AGENDA
ORO VALLEY TOWN COUNCIL
REGULAR SESSION
April 16, 2014
ORO VALLEY COUNCIL CHAMBERS
11000 N. LA CAÑADA DRIVE

REGULAR SESSION AT OR AFTER 5:00 PM

CALL TO ORDER

ROLL CALL

EXECUTIVE SESSION - Pursuant to ARS 38-431.03(A)(1) Personnel matters - Town Manager's annual performance review

REGULAR SESSION AT OR AFTER 6:00 PM

CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

UPCOMING MEETING ANNOUNCEMENTS

COUNCIL REPORTS

- **Spotlight on Youth**

DEPARTMENT REPORTS

The Mayor and Council may consider and/or take action on the items listed below:

ORDER OF BUSINESS: MAYOR WILL REVIEW THE ORDER OF THE MEETING

INFORMATIONAL ITEMS

1. Letters of Appreciation for Oro Valley Police Department

CALL TO AUDIENCE – At this time, any member of the public is allowed to address the Mayor and Town Council on any issue ***not listed on today's agenda.*** Pursuant to the Arizona Open Meeting Law, individual Council Members may ask Town Staff to review the matter, ask that the matter be placed on a future agenda, or respond to criticism made by speakers. However, the Mayor and Council may not discuss or take legal action on matters raised during "Call to Audience." In order to speak during "Call to Audience" please specify what you wish to discuss when completing the blue speaker card.

CONSENT AGENDA
(Consideration and/or possible action)

A. Minutes - April 2, 2014

B. Fiscal Year 2013/14 Financial Update through February 2014

C. Appointments to the Conceptual Design Review Board (CDRB)

D. Appointment to the Parks and Recreation Advisory Board (PRAB)

E. Resolution No. (R)14-20, authorizing and approving Amendment Number 1 to the intergovernmental agreement between the Town of Oro Valley, the Town of Marana and Pima County for the design and construction of roadway improvements to Tangerine Road from Dove Mountain Boulevard/Twin Peaks Road to La Canada Drive

F. Request for approval of a Final Plat Amendment for Steam Pump Village, Phase 3, Lot 1, located near the intersection of Steam Pump Way and N. Oracle Road

G. Request for modification of a Conceptual Site Plan Condition of Approval related to provision of sidewalks for Phase I of the Enclave at Stone Canyon subdivision, located north of Tortolita Mountain Circle and east of Hohokam Village Place

H. Resolution No. (R)14-21, approving Oro Valley Historical Society License Agreement Amendment

I. Resolution No. (R)14-22, adopting the Pima County Community Wildfire Protection Plan as the official Town plan

J. Resolution No. (R)14-23, authorizing and approving an Intergovernmental Agreement (IGA) between Pima County and the Town of Oro Valley for the Pima County Wireless Integrated Network (PCWIN) subscriber services

K. Resolution No. (R)14-24, authorizing and approving an Intergovernmental Agreement (IGA) among the parties that form the Pima County/Tucson Metropolitan Counter Narcotics Alliance (CNA) a law enforcement task force. CNA members include: Tucson Police Department, Arizona Department of Public Safety, University of Arizona Police Department, Oro Valley Police Department, Marana Police Department and Sahuarita Police Department.

L. Resolution No. (R)14-25, authorizing and approving a grant contract between the Oro Valley Police Department and the Governor's Office of Highway Safety (GOHS) for funding of one (1) DUI Enforcement SUV to enhance DUI enforcement in the Town of Oro Valley

M. Resolution No. (R)14-26, authorizing and approving a grant contract between the Oro Valley Police Department and the Governor's Office of Highway Safety (GOHS) for funding to provide Northwestern University Collision Investigation Training to be hosted by the Town of Oro Valley Police Department

REGULAR AGENDA

1. PUBLIC HEARING: DISCUSSION AND POSSIBLE ACTION REGARDING AN APPLICATION FOR A SERIES 12 (RESTAURANT) LIQUOR LICENSE FOR CHUY'S MESQUITE BROILER LOCATED AT 8195 N. ORACLE ROAD #105

2. REQUEST FOR APPROVAL OF CONCEPTUAL SITE PLAN FOR A 118 LOT SUBDIVISION ON 131 ACRES KNOWN AS SAGUAROS VIEJOS, LOCATED ON THE NORTHWEST CORNER OF NARANJA DRIVE AND LA CHOLLA BOULEVARD

3. DISCUSSION AND POSSIBLE ACTION TO INITIATE THE 60-DAY PUBLIC NOTICE PROCESS FOR A FUTURE DISCUSSION REGARDING REVENUE OPTIONS

4. PUBLIC HEARING: LOCAL ALTERNATIVE EXPENDITURE LIMITATION ELECTION (HOME RULE OPTION)

RECESS REGULAR SESSION

CONVENE SPECIAL SESSION

CALL TO ORDER

1. RESOLUTION NO. (R)14-27, A RESOLUTION OF THE TOWN OF ORO VALLEY PROPOSING AN EXTENSION OF THE ALTERNATIVE EXPENDITURE LIMITATION (HOME RULE OPTION)

ADJOURN SPECIAL SESSION

RECONVENE REGULAR SESSION

FUTURE AGENDA ITEMS (The Council may bring forth general topics for future meeting agendas. Council may not discuss, deliberate or take any action on the topics presented pursuant to ARS 38-431.02H)

CALL TO AUDIENCE – At this time, any member of the public is allowed to address the Mayor and Town Council on any issue ***not listed on today's agenda.*** Pursuant to the Arizona Open Meeting Law, individual Council Members may ask Town Staff to review the matter, ask that the matter be placed on a future agenda, or respond to criticism made by speakers. However, the Mayor and Council may not discuss or take legal action on matters raised during "Call to Audience." In order to speak during "Call to Audience" please specify what you wish to discuss when completing the blue speaker card.

ADJOURNMENT

POSTED: 4/9/14 at 5:00 p.m. by mrs

When possible, a packet of agenda materials as listed above is available for public inspection at least 24 hours prior to the Council meeting in the office of the Town Clerk between the hours of 8:00 a.m. – 5:00p.m.

The Town of Oro Valley complies with the Americans with Disabilities Act (ADA). If any person with a disability needs any type of accommodation, please notify the Town Clerk's Office at least five days prior to the Council meeting at 229-4700.

INSTRUCTIONS TO SPEAKERS

Members of the public have the right to speak during any posted public hearing. However, those items not listed as a public hearing are for consideration and action by the Town Council during the course of their business meeting. Members of the public may be allowed to speak on these topics at the discretion of the Chair.

