0	0	0	39	137
	4:30 AM	0	0	0	0	0	0	0	7	0	0	0	11	0	0	0	0	33	0	0	0	51	151
	4:45 AM	0	0	0	0	0	0	0	13	0	0	1	11	0	0	0	0	28	0	0	0	53	179
	5:00 AM	0	0	0	0	0	0	0	9	0	0	0	14	0	0	0	0	36	0	0	0	59	202
	5:15 AM	0	0	0	0	0	0	0	7	0	0	1	14	0	0	0	0	37	0	0	0	59	222
	5:30 AM	0	0	0	0	0	0	0	11	0	0	2	9	0	0	0	0	47	0	0	0	69	240
	5:45 AM	0	0	0	0	0	0	0	14	0	0	2	8	0	0	0	0	40	0	0	0	64	251
	6:00 AM	0	0	0	0	0	0	0	11	0	0	2	9	0	0	0	0	39	0	0	0	61	253
	6:15 AM	0	0	0	0	0	1	0	13	0	0	3	13	0	0	0	0	47	0	0	0	77	271
	6:30 AM	0	0	0	0	0	1	0	7	0	0	0	12	0	0	0	0	38	0	0	0	58	260
	6:45 AM	0	0	0	0	0	0	0	10	0	0	1	21	0	0	0	0	40	0	0	0	72	268
	7:00 AM	0	0	0	0	0	0	0	11	0	0	2	12	0	0	0	0	46	0	0	0	71	278
	7:15 AM	0	0	0	0	0	0	0	10	0	0	2	25	0	0	0	0	40	0	0	0	77	278
	7:30 AM	0	0	0	0	0	0	0	12	0	0	5	20	0	0	0	0	49	0	0	0	86	306
	7:45 AM	0	0	0	0	0	0	0	8	0	0	3	21	0	0	0	0	36	0	0	0	68	302
	8:00 AM	0	0	0	0	0	0	0	15	0	0	2	12	0	0	0	0	40	1	0	0	70	301
	8:15 AM	0	0	0	0	0	0	0	10	0	0	4	26	0	0	0	0	34	0	0	0	74	298
	8:30 AM	0	0	0	0	0	0	0	12	0	0	6	17	0	0	0	0	34	0	0	0	69	281
	8:45 AM	0	0	0	0	0	0	0	9	0	0	2	15	0	0	0	0	38	0	0	0	64	277
	9:00 AM	0	0	0	0	0	0	0	9	0	0	2	15	0	0	0	0	42	0	0	0	68	275
	9:15 AM	0	0	0	0	0	0	0	8	0	0	8	20	0	0	0	0	33	0	0	0	69	270
	9:30 AM	0	0	0	0	0	0	0	14	0	0	6	25	0	0	0	0	49	0	0	0	94	295
	9:45 AM	0	0	0	0	0	0	0	15	0	0	2	20	0	0	0	0	31	0	0	0	68	299
	10:00 AM	0	0	0	0	0	0	0	1	0	0	3	24	0	0	0	0	37	0	0	0	65	296
	10:15 AM	0	0	0	0	0	0	0	9	0	0	10	31	0	0	0	0	34	0	0	0	84	311
	10:30 AM	0	0	0	0	0	0	0	14	0	0	7	26	0	0	0	0	38	0	0	0	85	302
	10:45 AM	0	0	0	0	0	0	0	7	0	0	8	15	0	0	0	0	34	0	0	0	64	298
	11:00 AM	0	0	0	0	0	0	0	11	0	0	7	27	0	0	0	0	44	0	0	0	89	322
	11:15 AM	0	0	0	0	0	1	0	4	0	0	11	37	0	0	0	0	27	1	0	0	81	319
	11:30 AM	0	0	0	0	0	1	0	7	0	0	10	21	0	0	0	0	36	0	0	0	75	309
	11:45 AM	0	0	0	0	0	0	0	11	0	0	6	25	0	0	0	0	43	0	0	0	85	330
	12:00 PM	0	0	0	0	0	0	0	9	0	0	13	44	0	0	0	0	29	0	0	0	95	336
	12:15 PM	0	0	0	0	0	0	0	9	0	0	9	36	0	0	0	0	34	0	0	0	88	343
	12:30 PM	0	0	0	0	0	0	0	12	0	0	5	30	0	0	0	0	34	0	0	0	81	349
	12:45 PM	0	0	0	0	0	0	0	6	0	0	9	49	0	0	0	0	33	0	0	0	97	361
	1:00 PM	0	0	0	0	0	0	0	5	0	0	4	40	0	0	0	0	34	0	0	0	83	349
	1:15 PM	0	0	0	0	0	0	0	7	0	0	8	22	0	0	0	0	35	0	0	0	72	333
	1:30 PM	0	0	0	0	0	0	0	8	0	0	11	29	0	0	0	0	25	0	0	0	73	325
	1:45 PM	0	0	0	0	0	0	0	7	0	0	10	38	0	0	0	0	24	0	0	0	79	307
	2:00 PM	0	0	0	0	0	0	0	2	0	0	7	36	0	0	0	0	36	0	0	0	81	305
	2:15 PM	0	0	0	0	0	0	0	7	0	0	9	52	0	0	0	0	31	0	0	0	99	332
	2:30 PM	0	0	0	0	0	0	0	3	0	0	9	34	0	0	0	0	33	0	0	0	79	338
	2:45 PM	0	0	0	0	0	0	0	9	0	0	9	38	0	0	0	0	19	0	0	0	75	334
	3:00 PM	0	0	0	0	0	0	0	17	0	0	11	38	0	0	0	0	29	0	0	0	95	348
	3:15 PM	0	0	0	0	0	0	0	6	0	0	12	42	0	0	0	0	23	0	0	0	83	332
	3:30 PM	0	0	0	0	0	0	0	7	0	0	9	62	0	0	0	0	29	1	0	0	108	361
	3:45 PM	0	0	0	0	0	0	0	7	0	0	14	46	0	0	0	0	28	0	0	0	95	381
	4:00 PM	0	0	0	0	0	0	0	13	0	0	19	69	0	0	0	0	36	0	0	0	137	423
	4:15 PM	0	0	0	0	0	1	0	10	0	0	21	58	0	0	0	0	29	0	0	0	119	459
	4:30 PM	0	0	0	0	0	0	0	10	0	0	12	54	0	0	0	0	42	0	0	0	118	469
	4:45 PM	0	0	0	0	0	0	0	13	0	0	15	56	0	0	0	0	43	0	0	0	127	501
	5:00 PM	0	0	0	0	0	0	0	12	0	0	12	65	0	0	0	0	24	1	0	0	114	478
	5:15 PM	0	0	0	0	0	0	0	12	0	0	16	69	0	0	0	0	47	0	0	0	144	503
	5:30 PM	0	0	0	0	0	0	0	10	0	0	17	42	0	0	0	0	25	0	0	0	94	479
	5:45 PM	0	0	0	0	0	0	0	8	0	0	15	63	0	0	0	0	19	0	0	0	105	457
	6:00 PM	0	0	0	0	0	0	0	4	0	0	15	57	0	0	0	0	24	0	0	0	100	443
	6:15 PM	0	0	0	0	0	0	0	12	0	0	17	59	0	0	0	0	35	0	0	0	123	422
	6:30 PM	0	0	0	0	0	1	0	7	0	0	10	48	0	0	0	0	25	1	0	0	92	420
	6:45 PM	0	0	0	0	0	0	0	7	0	0	10	41	0	0	0	0	24	0	0	0	82	397
	7:00 PM	0	0	0	0	0	0	0	8	0	0	12	36	0	0	0	0	14	0	0	0	70	367
	7:15 PM	0	0	0	0	0	0	0	8	0	0	12	41	0	0	0	0	15	0	0	0	76	320
	7:30 PM	0	0	0	0	0	0	0	2	0	0	8	31	0	0	0	0	15	0	0	0	56	284
	7:45 PM	0	0	0	0	0	0	0	13	0	0	13	33	0	0	0	0	17	0	0	0	76	278
	8:00 PM	0	0	0	0	0	0	0	4	0	0	11	36	0	0	0	0	10	0	0	0	61	269
	8:15 PM	0	0	0	0	0	0	0	6	0	0	6	40	0	0	0	0	6	0	0	0	58	251
	8:30 PM	0	0	0	0	0	0	0	2	0	0	12	32	0	0	0	0	15	0	0	0	61	256
	8:45 PM	0	0	0	0	0	0	0	6	0	0	7	28	0	0	0	0	9	1	0	0	51	231
	9:00 PM	0	0	0	0	0	0	0	1	0	0	8	32	0	0	0	0	7	0	0	0	48	218
	9:15 PM	0	0	0	0	0	0	0	4	0	0	12	21	0	0	0	0	17	0	0	0	54	214
	9:30 PM	0	0	0	0	0	0	0	2	0	0	7	19	0	0	0	0	4	0	0	0	32	185
	9:45 PM	0	0	0	0	0	0	0	6	0	0	6	20	0	0	0	0	3	0	0	0	35	169
	10:00 PM	0	0	0	0	0	2	0	5	0	0	5	18	0	0	0	0	8	0	0	0	38	159
	10:15 PM	0	0	0	0	0	0	0	6	0	0	7	20	0	0	0	0	2	0	0	0	35	140
	10:30 PM	0	0	0	0	0	0	0	2	0	0	2	14	0	0	0	0	2	0	0	0	20	128
	10:45 PM	0	0	0	0	0	0	0	4	0	0	6	10	0	0	0	0	2	0	0	0	22	115
	11:00 PM	0	0	0	0	0	0	0	2	0	0	5	8	0	0	0	0	0	0	0	0	15	92
	11:15 PM	0	0	0	0	0	0	0	0	0	0	5	14	0	0	0	0	3	0	0	0	22	79
	11:30 PM	0	0	0	0	0	0	0	1	0	0	2	10	0	0	0	0	5	0	0	0	18	77
	11:45 PM	0	0	0	0	0	0	0	2	0	0	3	6	0	0	0	0	2	0	0	0	13	68

TOTAL	Northbound	Southbound	Eastbound	Westbound
APPROACH	1	676	3018	2312
DEPARTURE	616	0	2416	2975

UCG
United Civil Group

Turning Movement Count

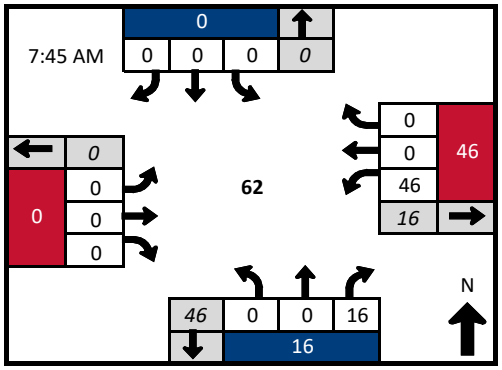
	Speed Limit	Lt	Lt\T	T	T/Rt	Rt	Lt/T/Rt	Lt/Rt
Northbound	35				1			
Southbound	35	1		1				
Eastbound								
Westbound	35	1				1		

Project No: TR24078

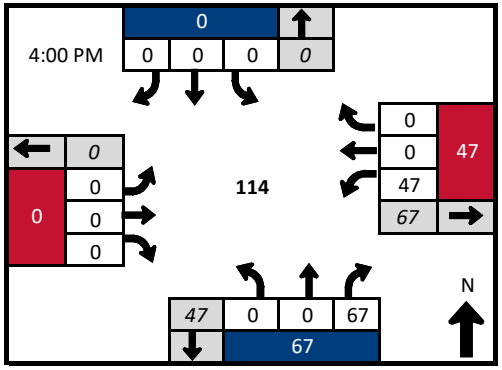
June 27, 2024 (Thursday)

Location: Felix Road
and Desert Mountain Boulevard

Intersection Configuration: Unsignalized



	Felix Road Northbound				Felix Road Southbound				Desert Mountain Boulevard Eastbound				Desert Mountain Boulevard Westbound				Total	Peak Hour
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
7:00 AM	0	1	1	0	0	1	0	0	0	0	0	0	10	0	0	0	13	
7:15 AM	0	0	2	0	0	0	0	0	0	0	0	0	10	0	0	0	12	
7:30 AM	0	0	5	0	0	0	0	0	0	0	0	0	12	0	0	0	17	
7:45 AM	0	0	3	0	0	0	0	0	0	0	0	0	9	0	0	0	12	54
8:00 AM	0	0	3	0	0	0	0	0	0	0	0	0	15	0	0	0	18	59
8:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	10	0	0	0	14	61
8:30 AM	0	0	6	0	0	0	0	0	0	0	0	0	12	0	0	0	18	62
8:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	9	0	0	0	11	61
Peak Hour Total	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**46**	**0**	**0**	**0**	**62**	



	Felix Road Northbound				Felix Road Southbound				Desert Mountain Boulevard Eastbound				Desert Mountain Boulevard Westbound				Total	Peak Hour
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
4:00 PM	0	0	19	0	0	0	0	0	0	0	0	0	13	0	0	0	32	
4:15 PM	0	0	21	0	0	0	0	0	0	0	0	0	11	0	0	0	32	
4:30 PM	0	0	12	0	0	0	0	0	0	0	0	0	10	0	0	0	22	
4:45 PM	0	0	15	0	0	0	0	0	0	0	0	0	13	0	0	0	28	114
5:00 PM	0	0	13	0	0	0	0	0	0	0	0	0	12	0	0	0	25	107
5:15 PM	0	0	16	0	0	0	0	0	0	0	0	0	12	0	0	0	28	103
5:30 PM	0	0	17	0	1	0	0	0	0	0	0	0	10	0	1	0	29	110
5:45 PM	0	0	15	0	0	0	0	0	0	0	0	0	8	0	0	0	23	105
Peak Hour Total	**0**	**0**	**67**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**47**	**0**	**0**	**0**	**114**	

United Civil Group

Turning Movement Count

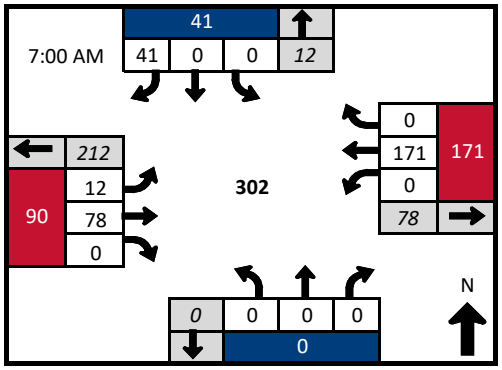
Project No: TR24078

Location: Felix Road and Judd Road

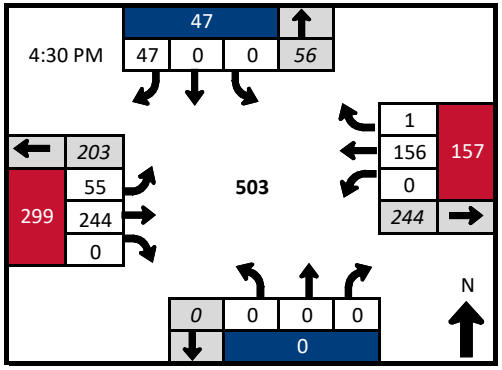
Intersection Configuration: Unsignalized

June 27, 2024 (Thursday)

	Speed Limit	Lt	Lt\T	T	T/Rt	Rt	Lt/T/Rt	Lt/Rt
Northbound								
Southbound	35	1				1		
Eastbound	45	1		1				
Westbound	45				1			



	Felix Road Northbound				Felix Road Southbound				Judd Road Eastbound				Judd Road Westbound				Total	Peak Hour
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
7:00 AM	0	0	0	0	0	0	11	0	2	12	0	0	0	46	0	0	71	
7:15 AM	0	0	0	0	0	0	10	0	2	25	0	0	0	40	0	0	77	
7:30 AM	0	0	0	0	0	0	12	0	5	20	0	0	0	49	0	0	86	
7:45 AM	0	0	0	0	0	0	8	0	3	21	0	0	0	36	0	0	68	302
8:00 AM	0	0	0	0	0	0	15	0	2	12	0	0	0	40	1	0	70	301
8:15 AM	0	0	0	0	0	0	10	0	4	26	0	0	0	34	0	0	74	298
8:30 AM	0	0	0	0	0	0	12	0	6	17	0	0	0	34	0	0	69	281
8:45 AM	0	0	0	0	0	0	9	0	2	15	0	0	0	38	0	0	64	277
Peak Hour Total	**0**	**0**	**0**	**0**	**0**	**0**	**41**	**0**	**12**	**78**	**0**	**0**	**0**	**171**	**0**	**0**	**302**	



	Felix Road Northbound				Felix Road Southbound				Judd Road Eastbound				Judd Road Westbound				Total	Peak Hour
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
4:00 PM	0	0	0	0	0	0	13	0	19	69	0	0	0	36	0	0	137	
4:15 PM	0	0	0	0	1	0	10	0	21	58	0	0	0	29	0	0	119	
4:30 PM	0	0	0	0	0	0	10	0	12	54	0	0	0	42	0	0	118	
4:45 PM	0	0	0	0	0	0	13	0	15	56	0	0	0	43	0	0	127	501
5:00 PM	0	0	0	0	0	0	12	0	12	65	0	0	0	24	1	0	114	478
5:15 PM	0	0	0	0	0	0	12	0	16	69	0	0	0	47	0	0	144	503
5:30 PM	0	0	0	0	0	0	10	0	17	42	0	0	0	25	0	0	94	479
5:45 PM	0	0	0	0	0	0	8	0	15	63	0	0	0	19	0	0	105	457
Peak Hour Total	**0**	**0**	**0**	**0**	**0**	**0**	**47**	**0**	**55**	**244**	**0**	**0**	**0**	**156**	**1**	**0**	**503**	

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Turning Movement Count

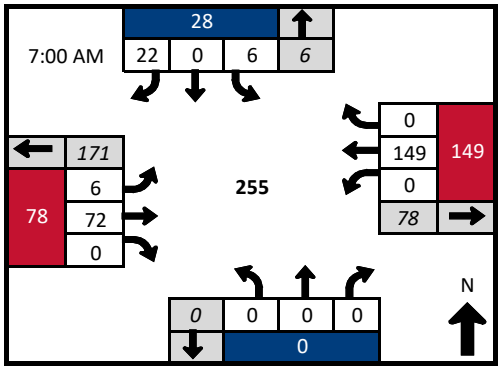
Project No: TR24078

Location: Magmawood Drive and Judd Road

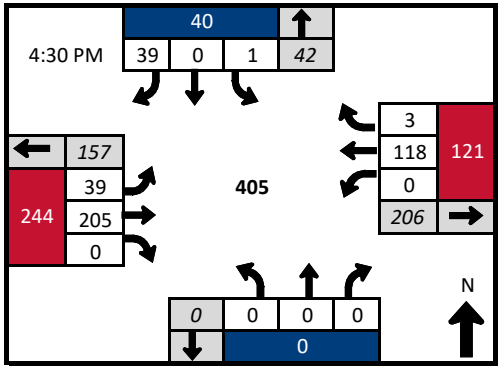
Intersection Configuration: Unsignalized

June 27, 2024 (Thursday)

	Speed Limit	Lt	Lt\T	T	T/Rt	Rt	Lt/T/Rt	Lt/Rt
Northbound								
Southbound	25	1				1		
Eastbound	45	1		1				
Westbound	45				1			



	Magmawood Drive Northbound				Magmawood Drive Southbound				Judd Road Eastbound				Judd Road Westbound				Total	Peak Hour
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
7:00 AM	0	0	0	0	1	0	5	0	1	11	0	0	0	41	0	0	59	
7:15 AM	0	0	0	0	2	0	5	0	3	22	0	0	0	35	0	0	67	
7:30 AM	0	0	0	0	2	0	7	0	0	20	0	0	0	42	0	0	71	
7:45 AM	0	0	0	0	1	0	5	0	2	19	0	0	0	31	0	0	58	255
8:00 AM	0	0	0	0	1	0	7	0	2	10	0	0	0	34	1	0	55	251
8:15 AM	0	0	0	0	1	0	5	0	0	26	0	0	0	29	2	0	63	247
8:30 AM	0	0	0	0	0	0	6	0	1	16	0	0	0	28	0	0	51	227
8:45 AM	0	0	0	0	0	0	0	0	3	12	0	0	0	38	0	0	53	222
Peak Hour Total	**0**	**0**	**0**	**0**	**6**	**0**	**22**	**0**	**6**	**72**	**0**	**0**	**0**	**149**	**0**	**0**	**255**	



	Magmawood Drive Northbound				Magmawood Drive Southbound				Judd Road Eastbound				Judd Road Westbound				Total	Peak Hour
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
4:00 PM	0	0	0	0	1	0	4	0	10	59	0	0	0	32	3	0	109	
4:15 PM	0	0	0	0	0	0	3	0	11	48	0	0	0	26	2	0	90	
4:30 PM	0	0	0	0	0	0	9	0	10	44	0	0	0	33	0	0	96	
4:45 PM	0	0	0	0	0	0	9	0	6	50	0	0	0	34	0	0	99	394
5:00 PM	0	0	0	0	0	0	10	0	8	57	0	0	0	15	0	0	90	375
5:15 PM	0	0	0	0	1	0	11	0	15	54	0	0	0	36	3	0	120	405
5:30 PM	0	0	0	0	2	0	4	0	1	41	0	0	0	21	0	0	69	378
5:45 PM	0	0	0	0	0	0	3	0	10	53	0	0	0	16	1	0	83	362
Peak Hour Total	**0**	**0**	**0**	**0**	**1**	**0**	**39**	**0**	**39**	**205**	**0**	**0**	**0**	**118**	**3**	**0**	**405**	

United Civil Group

Turning Movement Count

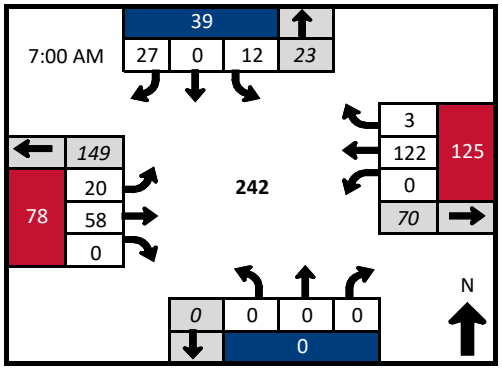
	Speed Limit	Lt	Lt\T	T	T/Rt	Rt	Lt/T/Rt	Lt/Rt
Northbound								
Southbound	25	1				1		
Eastbound	45	1		1				
Westbound	45				1			

Project No: TR24078

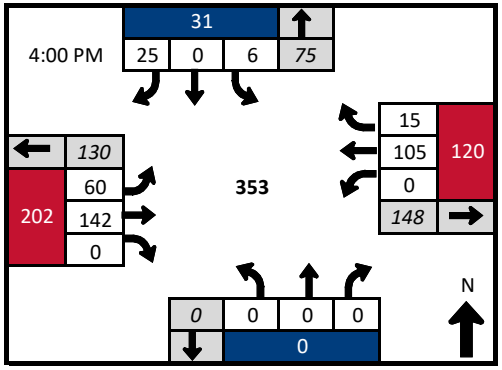
June 27, 2024 (Thursday)

Location: Wildflower Parkway and Judd Road

Intersection Configuration: Unsignalized



	Wildflower Parkway Northbound				Wildflower Parkway Southbound				Judd Road Eastbound				Judd Road Westbound				Total	Peak Hour
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
7:00 AM	0	0	0	0	3	0	5	0	2	10	0	0	0	36	1	0	57	
7:15 AM	0	0	0	0	3	0	6	0	10	14	0	0	0	29	0	0	62	
7:30 AM	0	0	0	0	4	0	9	0	2	20	0	0	0	33	1	0	69	
7:45 AM	0	0	0	0	2	0	7	0	6	14	0	0	0	24	1	0	54	242
8:00 AM	0	0	0	0	2	0	8	0	2	9	0	0	0	27	1	0	49	234
8:15 AM	0	0	0	0	5	0	4	0	6	21	0	0	0	27	0	0	63	235
8:30 AM	0	0	0	0	3	0	7	0	2	14	0	0	0	21	1	0	48	214
8:45 AM	0	0	0	0	1	0	8	0	3	9	0	0	0	30	1	0	52	212
Peak Hour Total	**0**	**0**	**0**	**0**	**12**	**0**	**27**	**0**	**20**	**58**	**0**	**0**	**0**	**122**	**3**	**0**	**242**	



	Wildflower Parkway Northbound				Wildflower Parkway Southbound				Judd Road Eastbound				Judd Road Westbound				Total	Peak Hour
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
4:00 PM	0	0	0	0	3	0	4	0	17	43	0	0	0	31	4	0	102	
4:15 PM	0	0	0	0	1	0	6	0	13	35	0	0	0	22	4	0	81	
4:30 PM	0	0	0	0	1	0	7	0	12	32	0	0	0	26	5	0	83	
4:45 PM	0	0	0	0	1	0	8	0	18	32	0	0	0	26	2	0	87	353
5:00 PM	0	0	0	0	0	0	6	0	11	46	0	0	0	9	2	0	74	325
5:15 PM	0	0	0	0	0	0	7	0	14	41	0	0	0	32	2	0	96	340
5:30 PM	0	0	0	0	0	0	3	0	10	33	0	0	0	18	3	0	67	324
5:45 PM	0	0	0	0	2	0	5	0	14	39	0	0	0	12	2	0	74	311
Peak Hour Total	**0**	**0**	**0**	**0**	**6**	**0**	**25**	**0**	**60**	**142**	**0**	**0**	**0**	**105**	**15**	**0**	**353**	

APPENDIX B

Capacity Analyses

Intersection Level Of Service Report
Intersection 1: Felix Road & Desert Mountain Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Base Volume Input [veh/h]	0	16	0	0	46	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	16	0	0	46	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	0	0	13	0
Total Analysis Volume [veh/h]	0	17	0	0	50	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.25	0.00	8.74	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.16	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	3.89	0.00
d_A, Approach Delay [s/veh]	0.00		3.62		8.74	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.52					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Felix Road & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.053

Intersection Setup

Name	Felix Road		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Judd Road		Judd Road	
Base Volume Input [veh/h]	0	41	12	78	171	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	41	12	78	171	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	11	3	21	46	0
Total Analysis Volume [veh/h]	0	45	13	85	186	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.23	9.44	7.62	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.17	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	4.15	0.71	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.44		1.01		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.59					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 3: Magmawood Drive & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Magmawood Drive		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Magmawood Drive		Judd Road		Judd Road	
Base Volume Input [veh/h]	6	22	6	72	149	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	22	6	72	149	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	6	2	20	40	0
Total Analysis Volume [veh/h]	7	24	7	78	162	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.97	9.19	7.55	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.08	0.01	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.72	2.09	0.37	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.37		0.62		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.23					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Wildflower Parkway & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Wildflower Parkway				Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Wildflower Parkway				Judd Road	
Base Volume Input [veh/h]	12	27	20	58	122	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	27	20	58	122	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	7	5	16	33	1
Total Analysis Volume [veh/h]	13	29	22	63	133	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.92	9.07	7.52	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.10	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.33	2.45	1.16	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.33		1.95		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.12					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: Felix Road & Desert Mountain Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.052