If you wish to address the Town Council on any item(s) on this agenda, please complete a speaker card located on the Agenda table at the back of the room and give it to the Town Clerk. **Please indicate on the speaker card which item number and topic you wish to speak on, or if you wish to speak during "Call to Audience", please specify what you wish to discuss when completing the blue speaker card.**

Please step forward to the podium when the Mayor announces the item(s) on the agenda which you are interested in addressing.

1. For the record, please state your name and whether or not you are a Town resident.
2. Speak only on the issue currently being discussed by Council. Please organize your speech, you will only be allowed to address the Council once regarding the topic being discussed.
3. Please limit your comments to 3 minutes.
4. During "Call to Audience" you may address the Council on any issue you wish.
5. Any member of the public speaking must speak in a courteous and respectful manner to those present.

Thank you for your cooperation.

Town Council Regular Session **Item # 1.**

Meeting Date: 04/16/2014

Submitted By: Catherine Hendrix, Police Department

Information

Subject

Letters of Appreciation for Oro Valley Police Department

Attachments

Letters of Appreciation

Thank you card

Vistoso Village Homeowners Association
13401 N. Rancho Vistoso Blvd.
Oro Valley, AZ 85755
Fax/Phone: (520) 219-2310

March 17, 2014

Sergeant Amy Graham
Oro Valley Police Department
Crime Prevention Unit, Suite 115
1171 E. Rancho Vistoso Boulevard
Oro Valley, AZ 85755

Dear Sergeant Graham:

On behalf of the Vistoso Village Community and our Neighborhood Watch Program Chaired by Gus Di Biasi, I wish to thank Officer Vivian Lopez for the excellent presentation to bring us up-to-date on current consumer scams, red flags and protection tips at our Annual Meeting last Tuesday, March 11, 2014.

Because of your department's continued support to Gus and his Neighborhood Watch Program, we have had one of the most effective operations of its kind in Oro Valley for the last seven years. With this, and the many services you offer to our Seniors, you have allowed them to live independently with peace of mind knowing you are there when the need arises.

We are ever so grateful to you and your Crime Prevention Unit for all the good deeds you bestow on communities throughout Oro Valley. We look forward to your return at our next annual meeting.

Sincerely,

David W. Cunningham, President
Vistoso Village Homeowners Association

cc: Chief of Police Daniel Sharp
Oro Valley Police Department

Received by
MAR 2 8 2014
Oro Valley Police Dept.

AMPHITHEATER
Public Schools

Copper Creek
Elementary School
Diana Walker, Principal

701 W. Wetmore Road • Tucson, AZ 85705 • (520) 696-5000 • TDD (520) 696-5055

GOVERNING BOARD MEMBERS

Susan Zibrat, President
Deanna M. Day, M.Ed., Vice President
Kent Paul Barrabee, Ph.D.
Julie Cozad, M.Ed.
Jo Grant

SUPERINTENDENT
Patrick Nelson

March 11, 2014

Danny Sharp, Chief
Oro Valley Police Department
11000 N. LaCanada Blvd.
Oro Valley, AZ 85737

Dear Chief Sharp,

On behalf of the students and staff at Copper Creek Elementary School, I would like to thank you for the wonderful backpacks you provided to our school. Thanks to you and the entire police department, each classroom will have a backpack full of supplies to be used in case of an emergency at Copper Creek.

When classrooms are evacuated for any reason, the teacher will grab the backpack to take with them. Each backpack contains both emergency items as well as comfort items. Our goal to provide teachers with the necessary tools to help them keep students safe and cared for in the event of an emergency. These backpacks provide tremendous peace of mind.

Thank you, again, for your generosity and for your continued efforts to support our schools and our families.

Sincerely,

Diana Walker

Diana Walker
Principal
Copper Creek Elementary

cc: Mr. Patrick Nelson, Superintendent
Mrs. Monica Nelson, Associate Superintendent

Received by

Oro Valley Police Dept.

If you or your group would like to share a picture holding this card, you can reach us at NATCA438AEW@gmail.com or on Twitter @NATCA_438 Hashtag: *#ReverseGratitude*

operationwritehome
susan D. & friends

To Oro Valley's Finest

Received by

APR 01 2014

Oro Valley Police Dept.

We in the military get a lot of attention and thanks for protecting freedom and security for people back home, especially when we are deployed. But at the same time, it's the police and firefighters who protect our families while we are over here. So I just wanted to take the time, as someone whose entire family lives in the Oro Valley / Tucson area, to say thank you for putting your lives on the line every day to keep the people I care about safe.

Thank you & God Bless

Blake Will

Major, USAF

438 AEW

Kabul, Afghanistan

Town Council Regular Session **Item # A.**

Meeting Date: 04/16/2014

Requested by: Julie Bower **Submitted By:** Mike Standish, Town Clerk's Office

Department: Town Clerk's Office

Information

SUBJECT:

Minutes - April 2, 2014

RECOMMENDATION:

Staff recommends approval.

EXECUTIVE SUMMARY:

N/A

BACKGROUND OR DETAILED INFORMATION:

N/A

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

I MOVE to (approve, approve with the following changes) the April 2, 2014 minutes.

Attachments

4/2/14 Draft Minutes

MINUTES
ORO VALLEY TOWN COUNCIL
REGULAR SESSION
April 2, 2014
ORO VALLEY COUNCIL CHAMBERS
11000 N. LA CANADA DRIVE

REGULAR SESSION AT OR AFTER 5:00 PM

CALL TO ORDER

Mayor Hiremath called the meeting to order at 5:00 p.m.

ROLL CALL

PRESENT:
Satish Hiremath, Mayor
Lou Waters, Vice Mayor
Brendan Burns, Councilmember
Bill Garner, Councilmember
Joe Hornat, Councilmember
Mary Snider, Councilmember
Mike Zinkin, Councilmember

EXECUTIVE SESSION

MOTION: A motion was made by Councilmember Zinkin and seconded by Vice Mayor Waters to go into Executive Session at 5:00 p.m. pursuant to ARS 38-431.03(A)(1) and (A)(3) for discussion or consideration of appointment of an elected official and for discussion or consultation with the Town Attorney for legal advice regarding same and regarding potential liabilities of the Town for private acts of public officers

MOTION carried, 7-0.

Mayor Hiremath stated that the following staff members would join Council in Executive Session: Town Manager Greg Caton, Town Attorney Kelly Schwab and Town Clerk Julie Bower.

REGULAR SESSION AT OR AFTER 6:00 PM

CALL TO ORDER

Mayor Hiremath called the meeting to order at 6:00 p.m.

ROLL CALL

DRAFT

PRESENT: Satish Hiremath, Mayor
Lou Waters, Vice Mayor
Brendan Burns, Councilmember
Bill Garner, Councilmember
Joe Hornat, Councilmember
Mary Snider, Councilmember
Mike Zinkin, Councilmember

PLEDGE OF ALLEGIANCE

Mayor Hiremath led the audience in the Pledge of Allegiance.

UPCOMING MEETING ANNOUNCEMENTS

Communications Administrator Misti Nowak announced the upcoming Town meetings and events.

COUNCIL REPORTS

Councilmember Hornat recognized Mr. Bill Adler for the production of the documentary film, “Determining Our Destiny: Oro Valley’s Heritage” which is available for viewing on the Town's website.

Councilmember Hornat attended the Coronado Little League where Mayor Hiremath threw out the first pitch.

Councilmember Hornat attended the SAHBA Home Show where he promoted awareness for the outreach group "Mission Strong".

Councilmember Zinkin attended the National League of Cities held in Washington DC.

Vice Mayor Waters spoke about the Town’s School Resource Officer (SRO) program and clarified misinformation about the program.

DEPARTMENT REPORTS

Town Clerk Julie Bower announced that new artwork was on display in the Council Chambers by artist Robert Ashbough.

Town Manager Greg Caton gave an overview of the National Synchronized Swimming Championship that would be held at the Oro Valley Aquatic Center April 8-12, 2014

ORDER OF BUSINESS

Mayor Hiremath stated that the agenda would stand as posted.

DRAFT

INFORMATIONAL ITEMS

1. Letters of Appreciation - William Vicens

2. Councilmember Zinkin NLC Congressional City Conference Trip Report

CALL TO AUDIENCE

Oro Valley resident Bill Adler spoke about "view shed analysis" as it related to the Town's Zoning Code.

Councilmember Zinkin requested that staff look into the phrase "view shed analysis" as stated in the Zoning Code.

Oro Valley resident and President of the Greater Oro Valley Chamber of Commerce Dave Perry, spoke about "Mission Strong" and the Southern Arizona Defense Alliance. Mr. Perry spoke about the Public Policy Meeting held on April 3, 2014 and the Greater Oro Valley Chamber of Commerce Luncheon to be held on April 10, 2014.

CONSENT AGENDA

Councilmember Zinkin requested that item (B) be removed from the Consent Agenda for discussion.

A. Minutes - March 5, 2014

C. Resolution No. (R)14-16, approving an amendment to the general consultant contract for Town Attorney services

MOTION: A motion was made by Councilmember Snider and seconded by Vice Mayor Waters to approve Consent Agenda items (A) and (C).

MOTION carried, 7-0.

B. Fiscal Year 2013/14 Financial Update through January 2014

Councilmember Zinkin requested clarification on Bed Tax Revenues, Expenditures and the General Fund Contingency Reserves.

Finance Director Stacey Lemos gave clarification regarding Bed Tax Revenue, Expenditures and the General Fund Contingency Reserves.

Town Manager Greg Caton gave further clarification on Bed Tax Revenues and Expenditures.

DRAFT

MOTION: A motion was made by Councilmember Zinkin and seconded by Councilmember Hornat to accept the Fiscal Year 2013/14 Financial Update through January 2014.

MOTION carried, 7-0.

REGULAR AGENDA

1. AMENDMENT TO THE ORO VALLEY TOWN CODE, CHAPTER 13, DEVELOPMENT IMPACT FEES

a. RESOLUTION NO. (R)14-17, DECLARING THE PROPOSED AMENDMENT TO THE ORO VALLEY TOWN CODE CHAPTER 13, DEVELOPMENT IMPACT FEES, AS EXHIBIT "A" AND FILED WITH THE TOWN CLERK, A PUBLIC RECORD

MOTION: A motion was made by Vice Mayor Waters and seconded by Councilmember Snider to adopt Resolution No. (R)14-17, declaring the proposed amendment to the Oro Valley Town Code Chapter 13, Development Impact Fees, attached hereto as Exhibit "A" and filed with the Town Clerk, a public record.

MOTION carried, 7-0.

b. PUBLIC HEARING: ORDINANCE NO. (O)14-04, AMENDING THE ORO VALLEY TOWN CODE CHAPTER 13, DEVELOPMENT IMPACT FEES, BY REPEALING CHAPTER 13 IN ITS ENTIRETY AND REPLACING IT WITH A NEW CHAPTER 13 AS PROVIDED IN EXHIBIT "A"

Finance Director Stacey Lemos gave an overview of the Town's Water Utility Impact Fees and discussed the following:

-Approval Process - Schedule
-Proposed Impact Fee Schedule
-Historical Comparison of Combined Fees
-Town Code Changes Chapter 13 - Development Fees

Mayor Hiremath opened the public hearing.

No comments were received.

Mayor Hiremath closed the public hearing.

MOTION: A motion was made by Vice Mayor Waters and seconded by Councilmember Hornat to approve Ordinance No. (O)14-04, amending the Oro Valley Town Code Chapter 13, Development Impact Fees by repealing Chapter 13 in its entirety and replacing it with a new Chapter 13 as provided in Exhibit "A," and repealing all resolutions, ordinances and rules of the Town of Oro Valley in conflict therewith.

DRAFT

MOTION carried, 7-0.

2. AMENDMENT TO THE ORO VALLEY TOWN CODE, CHAPTER 15, ARTICLE 17, WATER RATES, FEES AND CHARGES

a. RESOLUTION NO. (R)14-18, DECLARING THE PROPOSED AMENDMENT TO THE ORO VALLEY TOWN CODE CHAPTER 15, ARTICLE 17, WATER RATES, FEES AND CHARGES, AS EXHIBIT "A" AND FILED WITH THE TOWN CLERK, A PUBLIC RECORD

MOTION: A motion was made by Councilmember Snider and seconded by Vice Mayor Waters to approve Resolution No. (R)14-18, declaring the proposed amendment to the Oro Valley Town Code Chapter 15, Article 17, Water Rates, Fees and Charges, attached herto as Exhibit "A" and filed with the Town Clerk, a public record.

MOTION carried, 7-0.

b. PUBLIC HEARING: ORDINANCE NO. (O)14-05, AMENDING THE ORO VALLEY TOWN CODE CHAPTER 15 ARTICLE 17, WATER RATES, FEES AND CHARGES TO COMPLY WITH NEW CHANGES MADE TO CHAPTER 13, DEVELOPMENT IMPACT FEES

Water Utility Director Philip Saletta gave an overview of the proposed Water Rates, Fees and Charges that included the following:

-Water Utility Impact Fees
-Comparison of Combined Fees Portable and Alternative Water
-Water Code Changes Chapter 15 Article 17 of Town Code
-Water Utility Impact Fees

Mayor Hiremath opened the public hearing.