Intersection Setup

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Base Volume Input [veh/h]	0	67	0	0	47	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	67	0	0	47	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	18	0	0	13	0
Total Analysis Volume [veh/h]	0	73	0	0	51	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.36	0.00	8.89	8.48
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.17	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	4.13	0.00
d_A, Approach Delay [s/veh]	0.00		3.68		8.89	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.66					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Felix Road & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.058

Intersection Setup

Name	Felix Road		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Judd Road		Judd Road	
Base Volume Input [veh/h]	0	47	55	244	156	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	47	55	244	156	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	15	66	42	0
Total Analysis Volume [veh/h]	0	51	60	265	170	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.64	9.38	7.67	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.19	0.13	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	4.64	3.34	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.38		1.42		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.72					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 3: Magmawood Drive & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Magmawood Drive		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Magmawood Drive		Judd Road		Judd Road	
Base Volume Input [veh/h]	1	39	39	205	118	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	39	39	205	118	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	11	11	56	32	1
Total Analysis Volume [veh/h]	1	42	42	223	128	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.03	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.43	9.10	7.55	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.14	0.09	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.13	3.58	2.23	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.15		1.20		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.62					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Wildflower Parkway & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	10.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Wildflower Parkway				Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Wildflower Parkway				Judd Road	
Base Volume Input [veh/h]	6	25	60	142	105	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	25	60	142	105	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	16	39	29	4
Total Analysis Volume [veh/h]	7	27	65	154	114	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.87	8.99	7.59	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.09	0.14	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.86	2.24	3.50	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.38		2.25		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.12					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 1: Felix Road & Desert Mountain Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Base Volume Input [veh/h]	0	16	0	0	46	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0404	1.0000	1.0000	1.0404	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	16	0	0	46	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	0	0	13	0
Total Analysis Volume [veh/h]	0	17	0	0	50	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.25	0.00	8.74	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.16	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	3.89	0.00
d_A, Approach Delay [s/veh]	0.00		3.62		8.74	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.52					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Felix Road & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.095

Intersection Setup

Name	Felix Road		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Judd Road		Judd Road	
Base Volume Input [veh/h]	0	41	12	78	171	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	141	382	0
Total Hourly Volume [veh/h]	0	43	12	222	560	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	12	3	60	152	0
Total Analysis Volume [veh/h]	0	47	13	241	609	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.09	0.01	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	16.43	13.03	8.76	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.31	0.04	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	7.82	1.02	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.03		0.45		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.80					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: Magmawood Drive & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	15.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Magmawood Drive		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Magmawood Drive		Judd Road		Judd Road	
Base Volume Input [veh/h]	6	22	6	72	149	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0404	1.0404	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	141	382	0
Total Hourly Volume [veh/h]	6	22	6	216	537	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	6	2	59	146	0
Total Analysis Volume [veh/h]	7	24	7	235	584	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.05	0.01	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	15.94	12.38	8.66	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.15	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.59	3.68	0.53	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.19		0.25		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.55					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 4: Wildflower Parkway & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	Wildflower Parkway				Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Wildflower Parkway				Judd Road	
Base Volume Input [veh/h]	12	27	20	58	122	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0404	1.0404	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	141	382	0
Total Hourly Volume [veh/h]	12	27	20	201	509	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	7	5	55	138	1
Total Analysis Volume [veh/h]	13	29	22	218	553	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.02	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	13.28	12.16	8.63	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.17	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.24	4.32	1.66	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.51		0.79		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.85					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 1: Felix Road & Desert Mountain Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.052

Intersection Setup

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Base Volume Input [veh/h]	0	67	0	0	47	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0404	1.0000	1.0000	1.0404	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	67	0	0	47	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	18	0	0	13	0
Total Analysis Volume [veh/h]	0	73	0	0	51	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.36	0.00	8.89	8.48
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.17	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	4.13	0.00
d_A, Approach Delay [s/veh]	0.00		3.68		8.89	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.66					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Felix Road & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Felix Road		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Judd Road		Judd Road	
Base Volume Input [veh/h]	0	47	55	244	156	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	442	271	0
Total Hourly Volume [veh/h]	0	49	57	696	433	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	15	189	118	0
Total Analysis Volume [veh/h]	0	53	62	757	471	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.09	0.06	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	28.09	11.67	8.50	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.29	0.18	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	7.34	4.52	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.67		0.64		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.85					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: Magmawood Drive & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	24.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Magmawood Drive		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Magmawood Drive		Judd Road		Judd Road	
Base Volume Input [veh/h]	1	39	39	205	118	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0404	1.0404	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	442	271	0
Total Hourly Volume [veh/h]	1	39	39	655	394	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	11	11	178	107	1
Total Analysis Volume [veh/h]	1	42	42	712	428	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.07	0.04	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	24.05	11.17	8.31	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.22	0.12	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.40	5.38	2.90	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.47		0.46		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.69					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 4: Wildflower Parkway & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Wildflower Parkway				Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Wildflower Parkway				Judd Road	
Base Volume Input [veh/h]	6	25	60	142	105	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0404	1.0404	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	442	271	0
Total Hourly Volume [veh/h]	6	25	60	590	380	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	16	160	103	4
Total Analysis Volume [veh/h]	7	27	65	641	413	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.04	0.06	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	16.48	10.95	8.38	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.07	0.13	0.18	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.67	3.34	4.57	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.08		0.77		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.82					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: Felix Road & Desert Mountain Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Base Volume Input [veh/h]	0	16	0	0	46	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1487	1.0000	1.0000	1.1487	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	16	0	0	46	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	0	0	13	0
Total Analysis Volume [veh/h]	0	17	0	0	50	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.25	0.00	8.74	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.16	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	3.89	0.00
d_A, Approach Delay [s/veh]	0.00		3.62		8.74	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.52					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Felix Road & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.106

Intersection Setup

Name	Felix Road		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Judd Road		Judd Road	
Base Volume Input [veh/h]	0	41	12	78	171	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	141	382	0
Total Hourly Volume [veh/h]	0	47	14	231	578	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	4	63	157	0
Total Analysis Volume [veh/h]	0	51	15	251	628	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.11	0.02	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	16.98	13.33	8.83	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.35	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	8.80	1.20	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.33		0.50		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.86					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: Magmawood Drive & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	16.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Magmawood Drive		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Magmawood Drive		Judd Road		Judd Road	
Base Volume Input [veh/h]	6	22	6	72	149	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.1487	1.1487	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	141	382	0
Total Hourly Volume [veh/h]	6	22	6	224	553	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	6	2	61	150	0
Total Analysis Volume [veh/h]	7	24	7	243	601	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.05	0.01	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	16.32	12.56	8.71	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.07	0.15	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.65	3.77	0.54	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.41		0.24		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.54					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 4: Wildflower Parkway & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.030

Intersection Setup

Name	Wildflower Parkway				Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Wildflower Parkway				Judd Road	
Base Volume Input [veh/h]	12	27	20	58	122	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.1487	1.1487	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	141	382	0
Total Hourly Volume [veh/h]	12	27	20	208	522	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	7	5	57	142	1
Total Analysis Volume [veh/h]	13	29	22	226	567	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.06	0.02	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	13.43	12.30	8.67	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.18	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.28	4.40	1.68	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.65		0.77		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.84					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 1: Felix Road & Desert Mountain Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.052

Intersection Setup

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Base Volume Input [veh/h]	0	67	0	0	47	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1487	1.0000	1.0000	1.1487	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	67	0	0	47	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	18	0	0	13	0
Total Analysis Volume [veh/h]	0	73	0	0	51	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.36	0.00	8.89	8.48
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.17	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	4.13	0.00
d_A, Approach Delay [s/veh]	0.00		3.68		8.89	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.66					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Felix Road & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.102

Intersection Setup

Name	Felix Road		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Judd Road		Judd Road	
Base Volume Input [veh/h]	0	47	55	244	156	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	442	271	0
Total Hourly Volume [veh/h]	0	54	63	722	450	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	15	17	196	122	0
Total Analysis Volume [veh/h]	0	59	68	785	489	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.10	0.06	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	30.22	11.93	8.58	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.34	0.20	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	8.47	5.07	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.93		0.68		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.92					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: Magmawood Drive & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	25.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Magmawood Drive		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Magmawood Drive		Judd Road		Judd Road	
Base Volume Input [veh/h]	1	39	39	205	118	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.1487	1.1487	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	442	271	0
Total Hourly Volume [veh/h]	1	39	39	677	407	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	11	11	184	111	1
Total Analysis Volume [veh/h]	1	42	42	736	442	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.07	0.04	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	25.10	11.29	8.35	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.22	0.12	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.42	5.49	2.93	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.61		0.45		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.67					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 4: Wildflower Parkway & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	16.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Wildflower Parkway				Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Wildflower Parkway				Judd Road	
Base Volume Input [veh/h]	6	25	60	142	105	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.1487	1.1487	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	442	271	0
Total Hourly Volume [veh/h]	6	25	60	605	392	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	16	164	107	4
Total Analysis Volume [veh/h]	7	27	65	658	426	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.04	0.06	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	16.76	11.05	8.42	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.07	0.14	0.18	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.71	3.40	4.62	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.23		0.76		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.80					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: Felix Road & Desert Mountain Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Base Volume Input [veh/h]	0	16	0	0	46	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0404	1.0000	1.0000	1.0404	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	16	0	0	46	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	0	0	13	0
Total Analysis Volume [veh/h]	0	17	0	0	50	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.25	0.00	8.74	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.16	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	3.89	0.00
d_A, Approach Delay [s/veh]	0.00		3.62		8.74	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.52					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Felix Road & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	24.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.105

Intersection Setup

Name	Felix Road			Felix Road			Judd Road			Judd Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Felix Road			Felix Road			Judd Road			Judd Road		
Base Volume Input [veh/h]	0	0	0	0	0	41	12	78	0	0	171	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	0	7	0	0	0	0	0	69	23	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	141	0	0	382	0
Total Hourly Volume [veh/h]	20	0	7	0	0	43	12	222	69	23	560	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	2	0	0	12	3	60	19	6	152	0
Total Analysis Volume [veh/h]	22	0	8	0	0	47	13	241	75	25	609	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.01	0.00	0.00	0.09	0.01	0.00	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	24.13	18.91	9.56	21.11	21.10	13.03	8.76	0.00	0.00	7.95	0.00	0.00
Movement LOS	C	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.35	0.03	0.03	0.00	0.31	0.31	0.04	0.00	0.00	0.06	0.00	0.00
95th-Percentile Queue Length [ft/ln]	8.64	0.76	0.76	0.00	7.82	7.82	1.02	0.00	0.00	1.54	0.00	0.00
d_A, Approach Delay [s/veh]	20.24			13.03			0.35			0.31		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	1.47											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: Magmawood Drive & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Magmawood Drive		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Magmawood Drive		Judd Road		Judd Road	
Base Volume Input [veh/h]	6	22	6	72	149	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0404	1.0404	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	7	23	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	141	382	0
Total Hourly Volume [veh/h]	6	22	6	223	560	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	6	2	61	152	0
Total Analysis Volume [veh/h]	7	24	7	242	609	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.05	0.01	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	16.43	12.64	8.74	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.07	0.15	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.66	3.81	0.55	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.50		0.25		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.54					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 4: Wildflower Parkway & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	13.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.030

Intersection Setup

Name	Wildflower Parkway				Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Wildflower Parkway				Judd Road	
Base Volume Input [veh/h]	12	27	20	58	122	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0404	1.0404	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	7	23	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	141	382	0
Total Hourly Volume [veh/h]	12	27	20	208	532	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	7	5	57	145	1
Total Analysis Volume [veh/h]	13	29	22	226	578	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.06	0.02	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	13.53	12.41	8.71	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.18	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.31	4.47	1.70	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.76		0.77		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.84					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Felix Road & Access A

Control Type:	Two-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	Felix Road		Felix Road		Access A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Access A	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	46	46	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	46	46	0	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	13	13	0	4
Total Analysis Volume [veh/h]	15	0	50	50	0	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.32	0.00	0.00	8.43
Movement LOS	A	A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.10	0.00	0.00	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.41	0.00	0.00	1.07
d_A, Approach Delay [s/veh]	0.00		3.66		8.43	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.79					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Felix Road & Access B

Control Type:	Two-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	Felix Road		Felix Road		Access B	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Access B	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	46	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	46	0	0	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	13	0	0	4
Total Analysis Volume [veh/h]	0	0	50	0	0	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.29	0.00	9.18	8.36
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.10	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.38	0.00	1.05	1.05
d_A, Approach Delay [s/veh]	0.00		7.29		8.36	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.54					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: Felix Road & Desert Mountain Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.052

Intersection Setup

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Base Volume Input [veh/h]	0	67	0	0	47	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0404	1.0000	1.0000	1.0404	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	67	0	0	47	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	18	0	0	13	0
Total Analysis Volume [veh/h]	0	73	0	0	51	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.36	0.00	8.89	8.48
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.17	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	4.13	0.00
d_A, Approach Delay [s/veh]	0.00		3.68		8.89	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.66					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Felix Road & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	106.4
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.739

Intersection Setup

Name	Felix Road			Felix Road			Judd Road			Judd Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Felix Road			Felix Road			Judd Road			Judd Road		
Base Volume Input [veh/h]	0	0	0	0	0	47	55	244	0	0	156	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	68	0	23	0	0	0	0	0	26	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	442	0	0	271	0
Total Hourly Volume [veh/h]	68	0	23	0	0	49	57	696	26	9	433	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	6	0	0	13	15	189	7	2	118	0
Total Analysis Volume [veh/h]	74	0	25	0	0	53	62	757	28	10	471	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.74	0.00	0.06	0.00	0.00	0.09	0.06	0.01	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	106.39	32.10	14.41	39.88	33.15	11.67	8.50	0.00	0.00	9.37	0.00	0.00
Movement LOS	F	D	B	E	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	3.88	0.20	0.20	0.00	0.29	0.29	0.18	0.00	0.00	0.04	0.00	0.00
95th-Percentile Queue Length [ft/ln]	97.07	4.88	4.88	0.00	7.34	7.34	4.52	0.00	0.00	0.91	0.00	0.00
d_A, Approach Delay [s/veh]	83.16			11.67			0.62			0.19		
Approach LOS	F			B			A			A		
d_I, Intersection Delay [s/veh]	6.40											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Magmawood Drive & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	25.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Magmawood Drive		Judd Road		Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Magmawood Drive		Judd Road		Judd Road	
Base Volume Input [veh/h]	1	39	39	205	118	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0404	1.0404	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	23	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	442	271	0
Total Hourly Volume [veh/h]	1	39	39	678	403	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	11	11	184	110	1
Total Analysis Volume [veh/h]	1	42	42	737	438	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.07	0.04	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	25.01	11.26	8.34	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.22	0.12	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.42	5.46	2.92	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.57		0.45		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.67					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 4: Wildflower Parkway & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	16.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Wildflower Parkway				Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Wildflower Parkway				Judd Road	
Base Volume Input [veh/h]	6	25	60	142	105	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0404	1.0404	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	23	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	442	271	0
Total Hourly Volume [veh/h]	6	25	60	613	389	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	16	167	106	4
Total Analysis Volume [veh/h]	7	27	65	666	423	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.04	0.06	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	16.82	11.03	8.41	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.07	0.14	0.18	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.72	3.38	4.61	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.22		0.75		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.80					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Felix Road & Access A

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name	Felix Road		Felix Road		Access A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Access A	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	46	0	18	18	0	46
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	0	18	18	0	46
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	0	5	5	0	13
Total Analysis Volume [veh/h]	50	0	20	20	0	50
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	7.34	0.00	0.00	8.72
Movement LOS	A	A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.00	0.00	0.15
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.98	0.00	0.00	3.87
d_A, Approach Delay [s/veh]	0.00		3.67		8.72	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.16					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Felix Road & Access B

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	Felix Road		Felix Road		Access B	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Access B	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	18	0	0	46
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	18	0	0	46
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	5	0	0	13
Total Analysis Volume [veh/h]	0	0	20	0	0	50
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	7.25	0.00	8.91	8.48
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.00	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.94	0.00	3.62	3.62
d_A, Approach Delay [s/veh]	0.00		7.25		8.48	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.13					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: Felix Road & Desert Mountain Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.059

Intersection Setup

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Base Volume Input [veh/h]	0	16	0	0	46	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1487	1.0000	1.0000	1.1487	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	0	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	21	0	0	54	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	0	0	15	0
Total Analysis Volume [veh/h]	0	23	0	0	59	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.06	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.26	0.00	8.79	8.37
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.19	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	4.65	0.00
d_A, Approach Delay [s/veh]	0.00		3.63		8.79	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.33					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Felix Road & Judd Road

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.404

Intersection Setup

Name	Felix Road			Felix Road			Judd Road			Judd Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Felix Road			Felix Road			Judd Road			Judd Road		
Base Volume Input [veh/h]	0	0	0	0	0	41	12	78	0	0	171	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	39	3	24	5	3	0	0	40	89	51	19	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	141	0	0	382	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	3	24	5	3	47	14	271	89	51	597	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	1	7	1	1	13	4	74	24	14	162	1
Total Analysis Volume [veh/h]	42	3	26	5	3	51	15	295	97	55	649	3
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	5	19	0	5	19	0	5	183	0	17	195	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	9	27	0	9	27	0	9	45	0	9	45	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	0.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	32	23	32	23	50	41	41	50	41
g / C, Green / Cycle	0.36	0.26	0.36	0.26	0.56	0.46	0.46	0.56	0.46
(v / s)_i Volume / Saturation Flow Rate	0.03	0.02	0.00	0.03	0.02	0.16	0.06	0.05	0.35
s, saturation flow rate [veh/h]	1444	1615	1468	1603	920	1870	1589	1102	1868
c, Capacity [veh/h]	598	413	623	410	403	852	724	631	851
d1, Uniform Delay [s]	19.17	25.40	18.75	25.81	12.87	15.84	14.21	9.67	20.49
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.23	0.33	0.02	0.67	0.17	1.12	0.38	0.27	6.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.07	0.01	0.13	0.04	0.35	0.13	0.09	0.77
d, Delay for Lane Group [s/veh]	19.40	25.72	18.77	26.47	13.04	16.95	14.59	9.94	27.01
Lane Group LOS	B	C	B	C	B	B	B	A	C
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.60	0.50	0.07	0.94	0.13	3.78	1.12	0.48	11.60
50th-Percentile Queue Length [ft/ln]	14.92	12.39	1.73	23.55	3.34	94.56	27.88	11.90	290.05
95th-Percentile Queue Length [veh/ln]	1.07	0.89	0.12	1.70	0.24	6.81	2.01	0.86	17.19
95th-Percentile Queue Length [ft/ln]	26.86	22.30	3.12	42.39	6.01	170.21	50.18	21.42	429.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.40	25.72	25.72	18.77	26.47	26.47	13.04	16.95	14.59	9.94	27.01	27.01
Movement LOS	B	C	C	B	C	C	B	B	B	A	C	C
d_A, Approach Delay [s/veh]	21.98			25.82			16.25			25.68		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	22.39											
Intersection LOS	C											
Intersection V/C	0.404											

Emissions

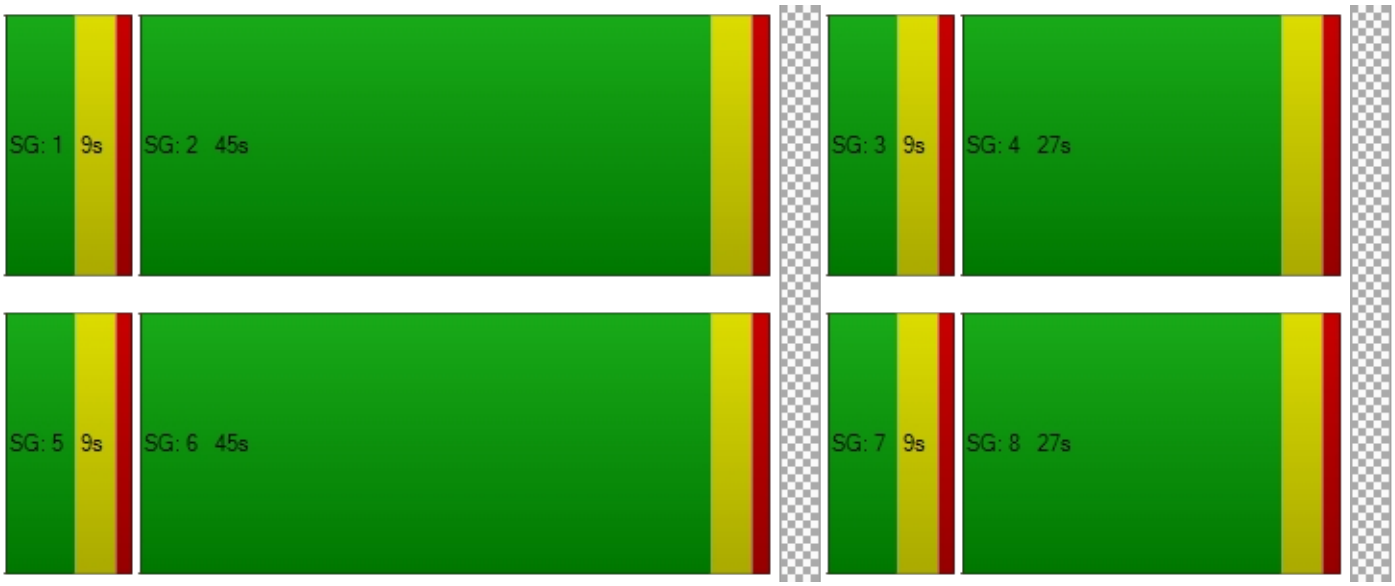
Vehicle Miles Traveled [mph]	5.73	3.96	1.27	13.70	0.36	7.00	2.30	6.68	79.22
Stops [stops/h]	23.88	19.82	2.77	37.68	5.34	151.30	44.60	19.04	464.08
Fuel consumption [US gal/h]	0.56	0.45	0.09	1.10	0.12	3.14	0.92	0.58	12.07
CO [g/h]	39.42	31.58	6.17	76.64	8.28	219.41	64.41	40.34	843.62
NOx [g/h]	7.67	6.14	1.20	14.91	1.61	42.69	12.53	7.85	164.14
VOC [g/h]	9.14	7.32	1.43	17.76	1.92	50.85	14.93	9.35	195.52

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	511	511	911	911
d_b, Bicycle Delay [s]	24.94	24.94	13.34	13.34
l_b,int, Bicycle LOS Score for Intersection	1.677	1.657	2.231	2.726
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-


SG: 1 9s
SG: 2 45s
SG: 3 9s
SG: 4 27s
SG: 5 9s
SG: 6 45s
SG: 7 9s
SG: 8 27s

Intersection Level Of Service Report
Intersection 3: Magmawood Drive-Access D & Judd Road

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.396

Intersection Setup

Name	Access D			Magmawood Drive			Judd Road			Judd Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Access D			Magmawood Drive			Judd Road			Judd Road		
Base Volume Input [veh/h]	0	0	0	6	0	22	6	72	0	0	149	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.1487	1.0000	1.0000	1.1487	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	21	2	15	0	3	5	3	37	22	26	73	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	141	0	0	382	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	2	15	6	3	27	9	261	22	26	626	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	1	4	2	1	7	2	71	6	7	170	0
Total Analysis Volume [veh/h]	23	2	16	7	3	29	10	284	24	28	680	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	5	12	0	5	12	0	5	32	0	5	32	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	9	26	0	9	26	0	9	46	0	9	46	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	0.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	31	22	31	22	51	42	42	51	42
g / C, Green / Cycle	0.34	0.24	0.34	0.24	0.57	0.47	0.47	0.57	0.47
(v / s)_i Volume / Saturation Flow Rate	0.02	0.01	0.00	0.02	0.01	0.15	0.02	0.02	0.36
s, saturation flow rate [veh/h]	1468	1616	1482	1612	900	1870	1589	1169	1870
c, Capacity [veh/h]	604	395	618	394	398	873	742	679	873
d1, Uniform Delay [s]	19.60	25.98	19.42	26.21	12.73	15.09	13.00	9.01	20.11
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.12	0.22	0.03	0.40	0.12	0.99	0.08	0.11	6.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.05	0.01	0.08	0.03	0.33	0.03	0.04	0.78
d, Delay for Lane Group [s/veh]	19.72	26.20	19.45	26.61	12.85	16.08	13.08	9.12	26.93
Lane Group LOS	B	C	B	C	B	B	B	A	C
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.34	0.32	0.10	0.57	0.09	3.51	0.25	0.23	12.09
50th-Percentile Queue Length [ft/ln]	8.49	7.98	2.56	14.35	2.15	87.78	6.37	5.71	302.24
95th-Percentile Queue Length [veh/ln]	0.61	0.57	0.18	1.03	0.15	6.32	0.46	0.41	17.79
95th-Percentile Queue Length [ft/ln]	15.29	14.37	4.60	25.83	3.87	158.01	11.46	10.27	444.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.72	26.20	26.20	19.45	26.61	26.61	12.85	16.08	13.08	9.12	26.93	26.93
Movement LOS	B	C	C	B	C	C	B	B	B	A	C	C
d_A, Approach Delay [s/veh]	22.56			25.33			15.76			26.22		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	23.05											
Intersection LOS	C											
Intersection V/C	0.396											

Emissions

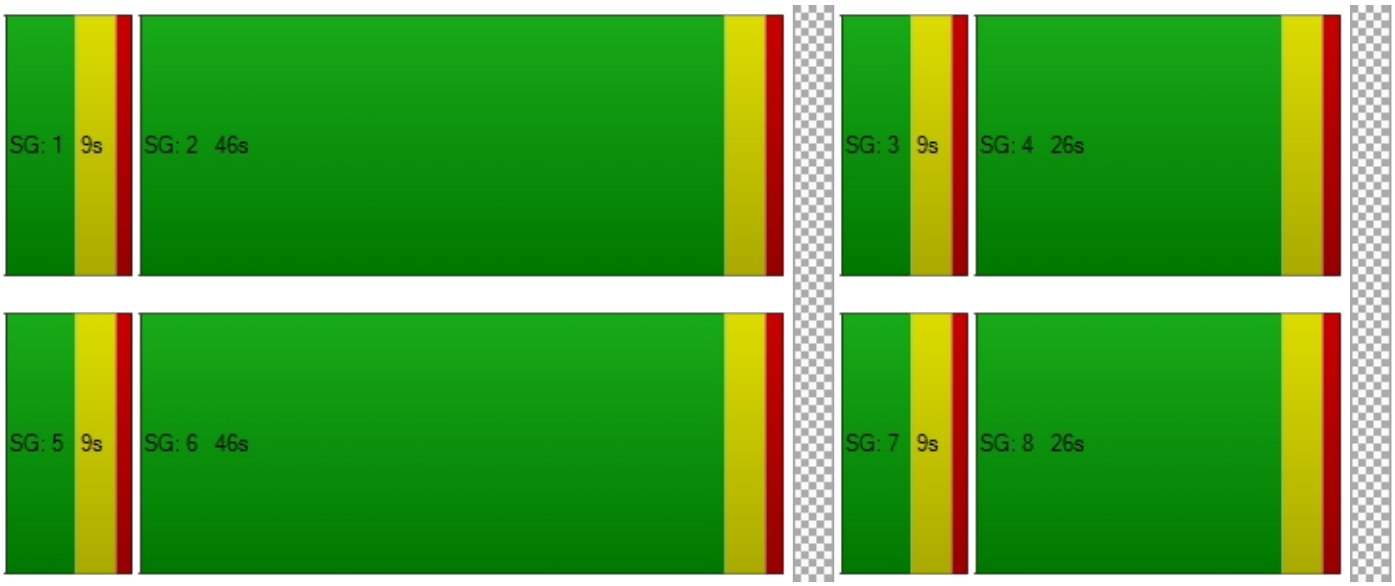
Vehicle Miles Traveled [mph]	0.54	0.43	0.17	0.76	1.26	35.90	3.03	2.88	69.90
Stops [stops/h]	13.59	12.77	4.09	22.96	3.44	140.46	10.19	9.13	483.59
Fuel consumption [US gal/h]	0.17	0.16	0.05	0.30	0.11	3.91	0.29	0.26	12.13
CO [g/h]	11.80	11.47	3.55	20.65	7.85	273.07	20.59	18.46	848.23
NOx [g/h]	2.30	2.23	0.69	4.02	1.53	53.13	4.01	3.59	165.03
VOC [g/h]	2.74	2.66	0.82	4.78	1.82	63.29	4.77	4.28	196.59