The following individual spoke on item #2b.

Oro Valley resident Bill Adler

Mayor Hiremath closed the public hearing.

Discussion ensued amongst Council and Mr. Saletta regarding water conservation.

MOTION: A motion was made by Councilmember Snider and seconded by Councilmember Hornat to approve Ordinance No. (O)14-05 as presented.

MOTION carried, 7-0.

DRAFT

3. PUBLIC HEARING: ORDINANCE NO. (O)14-06, AMENDING SECTIONS 15-5-2 AND 15-5-3 OF CHAPTER 15, WATER CODE, OF THE ORO VALLEY TOWN CODE

Water Utility Director Philip Saletta gave an overview of the proposed Water Utility Refund of Deposits and Water Code changes and discussed the following:
-Water Utility Refund of Account Deposits
-Water Utility Retention of Account Deposits - Why is this needed?
-Water Code Changes Retention of Account Deposits

Mayor Hiremath opened the public hearing.

No comments were received.

Mayor Hiremath closed the public hearing.

Discussion ensued amongst Council and staff regarding Water Utility Refund of Deposits.

MOTION: A motion was made by Vice Mayor Waters and seconded by Councilmember Snider to adopt Ordinance No. (O)14-06.

MOTION carried, 7-0.

4. PUBLIC HEARING: ORDINANCE NO. (O)14-07, REZONING THE 45 ACRE KAI NARANJA PROPERTY FROM R1-144 TO R1-7, LOCATED IMMEDIATELY EAST OF IRONWOOD RIDGE HIGH SCHOOL ON THE SOUTH SIDE OF NARANJA DRIVE

Senior Planner Michael Spaeth gave an overview of the proposed Kai Naranja property and discussed the following:

-Location
-Vicinity
-General Plan Designation
-Existing Zoning
-Applicant's Request
-Proposed Zoning
-Neighborhood Meeting/Public Input
-Review Criteria
-Summary & Recommendation
-Applicant Representative
-Conditions of Approval
-Tentative Development Plan
-ESL Designations
-Proposed Development

Applicant Paul Oland, representative for WLB, gave an overview of the proposed Kai Naranja Property.

Discussion ensued amongst Council, Mr. Oland and staff regarding the proposed Kai Naranja Property.

DRAFT

Mayor Hiremath opened the public hearing.

No comments were received.

Mayor Hiremath closed the public hearing.

MOTION: A motion was made by Councilmember Hornat and seconded by Vice Mayor Waters to approve Ordinance No. (O)14-07, rezoning the Kai Naranja property totaling 45 acres from R1-144 to R1-7, subject to the conditions in Attachment 2, finding that the request is consistent with the General Plan.

Attachment 2
Conditions of Approval

1. An amended Tentative Development Plan in conformance with the Environmentally Sensitive Lands Open Space Requirements will be required prior to Conceptual Site Plan Submittal.

2. All improvements requiring ground disturbance shall be contained within development envelopes.

MOTION carried, 7-0.

5. CONSIDERATION AND ACCEPTANCE OF THE ORO VALLEY WATER UTILITY COMMISSION ANNUAL REPORT DATED APRIL 2014

Water Utility Director Philip Saletta gave an overview of the Oro Valley Water Utility Commission Annual Report.

Discussion ensued amongst Council and Mr. Saletta regarding the Water Utility Commission Annual Report.

MOTION: A motion was made by Councilmember Snider and seconded by Councilmember Hornat to accept the Water Utility Commission Annual Report dated April 2014.

MOTION carried, 6-1 with Councilmember Burns opposed.

6. PUBLIC HEARING: LOCAL ALTERNATIVE EXPENDITURE LIMITATION ELECTION (HOME RULE OPTION)

Finance Director Stacey Lemos gave on overview of the Local Alternative Expenditure Limitation Election (Home Rule Option) that included the following:

-Expenditure Limitation History
-What is the State-Imposed Limitation?

DRAFT

-Exclusions to the Limitation
-A little bit of number crunching...
-How do we compare?
-Consequences of State-Imposed Limitation
-Alternative Expenditure Limitation "Home Rule" Option
-Home Rule, what it does...
-Home Rule, what it does not do...
-Some Facts...
-Primary Election Timeline August 26, 2014

Mayor Hiremath opened the public hearing.

No comments were received.

Mayor Hiremath closed the public hearing.

7. RESOLUTION NO. (R)14-19, TO CONSIDER IN WHOLE OR IN PART THESE ITEMS, REPEALING AND REPLACING PERSONNEL POLICIES 2, DEFINITIONS OF TERMS; 9, PROBATIONARY PERIODS; 10, ATTENDANCE AND LEAVES; 11, DISCIPLINE; 16, NEPOTISM; 23, DRUG FREE WORKPLACE; 26, COMPUTER USAGE; E-MAIL USE, RETENTION, & STORAGE; AND INTERNET POLICY; AND, 29, CONFLICT OF INTEREST

Town Manager Greg Caton gave a brief overview of the proposed Personnel Policies and Procedures.

MOTION: A motion was made by Councilmember Hornat and seconded by Councilmember Garner to approve Resolution No. (R)14-19, repealing and replacing Personnel Policies, 2, 9, 11, 16, 23, 26, and 29, and excluding #10.

MOTION carried, 7-0.

The following individual spoke on item #7:

Oro Valley resident and President of the Oro Valley Police Officer's Association, Marshall Morris

Discussion ensued amongst Council and staff regarding Policy 10, Attendance and Leaves.

MOTION: A motion was made by Councilmember Garner and seconded by Councilmember Zinkin to adopt Personnel Policy #10, Option #3, changing the policy so that vacation would be used in the calculation of overtime but no other leave type would be used.

DRAFT

MOTION failed, 3-4 with Mayor Hiremath, Vice Mayor Waters, Councilmember Hornat, and Councilmember Snider opposed.

MOTION: A motion was made by Councilmember Hornat and seconded by Councilmember Snider to approve Policy #10, Option #1, as presented.

MOTION carried, 4-3 with Councilmember Burns, Councilmember Garner, and Councilmember Zinkin opposed.

8. PRESENTATION OF TOWN MANAGER'S RECOMMENDED BUDGET FOR FISCAL YEAR 2014/15

Town Manager Greg Caton gave an overview of the Town Manager's Recommended Budget for Fiscal Year 2014/15 which included the following:

-FY 2014/15 Budget Timeline
-General Fund - Then Five-Year Forecast
-General Fund - Now Five-Year Forecast
-Fiscal Responsibility Major Initiatives and Accomplishments
-"Vertical" Strategic Savings
-FY 2014/15 Budget Core Themes

Finance Director Stacey Lemos gave an overview of the Fiscal Year 2014/15 Budget Core Themes that included the following:

-Investment in Town employees
-Investment in Town assets and technology
-Delivery of community services
-New initiatives

Ms. Lemos gave an overview of the Fiscal Year 2014-15 Recommended Budget by Category that included the following:

-FY 2014/15 Budget Revenue Projections
-FY 2014/15 Budget Capital Improvement Program (CIP)
-Awards and Accolades

No action was taken on item #8.

FUTURE AGENDA ITEMS

No future agenda items were requested.

CALL TO AUDIENCE

No comments were received.

DRAFT

ADJOURNMENT

MOTION: A motion was made by Vice Mayor Waters and seconded by Councilmember Snider to adjourn the meeting at 9:23 p.m.

MOTION carried, 7-0.

Prepared by:

_____
Michelle Stine,
Senior Office Specialist

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the regular session of the Town of Oro Valley Council of Oro Valley, Arizona held on the 2nd day of April 2014. I further certify that the meeting was duly called and held and that a quorum was present.

Dated this _____ day of _____, 2014.

_____
Julie K. Bower, MMC
Town Clerk

DRAFT

Town Council Regular Session **Item # B.**

Meeting Date: 04/16/2014

Requested by: Stacey Lemos **Submitted By:** Wendy Gomez, Finance

Department: Finance

Information

SUBJECT:

Fiscal Year 2013/14 Financial Update through February 2014

RECOMMENDATION:

This item is for information only.

EXECUTIVE SUMMARY:

In the General Fund (see attachment A), revenues collected through February totaled $19.4 million or 68.5% of the budget amount of $28.4 million. Year-to-date expenditures through February totaled $19.0 million or 63.3% of the budget amount of $29.9 million.

In the Highway Fund (see attachment B), revenues collected through February totaled $2,757,708 or 72.4% of the budget amount of $3.8 million. Year-to-date expenditures through February totaled $1,844,639 or 49.6% of the budget amount of $3.7 million.

In the Bed Tax Fund (see attachment C), revenues collected through February totaled $507,674 or 64.0% of the budget amount of $793,000. Year-to-date expenditures through February totaled $861,862 or 66.7% of the budget amount of $1,292,000.

BACKGROUND OR DETAILED INFORMATION:

GENERAL FUND

Attachment A shows General Fund revenues and expenditures through February, as well as year-end estimates for each category. The estimated year-end projections in the General Fund are as follows:

Revenues	$29,355,710
Less:	
Expenditures	($29,749,093) (A)
Less:	
Approved Use of Contingency Reserves	($ 2,100,000) **
Est. Decrease in Fund Balance	($ 2,493,383)

(A) Includes Council-approved Naranja Park improvements of $1.6 million from the General Fund

** Council-approved payment to Tucson Electric Power for undergrounding of utility lines

General Fund Revenues

- Local sales tax collections in the General Fund total $9.0 million or 68.2% of the budget amount of $13.1 million. Sales tax collections in the General Fund are estimated to come in over budget by approximately $571,000 or 4.4%, due to higher than anticipated construction activity and retail collections across several business activities and industry groups.
- License and Permit revenues are estimated to come in over budget by approximately $454,000 or 30.4%, due to higher than anticipated residential and commercial building permit fees, as well as grading permit fees.
- Charges for Services revenues are estimated to come in over budget by approximately $161,000 or 11.2%, due primarily to zoning & subdivision fees, Aquatic Center revenue, and grading review fees.
- Interest Income revenue is estimated to come in over budget by $37,725 or 60.6%, based on observed actuals through February.

Staff will continue to monitor revenue collections and may adjust the year-end estimates based on actual trends.

General Fund Expenditures

- Expenditures are estimated to come in under budget by $199,149 or 0.7%. This is due primarily to budgeted grant capacity that will not be utilized, as well as department operations & maintenance savings. Note that these figures are estimates and are subject to change.
- The General Fund expenditures reflect the Council-approved authorization to use $1,403,000 in General Fund contingency reserves and $197,000 in Council-designated reserves to fund the Naranja Park improvements. This total amount of $1.6 million is included as a transfer out to the Naranja Park Fund in the Expenditures section of Attachment A.

HIGHWAY FUND

Highway Fund Revenues

- Construction tax revenues in the Highway Fund total $916,783 or 85.1% of the budget amount of $1.1 million. Construction tax revenues in the Highway Fund are estimated to come in over budget by $141,623 or 13.1%, due to higher than anticipated construction activity.
- State shared highway user funds total $1,680,702 or 67.2% of the budget amount of $2.5 million and are expected to come in on budget at year-end.

Highway Fund Expenditures

- Expenditures are estimated to come in under budget by $75,891 or 2.0%, due to projected vacancy savings. Note that these savings are estimates and are subject to change.

BED TAX FUND

Bed Tax Revenues

- Bed tax revenues total $501,706 or 63.6% of the budget amount of $789,000 and are expected to come in over budget by $78,898, or 10.0%, based on observed collections through February.

Bed Tax Fund Expenditures

- Expenditures are estimated to come in under budget by $7,356 or 0.6%, due to projected vacancy savings. Note that these savings are estimates and are subject to change.
- The Bed Tax Fund expenditures reflect the Council-authorized use of Bed Tax Fund contingency

reserves of $400,000 to fund the Naranja Park improvements. This amount is included as a transfer out to the Naranja Park Fund in the Expenditures section of Attachment C.

Please see Attachments A, B, and C for additional details on the General Fund, Highway Fund and Bed Tax Fund. See Attachment D for a fiscal year-to-date consolidated summary of all Town Funds.

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

This item is for information only.