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	933	933
d_b, Bicycle Delay [s]	25.69	25.69	12.80	12.80
l_b,int, Bicycle LOS Score for Intersection	1.627	1.624	2.084	2.728
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-


SG: 1 9s
SG: 2 46s
SG: 3 9s
SG: 4 26s
SG: 5 9s
SG: 6 46s
SG: 7 9s
SG: 8 26s

Intersection Level Of Service Report
Intersection 4: Wildflower Parkway & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	14.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name	Wildflower Parkway				Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Wildflower Parkway				Judd Road	
Base Volume Input [veh/h]	12	27	20	58	122	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.1487	1.1487	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	5	47	91	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	141	382	0
Total Hourly Volume [veh/h]	12	35	25	255	613	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	10	7	69	167	1
Total Analysis Volume [veh/h]	13	38	27	277	666	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.08	0.03	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	14.69	13.56	9.03	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.27	0.09	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.62	6.74	2.26	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.85		0.80		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.93					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Felix Road & Access A

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.052

Intersection Setup

Name	Felix Road		Felix Road		Access A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Access A	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	96	46	0	51
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	96	46	0	51
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	26	13	0	14
Total Analysis Volume [veh/h]	15	0	104	50	0	55
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.06	0.00	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	7.40	0.00	0.00	8.57
Movement LOS	A	A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.21	0.00	0.00	0.16
95th-Percentile Queue Length [ft/ln]	0.00	0.00	5.20	0.00	0.00	4.08
d_A, Approach Delay [s/veh]	0.00		5.00		8.57	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.54					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Felix Road & Access B

Control Type:	Two-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	Felix Road		Felix Road		Access B	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Access B	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	46	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	46	0	0	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	13	0	0	4
Total Analysis Volume [veh/h]	0	0	50	0	0	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.29	0.00	9.18	8.36
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.10	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.38	0.00	1.05	1.05
d_A, Approach Delay [s/veh]	0.00		7.29		8.36	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.54					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Access C & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name	Access C		Judd Road		Judd Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Access C		Judd Road		Judd Road	
Base Volume Input [veh/h]	0	0	78	0	0	171
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.1487	1.0000	1.0000	1.1487
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	46	23	28	72
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	141	0	0	382
Total Hourly Volume [veh/h]	0	17	277	23	28	650
Peak Hour Factor	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	75	6	8	177
Total Analysis Volume [veh/h]	0	18	301	25	30	707
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	10.00	0.00	0.00	7.99	0.00
Movement LOS		A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.07	0.00	0.00	0.07	0.00
95th-Percentile Queue Length [ft/ln]	0.00	1.87	0.00	0.00	1.87	0.00
d_A, Approach Delay [s/veh]	10.00		0.00		0.33	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: Felix Road & Desert Mountain Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.074

Intersection Setup

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Desert Mountain Boulevard	
Base Volume Input [veh/h]	0	67	0	0	47	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1487	1.0000	1.0000	1.1487	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	19	0	0	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	86	0	0	65	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	23	0	0	18	0
Total Analysis Volume [veh/h]	0	93	0	0	71	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.07	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.40	0.00	9.03	8.52
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.24	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	5.95	0.00
d_A, Approach Delay [s/veh]	0.00		3.70		9.03	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.91					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Felix Road & Judd Road

Control Type:	Signalized	Delay (sec / veh):	19.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.608

Intersection Setup

Name	Felix Road			Felix Road			Judd Road			Judd Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Felix Road			Felix Road			Judd Road			Judd Road		
Base Volume Input [veh/h]	0	0	0	0	0	47	55	244	0	0	156	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487	1.1487
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	142	10	90	12	6	0	0	95	73	74	74	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	442	0	0	271	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	10	90	12	6	54	63	817	73	74	524	11
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	3	24	3	2	15	17	222	20	20	142	3
Total Analysis Volume [veh/h]	154	11	98	13	7	59	68	888	79	80	570	12
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	16	26	0	5	15	0	6	167	0	6	167	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	9	14	0	9	14	0	9	58	0	9	58	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	0.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	19	10	19	10	63	54	54	63	54
g / C, Green / Cycle	0.21	0.11	0.21	0.11	0.70	0.60	0.60	0.70	0.60
(v / s)_i Volume / Saturation Flow Rate	0.10	0.07	0.01	0.04	0.07	0.47	0.05	0.11	0.31
s, saturation flow rate [veh/h]	1499	1614	1467	1615	938	1870	1589	714	1863
c, Capacity [veh/h]	386	179	347	179	625	1122	954	409	1118
d1, Uniform Delay [s]	30.73	38.13	28.40	37.07	5.83	13.71	7.58	11.07	10.47
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.07	14.39	0.20	5.72	0.35	5.74	0.17	1.06	1.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.61	0.04	0.37	0.11	0.79	0.08	0.20	0.52
d, Delay for Lane Group [s/veh]	33.80	52.52	28.60	42.79	6.18	19.45	7.75	12.13	12.21
Lane Group LOS	C	D	C	D	A	B	A	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.13	2.95	0.24	1.60	0.34	12.67	0.58	0.45	5.99
50th-Percentile Queue Length [ft/ln]	78.23	73.77	5.93	40.01	8.48	316.74	14.50	11.27	149.63
95th-Percentile Queue Length [veh/ln]	5.63	5.31	0.43	2.88	0.61	18.51	1.04	0.81	10.00
95th-Percentile Queue Length [ft/ln]	140.81	132.78	10.67	72.01	15.26	462.68	26.10	20.28	249.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.80	52.52	52.52	28.60	42.79	42.79	6.18	19.45	7.75	12.13	12.21	12.21
Movement LOS	C	D	D	C	D	D	A	B	A	B	B	B
d_A, Approach Delay [s/veh]	41.56			40.45			17.68			12.20		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	19.86											
Intersection LOS	B											
Intersection V/C	0.608											

Emissions

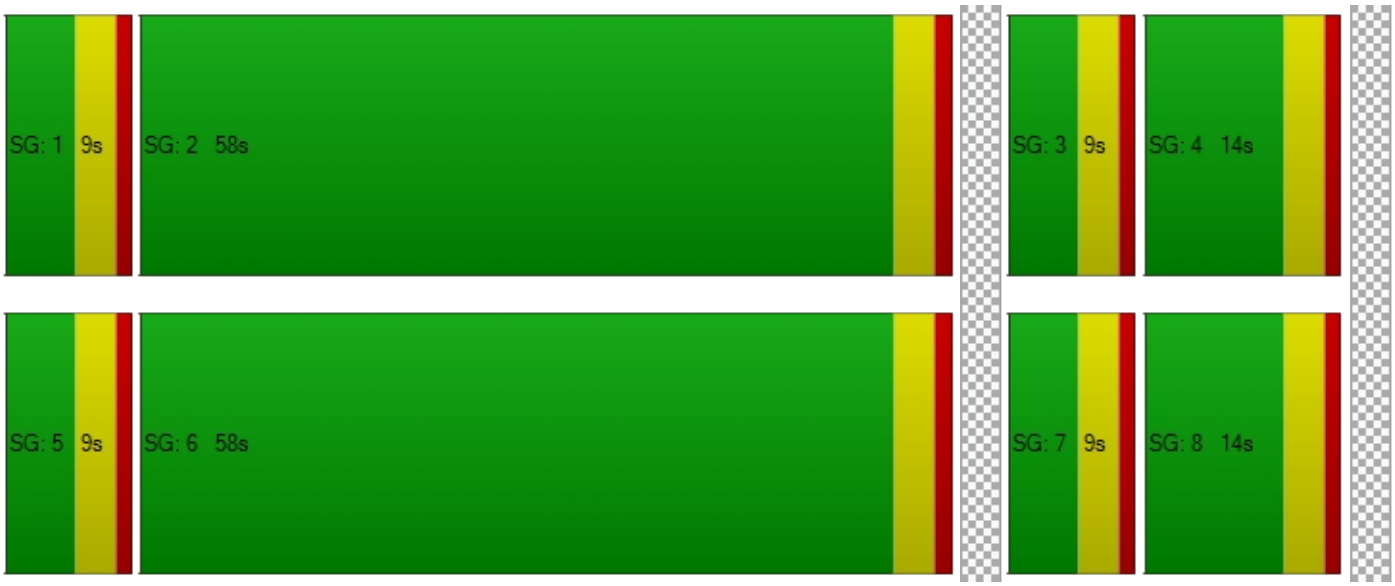
Vehicle Miles Traveled [mph]	21.02	14.88	3.30	16.74	1.61	21.07	1.87	9.72	70.72
Stops [stops/h]	125.16	118.02	9.48	64.01	13.57	506.79	23.20	18.03	239.40
Fuel consumption [US gal/h]	2.80	2.62	0.27	1.69	0.31	10.54	0.48	0.75	6.85
CO [g/h]	195.85	183.11	19.06	118.42	21.64	736.60	33.36	52.76	478.56
NOx [g/h]	38.11	35.63	3.71	23.04	4.21	143.32	6.49	10.27	93.11
VOC [g/h]	45.39	42.44	4.42	27.45	5.01	170.72	7.73	12.23	110.91

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	222	222	1200	1200
d_b, Bicycle Delay [s]	35.56	35.56	7.20	7.20
l_b,int, Bicycle LOS Score for Intersection	1.994	1.690	3.267	2.652
Bicycle LOS	A	A	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-


SG: 1 9s
SG: 2 58s
SG: 3 9s
SG: 4 14s
SG: 5 9s
SG: 6 58s
SG: 7 9s
SG: 8 14s

Intersection Level Of Service Report
Intersection 3: Magmawood Drive-Access D & Judd Road

Control Type:	Signalized	Delay (sec / veh):	22.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name	Access D			Magmawood Drive			Judd Road			Judd Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Access D			Magmawood Drive			Judd Road			Judd Road		
Base Volume Input [veh/h]	0	0	0	1	0	39	39	205	0	0	118	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.1487	1.0000	1.0000	1.1487	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	84	6	63	0	6	12	13	145	53	61	126	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	442	0	0	271	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	6	63	1	6	51	52	822	53	61	533	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	2	17	0	2	14	14	223	14	17	145	1
Total Analysis Volume [veh/h]	91	7	68	1	7	55	57	893	58	66	579	3
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	8	16	0	5	13	0	6	158	0	5	157	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	9	18	0	9	18	0	9	54	0	9	54	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	0.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	23	14	23	14	59	50	50	59	50
g / C, Green / Cycle	0.26	0.16	0.26	0.16	0.66	0.56	0.56	0.66	0.56
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.00	0.04	0.06	0.48	0.04	0.09	0.31
s, saturation flow rate [veh/h]	1474	1612	1463	1617	945	1870	1589	731	1868
c, Capacity [veh/h]	451	251	439	252	572	1039	883	359	1038
d1, Uniform Delay [s]	26.34	33.65	25.03	33.37	7.47	17.01	9.23	13.91	12.91
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.01	3.03	0.01	2.33	0.35	9.25	0.14	1.12	2.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.30	0.00	0.25	0.10	0.86	0.07	0.18	0.56
d, Delay for Lane Group [s/veh]	27.34	36.69	25.04	35.69	7.82	26.27	9.37	15.03	15.10
Lane Group LOS	C	D	C	D	A	C	A	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.66	1.66	0.02	1.35	0.35	15.57	0.49	0.46	7.01
50th-Percentile Queue Length [ft/ln]	41.40	41.57	0.43	33.80	8.81	389.20	12.23	11.45	175.25
95th-Percentile Queue Length [veh/ln]	2.98	2.99	0.03	2.43	0.63	22.04	0.88	0.82	11.35
95th-Percentile Queue Length [ft/ln]	74.51	74.83	0.77	60.85	15.86	550.97	22.02	20.61	283.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.34	36.69	36.69	25.04	35.69	35.69	7.82	26.27	9.37	15.03	15.10	15.10
Movement LOS	C	D	D	C	D	D	A	C	A	B	B	B
d_A, Approach Delay [s/veh]	31.56			35.52			24.25			15.09		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	22.12											
Intersection LOS	C											
Intersection V/C	0.574											

Emissions

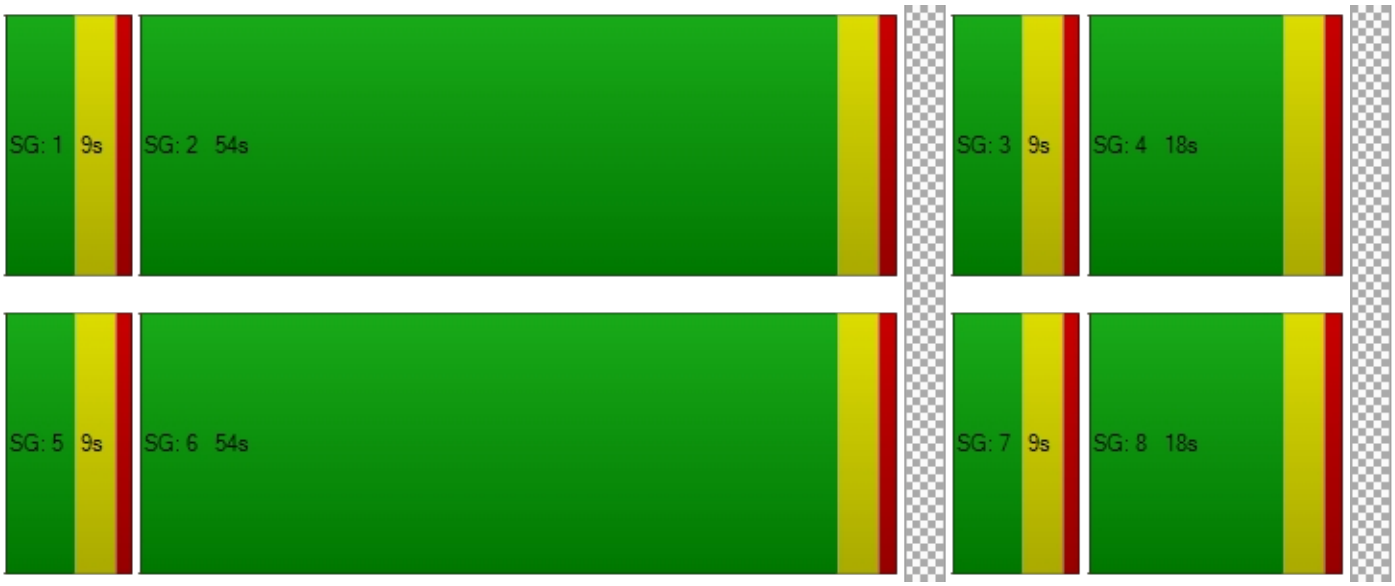
Vehicle Miles Traveled [mph]	2.15	1.77	0.02	1.46	7.21	112.89	7.33	6.78	59.83
Stops [stops/h]	66.23	66.51	0.68	54.09	14.10	622.71	19.58	18.32	280.41
Fuel consumption [US gal/h]	0.86	0.89	0.01	0.72	0.51	16.39	0.61	0.66	7.33
CO [g/h]	59.91	62.54	0.61	50.58	35.86	1145.32	42.31	46.29	512.07
NOx [g/h]	11.66	12.17	0.12	9.84	6.98	222.84	8.23	9.01	99.63
VOC [g/h]	13.88	14.49	0.14	11.72	8.31	265.44	9.81	10.73	118.68

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	311	311	1111	1111
d_b, Bicycle Delay [s]	32.09	32.09	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.834	1.664	3.223	2.629
Bicycle LOS	A	A	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-


SG: 1 9s
SG: 2 54s
SG: 3 9s
SG: 4 18s
SG: 5 9s
SG: 6 54s
SG: 7 9s
SG: 8 18s

Intersection Level Of Service Report
Intersection 4: Wildflower Parkway & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	21.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

Name	Wildflower Parkway				Judd Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Wildflower Parkway				Judd Road	
Base Volume Input [veh/h]	6	25	60	142	105	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.1487	1.1487	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	19	189	169	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	442	271	0
Total Hourly Volume [veh/h]	6	43	79	794	561	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	12	21	216	152	4
Total Analysis Volume [veh/h]	7	47	86	863	610	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.10	0.09	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	21.84	13.14	9.14	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.32	0.30	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.45	7.93	7.40	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.27		0.83		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.96					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Felix Road & Access A

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.209

Intersection Setup

Name	Felix Road		Felix Road		Access A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Access A	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	46	0	135	18	0	196
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	0	135	18	0	196
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	0	37	5	0	53
Total Analysis Volume [veh/h]	50	0	147	20	0	213
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.09	0.00	0.00	0.21
d_M, Delay for Movement [s/veh]	0.00	0.00	7.55	0.00	0.00	9.47
Movement LOS	A	A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.31	0.00	0.00	0.79
95th-Percentile Queue Length [ft/ln]	0.00	0.00	7.81	0.00	0.00	19.68
d_A, Approach Delay [s/veh]	0.00		6.65		9.47	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.27					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Felix Road & Access B

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	Felix Road		Felix Road		Access B	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Felix Road		Felix Road		Access B	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	18	0	0	46
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	18	0	0	46
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	5	0	0	13
Total Analysis Volume [veh/h]	0	0	20	0	0	50
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	7.25	0.00	8.91	8.48
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.00	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.94	0.00	3.62	3.62
d_A, Approach Delay [s/veh]	0.00		7.25		8.48	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.13					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Access C & Judd Road

Control Type:	Two-way stop	Delay (sec / veh):	19.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.228

Intersection Setup

Name	Access C		Judd Road		Judd Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Access C		Judd Road		Judd Road	
Base Volume Input [veh/h]	0	0	244	0	0	157
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.1487	1.0000	1.0000	1.1487
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	67	143	54	65	157
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	442	0	0	271
Total Hourly Volume [veh/h]	0	67	865	54	65	608
Peak Hour Factor	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	18	235	15	18	165
Total Analysis Volume [veh/h]	0	73	940	59	71	661
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.23	0.01	0.00	0.10	0.01
d_M, Delay for Movement [s/veh]	0.00	19.56	0.00	0.00	10.79	0.00
Movement LOS		C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.86	0.00	0.00	0.34	0.00
95th-Percentile Queue Length [ft/ln]	0.00	21.59	0.00	0.00	8.53	0.00
d_A, Approach Delay [s/veh]	19.56		0.00		1.05	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.22					
Intersection LOS	C					

APPENDIX C

Crash Data

Incident ID	Incident Microfilm	Incident Date & Time	Incident On Road	Incident Crossing Feature	Incident Offset	Incident Injury Severity Description	Incident First Harmful Description	Incident Collision Manner Desc
3783246		5/18/2021 7:14:00 PM	11 JUDD RD	Felix Rd	0	Possible Injury	Utility Pole Light Support	Single Vehicle
3843149		12/6/2021 7:28:00 PM	11 JUDD RD	Felix Rd	0	Suspected Minor Injury	Motor Vehicle In Transport	Left Turn
3843149		12/6/2021 7:28:00 PM	11 JUDD RD	Felix Rd	0	Suspected Minor Injury	Motor Vehicle In Transport	Left Turn
3901944		4/9/2022 9:27:00 AM	11 JUDD RD	Felix Rd	-149	Suspected Minor Injury	Motor Vehicle In Transport	Other
3901944		4/9/2022 9:27:00 AM	11 JUDD RD	Felix Rd	-149	Suspected Minor Injury	Motor Vehicle In Transport	Other
3901944		4/9/2022 9:27:00 AM	11 JUDD RD	Felix Rd	-149	Suspected Minor Injury	Motor Vehicle In Transport	Other
4012744		3/8/2023 8:46:00 AM	11 JUDD RD	Felix Rd	0	No Injury	Motor Vehicle In Transport	Left Turn
4012744		3/8/2023 8:46:00 AM	11 JUDD RD	Felix Rd	0	No Injury	Motor Vehicle In Transport	Left Turn

APPENDIX D

Traffic Signal Warrant Analyses

Signal Warrants Report For Intersection 2: Felix Road & Judd Road

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	157	299	47
2	143	272	43
3	124	236	37
4	119	227	36
5	113	215	34
6	105	200	31
7	104	197	31
8	97	185	29
9	94	179	28
10	94	179	28
11	93	176	28
12	86	164	26
13	85	161	25
14	63	120	19
15	63	120	19
16	44	84	13
17	25	48	8
18	25	48	8
19	14	27	4
20	8	15	2
21	5	9	1
22	2	3	0
23	2	3	0
24	2	3	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	456	2	47	No	No	No	No	No	No	No	No	No	No
2	2	415	2	43	No	No	No	No	No	No	No	No	No	No
3	2	360	2	37	No	No	No	No	No	No	No	No	No	No
4	2	346	2	36	No	No	No	No	No	No	No	No	No	No
5	2	328	2	34	No	No	No	No	No	No	No	No	No	No
6	2	305	2	31	No	No	No	No	No	No	No	No	No	No
7	2	301	2	31	No	No	No	No	No	No	No	No	No	No
8	2	282	2	29	No	No	No	No	No	No	No	No	No	No
9	2	273	2	28	No	No	No	No	No	No	No	No	No	No
10	2	273	2	28	No	No	No	No	No	No	No	No	No	No
11	2	269	2	28	No	No	No	No	No	No	No	No	No	No
12	2	250	2	26	No	No	No	No	No	No	No	No	No	No
13	2	246	2	25	No	No	No	No	No	No	No	No	No	No
14	2	183	2	19	No	No	No	No	No	No	No	No	No	No
15	2	183	2	19	No	No	No	No	No	No	No	No	No	No
16	2	128	2	13	No	No	No	No	No	No	No	No	No	No
17	2	73	2	8	No	No	No	No	No	No	No	No	No	No
18	2	73	2	8	No	No	No	No	No	No	No	No	No	No
19	2	41	2	4	No	No	No	No	No	No	No	No	No	No
20	2	23	2	2	No	No	No	No	No	No	No	No	No	No
21	2	14	2	1	No	No	No	No	No	No	No	No	No	No
22	2	5	2	0	No	No	No	No	No	No	No	No	No	No
23	2	5	2	0	No	No	No	No	No	No	No	No	No	No
24	2	5	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.4
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	47
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	503
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 3: Magmawood Drive & Judd Road

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	121	244	40
2	110	222	36
3	96	193	32
4	92	185	30
5	87	176	29
6	81	163	27
7	80	161	26
8	75	151	25
9	73	146	24
10	73	146	24
11	71	144	24
12	67	134	22
13	65	132	22
14	48	98	16
15	48	98	16
16	34	68	11
17	19	39	6
18	19	39	6
19	11	22	4
20	6	12	2
21	4	7	1
22	1	2	0
23	1	2	0
24	1	2	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	365	2	40	No	No	No	No	No	No	No	No	No	No
2	2	332	2	36	No	No	No	No	No	No	No	No	No	No
3	2	289	2	32	No	No	No	No	No	No	No	No	No	No
4	2	277	2	30	No	No	No	No	No	No	No	No	No	No
5	2	263	2	29	No	No	No	No	No	No	No	No	No	No
6	2	244	2	27	No	No	No	No	No	No	No	No	No	No
7	2	241	2	26	No	No	No	No	No	No	No	No	No	No
8	2	226	2	25	No	No	No	No	No	No	No	No	No	No
9	2	219	2	24	No	No	No	No	No	No	No	No	No	No
10	2	219	2	24	No	No	No	No	No	No	No	No	No	No
11	2	215	2	24	No	No	No	No	No	No	No	No	No	No
12	2	201	2	22	No	No	No	No	No	No	No	No	No	No
13	2	197	2	22	No	No	No	No	No	No	No	No	No	No
14	2	146	2	16	No	No	No	No	No	No	No	No	No	No
15	2	146	2	16	No	No	No	No	No	No	No	No	No	No
16	2	102	2	11	No	No	No	No	No	No	No	No	No	No
17	2	58	2	6	No	No	No	No	No	No	No	No	No	No
18	2	58	2	6	No	No	No	No	No	No	No	No	No	No
19	2	33	2	4	No	No	No	No	No	No	No	No	No	No
20	2	18	2	2	No	No	No	No	No	No	No	No	No	No
21	2	11	2	1	No	No	No	No	No	No	No	No	No	No
22	2	3	2	0	No	No	No	No	No	No	No	No	No	No
23	2	3	2	0	No	No	No	No	No	No	No	No	No	No
24	2	3	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	40
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	405
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 2: Felix Road & Judd Road

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	434	753	49
2	395	685	45
3	343	595	39
4	330	572	37
5	312	542	35
6	291	505	33
7	286	497	32
8	269	467	30
9	260	452	29
10	260	452	29
11	256	444	29
12	239	414	27
13	234	407	26
14	174	301	20
15	174	301	20
16	122	211	14
17	69	120	8
18	69	120	8
19	39	68	4
20	22	38	2
21	13	23	1
22	4	8	0
23	4	8	0
24	4	8	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1187	2	49	No	No	No	No	No	No	No	No	No	No
2	2	1080	2	45	No	No	No	No	No	No	No	No	No	No
3	2	938	2	39	No	No	No	No	No	No	No	No	No	No
4	2	902	2	37	No	No	No	No	No	No	No	No	No	No
5	2	854	2	35	No	No	No	No	No	No	No	No	No	No
6	2	796	2	33	No	No	No	No	No	No	No	No	No	No
7	2	783	2	32	No	No	No	No	No	No	No	No	No	No
8	2	736	2	30	No	No	No	No	No	No	No	No	No	No
9	2	712	2	29	No	No	No	No	No	No	No	No	No	No
10	2	712	2	29	No	No	No	No	No	No	No	No	No	No
11	2	700	2	29	No	No	No	No	No	No	No	No	No	No
12	2	653	2	27	No	No	No	No	No	No	No	No	No	No
13	2	641	2	26	No	No	No	No	No	No	No	No	No	No
14	2	475	2	20	No	No	No	No	No	No	No	No	No	No
15	2	475	2	20	No	No	No	No	No	No	No	No	No	No
16	2	333	2	14	No	No	No	No	No	No	No	No	No	No
17	2	189	2	8	No	No	No	No	No	No	No	No	No	No
18	2	189	2	8	No	No	No	No	No	No	No	No	No	No
19	2	107	2	4	No	No	No	No	No	No	No	No	No	No
20	2	60	2	2	No	No	No	No	No	No	No	No	No	No
21	2	36	2	1	No	No	No	No	No	No	No	No	No	No
22	2	12	2	0	No	No	No	No	No	No	No	No	No	No
23	2	12	2	0	No	No	No	No	No	No	No	No	No	No
24	2	12	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.7
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	49
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1236
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 3: Magmawood Drive & Judd Road

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	397	694	40
2	361	632	36
3	314	548	32
4	302	527	30
5	286	500	29
6	266	465	27
7	262	458	26
8	246	430	25
9	238	416	24
10	238	416	24
11	234	409	24
12	218	382	22
13	214	375	22
14	159	278	16
15	159	278	16
16	111	194	11
17	64	111	6
18	64	111	6
19	36	62	4
20	20	35	2
21	12	21	1
22	4	7	0
23	4	7	0
24	4	7	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1091	2	40	No	No	No	No	No	No	No	No	No	No
2	2	993	2	36	No	No	No	No	No	No	No	No	No	No
3	2	862	2	32	No	No	No	No	No	No	No	No	No	No
4	2	829	2	30	No	No	No	No	No	No	No	No	No	No
5	2	786	2	29	No	No	No	No	No	No	No	No	No	No
6	2	731	2	27	No	No	No	No	No	No	No	No	No	No
7	2	720	2	26	No	No	No	No	No	No	No	No	No	No
8	2	676	2	25	No	No	No	No	No	No	No	No	No	No
9	2	654	2	24	No	No	No	No	No	No	No	No	No	No
10	2	654	2	24	No	No	No	No	No	No	No	No	No	No
11	2	643	2	24	No	No	No	No	No	No	No	No	No	No
12	2	600	2	22	No	No	No	No	No	No	No	No	No	No
13	2	589	2	22	No	No	No	No	No	No	No	No	No	No
14	2	437	2	16	No	No	No	No	No	No	No	No	No	No
15	2	437	2	16	No	No	No	No	No	No	No	No	No	No
16	2	305	2	11	No	No	No	No	No	No	No	No	No	No
17	2	175	2	6	No	No	No	No	No	No	No	No	No	No
18	2	175	2	6	No	No	No	No	No	No	No	No	No	No
19	2	98	2	4	No	No	No	No	No	No	No	No	No	No
20	2	55	2	2	No	No	No	No	No	No	No	No	No	No
21	2	33	2	1	No	No	No	No	No	No	No	No	No	No
22	2	11	2	0	No	No	No	No	No	No	No	No	No	No
23	2	11	2	0	No	No	No	No	No	No	No	No	No	No
24	2	11	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.5
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	40
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1131
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 2: Felix Road & Judd Road

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	451	785	54
2	410	714	49
3	356	620	43
4	343	597	41
5	325	565	39
6	302	526	36
7	298	518	36
8	280	487	33
9	271	471	32
10	271	471	32
11	266	463	32
12	248	432	30
13	244	424	29
14	180	314	22
15	180	314	22
16	126	220	15
17	72	126	9
18	72	126	9
19	41	71	5
20	23	39	3
21	14	24	2
22	5	8	1
23	5	8	1
24	5	8	1

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1236	2	54	No	No	No	No	No	No	No	No	No	No
2	2	1124	2	49	No	No	No	No	No	No	No	No	No	No
3	2	976	2	43	No	No	No	No	No	No	No	No	No	No
4	2	940	2	41	No	No	No	No	No	No	No	No	No	No
5	2	890	2	39	No	No	No	No	No	No	No	No	No	No
6	2	828	2	36	No	No	No	No	No	No	No	No	No	No
7	2	816	2	36	No	No	No	No	No	No	No	No	No	No
8	2	767	2	33	No	No	No	No	No	No	No	No	No	No
9	2	742	2	32	No	No	No	No	No	No	No	No	No	No
10	2	742	2	32	No	No	No	No	No	No	No	No	No	No
11	2	729	2	32	No	No	No	No	No	No	No	No	No	No
12	2	680	2	30	No	No	No	No	No	No	No	No	No	No
13	2	668	2	29	No	No	No	No	No	No	No	No	No	No
14	2	494	2	22	No	No	No	No	No	No	No	No	No	No
15	2	494	2	22	No	No	No	No	No	No	No	No	No	No
16	2	346	2	15	No	No	No	No	No	No	No	No	No	No
17	2	198	2	9	No	No	No	No	No	No	No	No	No	No
18	2	198	2	9	No	No	No	No	No	No	No	No	No	No
19	2	112	2	5	No	No	No	No	No	No	No	No	No	No
20	2	62	2	3	No	No	No	No	No	No	No	No	No	No
21	2	38	2	2	No	No	No	No	No	No	No	No	No	No
22	2	13	2	1	No	No	No	No	No	No	No	No	No	No
23	2	13	2	1	No	No	No	No	No	No	No	No	No	No
24	2	13	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.9
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:10
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	54
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1290
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 3: Magmawood Drive & Judd Road

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	410	716	40
2	373	652	36
3	324	566	32
4	312	544	30
5	295	516	29
6	275	480	27
7	271	473	26
8	254	444	25
9	246	430	24
10	246	430	24
11	242	422	24
12	226	394	22
13	221	387	22
14	164	286	16
15	164	286	16
16	115	200	11
17	66	115	6
18	66	115	6
19	37	64	4
20	21	36	2
21	12	21	1
22	4	7	0
23	4	7	0
24	4	7	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1126	2	40	No	No	No	No	No	No	No	No	No	No
2	2	1025	2	36	No	No	No	No	No	No	No	No	No	No
3	2	890	2	32	No	No	No	No	No	No	No	No	No	No
4	2	856	2	30	No	No	No	No	No	No	No	No	No	No
5	2	811	2	29	No	No	No	No	No	No	No	No	No	No
6	2	755	2	27	No	No	No	No	No	No	No	No	No	No
7	2	744	2	26	No	No	No	No	No	No	No	No	No	No
8	2	698	2	25	No	No	No	No	No	No	No	No	No	No
9	2	676	2	24	No	No	No	No	No	No	No	No	No	No
10	2	676	2	24	No	No	No	No	No	No	No	No	No	No
11	2	664	2	24	No	No	No	No	No	No	No	No	No	No
12	2	620	2	22	No	No	No	No	No	No	No	No	No	No
13	2	608	2	22	No	No	No	No	No	No	No	No	No	No
14	2	450	2	16	No	No	No	No	No	No	No	No	No	No
15	2	450	2	16	No	No	No	No	No	No	No	No	No	No
16	2	315	2	11	No	No	No	No	No	No	No	No	No	No
17	2	181	2	6	No	No	No	No	No	No	No	No	No	No
18	2	181	2	6	No	No	No	No	No	No	No	No	No	No
19	2	101	2	4	No	No	No	No	No	No	No	No	No	No
20	2	57	2	2	No	No	No	No	No	No	No	No	No	No
21	2	33	2	1	No	No	No	No	No	No	No	No	No	No
22	2	11	2	0	No	No	No	No	No	No	No	No	No	No
23	2	11	2	0	No	No	No	No	No	No	No	No	No	No
24	2	11	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.6
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	40
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1166
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 2: Felix Road & Judd Road

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	443	779	49	91
2	403	709	45	83
3	350	615	39	72
4	337	592	37	69
5	319	561	35	66
6	297	522	33	61
7	292	514	32	60
8	275	483	30	56
9	266	467	29	55
10	266	467	29	55
11	261	460	29	54
12	244	428	27	50
13	239	421	26	49
14	177	312	20	36
15	177	312	20	36
16	124	218	14	25
17	71	125	8	15
18	71	125	8	15
19	40	70	4	8
20	22	39	2	5
21	13	23	1	3
22	4	8	0	1
23	4	8	0	1
24	4	8	0	1

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	1222	2	91	No	No	No	No	No	Yes	Yes	Yes	Yes	No
2	3	1112	2	83	No	No	No	No	No	Yes	Yes	Yes	Yes	No
3	3	965	2	72	No	No	No	No	No	No	Yes	Yes	No	No
4	3	929	2	69	No	No	No	No	No	No	No	Yes	No	No
5	3	880	2	66	No	No	No	No	No	No	No	Yes	No	No
6	3	819	2	61	No	No	No	No	No	No	No	Yes	No	No
7	3	806	2	60	No	No	No	No	No	No	No	Yes	No	No
8	3	758	2	56	No	No	No	No	No	No	No	Yes	No	No
9	3	733	2	55	No	No	No	No	No	No	No	No	No	No
10	3	733	2	55	No	No	No	No	No	No	No	No	No	No
11	3	721	2	54	No	No	No	No	No	No	No	No	No	No
12	3	672	2	50	No	No	No	No	No	No	No	No	No	No
13	3	660	2	49	No	No	No	No	No	No	No	No	No	No
14	3	489	2	36	No	No	No	No	No	No	No	No	No	No
15	3	489	2	36	No	No	No	No	No	No	No	No	No	No
16	3	342	2	25	No	No	No	No	No	No	No	No	No	No
17	3	196	2	15	No	No	No	No	No	No	No	No	No	No
18	3	196	2	15	No	No	No	No	No	No	No	No	No	No
19	3	110	2	8	No	No	No	No	No	No	No	No	No	No
20	3	61	2	5	No	No	No	No	No	No	No	No	No	No
21	3	36	2	3	No	No	No	No	No	No	No	No	No	No
22	3	12	2	1	No	No	No	No	No	No	No	No	No	No
23	3	12	2	1	No	No	No	No	No	No	No	No	No	No
24	3	12	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	2	3	8	2	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.7	83.2
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09	2:06
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	49	91
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1362	1362
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 3: Magmawood Drive & Judd Road

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	406	717	40
2	369	652	36
3	321	566	32
4	309	545	30
5	292	516	29
6	272	480	27
7	268	473	26
8	252	445	25
9	244	430	24
10	244	430	24
11	240	423	24
12	223	394	22
13	219	387	22
14	162	287	16
15	162	287	16
16	114	201	11
17	65	115	6
18	65	115	6
19	37	65	4
20	20	36	2
21	12	22	1
22	4	7	0
23	4	7	0
24	4	7	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1123	2	40	No	No	No	No	No	No	No	No	No	No
2	2	1021	2	36	No	No	No	No	No	No	No	No	No	No
3	2	887	2	32	No	No	No	No	No	No	No	No	No	No
4	2	854	2	30	No	No	No	No	No	No	No	No	No	No
5	2	808	2	29	No	No	No	No	No	No	No	No	No	No
6	2	752	2	27	No	No	No	No	No	No	No	No	No	No
7	2	741	2	26	No	No	No	No	No	No	No	No	No	No
8	2	697	2	25	No	No	No	No	No	No	No	No	No	No
9	2	674	2	24	No	No	No	No	No	No	No	No	No	No
10	2	674	2	24	No	No	No	No	No	No	No	No	No	No
11	2	663	2	24	No	No	No	No	No	No	No	No	No	No
12	2	617	2	22	No	No	No	No	No	No	No	No	No	No
13	2	606	2	22	No	No	No	No	No	No	No	No	No	No
14	2	449	2	16	No	No	No	No	No	No	No	No	No	No
15	2	449	2	16	No	No	No	No	No	No	No	No	No	No
16	2	315	2	11	No	No	No	No	No	No	No	No	No	No
17	2	180	2	6	No	No	No	No	No	No	No	No	No	No
18	2	180	2	6	No	No	No	No	No	No	No	No	No	No
19	2	102	2	4	No	No	No	No	No	No	No	No	No	No
20	2	56	2	2	No	No	No	No	No	No	No	No	No	No
21	2	34	2	1	No	No	No	No	No	No	No	No	No	No
22	2	11	2	0	No	No	No	No	No	No	No	No	No	No
23	2	11	2	0	No	No	No	No	No	No	No	No	No	No
24	2	11	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.6
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	40
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1163
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 2: Felix Road & Judd Road

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	609	953	72	242
2	554	867	66	220
3	481	753	57	191
4	463	724	55	184
5	438	686	52	174
6	408	639	48	162
7	402	629	48	160
8	378	591	45	150
9	365	572	43	145
10	365	572	43	145
11	359	562	42	143
12	335	524	40	133
13	329	515	39	131
14	244	381	29	97
15	244	381	29	97
16	171	267	20	68
17	97	152	12	39
18	97	152	12	39
19	55	86	6	22
20	30	48	4	12
21	18	29	2	7
22	6	10	1	2
23	6	10	1	2
24	6	10	1	2

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1562	2	242	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	2	1421	2	220	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	2	1234	2	191	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	2	1187	2	184	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	2	1124	2	174	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	2	1047	2	162	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	2	1031	2	160	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	2	969	2	150	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
9	2	937	2	145	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
10	2	937	2	145	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
11	2	921	2	143	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
12	2	859	2	133	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No
13	2	844	2	131	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No
14	2	625	2	97	No	No	No	No	No	No	No	Yes	No	No
15	2	625	2	97	No	No	No	No	No	No	No	Yes	No	No
16	2	438	2	68	No	No	No	No	No	No	No	No	No	No
17	2	249	2	39	No	No	No	No	No	No	No	No	No	No
18	2	249	2	39	No	No	No	No	No	No	No	No	No	No
19	2	141	2	22	No	No	No	No	No	No	No	No	No	No
20	2	78	2	12	No	No	No	No	No	No	No	No	No	No
21	2	47	2	7	No	No	No	No	No	No	No	No	No	No
22	2	16	2	2	No	No	No	No	No	No	No	No	No	No
23	2	16	2	2	No	No	No	No	No	No	No	No	No	No
24	2	16	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					2	7	11	13	11	13	13	15	13	7

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	53.1	918.3
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	1:03	61:43
Delay Condition Met	No	Yes
Volume on Minor Street Approach During Same Hour	72	242
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	1876	1876
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	Yes
Warrant Met for Intersection	**Yes**	

Signal Warrants Report For Intersection 3: Magmawood Drive-Access D & Judd Road

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	597	927	153	58
2	543	844	139	53
3	472	732	121	46
4	454	705	116	44
5	430	667	110	42
6	400	621	103	39
7	394	612	101	38
8	370	575	95	36
9	358	556	92	35
10	358	556	92	35
11	352	547	90	34
12	328	510	84	32
13	322	501	83	31
14	239	371	61	23
15	239	371	61	23
16	167	260	43	16
17	96	148	24	9
18	96	148	24	9
19	54	83	14	5
20	30	46	8	3
21	18	28	5	2
22	6	9	2	1
23	6	9	2	1
24	6	9	2	1

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1524	2	153	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	2	1387	2	139	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	2	1204	2	121	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	2	1159	2	116	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	2	1097	2	110	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
6	2	1021	2	103	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
7	2	1006	2	101	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
8	2	945	2	95	No	No	No	No	No	Yes	Yes	Yes	Yes	No
9	2	914	2	92	No	No	No	No	No	Yes	Yes	Yes	Yes	No
10	2	914	2	92	No	No	No	No	No	Yes	Yes	Yes	Yes	No
11	2	899	2	90	No	No	No	No	No	Yes	Yes	Yes	Yes	No
12	2	838	2	84	No	No	No	No	No	Yes	Yes	Yes	No	No
13	2	823	2	83	No	No	No	No	No	Yes	Yes	Yes	No	No
14	2	610	2	61	No	No	No	No	No	No	No	Yes	No	No
15	2	610	2	61	No	No	No	No	No	No	No	Yes	No	No
16	2	427	2	43	No	No	No	No	No	No	No	No	No	No
17	2	244	2	24	No	No	No	No	No	No	No	No	No	No
18	2	244	2	24	No	No	No	No	No	No	No	No	No	No
19	2	137	2	14	No	No	No	No	No	No	No	No	No	No
20	2	76	2	8	No	No	No	No	No	No	No	No	No	No
21	2	46	2	5	No	No	No	No	No	No	No	No	No	No
22	2	15	2	2	No	No	No	No	No	No	No	No	No	No
23	2	15	2	2	No	No	No	No	No	No	No	No	No	No
24	2	15	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	1	4	7	13	13	15	11	4

Warrant 3 Condition A

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	383	21.3
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	16:16	0:20
Delay Condition Met	Yes	No
Volume on Minor Street Approach During Same Hour	153	58
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	1735	1735
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	Yes	No
Warrant Met for Intersection	**Yes**	

APPENDIX E

Queue Analyses

Queue Analysis

Project: Sunhill

Design Year: Total 2031

Unsignalized intersections:

Pinal County TIA Guidelines, Section 5.12

Right and Left Turns:

Queue Storage Length = vehicles/2 min period x L

vph= vehicles per hour (use peak hour volume)

L= length of typical vehicle (use 25 feet)

30 two minute periods per hour

Signalized intersections:

Pinal County TIA Guidelines, Section 5.12

Right and Left Turns:

Queue Storage Length = 2 x (vehicles/cycle) x L

vph= vehicles per hour (use peak hour volume)

L= length of typical vehicle (use 25 feet)

cycle length = utilize 90 optimized second cycle length (40 cycles/hr)

Direction	Greatest Turning Vol (veh/hr)	**Calculated Queue Length (ft) Pinal County TIA Guidelines Section 5.12**	**Calculated 95th % Queue Length (ft) Vistro**
		Felix Road/Judd Road - Signalized	
		LEFT TURNS	
NB	142	**178**	**141 ft**
WB	74	**93**	**20 ft**
		RIGHT TURNS	
EB	89	**111**	**50 ft**
		Magmawood Drive-Access D/Judd Road - Signalized	
		LEFT TURNS	
WB	61	**76**	**21 ft**
		RIGHT TURNS	
EB	53	**66**	**22 ft**
		Felix Road/Access A - Unsignalized	
		LEFT TURNS	
SB	135	**113**	**8 ft**
		Felix Road/Access B - Unsignalized	
		LEFT TURNS	
SB	46	**38**	**2 ft**
		Judd Road/Access C - Unsignalized	
		LEFT TURNS	
WB	65	**54**	**9 ft**

APPENDIX F

Traffic Volumes of Adjacent Developments

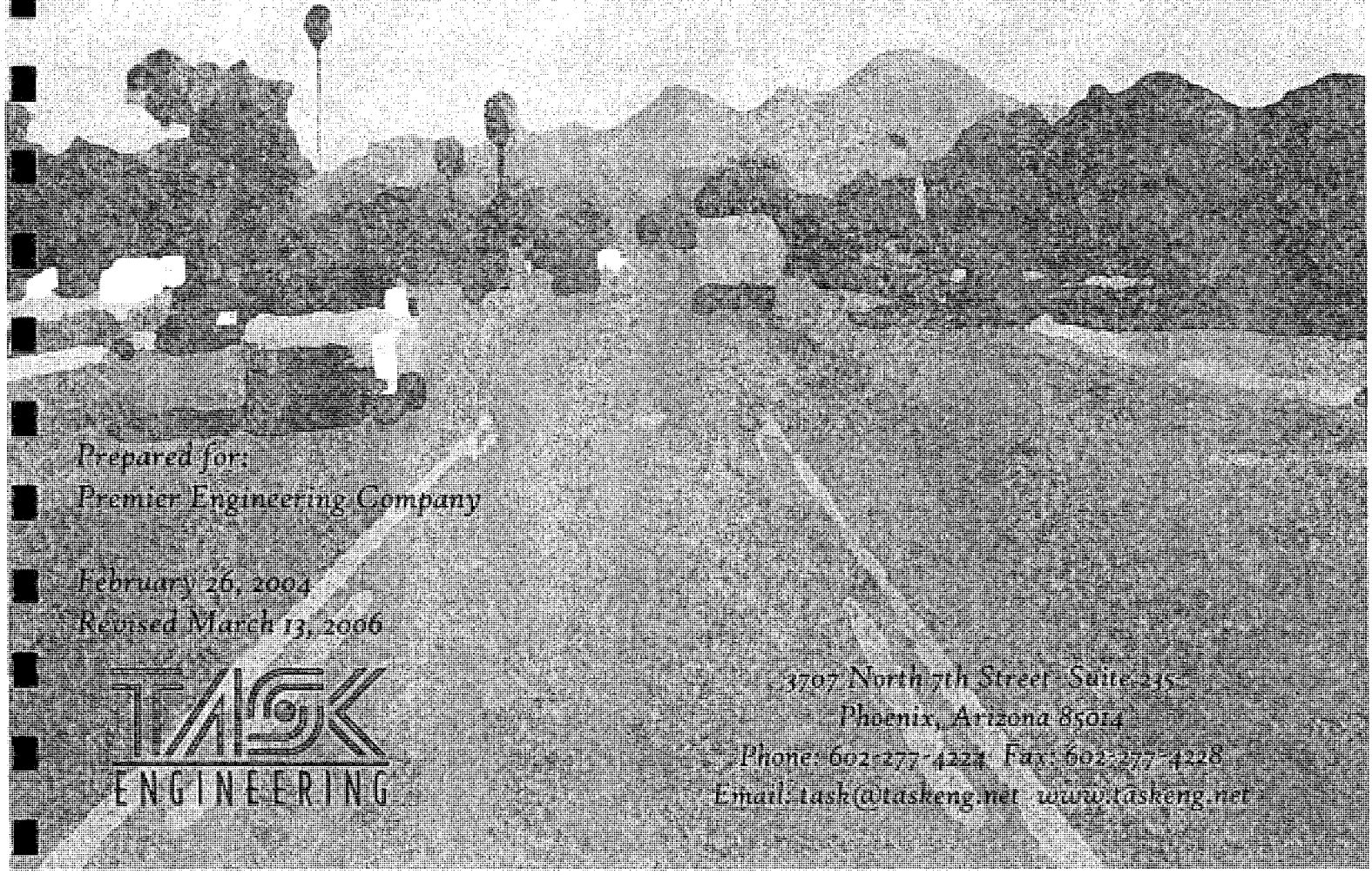
FILE COPY

RECEIVED
MAR 15 2006
PINAL COUNTY DEPARTMENT
OF PUBLIC WORKS

Magma Ranch II
Traffic Impact Study

ACCEPTED

Pinal County, Arizona



Prepared for:
Premier Engineering Company

February 26, 2004
Revised March 13, 2006

TASK ENGINEERING

3707 North 7th Street · Suite 235
Phoenix, Arizona 85014
Phone: 602-277-4224 Fax: 602-277-4228
Email: task@taskeng.net www.taskeng.net

Magma Ranch II
Traffic Impact Study

Pinal County, Arizona

Prepared for:

Premier Engineering Company
1600 West Broadway Road, Suite 165
Phoenix, Arizona 85282



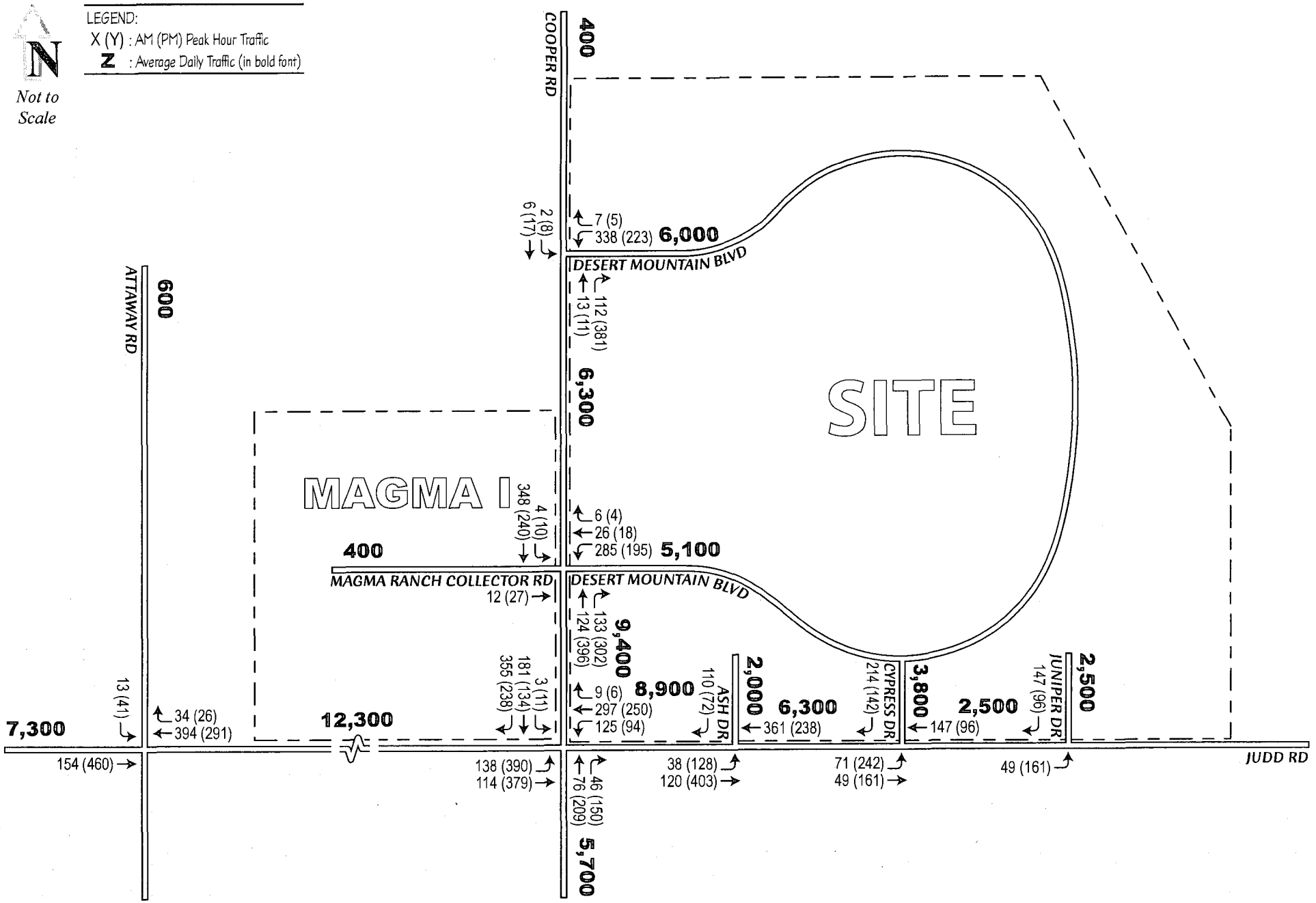
By:

TASK Engineering, Inc.
3707 North 7th Street, Suite 235
Phoenix, Arizona 85014

Phone: (602) 277-4224
Fax: (602) 277-4228

February 26, 2004
Revised August 4, 2004, May 19, 2005, March 13, 2006

2254.02C



Magma II Traffic Impact Study

TAGK ENGINEERING

Site Traffic
(Long Range Year - 2020)

Figure 6
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3/2006

TRAFFIC IMPACT ANALYSIS

North Florence 80
North of Magma Road and East of Cooper Road
Pinal County, Arizona

PREPARED FOR
CVL Consultants
4550 North 12th Street
Phoenix, Arizona 85014

PREPARED BY

UCG
United Civil Group

APPROVED BY:

PINAL COUNTY ENGINEER
PINAL COUNTY DEPARTMENT OF PUBLIC WORKS

DATE

APPROVAL EXPIRES:

DATE

County Case Numbers: Z-PA-126-21
PZ-PD-009-22

TRAFFIC IMPACT ANALYSIS

North Florence 80

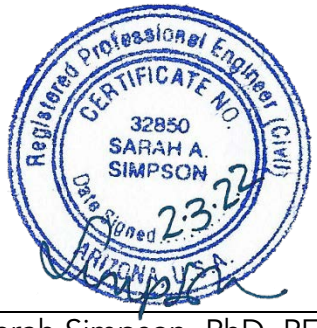
North of Magma Road and East of Cooper Road
Pinal County, Arizona

February 8, 2022
Revision 1: August 19, 2022
Revision 2: December 12, 2022
Revision 3: February 3, 2023

UCG Project Number: TR21148

PREPARED FOR
CVL Consultants
4550 North 12th Street
Phoenix, Arizona 85014

PREPARED BY
United Civil Group
2803 N. 7th Avenue
Phoenix, Arizona 85007
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CONDUCTED BY
Sarah Simpson, PhD, PE
President

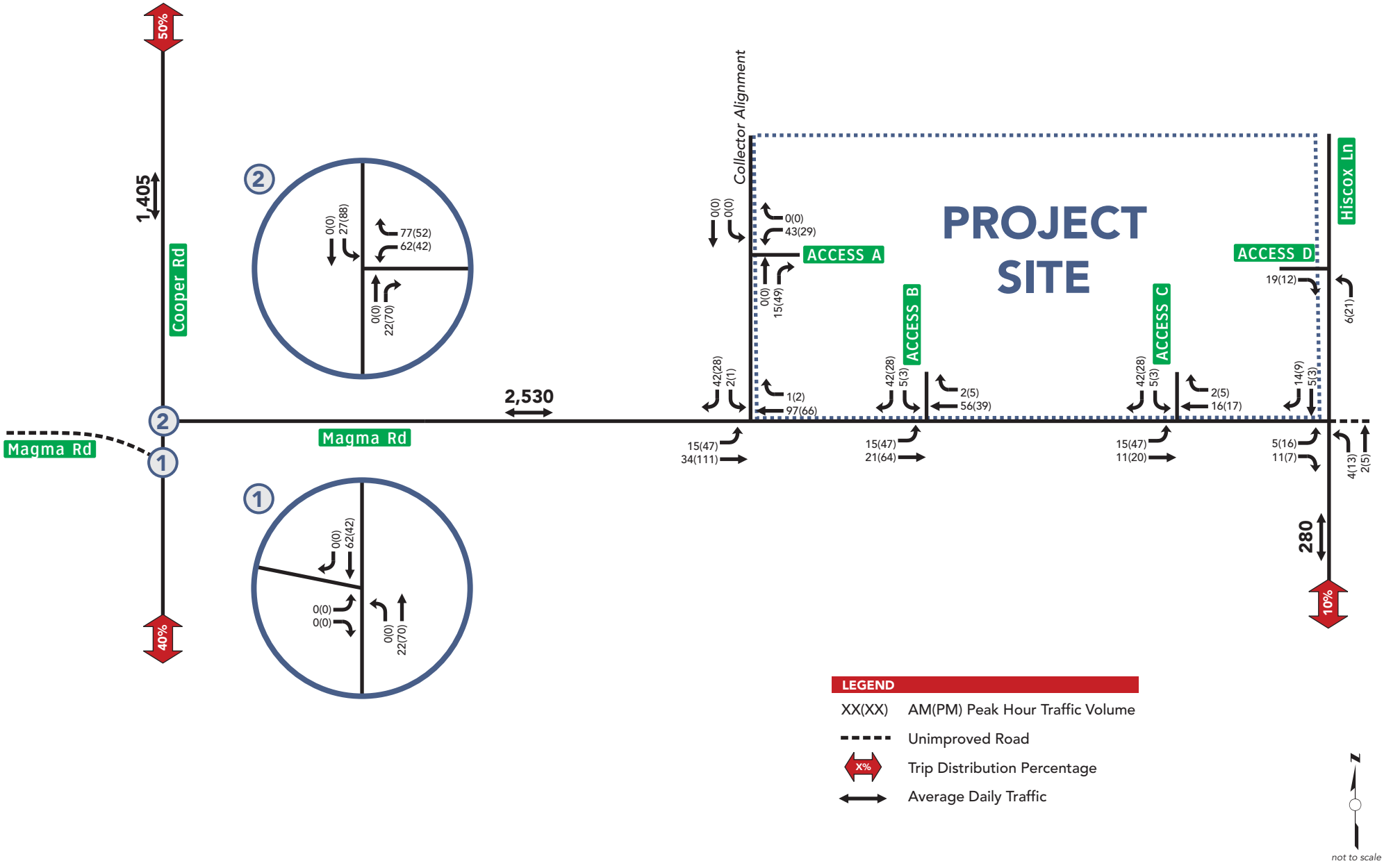


Figure 5: Site Generated Traffic and Trip Distribution

United Civil Group

TRAFFIC IMPACT ANALYSIS

Rock Creek
South of Judd Road and East of Cooper Road
Pinal County, Arizona

PREPARED FOR
W Holdings
1121 West Warner Road, Suite 109
Tempe, Arizona 85284

PREPARED BY



APPROVED BY:

PINAL COUNTY ENGINEER PINAL COUNTY DEPARTMENT OF PUBLIC WORKS	DATE
APPROVAL EXPIRES:	DATE

County Case Number: PZ-PD-042-22

TRAFFIC IMPACT ANALYSIS

Rock Creek

South of Judd Road and East of Cooper Road
Pinal County, Arizona

June 20, 2022
Revision #1: May 18, 2023
Revision #2: October 31, 2023

UCG Project Number: TR22054

PREPARED FOR
W Holdings
1121 West Warner Road, Suite 109
Tempe, Arizona 85284

PREPARED BY

United Civil Group
2803 N. 7th Avenue
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CONDUCTED BY _____
Sarah Simpson, PhD, PE
President

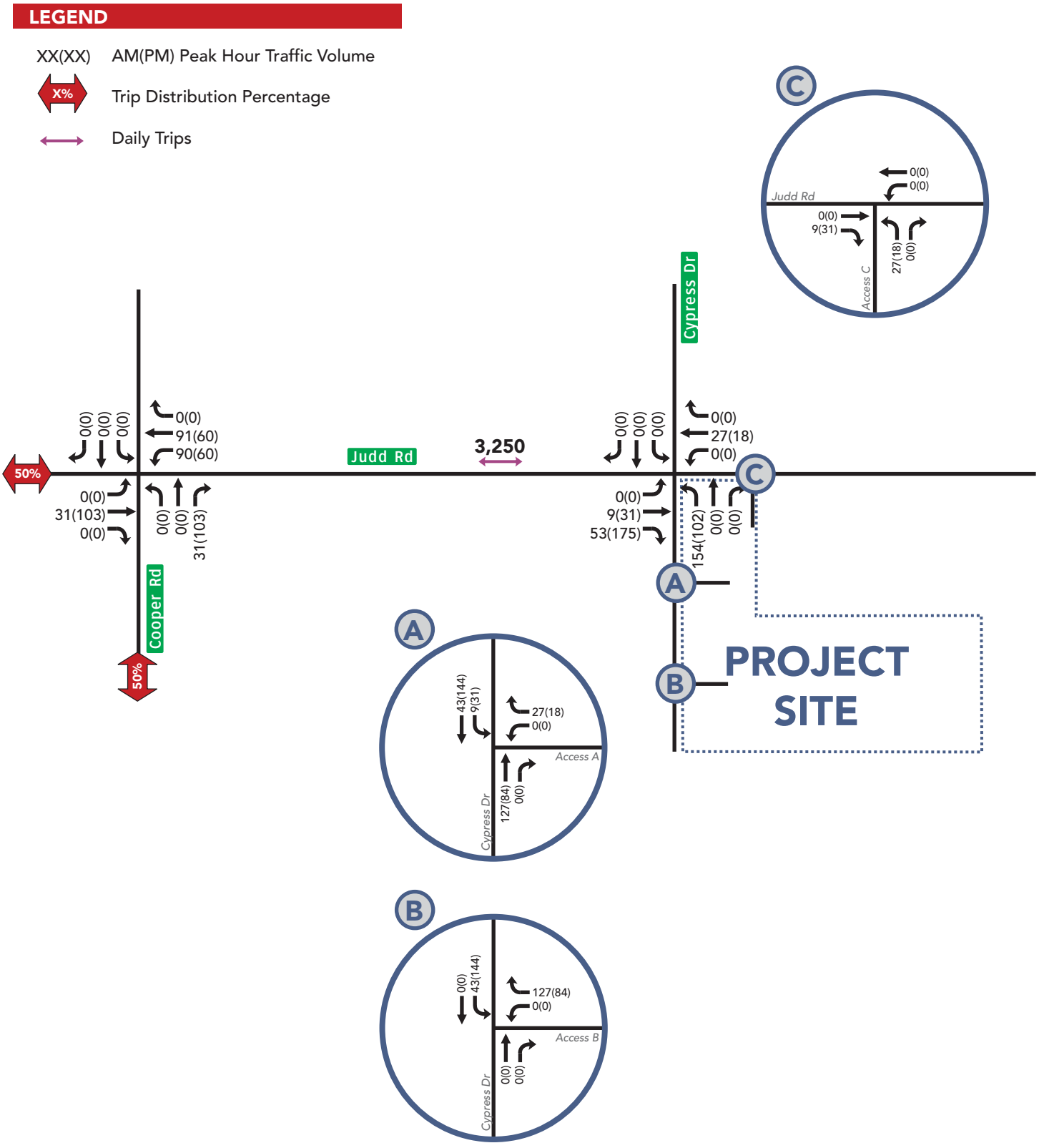


Figure 5: Site Generated Traffic and Trip Distribution

MASTER DRAINAGE REPORT

July 15, 2024

SUNHILL

Pinal County, Arizona

Master Drainage Report

Prepared for:
JNL Arizona Properties, LLC
1590 E. Racine Dr.
Casa Grande, AZ 85122
Contact: Joseph Lefkowitz

Prepared by:
Coe & Van Loo Consultants, Inc.
4550 N. 12th Street
Phoenix, AZ 85014
Contact: William Haas, P.E.
602.264.6831



Job #1-01-0419901

CVL CONSULTANTS

MASTER DRAINAGE REPORT

FOR

SUNHILL

PINAL COUNTY, ARIZONA

July 15, 2024

Prepared for:

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(602) 264-6831

CVL Job Number: 1.01.0419901

Master Drainage Report for

Sunhill

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1.0 INTRODUCTION

1.1 SCOPE

Coe & Van Loo Consultants, Inc. (CVL) has been contracted by JNL Arizona Properties, LLC to provide engineering services in support of the proposed Sunhill development (the site). The purpose of this report is to provide hydrologic and hydraulic analysis for the proposed development. In addition, this report addresses offsite drainage, onsite drainage and stormwater storage requirements.

This report is focused on providing preliminary design information, evaluation, and analysis for statistical flood events up to and including the 100-year storm. The scope of this assessment does not include evaluation of stormwater runoff resulting from storm events exceeding the 100-year frequency event. Hence, it should be noted that a storm event exceeding the 100-year frequency may cause or create the risk of greater flood impact than is addressed and presented in this assessment.

The procedures used herein are derived from, and performed with, currently accepted engineering methodologies and practices. Additionally, the criteria for this evaluation are designed to conform to currently applicable ordinances, regulations, and policies as set forth by the Pinal County.

1.2 REGULATORY JURISDICTION

The development is designed to meet the Pinal County drainage requirements as stated in the *Pinal County Drainage Manual Volume I, Design Criteria* [1] and *Pinal County Drainage Manual Volume II, Design Methodology and Procedures* [2].

1.3 STORMWATER MANAGEMENT PROGRAM

The *Pinal County Stormwater Management Program (SWMP)* [3] indicates that the proposed development is located southeast of the San Tan Valley area of the Pinal County Small Municipal Separate Storm Sewer System (MS4).

2.0 LOCATION AND SITE DESCRIPTION

The Sunhill development is located at the southwest corner of N Felix Road and E Judd Road within Pinal County, Arizona. The site is bordered on the north by Judd Road followed by Magma Ranch I subdivision, on the east and south by agriculture land and on the west by the N Felix Road. Furthermore, the site is

located within Section 29, Township 3 South, Range 9 East of the Gila and Salt River Base and Meridian, Pinal County, Arizona, on Parcel Numbers 210440020 and 210440040. See **Figure 1** for a Vicinity & Location Map.

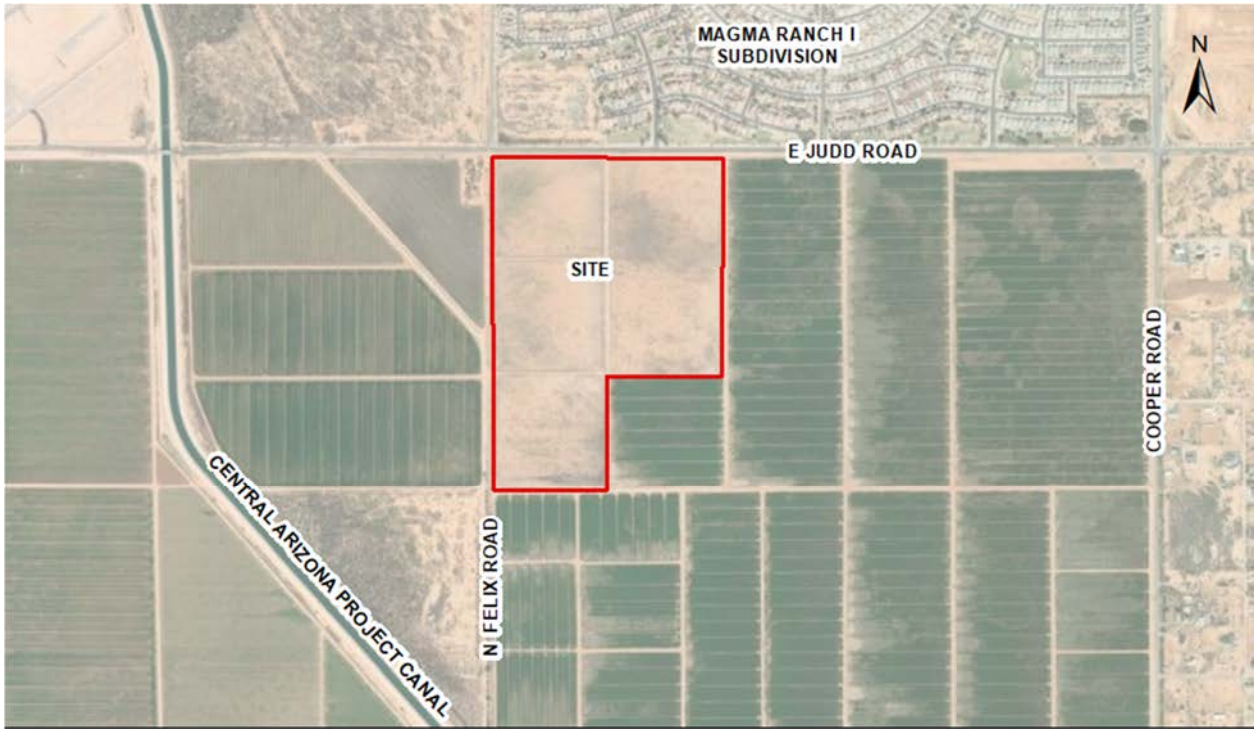


Figure 1: Vicinity & Location Map

The site is irregular in shape and consists of approximately 96 ac of agricultural field generally slopes to the southwest.

Soil for the site is Continue clay loam. Soils information for the site is provided in **Appendix A.2**.

3.0 Site Description And Proposed Development

The site will consist of a battery open space area, commercial area, associated utility infrastructure to service the development, and the improvement of the N Felix Road and E Judd Road adjacent to the property.

The current property zoning is agriculture and the zoning for proposed development is commercial-industrial.

4.0 FLOOD ZONE INFORMATION

The Pinal County, Arizona and Incorporated Flood Areas Flood Insurance Rate Map (FIRM), panel number 04021C0500E [4], indicates the site falls within Zone X (unshaded).

Zone X is defined by FEMA as:

> "Areas determined to be outside the 0.2% annual chance floodplain."

The site is not adjacent to any FEMA floodplain and will not require a CLOMR. Refer to **Figure 2** for a FIRM of the site and immediate adjacent areas.

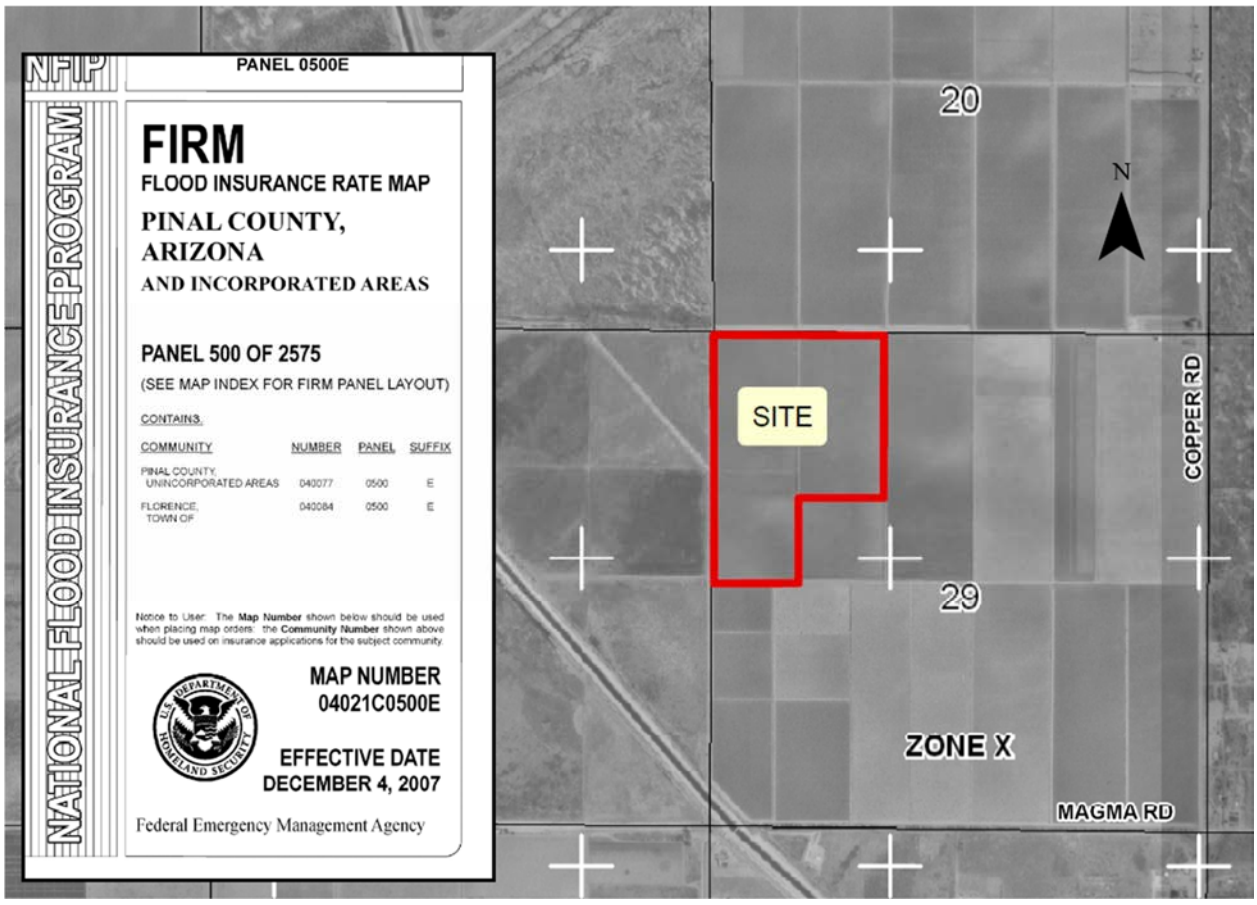


Figure 2: Flood Insurance Rate Map

5.0 OFFSITE HYDROLOGY

5.1 BACKGROUND

The land in the area generally slopes toward the southwest, so CVL has considered flows impacting the site from the north and east.

CVL reviewed the Magma Ranch Phase I Drainage Report and determined that based on the existing conditions hydrology, offsite flows are not expected to cross Judd Road located along the northern site boundary. Relevant excerpts from the Magma Ranch Phase I Drainage Report are included in **Appendix A.1**.

The sheet flow generated by the existing agriculture field located on the eastern site boundary was evaluated using the USGS contours. The watershed area that impacts the site covers less than 160-acres; therefore, the Rational Method was utilized to estimate the peak discharges. The peak flows were estimated based on the following parameters:

- Watershed rainfall – extracted from National Oceanic and Atmospheric Administration (NOAA) Atlas 14 (See **Appendix A.3**)
- Runoff coefficients - estimated using Table 2-1 of *Pinal County Drainage Manual Volume II.* (See **Appendix A.4**)
- Resistance coefficient (Kb) – selected from Table 2-2 of *Pinal County Drainage Manual Volume II.*
- Minimum time of concentration - 5 minutes.

The flow generated by the existing dirt road adjacent to the site along the north, west and south boundary will be retained on the proposed development.

Refer to **Appendix A.5** for the Rational Method results, and **Plate 1** for subbasin delineations.

5.2 PROPOSED OFFSITE FLOW MANAGEMENT

The agriculture fields located east of the site have berms which allow the flow to pond the first 6" of precipitation in the existing agriculture field. The existing berms and swales are conveying the flows to the west and south along the proposed development boundary. During the preliminary design, the berms and swales will be analyzed following the guidelines and requirements of the *Pinal County Drainage Manual Volume I, Design Criteria* [1]. The offsite flow will be conveyed through the site to the historical path.

6.0 MANAGEMENT OF ONSITE RUNOFF

6.1 ONSITE HYDROLOGY

The on-site hydrologic calculations will be considered when the site grading is determined at the time of preliminary design. The methodology and parameters selection, it will be conformed to the standards outlined in the *Pinal County Drainage Manual Volume II* [2].

The onsite drainage subbasins will be delineated based on preliminary design information. Rainfall data is based on NOAA Atlas 14 Point Precipitation Frequency Estimates (see **Appendix A.3**). The runoff coefficients will be based on Table 2-1 [2] (see **Appendix A.4**).

6.2 ONSITE RUNOFF MANAGEMENT PLAN

The onsite drainage concept for the site is to provide retention basins at various locations to retain the 100-year, 2-hour storm event for the site. The streets will be designed to convey the 10-year storm event between the top of curbs and the 100-year storm event within the right-of-way with a maximum conveyance depth of 8". Where the 10-year flow exceeds the capacity of the street, scuppers or catch basins and a storm drain system will be used to intercept and convey the flow from the street into retention basins. Street capacity design calculations will be provided with preliminary design.

6.3 RETENTION

The retention basins will retain the runoff for the drainage areas contributing to the individual basins, per Pinal County requirements [1] [2] using the following equation:

$$V_{REQ} = C_W * \frac{P}{12} * A$$

V_{REQ} = Required Storage Volume (acre-ft)

C_W = Weighted Runoff Coefficient

P = Rainfall Depth per NOAA Atlas 14; 2.33 inches (see **Appendix A.3**)

A = Area (acres)

A runoff coefficient of 0.95 will be used for the adjacent half-streets, 0.50 is used for retention basins and open space areas, and 0.95 is used for commercial and industrial areas.

The retention basins will be designed to have a maximum ponding depth of 3 feet, with an additional 1 foot of freeboard, and are designed in coordination with the landscape architect to allow for aesthetically pleasing and hydraulically efficient multi-use facilities.

Furthermore, the retention basins will be designed to drain within 36 hours following the end of a storm event via drywells. A drywell flow rate test will be required at the time of construction to determine the retention basin drainage time. The number of drywells will be adjusted based on the results of the testing and will be spaced at a minimum of 100 feet apart.

7.0 MAINTENANCE OF DRAINAGE INFRASTRUCTURE

Permanent maintenance access points will be provided to the retention basins through adjacent local roads. Maintenance vehicles will be able to drive over the curbs and into the retention basins. Maintenance for all drainage structures (channel, gutters, catch basins, stormdrain pipes, retention basins, and drywells) will be performed by the owner. Unscheduled maintenance activities are to be performed following each storm event. Scheduled maintenance inspections and maintenance are to occur bi-annually. Maintenance activities include:

I. Inspections and fixes for erosion or scour
II. Sediment and trash removal from all structures
III. Pipe inspections
IV. Drywell inspections, testing (and cleanout minimum annually)
V. Regular mowing and trimming
VI. Rip-rap replacement

Field inspection personnel shall be designated by the owner. Site inspection and maintenance records are to be kept on file with the owner.

8.0 SUMMARY AND CONCLUSIONS

1. The design of hydraulic structures and hydrologic and hydraulic analyses are based on generally accepted engineering practices and in accordance with the *Pinal County Drainage Manual Volume I, Design Criteria,* and the *Pinal County Drainage Manual Volume II, Design Methodology and Procedures*.
2. The site is located within Pinal County, Arizona at the southwest corner of N Felix Road and Judd Road, on Parcel Numbers 210440020 and 210440040. The Brystol site consists of approximately 96 ac of agricultural fields.
3. Emergency all-weather access will be provided to the site.
4. According to the FIRM panel number 04021C0500E, the site is located in Zone X (unshaded).
5. The onsite retention basins will be designed to retain stormwater from the 100-year, 2-hour storm event and to drain within 36 hours via drywells. Drywell flowrate tests will be conducted during construction and the number of required drywells will be adjusted based on the results.
6. Because the design accounts for retention of the 100-year storm, downstream drainage systems will not be adversely impacted as a result of the proposed development. Furthermore, the project is not anticipated to cause any adverse drainage impacts or increase drainage problems for adjacent properties.
7. The 100-year offsite flows impacting the site were evaluated using the Rational Method. The existing berms and swales are conveying the flow to the west and south along the site boundary, then the flow will go to the historical path.
8. All finished floor elevations will be designed to be protected from inundation in the 100-year design storm event. All finished floor elevations will be designed to be at least 12 inches above the expected 100-year water surface elevation in the adjacent streets and drainage paths.

9.0 REFERENCES

[1] Pinal County, "Drainage Manual Volume I, Design Criteria," Pinal County, Arizona, August 2004.