Attachments

Attachment A - Gen Fund

Attachment B - HW Fund

Attachment C - Bed Tax Fund

Attachment D - Summary All Funds

ATTACHMENT A

February YTD Financial Status

FY 2013/2014

General Fund

% Budget Completion through February --- 66.7%

	Actuals thru 2/2014	Budget	% Actuals to Budget	Year End Estimate *	YE % Variance to Budget
REVENUES:					
LOCAL SALES TAX	8,955,868	13,123,382	68.2%	13,694,864	4.4%
LICENSES & PERMITS	1,498,679	1,493,455	100.3%	1,947,000	30.4%
FEDERAL GRANTS	431,540	576,490	74.9%	592,689	2.8%
STATE GRANTS	738,462	1,509,700	48.9%	1,226,590	-18.8%
STATE/COUNTY SHARED	6,431,936	9,659,167	66.6%	9,659,167	0.0%
OTHER INTERGOVERNMENTAL	17,492	30,000	58.3%	25,000	-16.7%
CHARGES FOR SERVICES	1,087,311	1,443,437	75.3%	1,604,400	11.2%
FINES	118,102	190,000	62.2%	180,000	-5.3%
INTEREST INCOME	88,055	62,275	141.4%	100,000	60.6%
MISCELLANEOUS	80,264	114,000	70.4%	141,000	23.7%
TRANSFERS IN	-	185,000	0.0%	185,000	0.0%
TOTAL REVENUES	**19,447,707**	**28,386,906**	**68.5%**	**29,355,710**	**3.4%**

	Actuals thru 2/2014	Budget	% Actuals to Budget	Year End Estimate *	YE % Variance to Budget
EXPENDITURES:					
COUNCIL	153,619	225,853	68.0%	225,853	0.0%
CLERK	210,508	345,118	61.0%	345,118	0.0%
MANAGER	418,517	700,989	59.7%	691,219	-1.4%
HUMAN RESOURCES	320,619	523,821	61.2%	471,207	-10.0%
FINANCE	409,313	709,242	57.7%	694,820	-2.0%
INFORMATION TECHNOLOGY	802,938	1,482,173	54.2%	1,482,173	0.0%
GENERAL ADMINISTRATION	1,082,243	1,840,730	58.8%	1,840,730	0.0%
LEGAL	407,185	804,344	50.6%	729,344	-9.3%
COURT	469,462	761,430	61.7%	756,968	-0.6%
DEV & INFRASTRUCTURE SVCS	2,432,728	4,031,561	60.3%	4,028,934	-0.1%
PARKS & RECREATION	1,641,881	2,536,955	64.7%	2,536,955	0.0%
POLICE	8,854,840	14,223,297	62.3%	14,183,043	-0.3%
TRANSFERS OUT (A)	1,760,729	1,762,729	99.9%	1,762,729	0.0%
TOTAL EXPENDITURES	**18,964,584**	**29,948,242**	**63.3%**	**29,749,093**	**-0.7%**
SURPLUS / (DEFICIT)	**483,123**	**(1,561,336)**		**(393,383)**	

BEGINNING FUND BALANCE	***13,137,105***
Plus: Surplus / (Deficit)	***(393,383)***
Less: Approved Use of Contingency Reserves during FY 13/14	
TEP undergrounding	***(2,100,000)***
ENDING FUND BALANCE **	***10,643,722***

(A) Includes Council-approved Naranja Park improvements of $1.6 million from the General Fund

* Year-end estimates are subject to further revision

** Ending fund balance amounts are estimates and are subject to further revision

ATTACHMENT B

February YTD Financial Status *FY 2013/2014*

Highway Fund

% Budget Completion through February --- 66.7%

	Actuals thru 2/2014	Budget	% Actuals to Budget	Year End Estimate *	YE % Variance to Budget
REVENUES:					
LOCAL SALES TAX	916,783	1,077,197	85.1%	1,218,820	13.1%
LICENSES & PERMITS	29,887	48,000	62.3%	42,000	-12.5%
STATE GRANTS	-	35,000	0.0%	35,000	0.0%
STATE/COUNTY SHARED	1,680,702	2,500,000	67.2%	2,500,000	0.0%
CHARGES FOR SERVICES	86,328	129,493	66.7%	129,493	0.0%
INTEREST INCOME	25,743	7,000	367.8%	27,000	285.7%
MISCELLANEOUS	18,265	10,000	182.6%	20,930	109.3%
TRANSFERS IN	-	-	0.0%	-	0.0%
TOTAL REVENUES	**2,757,708**	**3,806,690**	**72.4%**	**3,973,243**	**4.4%**

	Actuals thru 2/2014	Budget	% Actuals to Budget	Year End Estimate *	YE % Variance to Budget
EXPENDITURES:					
ADMINISTRATION	383,644	657,860	58.3%	574,037	-12.7%
TRANSPORTATION ENGINEERING	489,584	1,547,739	31.6%	1,547,739	0.0%
PAVEMENT MANAGEMENT	51,996	111,022	46.8%	111,022	0.0%
STREET MAINTENANCE	601,256	888,033	67.7%	892,297	0.5%
TRAFFIC ENGINEERING	318,159	516,327	61.6%	519,995	0.7%
TRANSFERS OUT	-	-	0.0%	-	0.0%
TOTAL EXPENDITURES	**1,844,639**	**3,720,981**	**49.6%**	**3,645,090**	**-2.0%**
SURPLUS / (DEFICIT)	**913,069**	**85,709**		**328,153**	

BEGINNING FUND BALANCE	***3,517,765***
Plus: Surplus / (Deficit)	***328,153***
ENDING FUND BALANCE **	***3,845,918***

* Year-end estimates are subject to further revision

** Ending fund balance amounts are estimates and are subject to further revision

ATTACHMENT C

February YTD Financial Status *FY 2013/2014*

Bed Tax Fund

% Budget Completion through February --- 66.7%

	Actuals thru 2/2014	Budget	% Actuals to Budget	Year End Estimate *	YE % Variance to Budget
REVENUES:					
BED TAXES	501,706	789,000	63.6%	867,898	10.0%
INTEREST INCOME	5,968	3,975	150.1%	8,000	101.3%
TOTAL REVENUES	**507,674**	**792,975**	**64.0%**	**875,898**	**10.5%**

	Actuals thru 2/2014	Budget	% Actuals to Budget	Year End Estimate *	YE % Variance to Budget
EXPENDITURES:					
ECONOMIC DEVELOPMENT	256,193	501,762	51.1%	494,406	-1.5%
TRANSFERS OUT **(A)**	605,669	790,669	76.6%	790,669	0.0%
TOTAL EXPENDITURES	**861,862**	**1,292,431**	**66.7%**	**1,285,075**	**-0.6%**
SURPLUS / (DEFICIT)	**(354,188)**	**(499,456)**		**(409,177)**	

BEGINNING FUND BALANCE	***649,053***
Plus: Surplus / (Deficit)	***(409,177)***
ENDING FUND BALANCE **	***239,876***

(A) Includes Council-approved Naranja Park improvements of $400,000 from the Bed Tax Fund

* Year-end estimates are subject to further revision

** Ending fund balance amounts are estimates and are subject to further revision

CONSOLIDATED YEAR-TO-DATE FINANCIAL REPORT THROUGH FEBRUARY, 2014

ATTACHMENT D

Fund	FY 13/14 Begin Bal.	Revenue	Other Fin Sources/Tfrs	Total In	Capital Leases/ Transfer Out	Personnel	O&M	Capital	Contingency	Debt Service	Total Out	Left in Accounts Thru Feb 2014
General Fund - Unassigned	11,529,070	19,447,707	-	19,447,707	1,762,690	12,754,431	4,122,605	324,858	-	-	18,964,584	12,012,193
General Fund - Assigned	1,608,035											1,608,035
Highway Fund - Restricted	3,517,765	2,757,708	-	2,757,708	-	1,067,962	514,226	262,452	-	-	1,844,639	4,430,834
Seizure & Forfeiture - State	494,837	33,701	-	33,701	-	-	19,619	30,543	-	-	50,162	478,376
Seizure & Forfeiture - Justice	519,653	316,777	-	316,777	-	45,272	6,720	197,327	-	-	249,319	587,111
Bed Tax Fund - Committed	649,053	507,674	-	507,674	605,669	120,929	135,264	-	-	-	861,862	294,865
Impound Fee Fund	-	19,200	-	19,200	-	15,770	-	-	-	-	15,770	3,430
Municipal Debt Service Fund	774,914	103,480	369,576	473,056	-	-	3,900	-	-	826,641	830,541	417,430
Oracle Road Debt Service Fund	149	1,489,517	-	1,489,517	-	-	1,800	-	-	1,435,664	1,437,464	52,203
Alternative Water Resources Dev Impact Fee Fund	3,402,954	2,812,444	-	2,812,444	400,000	-	168,044	132,491	-	224,404	924,939	5,290,460
Potable Water System Dev Impact Fee Fund	3,544,937	774,929	-	774,929	-	-	-	-	-	50,522	50,522	4,269,344
Townwide Roadway Development Impact Fee Fund	1,461,437	1,466,009	-	1,466,009	-	-	9,433	1,200,511	-	-	1,209,945	1,717,502
Parks & Recreation Impact Fee Fund	182,110	94,477	-	94,477	-	-	9,433	-	-	-	9,433	267,154
Library Impact Fee Fund	114,798	-	-	-	-	-	-	-	-	-	-	114,798
Police Impact Fee Fund	99,478	54,155	-	54,155	-	-	9,559	-	-	-	9,559	144,073
General Government Impact Fee Fund	1,288	2,213	-	2,213	-	-	-	-	-	-	-	3,501
Naranja Park Fund	8,821	-	2,000,000	2,000,000	-	-	-	17,581	-	-	17,581	1,991,240
Aquatic Center Project Fund	66,638	-	-	-	-	-	-	1,768	-	-	1,768	64,870
Water Utility	9,783,839	8,022,603	400,000	8,422,603	3,178	1,700,740	3,156,499	378,508	-	530,746	5,769,670	12,436,772
Stormwater Utility	490,794	435,731	-	435,731	3,799	194,763	208,153	17,704	-	-	424,419	502,106
Fleet Fund	-	936,488	-	936,488	-	49,186	408,154	424,944	-	-	882,284	54,204
Benefit Self Insurance Fund	567,402	1,417,214	-	1,417,214	-	-	1,342,257	-	-	-	1,342,257	642,359
Recreation In-Lieu Fee Fund	6,190	-	-	-	-	-	-	-	-	-	-	6,190
					-				-	-		
Total	**38,824,161**	**40,692,029**	**2,769,576**	**43,461,605**	**2,775,335**	**15,949,054**	**10,115,665**	**2,988,686**	**-**	**3,067,976**	**34,896,716**	**47,389,049**

Town Council Regular Session **Item # C.**

Meeting Date: 04/16/2014
Submitted By: Julie Bower, Town Clerk's Office
Department: Town Clerk's Office

Information

SUBJECT:
Appointments to the Conceptual Design Review Board (CDRB)

RECOMMENDATION:
The selection committee for the CDRB recommends the following appointments:

Sarah Chen for a term expiring December 31, 2015
Jacob Herrington for a term expiring December 31, 2016

EXECUTIVE SUMMARY:
Interviews of applicants were conducted by the selection committee. Members of the selection committee included the Council liaison, the staff liaison and the CDRB chair. The applications are attached.

BACKGROUND OR DETAILED INFORMATION:
The seven-member Conceptual Design Review Committee makes recommendations to the Town Council on conceptual designs for new development including conceptual site plans, conceptual architecture and conceptual public art proposals. The CDRB also makes decisions on certain applications and requests including permanent sign criteria (for new multi-building developments), and Tier II Wireless Communication Facilities.

FISCAL IMPACT:
N/A

SUGGESTED MOTION:
I MOVE to (approve or deny) the following appointments to the Conceptual Design Review Board:

Sarah Chen for a term expiring December 31, 2015
Jacob Herrington for a term expiring December 31, 2016

Attachments

Application - Sarah Chen
Application - Jacob Herrington

ORO VALLEY VOLUNTEER APPOINTMENT APPLICATION
CONCEPTUAL DESIGN REVIEW BOARD

DEC 17 13 AM 11:31 TOV
DEC 17 13 AM 11:31 TOV

Dear Oro Valley Citizen:

We appreciate your interest in the Town of Oro Valley. This informational form, when completed, will allow us to quickly process your application by assisting us in understanding your talents and experience. This application form is only for citizens interested in serving on the **Conceptual Design Review Board (CDRB)**. The CDRB conducts public meetings to review conceptual site design, architecture and public art, as well as permanent sign applications that vary from adopted codes.

There are seven (7) voting members on the CDRB. Three (3) members are at-large and four (4) members must practice (current or previous) in the field of art, architecture, planning, engineering, development, construction, or otherwise qualified by a similar design background, training and experience. Information reflecting the procedures surrounding the appointment process to Boards is also attached. If appointed, your term on the CDRB will be for three (3) years. Your application will remain on file for two years from the date of receipt. We thank you kindly for volunteering to serve the Town!

Please note: No volunteer shall serve on more than one standing Board at any time.

Return this application to the Town Clerk's Office, 11000 N. La Cañada Drive, Oro Valley, Arizona 85737.

Name: Chen (Last) Sarah (First) Hutt (Middle) _____ (Suffix)

Address: _____ (Street) Oro Valley (City) AZ (State) 85755 (Zip)

Home Phone _____ Business Phone _____ Cellular Phone _____

Number of Years in Oro Valley 1 Email Address _____

Signature [signature] Date 12/15/13

Listed below are fields of professional experience required for four (4) members of the CDRB. If you have relevant experience, please check all that apply and provide a generalized description of your professional design background. If you do not have the design related experience listed below, please continue to the following page.

Profession	Years of Experience	Description
☐ Art		
☐ Architecture		
☑ Planning		Studied elements of city planning at Masters Level
☐ Engineering		
☑ Development	2	Studied/participated in civic/private development capacities
☐ Construction		
☐ Other Design Background		

Please list your volunteer services in Oro Valley and with other organizations including any boards or commissions on which you have served: (board/commission, civic, educational, cultural, social, etc.)