[2] Pinal County, "Drainage Manual Volume II, Design Methodology and Procedures," Pinal County, Arizona, August 2004.

[3] Pinal County, "Pinal County Stormwater Management Program (SWMP)," June 19, 2017.

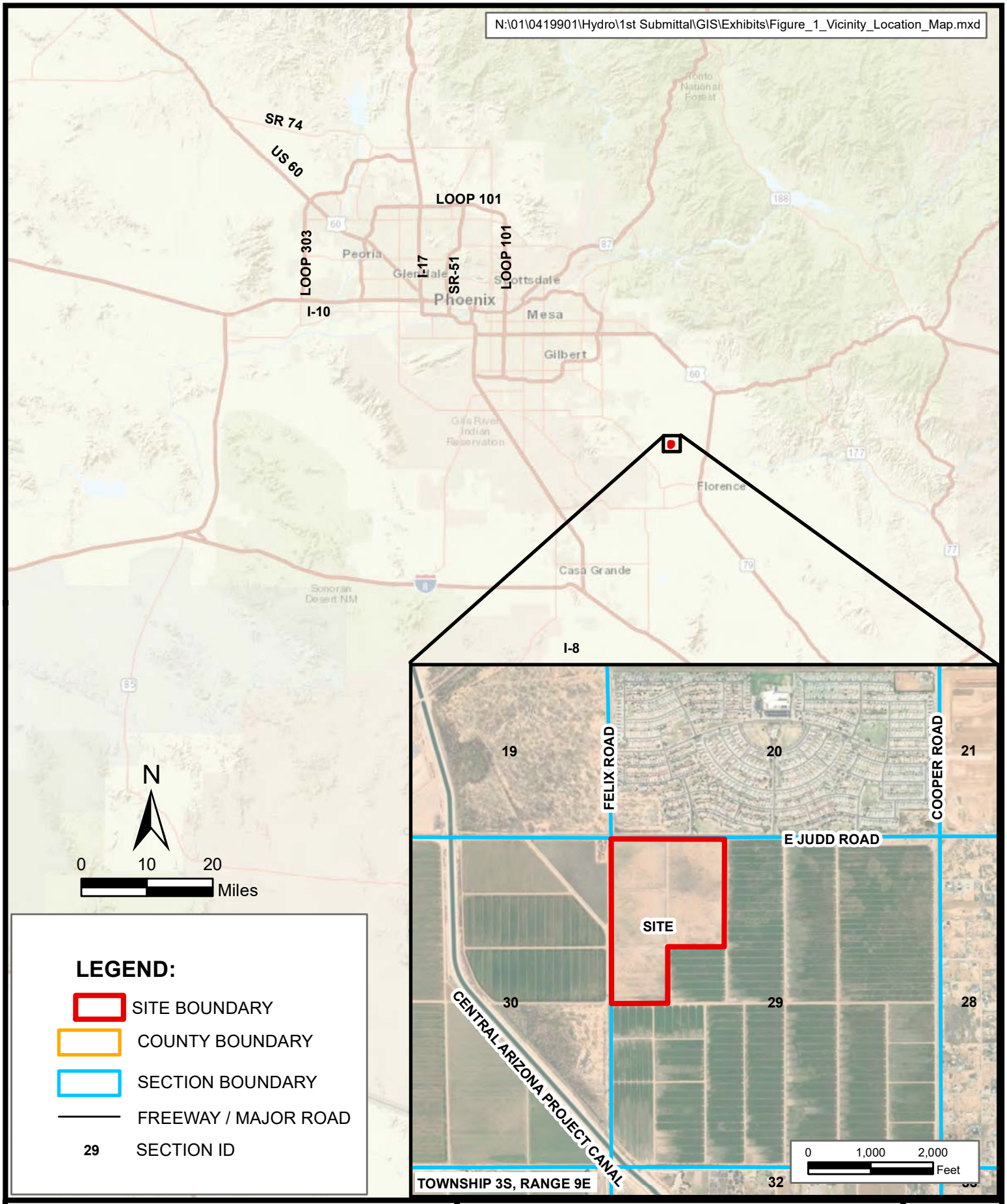
[4] Federal Emergency Management Agency (FEMA), "National Flood Insurance Program, Flood Insurance Rate Map, Pinal County, Arizona and Incorporated Areas, Panel Number 04021C0500E," Map Revised December 4, 2007.

[5] Pinal County Flood Control District, "Pinal County Area Drainage Master Plan, Rules of Development: Best Management Practices for Drainage Engineering in Pinal County," December 2009.

[6] Pinal County, "Pinal County Floodplain Management Ordinance," May 10, 2019.

FIGURES

N:\01\0419901\Hydro\1st Submittal\GIS\Exhibits\Figure_1_Vicinity_Location_Map.mxd



LEGEND:

- SITE BOUNDARY
- COUNTY BOUNDARY
- SECTION BOUNDARY
- FREEWAY / MAJOR ROAD
- 29 SECTION ID

CVL CONSULTANTS

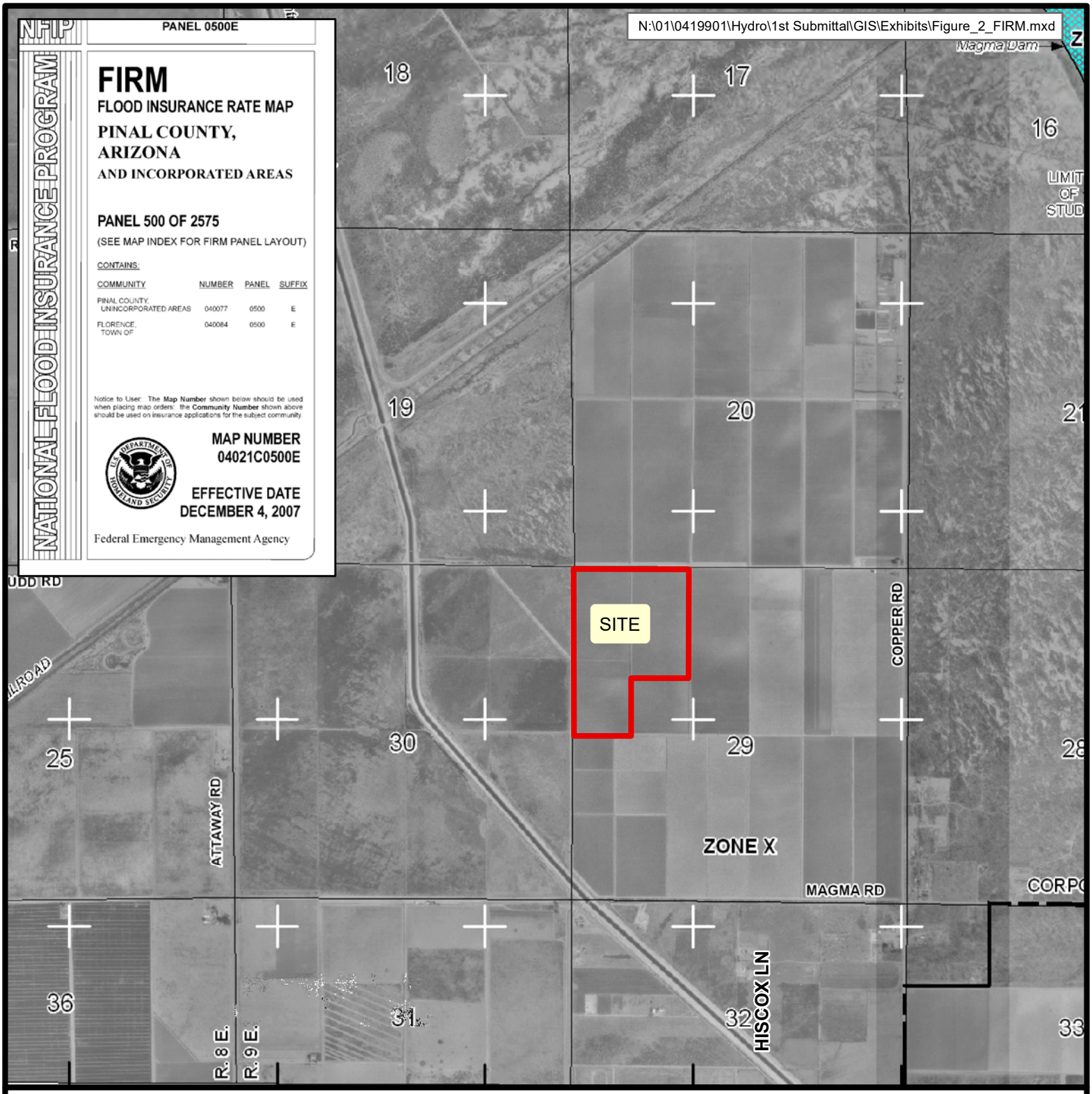
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

SUNHILL

JOB NO. 1-01-0419901

VICINITY & LOCATION MAP

FIGURE 1



LEGEND:

SITE BOUNDARY

N

0 1,500 3,000

Feet

CVL CONSULTANTS
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

SUNHILL

JOB NO.
1-14-0419901

FLOOD INSURANCE RATE MAP

FIGURE 2

APPENDICES

CVL

APPENDIX A

Offsite Documentations

A.1

Exhibits from Magma Ranch Phase I Drainage Report

CVL

MAGMA RANCH
PINAL COUNTY, ARIZONA

5-038-03

Preliminary Master Drainage Report

Prepared for

AREAD, INC
7373 N Scottsdale Road Suite A-180
Scottsdale, Arizona 85253

Tel (480) 998-5440



Prepared by

PREMIER ENGINEERING CORPORATION
1600 West Broadway Road, Suite 165
Tempe Arizona 85282
(480) 829-6000

DRAINAGE
CLEARANCE
1998 DRAINAGE ORDINANCE

COUNTY ENGINEER 11-3-03 DATE

September 2003
Premier Project No 2003015

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1 0 GENERAL LOCATION AND DESCRIPTION 1

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1 5 SLOPE ANALYSIS 2
1 6 FLOOD ZONE CLASSIFICATION 3

2 0 FLOOD PROTECTION WITH MAGMA DAM 3

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3 1 PRE-DEVELOPMNET ONSITE CONDITION 4
3 3 POST DEVELOPMENT ONSITE CONDITION 4

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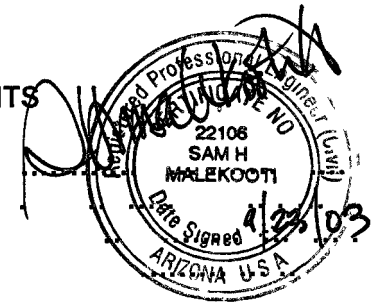
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4 2 HYDROLOGIC CRITERIA AND RESULTS 5

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B - Proposed Land Use and Phasing 15
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a small one along the south property line, most of the offsite flow will be sheet flow through the site

3 2 PRE-DEVELOPMENT ONSITE CONDITION

Appendix A shows the existing land use and zoning class as given in the WLB PAD Report The site is mainly agricultural land class GR with a uniform slope to the southwest direction There is no identifiable drainage basin The whole area is subject to sheet flow when storm of high intensity occurs Mass grading due to farming activities has obliterated the natural drainage pattern In general the onsite storm water runoff will sheet flow in southwesterly direction and concentrate further downstream at a drainage channel along the Southern Pacific railroad right of way some 2 miles to the Southwest

Appendix A shows the existing land use and zoning claasification

3 3 POST DEVELOPMENT ONSITE CONDITION

The post development condition assumes that the whole project side will be re-graded with a uniform slope from northeast corner to southwest corner

With the new plat layout as proposed by the owner the onsite watershed is subdivided in to 14 sub-drainage areas such that storm water runoff will collect near the southwest portion of each sub-drainage area Each will be provided with retention basin the size of which will depend upon the final lot and street layout Exhibit D shows the Proposed Sub-Drainage Area Map Proposed drainage improvements will provide retention/detention for the 100-year 1-hour storm Peak discharge leaving the site will not be increased from existing

conditions as required by Pinal County The required storm-water retention will be provided in each of the identified sub-drainage areas as shown in table above The 100-year site outfall will be at Elevation 1566 (+/-) as indicated on the USGS topographic map or as found from actual survey

The contributing off-site runoff will sheet flow across the project site via local streets and lots

The smaller retentions basins will bleed-off into the proposed bigger basins

Appendix B shows the proposed land use and phasing of the project

4 0 DRAINAGE DESIGN AND RESULTS

4 1 DEVELOPMENT CRITERIA AND CONSTRAINTS

The development criteria for this project are in accordance with the Pinal County Standards Manual and the Planning Requirements as specified in PAD Report prepared by WLB Group on January 2001

4 2 HYDROLOGIC CRITERIA AND RESULTS

The off-site drainage basin contributing to this project is about 558 acres (below the Magma Dam) If the project site area of 309 acres is added the total watershed including onsite is 867 acres or 1 35 square miles Assuming flow will concentrate at the SW corner of the property, a HEC- model was developed as shown in Appendix C for the pre-development condition with a 100-yr peak flow of 1035 cfs Another HEC-1 model for the post development condition with weighted values of STRTL, CNSTL and RTIMP used in the model resulted in a 100-yr peak flow of 1069 cfs using the same routing length of 2 07 miles

The storage volume provided for Sub-Drainage area B is (1/2)*(0 80 + 0 60)*3=2 09 ac-ft

Table 1 (see next page) is a spreadsheet showing the required volume of retention for each sub-drainage area The required volume will be provided in the proposed open spaces/park areas The estimated percent area of each open space/park parcel that will be used for retention is also shown in Table 1

5 0 RECOMMENDATIONS

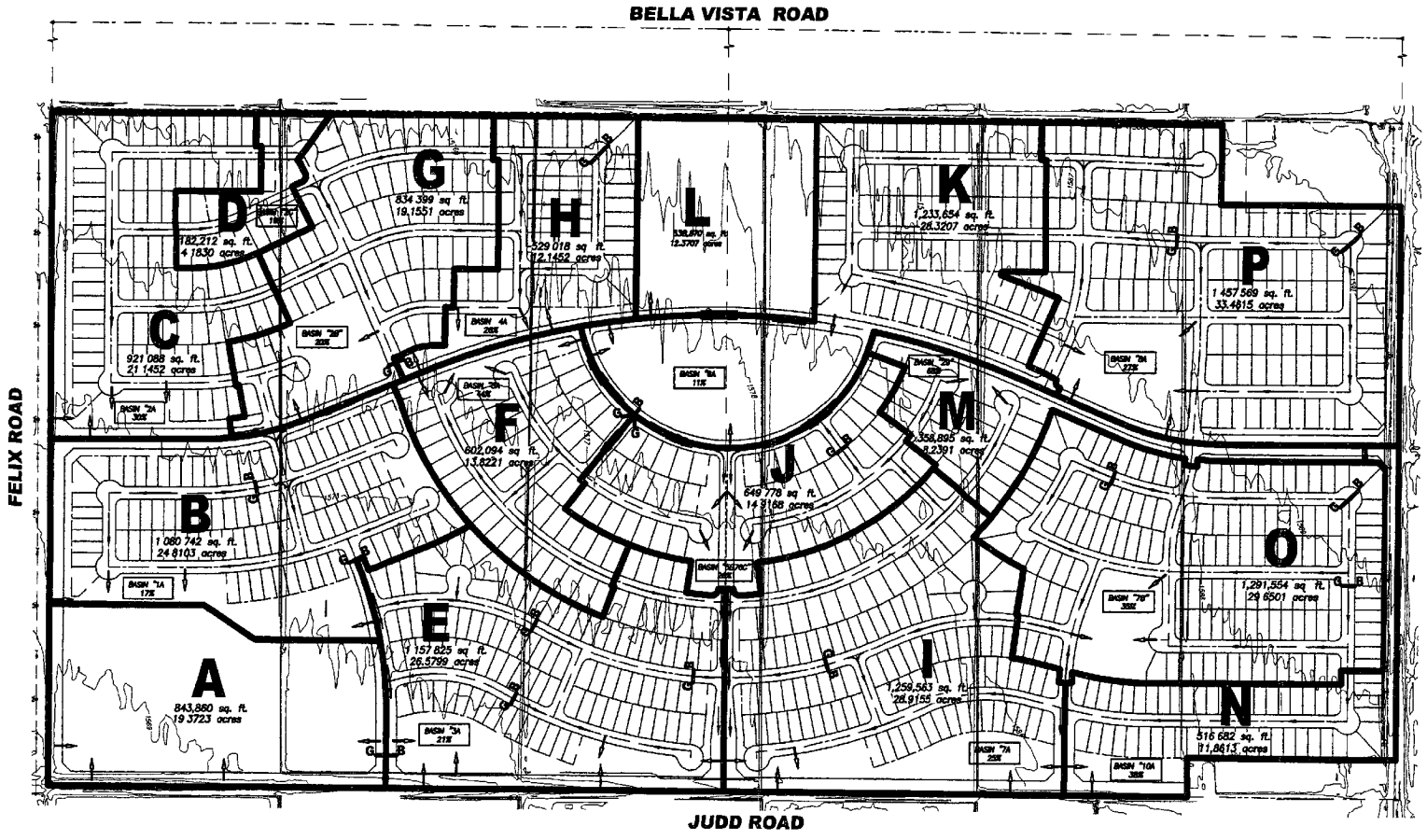
In accordance with Pinal County drainage requirements, the off-site runoff contributing to this site should not be increased as a result of the development The proposed drainage improvements will route the contributing 100-year off-site runoff through the site discharging at the historic drainage outlet The proposed drainage facilities also provide retention for the 100-year 1-hour storm event The retention volume will bleed-off within 36-hours or will be dissipated through natural percolation The finished PAD elevation floor of proposed buildings should be at least one foot above the base flood elevation or 100-yr water level

6 0 REFERENCES

③ *Soil Survey, Eastern Maricopa County and Northern Pinal Counties Area, Arizonas* US Department of Agriculture, Soil Conservstion Service November 1974

③ *Pinal Countu Drainage Ordinance, No 100798-DO* Pinal County Arizona November 7, 1998

③ *Magma Ranch Planned Area Development*,, Prepared by The WLB Group for Smith New Magma, LLC dated January 9 2001



LEGEND

- N — SUBDRAINAGE AREA DESIGNATION W/ ACREAGE (11.8613 acres)
- BASIN "O" 00% — RETENTION BASIN DESIGNATION / PERCENT OF PARK USED FOR RETENTION
- G B — GRADE BREAK
- DRAINAGE FLOW ARROW
- BASIN INLET / CURB OPENING
- SUB-DRAINAGE AREA BOUNDARY LINE

GRAPHIC SCALE

400 0 200 400

1 INCH = 400 FT

PRELIMINARY PLAN
DO NOT USE FOR CONSTRUCTION

602-263-1100

PREMIER ENGINEERING CORPORATION

REVISIONS | DATE

MAGMA RANCH
SUB DRAINAGE AREA MAP
NEC FELIX ROAD & JUDD ROAD, PINAL COUNTY, AZ.

SHEET TITLE: SUB DRAINAGE AREA MAP

STATUS: PRELIMINARY
DRAFTED: --
DESIGNED: --
CHECKED: SRM
DATE: 09/22/03
JOB NO: 20030015
SHEET NO: 1
01 OF 01

TABLE 1 - RETENTION BASIN CALCULATION

SubDr A	Area (acres)	C * (P/12)	100y1hVr (ac-ft)	Track ID	Track Area (acres)	Aver TS&BA (acres)	Top S A (acres)	Bot S A (acres)	SVol-Provided (ac-ft)	%TrackA for RB
A	19 372	0 080	1 55	Commercial	No Data	0 52	0 62	0 47	1 63	N A
B	24 810	0 080	1 99	1A	4 74	0 66	0 80	0 60	2 09	17
C	21 145	0 080	1 70	2A	2 27	0 57	0 68	0 51	1 78	30
D	4 183	0 080	0 34	2C	0 72	0 11	0 13	0 10	0 35	19
E	26 580	0 080	2 13	3A	4 06	0 71	0 85	0 64	2 24	21
F	13 822	0 080	1 11	5A	1 01	0 37	0 44	0 33	1 16	44
G	19 155	0 080	1 54	2B	3 05	0 51	0 61	0 46	1 61	20
H	12 145	0 080	0 97	4A	1 47	0 32	0 39	0 29	1 02	26
I	28 916	0 080	2 32	7A	3 74	0 77	0 93	0 70	2 43	25
J	14 917	0 080	1 20	5B&6C	1 87	0 40	0 48	0 36	1 26	26
K	28 321	0 080	2 27	6A	8 35	0 76	0 91	0 68	2 38	11
L	12 371	0 080	0 99	School	No Data	0 33	0 40	0 30	1 04	N A
M	8 239	0 080	0 66	6B	0 91	0 22	0 26	0 20	0 69	29
N	11 861	0 080	0 95	10A	1 00	0 32	0 38	0 29	1 00	38
O	29 650	0 080	2 38	7B	2 70	0 79	0 95	0 71	2 50	35
P	33 462	0 080	2 68	8A	3 99	0 89	1 07	0 80	2 82	27
TOTAL	308 949		24 77			8 26	9 91	7 43	26 01	

Notes

1 - 100year 1hr runoff is 100yr1hrVr where Vr = C*(P/12)*Area in acres C assumed=0 65 100yr-1hr Storm P=1 48 per Pinal County requirement

2 - Calculated Average of TopSA & BottomSA = Vr/3 assuming Ret Basin has 4 1 S S and Depth of 3 feet

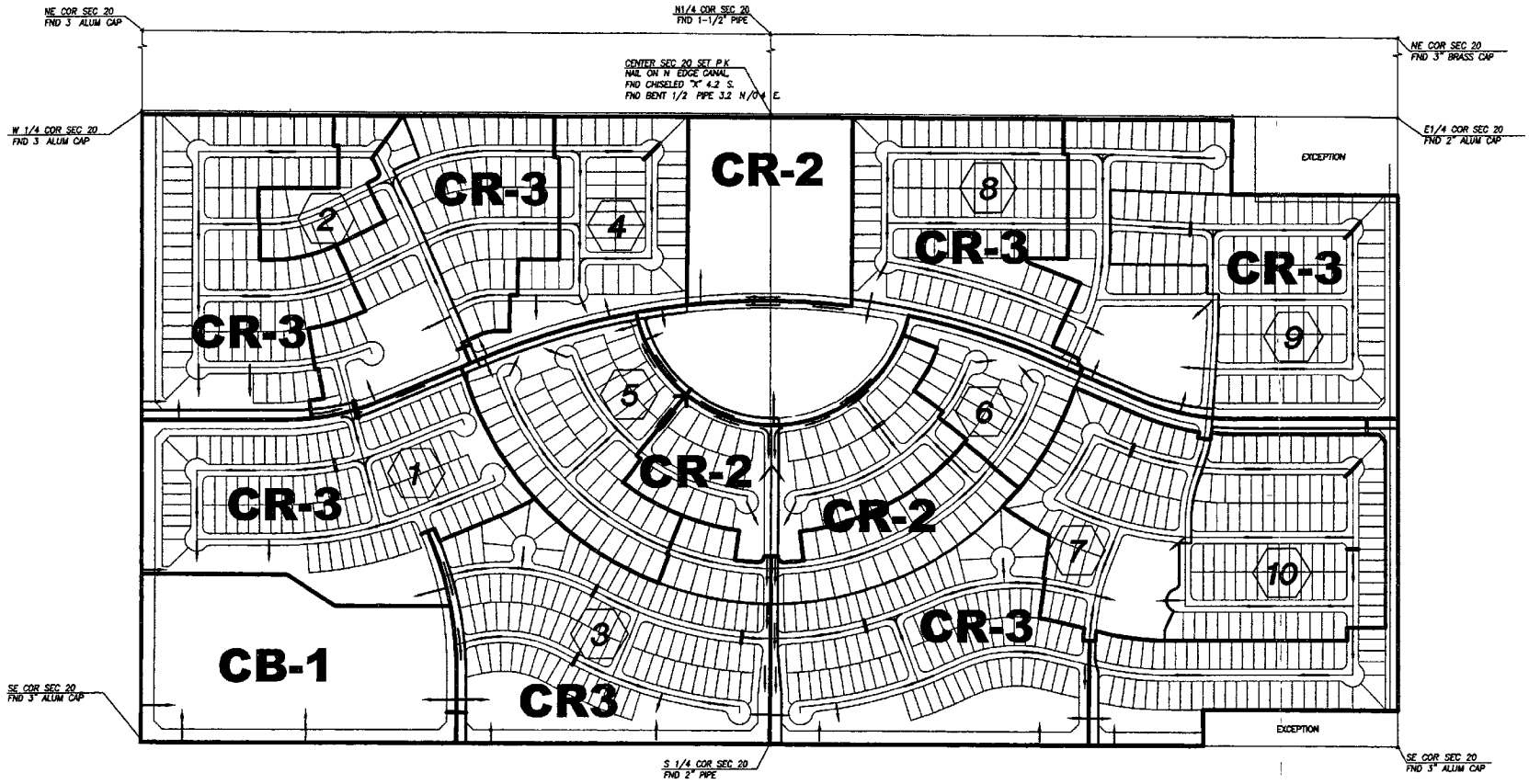
3 - Top Surface Area is assumed 1 2 times AverageTS&BA 1 2 derived from square area assumption

4 - Bottom Surface Area is assumed 0 75 of Top Surface Area

5 - SVol-Provided is storage volume provided in ac-ft

6 - %TrackA used for retention basin =(TopSurface Area/Open Space)x100

7 N A Not applicable (Commercial & School Parcels)



LEGEND

⟨1⟩ PHASE #

CB–1 COMMERICAL
CR–2 MEDIUM LOW DENSITY RESIDENTIAL
CR–3 MEDIUM DENSITY RESIDENTIAL

GRAPHIC SCALE
400 0 200 400
1 INCH = 400 FT

N

PRELIMINARY PLAN
DO NOT USE FOR CONSTRUCTION

602-263-1100

PREMIER ENGINEERING CORPORATION
1600 N. BROADWAY ROAD, SUITE 160
TEMPE, AZ. 85282
(480)829-6000 FAX (480)829-6018

REVISIONS DATE

MAGMA RANCH
PROPOSED LAND USE & PHASING
NEC FELIX ROAD & JUDD ROAD, PINAL COUNTY, AZ.

SHEET TITLE:
LAND USE & PHASING MAP

STATUS: PRELIMINARY
DRAFTED: ---
DESIGNED: BCT / CJA
CHECKED: MRD / BCT
DATE: 08/22/03
JOB NO: 2003015

SHEET NO: APPENDIX B

A.2

Soils Data

CVL

Soil Map—Eastern Maricopa and Northern Pinal Counties Area, Arizona
(Florence 96 boundary)



Map Scale: 1:4,720 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eastern Maricopa and Northern Pinal Counties Area, Arizona
Survey Area Data: Version 17, Sep 8, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 25, 2020—Feb 27, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Co	Contine clay loam	95.8	100.0%
Totals for Area of Interest		**95.8**	**100.0%**

A.3

NOAA Atlas 14 Precipitation Data

CVL

NOAA Atlas 14, Volume 1, Version 5
Location name: Florence, Arizona, USA*
Latitude: 33.145°, Longitude: -111.4535°
Elevation: 1568 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.202** (0.171-0.245)	**0.264** (0.225-0.320)	**0.357** (0.301-0.431)	**0.429** (0.359-0.515)	**0.525** (0.433-0.627)	**0.599** (0.488-0.714)	**0.674** (0.539-0.803)	**0.751** (0.591-0.893)	**0.853** (0.654-1.02)	**0.931** (0.698-1.11)
10-min	**0.308** (0.260-0.372)	**0.402** (0.341-0.487)	**0.544** (0.458-0.656)	**0.652** (0.546-0.784)	**0.799** (0.658-0.955)	**0.911** (0.742-1.09)	**1.03** (0.820-1.22)	**1.14** (0.899-1.36)	**1.30** (0.995-1.55)	**1.42** (1.06-1.69)
15-min	**0.382** (0.322-0.461)	**0.498** (0.423-0.604)	**0.674** (0.567-0.814)	**0.809** (0.677-0.971)	**0.990** (0.816-1.18)	**1.13** (0.920-1.35)	**1.27** (1.02-1.51)	**1.42** (1.11-1.68)	**1.61** (1.23-1.92)	**1.76** (1.32-2.10)
30-min	**0.514** (0.433-0.621)	**0.670** (0.570-0.813)	**0.908** (0.764-1.10)	**1.09** (0.911-1.31)	**1.33** (1.10-1.59)	**1.52** (1.24-1.81)	**1.71** (1.37-2.04)	**1.91** (1.50-2.27)	**2.17** (1.66-2.58)	**2.37** (1.77-2.83)
60-min	**0.636** (0.536-0.769)	**0.830** (0.705-1.01)	**1.12** (0.946-1.36)	**1.35** (1.13-1.62)	**1.65** (1.36-1.97)	**1.88** (1.53-2.24)	**2.12** (1.70-2.52)	**2.36** (1.86-2.81)	**2.68** (2.06-3.19)	**2.93** (2.20-3.50)
2-hr	**0.727** (0.618-0.867)	**0.941** (0.803-1.13)	**1.26** (1.06-1.50)	**1.49** (1.26-1.78)	**1.82** (1.51-2.15)	**2.07** (1.69-2.45)	**2.33** (1.87-2.75)	**2.59** (2.05-3.05)	**2.94** (2.26-3.47)	**3.21** (2.42-3.81)
3-hr	**0.775** (0.658-0.932)	**0.990** (0.844-1.20)	**1.30** (1.10-1.57)	**1.54** (1.30-1.85)	**1.89** (1.56-2.25)	**2.15** (1.76-2.56)	**2.44** (1.95-2.89)	**2.73** (2.15-3.24)	**3.14** (2.40-3.73)	**3.47** (2.58-4.13)
6-hr	**0.933** (0.809-1.10)	**1.18** (1.02-1.39)	**1.51** (1.30-1.77)	**1.77** (1.52-2.07)	**2.12** (1.80-2.47)	**2.40** (2.00-2.79)	**2.69** (2.21-3.12)	**2.99** (2.41-3.47)	**3.40** (2.67-3.95)	**3.73** (2.85-4.33)
12-hr	**1.08** (0.947-1.24)	**1.36** (1.20-1.56)	**1.72** (1.50-1.97)	**1.99** (1.74-2.28)	**2.38** (2.05-2.70)	**2.67** (2.27-3.03)	**2.96** (2.49-3.37)	**3.27** (2.70-3.72)	**3.67** (2.97-4.21)	**3.99** (3.16-4.59)
24-hr	**1.29** (1.17-1.43)	**1.63** (1.48-1.81)	**2.10** (1.90-2.33)	**2.47** (2.23-2.74)	**2.99** (2.67-3.30)	**3.39** (3.01-3.74)	**3.82** (3.36-4.21)	**4.26** (3.70-4.70)	**4.86** (4.16-5.39)	**5.34** (4.51-5.94)
2-day	**1.38** (1.24-1.53)	**1.75** (1.59-1.95)	**2.28** (2.06-2.54)	**2.70** (2.44-3.00)	**3.29** (2.94-3.64)	**3.75** (3.33-4.15)	**4.24** (3.73-4.69)	**4.74** (4.13-5.26)	**5.44** (4.67-6.06)	**6.00** (5.08-6.72)
3-day	**1.48** (1.34-1.63)	**1.88** (1.71-2.08)	**2.47** (2.24-2.73)	**2.94** (2.65-3.24)	**3.59** (3.23-3.96)	**4.12** (3.68-4.54)	**4.68** (4.14-5.16)	**5.26** (4.61-5.81)	**6.09** (5.26-6.75)	**6.75** (5.76-7.52)
4-day	**1.58** (1.44-1.74)	**2.02** (1.84-2.22)	**2.65** (2.42-2.92)	**3.16** (2.87-3.48)	**3.90** (3.51-4.28)	**4.49** (4.02-4.92)	**5.12** (4.55-5.62)	**5.78** (5.10-6.36)	**6.73** (5.85-7.43)	**7.50** (6.45-8.31)
7-day	**1.76** (1.60-1.94)	**2.24** (2.04-2.47)	**2.96** (2.69-3.26)	**3.54** (3.21-3.89)	**4.36** (3.92-4.78)	**5.02** (4.49-5.52)	**5.73** (5.08-6.30)	**6.49** (5.70-7.14)	**7.56** (6.55-8.36)	**8.43** (7.22-9.35)
10-day	**1.92** (1.74-2.11)	**2.45** (2.23-2.70)	**3.22** (2.92-3.55)	**3.84** (3.48-4.23)	**4.72** (4.25-5.18)	**5.42** (4.85-5.96)	**6.17** (5.48-6.78)	**6.95** (6.13-7.66)	**8.06** (7.02-8.92)	**8.96** (7.72-9.94)
20-day	**2.37** (2.16-2.61)	**3.05** (2.77-3.35)	**4.01** (3.64-4.40)	**4.74** (4.30-5.20)	**5.73** (5.17-6.28)	**6.49** (5.83-7.12)	**7.27** (6.50-7.97)	**8.06** (7.17-8.86)	**9.13** (8.04-10.1)	**9.95** (8.70-11.0)
30-day	**2.78** (2.55-3.04)	**3.58** (3.28-3.90)	**4.69** (4.30-5.12)	**5.55** (5.07-6.05)	**6.70** (6.08-7.31)	**7.59** (6.86-8.28)	**8.50** (7.65-9.28)	**9.43** (8.43-10.3)	**10.7** (9.45-11.7)	**11.7** (10.2-12.9)
45-day	**3.27** (2.99-3.58)	**4.20** (3.84-4.60)	**5.51** (5.03-6.04)	**6.49** (5.91-7.10)	**7.78** (7.06-8.50)	**8.75** (7.90-9.58)	**9.74** (8.75-10.7)	**10.7** (9.58-11.8)	**12.0** (10.7-13.2)	**13.0** (11.4-14.4)
60-day	**3.66** (3.35-4.00)	**4.72** (4.31-5.16)	**6.17** (5.64-6.75)	**7.23** (6.60-7.91)	**8.62** (7.83-9.42)	**9.65** (8.73-10.5)	**10.7** (9.62-11.7)	**11.7** (10.5-12.8)	**13.0** (11.6-14.3)	**14.0** (12.4-15.5)

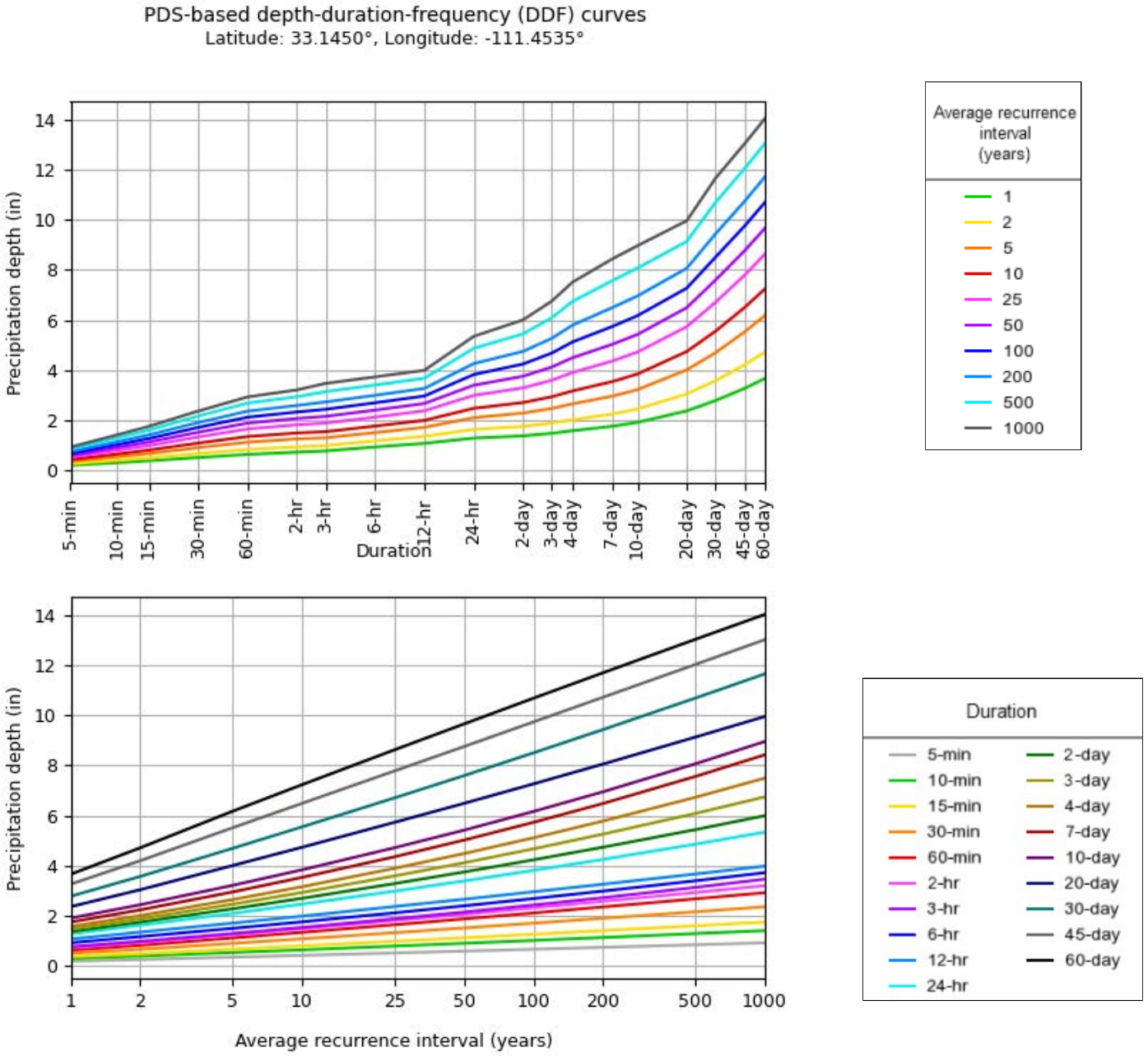
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical



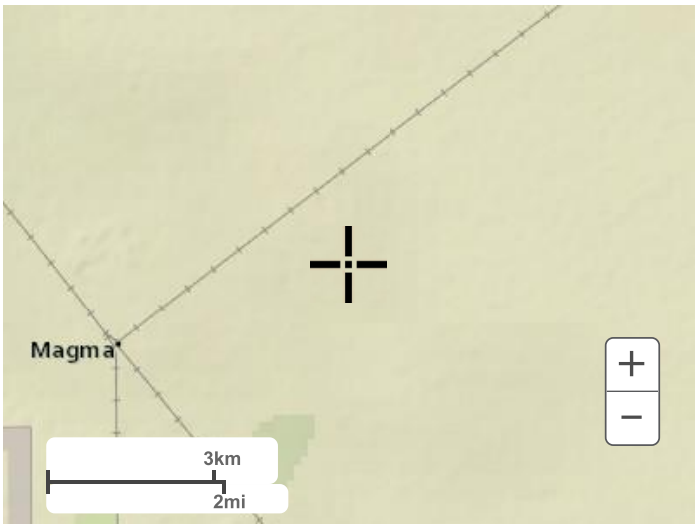
NOAA Atlas 14, Volume 1, Version 5

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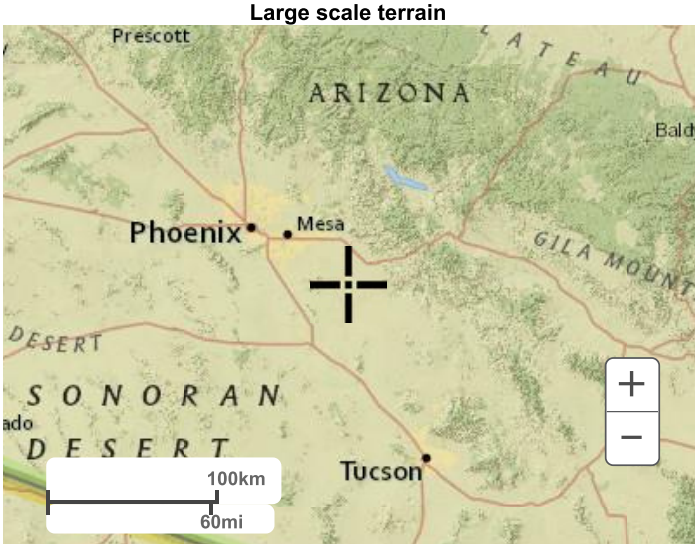
Back to Top

Maps & aerials

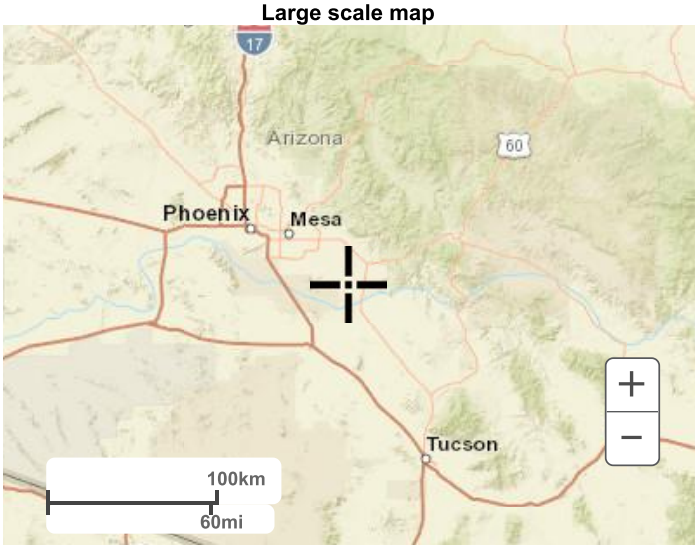
Small scale terrain



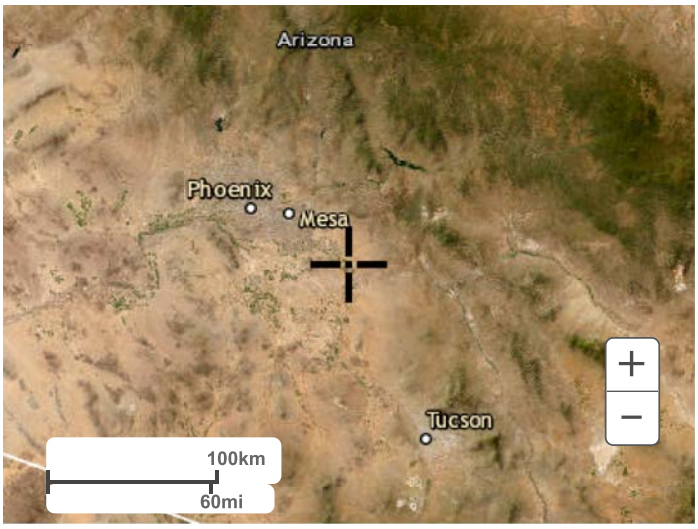
Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

A.4

Runoff Coefficients

Table 2-1: Runoff Coefficients [1,2]

Land Use Category	2-10 Year		25 Year		50 Year		100 Year	
	min	max	min	max	min	max	min	max
Very Low Density Residential[3]	0.33	0.42	0.36	0.46	0.40	0.50	0.41	0.53
Low Density Residential[3]	0.42	0.48	0.46	0.53	0.50	0.58	0.53	0.60
Medium Density Residential[3]	0.48	0.65	0.53	0.72	0.58	0.78	0.60	0.82
Multiple Family Residential[3]	0.65	0.75	0.72	0.83	0.78	0.90	0.82	0.94
Industrial 1[3]	0.60	0.70	0.66	0.77	0.72	0.84	0.75	0.88
Industrial 2[3]	0.70	0.80	0.77	0.88	0.84	0.95	0.88	0.95
Commercial 1[3]	0.55	0.65	0.61	0.72	0.66	0.78	0.69	0.81
Commercial 2[3]	0.75	0.85	0.83	0.94	0.90	0.95	0.94	0.95
Pavement and Rooftops	0.75	0.85	0.83	0.94	0.90	0.95	0.94	0.95
Gravel Roadways & Shoulders	0.60	0.70	0.66	0.77	0.72	0.84	0.75	0.88
Agricultural	0.10	0.20	0.11	0.22	0.12	0.24	0.13	0.25
Lawns/Parks/Cemeteries	0.10	0.25	0.11	0.28	0.12	0.30	0.13	0.31
Desert Landscaping 1	0.55	0.85	0.61	0.94	0.66	0.95	0.69	0.95
Desert Landscaping 2	0.30	0.40	0.33	0.44	0.36	0.48	0.38	0.50
Undeveloped Desert Rangeland	0.30	0.40	0.33	0.44	0.36	0.48	0.38	0.50
Hillslopes, Sonoran Desert	0.40	0.55	0.44	0.61	0.48	0.66	0.50	0.69
Mountain Terrain	0.60	0.80	0.66	0.88	0.72	0.95	0.75	0.95

[1] Runoff coefficients for 25-, 50-, and 100-Year storm frequencies were derived using adjustment factors of 1.10, 1.20 and 1.25, respectively, applied to the 2-10 Year values with an upper limit of 0.95

[2] The ranges of runoff coefficients shown for urban land uses were derived from lot coverage standards specified in the zoning ordinances for Maricopa Pinal County

[3] Runoff coefficients for urban land uses are for lot coverage only and do not include the adjacent street and right-of-way, or alleys.

Weighted runoff coefficients

Many times the ground surface in a tributary area cannot be properly represented using a single runoff coefficient. This is usually because of differences in ground cover. For example, between the right-of-way and the inlet some ground may have vegetative cover while other ground is paved.

A weighted runoff coefficient can be computed by proportion to the subareas using Equation (2-2):

$$C_w = \frac{A_1C_1 + A_2C_2 + \ldots + A_nC_n}{A_1 + A_2 + \ldots + A_n} \qquad (2\text{-}2)$$

Where:

A_i =Area in the i_{th} subarea, ac
C_i =Runoff coefficient for the i_{th} subarea

The weighted coefficient (C_w) is used in the Rational Formula just as would a single coefficient.

A.5

Offsite Peak Flow Calculations

CVL

SUNHILL

SUMMARY OF RATIONAL METHOD PEAK FLOW HYDROLOGY

Sub-basin ID	Sub- basin Area (ac)	Water Course Length ft	High Elevation ft	Low Elevation ft	Roughness, Kb	C Weighted Runoff Coefficient		i Intensity (in/hr)		Tc Time of Concentration (min)		Q Peak Flow Rate (cfs)	
						Return Period		Return Period		Return Period		Return Period	
						10-Year	100-Year	10-Year	100-Year	10-Year	100-Year	10-Year	100-Year
O-1	3.73	2755	1579	1566	0.0721 (B)	0.20	0.25	2.0	3.6	35.5	28.7	**2**	**3**
O-2	95.89	5006	1580	1564	0.0528 (B)	0.20	0.25	1.6	3.0	49.9	39.5	**31**	**72**
O-3	1.05	55	1564	1561	0.0797 (B)	0.20	0.25	5.1	8.1	5.0	5.0	**1**	**2**

Reference: [1] Pinal County Drainage Manual, Volume I: Design Criteria, August 2004
[2] Pinal County Drainage Manual, Volume II: Design Methodology and Procedures, August 2004

Notes:

T_c = Time of concentration = $11.4L^{0.5}K_b^{0.52}S^{-0.31}i^{-0.38}$ (Equation 2-2 of [2], Papadakis and kazan equation, 1987)

L = Length of the longest flow path, miles.

S = Watercourse slope, feet/mile.

K_b = Watershed resistance coefficient = $m\log_{10}A + b$, where A= drainage area in acres, m and b values from (Table 2-2 of [2]).

Q = Peak discharge = C*I*A, cfs. (Equation 2.1 of [2])

i = Average rainfall intensity, in in/hr, lasting for a T_c. Determined using the I-D-F curve from the NOAA Atlas 14 PRECIPITATION FREQUENCY ESTIMATES

C =See weighted C-Value for residential area from Appendix B.3.

PLATE 1

Drainage Map

CVL

Printed By: SimonaB Print Date: July 15, 2024 Filename: N:\01\0419901\Hydro\MDR 1st Submittal\CAD\Drainage Map.dwg

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PLATE 1
1 OF 2

CVL Contact: WILLIAM HAAS
CVL Project # 1.01.0419901

OFFSITE DRAINAGE MAP

SUNHILL

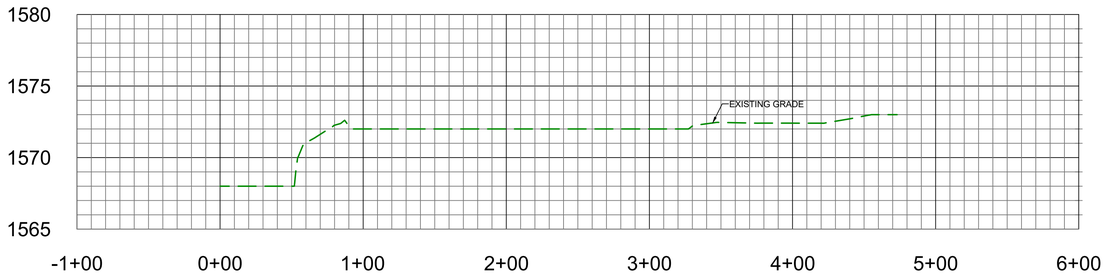
PINAL COUNTY, ARIZONA

NO.	REVISION	DATE

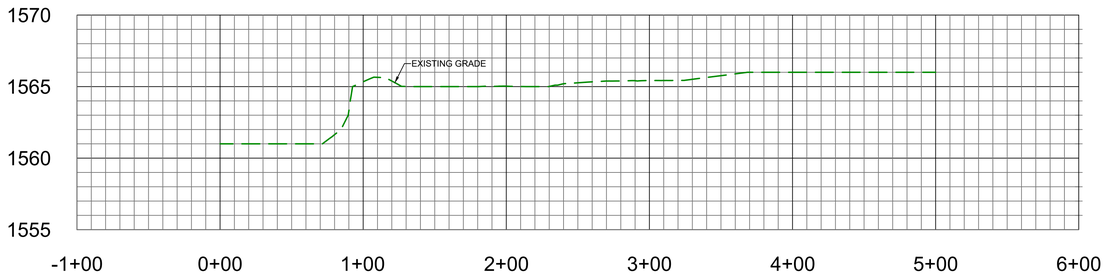
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CVL CONSULTANTS
4550 North 12th Street
Phoenix, Arizona 85014
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www.cvlci.com

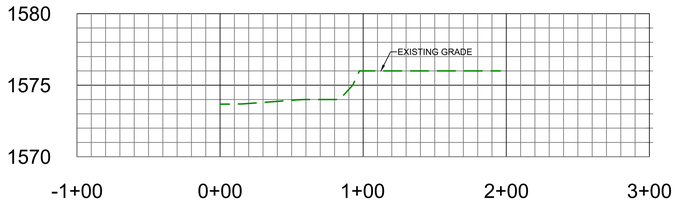
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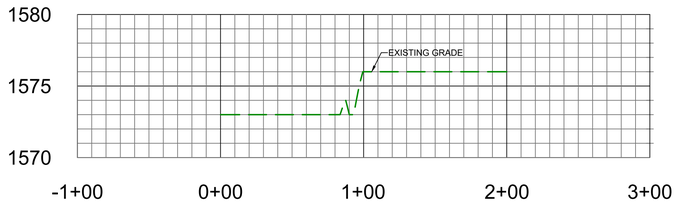
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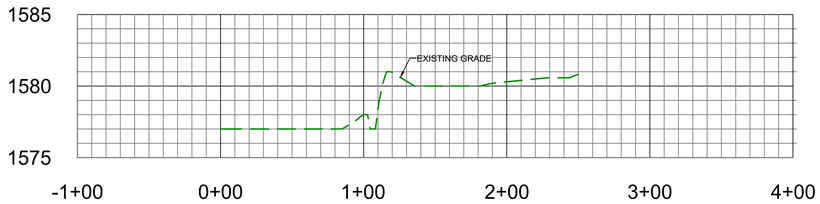
CROSS SECTION B-B



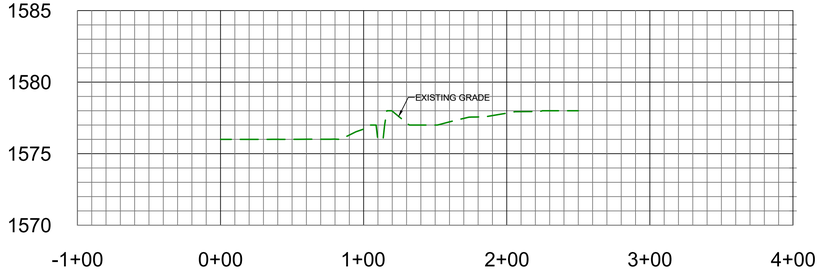
CROSS SECTION C-C



CROSS SECTION D-D



CROSS SECTION E-E



CROSS SECTION F-F

HORIZ. SCALE 1" = 50'
VERT. SCALE: 1" = 5'

CVL CONSULTANTS
4550 North 12th Street
Phoenix, Arizona 85014
602-264-6831
www.cvlci.com

DATE
REVISION
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BERM CROSS SECTIONS MAP

SUNHILL
PINAL COUNTY, ARIZONA

CVL Contact: WILLIAM HAAS
CVL Project #: 1.01.0419901

PLATE 1
2 OF 2

Printed By: **SimonaB** Print Date: **July 15, 2024** Filename: N:\01\0419901\Hydro\MDR 1st Submittal\CAD\Drainage Map.dwg

August 19, 2024

Mr. Gilbert Olgin
Planning Manager, Community Development
Pinal County Community Development Department Services
85 North Florence Street
Florence, AZ 85132

Electronically submitted to Gilbert.Olgin@pinalcountyaz.gov

RE: Pinal County Major Comprehensive Plan Proposed Amendments

Dear Mr. Olgin:

The Arizona Game and Fish Department (Department) appreciates the opportunity to review the proposed major amendment cases to the Pinal County Comprehensive Plan (Plan). The Department understands the proposed cases include: Ore Town Solar and Storage (PZ-PA-005-24); Montgomery Road land use change (PZ-PA-006-24); Cactus Flower Solar (PA-PA-007-24); Bella Natural Gas (PZ-PA-008-24); Tap Solar (PZ-PA-009-24); Frontier East and West Solar (PZ-PA-010-24/PZ-PA-011-24); and Sunhill mixed residential.

Under Title 17 of the Arizona Revised Statutes, the Department, by and through the Arizona Game and Fish Commission, has jurisdictional authority and public trust responsibilities to conserve and protect the state fish and wildlife resources. In addition, the Department manages threatened and endangered species through authorities of Section 6 of the Endangered Species Act and the Department's Section 10(a)(1)(A) permit. It is the mission of the Department to conserve and protect Arizona's diverse fish and wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations. For your consideration, the Department provides the following comments based on the agency's statutory authorities, public trust responsibilities, and special expertise related to wildlife resources and recreation.

The Department understands the Plan provides the overarching vision to manage growth, preserve the quality of life, and promote sustainability into the future. The Plan promotes effective economic vitality while ensuring environmental stewardship with outlining strategic actions and to coordinate efforts with the cities. The Department recommends providing encouragement within the Environmental Stewardship section for co-locating, retrofitting, and modifying existing facilities and infrastructure, while maintaining wildlife habitat and connectivity. The landscapes in which many of these projects are proposed currently provide wildlife habitat and movement corridors, including those projects in agricultural fields and

GOVERNOR: KATIE HOBBS COMMISSIONERS: CHAIRMAN CLAY HERNANDEZ, TUCSON | MARSHA PETRIE SUE, SCOTTSDALE | JEFF BUCHANAN, PATAGONIA
JAMES E. GOUGHNOUR, PAYSON | TODD G. GEILER, PRESCOTT DIRECTOR: TY E. GRAY DEPUTY DIRECTOR: TOM P. FINLEY

natural desert areas. The Department would like to encourage opportunities to incorporate wildlife connectivity and design features to retain habitat values across the landscape. The Department also recognizes the importance of planning efforts to develop renewable energy locations that contribute to regional and state economic growth needs and would like to work closely with Pinal County and project proponents throughout the preliminary area evaluation, site characterization and design, construction, operation, and decommissioning of the facility. Project proponents should refer to the Solar Communications Framework for a guide on how to maintain effective communication with the Department throughout the life of a solar project.

Arizona has recently seen an increase in the number of proposed and in-development renewable energy generation projects, storage facilities, and associated infrastructure. A number of solar energy and other renewable energy projects have been built or being proposed within Pinal County. Although each of these projects individually may have a minimal impact on the broader landscape, these projects cumulatively could result in loss of habitat, impact wildlife movements, and affect wildlife-related recreation. Additionally, long-term effects to wildlife can extend several kilometers beyond the footprint of a solar project area (Sawyer et al. 2022[1]). The Department recommends that the County consider all potential cumulative effects and to evaluate each proposed project in association with other projects in the area. Department staff are available to assist in identifying potential cumulative impacts to wildlife and associated voluntary conservation measures that can be implemented. The Department also encourages consideration and incorporation of setbacks and design recommendations from the Pinal County Open Space, Parks and Trails Plan (Pinal 2007), Pinal County Open Space and Recreation Area Guideline Manual (2012), Pinal County Floodplain Management Ordinance (2019), and lighting ordinances to be consistent with the vision of Pinal County.

The Department has previously commented on the proposed zoning case for Bella (M24-05283244) and has attached the letter. In addition, the Department's Arizona Online Environmental Review Tool (ERT) reports for Montgomery Road (HGIS-22317) and Sunhill Mixed Residential (HGIS-22319) are attached since they were not included within the provided documentation. A new ERT report has also been generated and attached for Cactus Flower Solar since the original report was generated in 2022. The additional projects (Ore Town Solar and Storage, Tap Solar, Frontier East Solar, Frontier West Solar, and Bella Natural Gas) included ERT reports as part of their proposal packets. These reports provide a list of special status species, including Species of Greatest Conservation Need (SGCN), as identified in the Arizona Wildlife Conservation Strategy[2] (AWCS), and Species of Economic and Recreational Importance that have been documented or predicted within the buffered project footprint.

The Department recommends conducting surveys in the project areas to determine species presence. These surveys should be of sufficient duration and intensity to adequately assess all habitat types and potential wildlife species occurrence in and adjacent to the project area. Department staff are available to assist project proponents in determining appropriate surveys to conduct and design features and best management practices that can help minimize potential

[1] https://esajournals.onlinelibrary.wiley.com/doi/10.1002/fee.2498
[2] https://awcs.azgfd.com

impacts. Based on the information provided, the Department offers the following recommendations to reduce potential impacts to wildlife and habitat for all proposed projects:

- The Sonoran pronghorn, listed as endangered under the Endangered Species Act, could occur in the project area and adjacent lands for Montgomery Road, Cactus Flower Solar, Tap Solar, Frontier West Solar and Frontier East Solar. Sonoran pronghorn have specific habitat requirements based on their life history and survival strategy. The Department would like to work with the project proponent to minimize any potential impacts to this species. The Department recommends scheduling construction activities outside the fawning season for Sonoran pronghorn (February 1 to July 15) and requests coordination prior to construction activities in order to exchange information on current Sonoran pronghorn use in the project area. If pronghorn are detected during project activities, please notify the U.S. Fish and Wildlife Service[3] (USFWS) and the Department's Sonoran Pronghorn Program Lead (rgardner@azgfd.gov) as soon as possible.
- Potential habitat for the Sonoran desert tortoise, which is a federal and state species of special concern and is covered under a Candidate Conservation Agreement, is present within the project area for Montgomery Road, Ore Town Solar and Storage, and Tap Solar. The Department recommends conducting surveys, in accordance with the *Desert Tortoise Survey Guidelines for Environmental Consultants*[4], to determine the presence of this species or its habitat. If tortoises are identified, please refer to and implement the *Recommended Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat*[5] and *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects*[6].
- Suitable habitat for the western burrowing owl, a special status species that is regulated under the Migratory Bird Treaty Act (MBTA), is present within or adjacent to the project area for Montgomery Road, Sunhill mixed residential, Cactus Flower Solar, Tap Solar, Frontier East Solar, and Frontier West Solar. The Department recommends conducting occupancy surveys for this species in advance of the design phase to understand distribution of burrowing owls in the project site; avoidance of a large burrowing owl population may be advisable over removal or other conservation measures. Guidelines for conducting this survey are found in *Burrowing Owl Project Clearance Guidance for Landowners*[7]. Please note that the survey should be conducted by a surveyor who is certified by the Department or has similar training and qualifications. If an active burrowing owl burrow is detected, please contact the Department and the USFWS for direction, in accordance with the guidelines.
- The Department also recommends conducting surveys for nesting birds prior to vegetation removal and/or construction activities that occur during the breeding season. The vegetation within the project area may provide nesting opportunities for avian species that are regulated under the Migratory Bird Treaty Act (MBTA). If it is

[3] https://www.fws.gov/office/arizona-ecological-services/contact-us
[4] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/2010SurveyguidelinesForConsultants.pdf
[5] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/MitigationMeasures.pdf
[6] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/2014%20Tortoise%20handling%20guidelines.pdf
[7] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/nongame/eagles/BurrowingOwlClearanceProtocol_2009.pdf

anticipated the project will not be in compliance with MBTA, the Department recommends contacting the USFWS for technical assistance.

- Burrowing mammals could occur within the project area and could be influenced by construction activities and by loss of habitat. Surveys for these species are recommended to determine their presence and to inform pre-construction activities. Department staff are available to assist in identifying suitable conservation measures, such as one-way exclosures on burrows that allow wildlife to exit the burrows and disperse to adjacent lands in advance of construction.

Maintaining habitat connectivity is a priority for the Department, and wildlife movement corridors are important for wildlife to respond to changing environmental conditions. The landscape in which all of the projects within the provided documentation are proposed provides important movement pathways for wildlife. The Department would like to meet with the county and project proponents to discuss opportunities to incorporate wildlife connectivity into the project designs, including the following:

- The Department recommends incorporating open unfenced corridors across the project area into the project design to facilitate wildlife movement, including within upland habitats as well as maintaining the ephemeral washes that occur in the project area in their natural state without fencing or other barriers to wildlife movement. These washes serve multiple functions in the ecosystem, including landscape-level conveyance corridors for wildlife movement.
- For all projects, the Department recommends conducting minimal grading in the project area. For solar projects, it is recommended that to the extent possible habitat features are retained underneath solar panels, including vegetation and soils. The topography in the majority of the project sites is flat and would require minimal trimming of shrubs and existing vegetation to install the panels. Keeping the existing soil and root structures intact would serve to minimize erosional run-off and help reduce biodiversity loss within the site (Grodsky and Hernandez 2020[8]).
- The Department's *Wildlife Compatible Fencing Guidelines*[9] provide information on how fencing impacts wildlife, ways to design fencing to prevent wildlife entanglement and impalement, and to ensure wildlife movement is not restricted. Department personnel are available as resources to help determine appropriate fencing design and layout that will achieve its objective while reducing impact on wildlife, such as leaving a 6–8-inch gap between the ground surface and bottom of the fence to allow for smaller wildlife species to move freely through the area and make use of any habitat within the project boundary.
- The Montgomery Road land-use change, Ore Solar and Storage, and Tap Solar project includes identified riparian habitat within and adjacent to the project area. The Department recognizes riparian habitats as areas of environmental importance to wildlife and encourages management practices that maintain current riparian areas. The Department recommends buffering these areas from development infrastructure to maintain wildlife access and connectivity and Department staff are available to assist in

[8] https://www.nature.com/articles/s41893-020-0574-x
[9] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/planningFor/wildlifeFriendlyGuidelines/110125_AGFD_fencing_guidelines.pdf

determining appropriate setbacks and other measures to protect these areas. Please refer to the Riparian Area Guidelines[10] for Pinal County.

The Department offers the following general recommendations to reduce potential impacts to wildlife and habitat during construction and operation for all projects:

- A variety of other Arizona Species of Greatest Conservation Need (SGCN) have the potential to occur within the project area. If wildlife are encountered during project activities, the Department recommends moving them out of harm's way, no more than 0.25 mile outside the project boundary within similar habitat. Please note that the Arizona State Wildlife Action Plan was recently updated, and the Department has an interactive website, Arizona Wildlife Conservation Strategy[11], that includes the most recent list of SGCN to help navigate and identify conservation opportunities.
- If trenching or digging of large holes will occur, the Department recommends that trenching/digging and backfilling crews work together to minimize the number of open holes/trenches at any given time. Where trenches/holes cannot be backfilled immediately, the Department recommends escape ramps be constructed in each hole and at least every 90 meters in trenches. Escape ramps can be short lateral trenches or wooden planks sloping to the surface, ramp slopes should be less than 45 degrees (1:1). Trenches or holes that have been left open should be inspected for animals and animals removed prior to backfilling.
- The Department recommends designing power lines and substations to be bird safe by following standards established by the Avian Power Line Interaction Committee (APLIC) for new power lines, which can be found in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*[12] and *Reduced Avian Collisions with Power Lines: The State of the Art in 2012*[13]. Birds of prey, such as raptors, owls, vultures, and eagles, are vulnerable to powerline strikes and electrocution during construction and operation of transmission lines and substations; power poles can also serve as perches for birds of prey. Tuk Jacobson, the Department's Raptor Coordinator, can provide further information on specific design features and best management practices; he can be contacted at raptors@azgfd.gov or 623-236-7575.
- Artificial lighting could impair the ability of nocturnal animals to navigate (e.g., owls, migratory birds, bats, and other nocturnal mammals) and may affect wildlife behavior and populations (Davies et. al. 2013[14]). If construction activities will take place during the night, the Department recommends using only the minimum amount of light needed for safety, due to the proximity to identified bat colonies within 3-miles of the Project area. The Department encourages the use of motion sensing lighting and "warmer" narrow spectrum lighting (amber, orange, red) wherever possible to lower the range of species affected by lighting. Also, please consider shielding, canting, or cutting all lighting,

[10] https://azgfd-portal-wordpress-pantheon.s3.us-west-2.amazonaws.com/wp-content/uploads/archive/Riparian-Guidelines_Wildlife.pdf
[11] https://awcs.azgfd.com
[12] https://www.aplic.org/uploads/files/2643/SuggestedPractices2006(LR-2).pdf
[13] https://www.aplic.org/uploads/files/15518/Reducing_Avian_Collisions_2012watermarkLR.pdf
[14] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3657119

where possible, to ensure that light reaches only areas needing illumination and to minimize impacts to nocturnal wildlife.

- Please ensure the Project complies with Arizona Native Plant Law regulations[15]. A Native Plant Inventory may also be needed to be conducted to identify, record, and coordinate plant salvage efforts for species that are Protected under the Arizona Native Plant Law.
- To minimize the potential introduction or spread of exotic invasive species, including aquatic and terrestrial plants, animals, insects, and pathogens, the Department encourages taking precautions to wash and/or decontaminate equipment before entering and leaving the site. See the Arizona Department of Agriculture website[16] for a list of prohibited and restricted noxious weeds and the Arizona Native Plant Society[17] for recommendations on how to control them. To view a list of documented invasive species or to report invasive species in or near the Project area, visit iMapInvasives[18], which is a national cloud-based application for tracking and managing invasive species.Those comments are included as attachments for reference.
- The Department recommends revegetating disturbed areas with native drought-tolerant species that represent the natural surrounding landscape. Landscaping with native plants can help support wildlife and pollinator species in the area while reducing dust and erosion. In addition, the applicable land management agencies should be consulted regarding guidelines for revegetation efforts.

The following recommendation to reduce potential impacts to wildlife and habitat is specifically for the proposed solar projects; additional information can be found in *Guidelines for Solar Development in Arizona*[19]:

- The Department recommends conducting avian surveys during the planning stage of proposed solar projects in order to better understand species presence and to inform potential conservation measures. Point counts are the preferred method for breeding bird surveys. These surveys are conducted twice a year during the peak breeding season, which is mid-January through June in this area; McLaren et al. (2019)[20] outline protocols. Additional surveys for Bendire's and/or LeConte's thrashers, two bird species of conservation concern, are recommended for Ore Solar and Storage (Bendire's thrasher), Tap Solar (Bendire and LeConte's thrashers), and Frontier East and West Solar (Bendire's thrasher) ; a draft protocol[21] from the Desert Thrashers Working Group is available online.

For all the projects, the Department would like to work with the County to develop more site specific recommendations when further information is available. The Department provides the

[15] https://agriculture.az.gov/plantsproduce/native-plants
[16] https://agriculture.az.gov/pestspest-control/agriculture-pests/noxious-weeds
[17] https://aznps.com/invas
[18] https://imap.natureserve.org/imap/services/page/map.html
[19] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/planningFor/wildlifeFriendlyGuidelines/FinalSolarGuidelines03122010.pdf
[20] https://www.birdconservancy.org/wp-content/uploads/2021/03/2020-Field-Protocol-for-Spatially-Balanced-Sampling.pdf
[21] https://drive.google.com/drive/folders/1d9L8Su0HPbBzo2oGSH4H2xqrwOqHpT1o?usp=sharing

following project-specific recommendations based on the information available in addition to the recommendations above:

Sunhill Mixed Residential Project
The ERT report (HGIS-22319) indicated there was a landscape movement area (CAP canal) for wildlife in the project. The Department would like to meet with the county and project proponents to discuss opportunities to incorporate wildlife connectivity into the project designs.

Ore Solar and Storage
Large-scale solar PV facilities can result in a high rate of bird mortality due to habitat loss, collision with panels, attraction due to an optical illusion of water, and unknown causes (Kosciuch et al. 2020[22]) These effects could be amplified at this facility due to its proximity to the Lower San Pedro River Important Bird Area (IBA) approximately 1.5 miles east of the proposed project. The Department encourages the use of non-reflective coatings on the solar panels, which can reduce the appearance of the array as a body of water and reduce the attraction of birds to the site. Additionally, maximizing the spacing between solar panels can reduce the appearance of the array as a body of water. The Department would like to emphasize the recommendation that a qualified biologist survey for bird species within the project area to better understand potential impacts from this project. It is also encouraged that the developer implements post-construction monitoring for avian injuries and fatalities. Recommendations for monitoring design and frequency can be found in the U.S. Geological Survey's 2016 Mortality Monitoring Design for Utility-Scale Solar Power Facilities. Any avian injuries or fatalities should be reported both to the Department and by using the USFWS Injury and Mortality Reporting[23] website. Department staff are available to assist in developing the monitoring protocol and to further refine the monitoring and reporting recommendations in order to develop feasible and repeatable protocols to be implemented during operations. The Department is also available to help determine adaptive management measures based on results of the post-construction monitoring. For example, the U.S. Geological Survey has been conducting research that indicates birds are most attracted to solar arrays around midday, and tilting of panels during key times of strikes could reduce bird attraction.

The decommissioning plan should include management of invasive species, revegetation with a weed free native seed mix that is commensurate with the surrounding area. The plan should also include fencing removal with other recycling components. Additionally, the documents do not seem to include any measures to avoid riparian areas within the project area. There are three identified riparian corridors within the project area that should be avoided. If it is not possible to avoid these areas, at a minimum a buffer should be placed along the length of these areas and set back. The Pinal Riparian Guidelines recommend 250 feet set back on each side of the corridor if mesoriparian species are present and a minimum of 150 feet set back on each side of the corridor if xeroriparian species are present. According to the biological report included in the application, xeroriparian is present within the project.

[22] https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0232034
[23] https://ecos.fws.gov/imr/welcome

Tap Solar
The ERT report (HGIS-22111) indicated the project contains identified landscape and riparian movement areas, specifically Vekol Wash, for wildlife as well as identified areas of open space and trail corridors as per the Pinal Open Space and Trails Master Plan 2012. The Department would like to work with the County and project the proponent on further design of the project and to identify any potential setbacks or buffers needed to provide wildlife connectivity throughout the project. In addition, the Department recommends developing a decommissioning plan.

Frontier East Solar and Frontier West Solar
In addition to the recommendations above, the Department recommends developing a decommissioning plan.

Thank you for the opportunity to provide review and input on the Pinal County Major Comprehensive Plan Amendments. For further coordination, please contact Kelly Wolff at kwolff@azgfd.gov or 480-324-3550.

Sincerely,
Joshua W. Hurst

Joshua Hurst
Regional Supervisor, Region 6

Attachments

cc: Ginger Ritter – Project Evaluation Program Supervisor
Jessica Potter – Project Evaluation Program Specialist

AZGFD #M24-06134836

AZGFD Comments - Pinal County Comprehensive Plan:

Section	Page	Recommendation	Commenter Initials
Montogomery	10	The proposed project has the potential to impact the identified trail, open space and riparian habitat within the project area. There is not enough information made available to determine the impacts at this time by the Department. Once further information is made available, recommendations specifics would be available.	kw
	General	The project contains documented occurrences of desert tortoise, Greene Wash and Reservoir, identified riparian movement area, identified open space corridor, trail corridor and identified riparian habitat.	kw
Sunhill	NA	The information provided does not include information on potential to impact natural resources and therefore, the Department will not be able to provide substantive comments at this time. The project area includes the landscape movement area for wildlife known as the CAP canal. The project area includes documented occurrence for the western burrowing owl.	kw

Bella Natural Gas (PZ-PA-008-24)
Sunhill mixed residential.
Montgomery Road land use change (PZ-PA-006-24)
Ore Town Solar and Storage (PZ-PA-005-24)
Cactus Flower Solar (PA-PA-007-24)
Tap Solar (PZ-PA-009-24)
Frontier East and West Solar (PZ-PA-010-24/PZ-PA-011-24)

Section	**Recommendation**	Commenter Initials
Decommissioning	The decommissioning plan should include management of invasive species, revegetation with a weed free native seed mix that is commensurate with the surrounding area. Inclusion of fencing removal into the plan with other recycling components.	kw
General	The documents do not seem to include any measures to avoid riparian areas within the project area. There are three identified riparian corridors within the project area. These areas should be avoided. If it is not possible to avoid these areas at a minumum a buffer should be placed along the length of these areas and set back. The Pinal Riparian Guidelines recommend 250 feet set back on each side of the corridor if mesoriparian species are present and a minimum of 150 feet set back on each side of the corridor if xeroriparian species are present. According to the biological report included in the application, xeroriparian is present within the project.	kw

General	Large-scale solar PV facilities can result in a high rate of bird mortality due to habitat loss, collision with panels, attraction due to an optical illusion of water, and unknown causes (Kosciuch et al. 2020 [https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0232034]). These effects could be amplified at this facility due to its proximity to the Lower San Pedro River Important Bird Area (IBA) approximately 1.5 miles east of the proposed project. The Department encourages the use of non-reflective coatings on the solar panels, which can reduce the appearance of the array as a body of water and reduce the attraction of birds to the site. Additionally, maximizing the spacing between solar panels can reduce the appearance of the array as a body of water. The Department would like to emphasize the recommendation within the comment letter that a qualified biologist survey for bird species within the project area to better understand potential impacts from this project. It is also encouraged that the developer implement post-construction monitoring for avian injuries and fatalities. Recommendations for monitoring design and frequency can be found in the U.S. Geological Survey's 2016 Mortality Monitoring Design for Utility-Scale Solar Power Facilities (https://pubs.usgs.gov/of/2016/1087/ofr20161087.pdf). Any avian injuries or fatalities should be reported both to the Department and by using the U.S. Fish and Wildlife Service's Injury and Mortality Reporting website (https://ecos.fws.gov/imr/welcome). Department staff are available to assist in developing the monitoring protocol and to further refine the monitoring and reporting recommendations in order to develop feasible and repeatable protocols to be implemented during operations. The Department is also available to help determine adaptive management measures based on results of the post-construction monitoring. For example, the U.S. Geological Survey has been conducting research that indicates birds are most attracted to solar arrays around midday, and tilting of panels during key times of strikes could reduce bird attraction.	jp

Section	Recommendation	Commenter Initials
General	The project information provided did not include biological information or measures to reduce impacts; therefore, the Department will need further information to provide substative comments. The following general information is provided: the project contains identified landscape and riparian movement areas for wildlife as well as identified areas of openspace and trail corridors as per the Pinal Open Space and Trails Master Plan 2012. Riparian areas are also identified in the project area as Vekol wash. The Department would like to work with the County and project proponent on further design of the project and to identify any potential set backs or buffers needed to provide wildlife connectivity throughout the project. A decommissing plan should also be identified for the project.	kw
General	Additional surveys for Bendire's and LeConte's thrashers, two bird species of conservation concern, are recommended for this project; protocols are outlined by The Desert Thrasher Working Group (2018, [https://borderlandsbirds.org/wp-content/uploads/2017/08/Thrasher-Survey-Protocol-2018_DTWG.pdf]).	jp

Section	Recommendation	Commenter Initials
General	Information provided for both projects did not include biological information or measures to reduce impacts; therefore, the Department will need further information to provide substative comments. In addition, information on a decommission plan was not included with either project.	kw
General	Additional surveys for Bendire's thrashers, a bird species of conservation concern, are recommended for these projects within suitable habitat; protocols are outlined by The Desert Thrasher Working Group (2018, [https://borderlandsbirds.org/wp-content/uploads/2017/08/Thrasher-Survey-Protocol-2018_DTWG.pdf]).	jp

Project Name: Sunhill
Case Number: PZ-PA-012-24
Reviewed By: Arizona Game and Fish Department
Major Comprehensive Plan Amendment 60 day agency review

	Comments
General	The ERT report (HGIS-22319) indicated there was a landscape movement area (CAP canal) for wildlife in the project. The Department would like to meet with the county and project proponents to discuss opportunities to incorporate wildlife connectivity into the project designs.
General	The Department recommends conducting surveys in the project areas to determine species presence. These surveys should be of sufficient duration and intensity to adequately assess all habitat types and potential wildlife species occurrence in and adjacent to the project area. Department staff are available to assist project proponents in determining appropriate surveys to conduct and design features and best management practices that can help minimize potential.
General	Department encourages consideration and incorporation of setbacks and design recommendations from the Pinal County Open Space, Parks and Trails Plan (Pinal 2007), Pinal County Open Space and Recreation Area Guideline Manual (2012), Pinal County Floodplain Management Ordinance (2019), and lighting ordinances to be consistent with the vision of Pinal County.
	The Department offers the following recommendations to reduce potential impacts to wildlife and habitat for all proposed projects:
Wildlife	Suitable habitat for the western burrowing owl, a special status species that is regulated under the Migratory Bird Treaty Act (MBTA), is present within or adjacent to the project area for Montgomery Road. The Department recommends conducting occupancy surveys for this species in advance of the design phase to understand distribution of burrowing owls in the project site; avoidance of a large burrowing owl population may be advisable over removal or other conservation measures. Guidelines for conducting this survey are found in *Burrowing Owl Project Clearance Guidance for Landowners*. Please note that the survey should be conducted by a surveyor who is certified by the Department or has similar training and qualifications. If an active burrowing owl burrow is detected, please contact the Department and the USFWS for direction, in accordance with the guidelines.
Wildlife	The Department recommends conducting surveys for nesting birds prior to vegetation removal and/or construction activities that occur during the breeding season. The vegetation within the project area may provide nesting

	opportunities for avian species that are regulated under the Migratory Bird Treaty Act (MBTA). If it is anticipated the project will not be in compliance with MBTA, the Department recommends contacting the USFWS for technical assistance.
Wildlife	Burrowing mammals could occur within the project area and could be influenced by construction activities and by loss of habitat. Surveys for these species are recommended to determine their presence and to inform pre-construction activities. Department staff are available to assist in identifying suitable conservation measures, such as one-way exclosures on burrows that allow wildlife to exit the burrows and disperse to adjacent lands in advance of construction.
Vegetation	Please ensure the Project complies with Arizona Native Plant Law regulations. A Native Plant Inventory may also be needed to be conducted to identify, record, and coordinate plant salvage efforts for species that are Protected under the Arizona Native Plant Law.
Vegetation	To minimize the potential introduction or spread of exotic invasive species, including aquatic and terrestrial plants, animals, insects, and pathogens, the Department encourages taking precautions to wash and/or decontaminate equipment before entering and leaving the site. See the Arizona Department of Agriculture website for a list of prohibited and restricted noxious weeds and the Arizona Native Plant Society for recommendations on how to control them. To view a list of documented invasive species or to report invasive species in or near the Project area, visit iMapInvasives, which is a national cloud-based application for tracking and managing invasive species.
Vegetation	The Department recommends revegetating disturbed areas with native drought-tolerant species that represent the natural surrounding landscape. Landscaping with native plants can help support wildlife and pollinator species in the area while reducing dust and erosion. In addition, the applicable land management agencies should be consulted regarding guidelines for revegetation efforts.