We are a young family, active duty Air Force spouse new to Oro Valley. I have extensive involvement in these capacities at prior duty stations (see attached).

Please describe an issue or project you contributed to which related specifically to conceptual design?

Besides my education in public administration (undergraduate and graduate level), I have 8+ years of theater tech experience which included aspects of design.

Have you attended the Community Academy or CPI? No What Year? _____ If not, are you willing to attend? Of course

Briefly describe your educational/vocational background.

~~[illegible]~~ Please see attached resume.

IF DESIRED, ADDITIONAL INFORMATION MAY BE ATTACHED

www.orovalleyaz.gov

Oro Valley, AZ 85755

Conceptual Design Review Board (CDRB)
Town Clerk's Office
11000 La Canada Drive
Oro Valley, AZ 85755

To the Chairman of the Conceptual Design Review Board,

The purpose of this letter is to apply for one of two vacant positions on the Conceptual Design Review Board (CDRB) and to introduce myself. I believe I am the ideal candidate for this board because I offer a background in public policy and economic development, a young family perspective and a deep desire to serve the community from which I benefit so tremendously.

I am a new homeowner in Oro Valley. I relocated here in 2012 with my husband – an active duty pilot at Davis-Monthan Air Force Base – and our toddler. We added an infant born in the Tucson area this past spring. This is our seventh military move in seven years, and although we are new to Arizona, I truly feel that we've found our permanent home.

Community work is a passion of mine. I bring a Bachelor of Political Science and Chinese degree as well as a Master of Public Affairs to Oro Valley. I concentrated specifically in local governance while attending policy school. This concentration included a variety of intense training in economic development, emergency planning, financial management and city affairs. I acquired several city manager mentors in this capacity, and I worked for the City of Abilene, Texas. I am a member of the International City Managers Association and the American Society for Public Affairs. I am currently a freelance writer while I care for my young children.

I am the anchor of a very young family by Oro Valley standards. Our town attracts so many families with school-aged children due to the excellent reputation the Amphitheater school district, the raw beauty of our mountain ranges and desert and the essential feeling of security that a well-protected city provides. I offer a unique perspective of the young, working family which will sustain Oro Valley's reputation into the future, especially as we continue to compete with Marana, Vail and Catalina Foothills for the educated and affluent taxpayer base we require.

I bring my volunteer experience from previous duty stations with me to Arizona: United Way, several animal humane societies and Big Brothers Big Sisters. An example of my city-oriented community engagement is my participation in a twelve-week Leadership Rapid City course for young South Dakota leaders – similar to the Community Academy for Oro Valley. Our capstone project yielded a large-scale endeavor to bring "Movies Under The Stars" to our city in conjunction with the newly-designed downtown outdoor plaza.

Thank you for your consideration for participation in the CDRB. I look forward to future communication with the board. Thank you for all you have already done to make Oro Valley such a desirable, sustainable and beautiful city.

Sincerely,

Sarah H. Chen, MPAff

SARAH H. CHEN

Oro Valley AZ 85755

EDUCATION

M.A. Public Affairs
May 2010
LBJ School of Public Affairs
The University of Texas at Austin
Research Project: "An Assessment of Provincial Reconstruction Teams in Rural Afghanistan"

B.A. Political Science & Chinese
May 2006
Trinity University
San Antonio, TX
Honors: Cum Laude, 4-time Dean's List
Study Abroad: Beijing, China

Certificate of Paralegal Studies
November 2011
Boston University
Boston, Massachusetts
Focus: Legal writing and research, real estate, corporate law, litigation, probate and family law, and paralegal technology software.

SKILLS

- Professional Writing & Editing
- Quantitative & Financial Analysis
- Team Leadership
- Performance Management
- Cost-Benefit Analysis
- **Languages**: Proficient Mandarin Chinese, Elementary French, Spanish and Hebrew
- **Software**: Microsoft Office, Excel, Power Point, Access, ArcGIS, InDesign, SAS, STATA, LINDO, HAZUS, Westlaw, CaseMap, LiveNote, PACER

PROFESSIONAL EXPERIENCE

Data Analyst **2012-2013**
Advanced Pierre Foods via TPI Staffing Agency, Enid, OK
- Human Resources - Executed a series of human resources reports utilizing employee demographics and wage data
- Process Safety Management – Created and updated templates for standard operating procedures for machinery involving hazardous chemicals for the area's several facilities in preparation for state and federal inspections

University Advancement Specialist **2010-2011**
South Dakota School of Mines and Technology, Rapid City, SD
- Served as personal executive secretary to the Vice President of University Advancement and senior secretary of university advancement office including state budgeting and purchasing responsibilities.
- Managed events, provided legislative analysis, line edited university publications, provided copy and circulation services, published weekly university newsletter, coordinated social media, liaised with President's Office and greater community.

Graduate Research Intern **2009**
City of Abilene, Abilene, TX
- Executed special research projects and pilot program and conducted corresponding in-depth financial analysis of City.
- Provided professional research on economic development, tax policy, federal transit funding, and solid waste projections.

Policy Research Co-Director
LBJ School of Public Affairs, Austin, TX **2008-2009**
- Developed a comprehensive, accessible, verifiable database for Congressional Research Services experts to examine and analyze various aspects of the Provincial Reconstruction Teams (PRTs) in Afghanistan and funding levels.
- Published two databases and an extensive report on PRT composition, survey results, comprehensive annotated bibliography, and complete project list, "A Comprehensive Database of Provincial Reconstruction Teams in Afghanistan."

Account Relations Specialist **2007-2008**
Pensacola News Journal, Pensacola, FL
- Coordinated sale, publishing, and financial analysis of sales team real estate advertising revenue from online and print.
- Managed over 800 client accounts from individual to large corporate and national accounts.

International Agricultural Intern **2006-2007**
Foreign Agricultural Service (US Dept. of Agriculture), Taipei, Taiwan
- Published agricultural economic reports and marketing material pertaining to the promotion of US-Taiwan agricultural trade.
- Organized trade missions and delegations from the US, provided business matching services for interested US suppliers.

Researcher **2005**
- National Science Foundation China Summer, Central Washington University, WA / Shaanxi & Ningxia Provinces, China.
- ASIANetwork Freeman Student-Faculty Grant, Trinity University, TX / Seoul, South Korea

RELATED EXPERIENCE

Member, International City Managers Association
Member, American Society for Public Administration
Charter Member, National Language Service Corps
Recipient, Spirit of Lyndon B. Johnson Alumni Award
Producer, "Our Tears Still Flood the City" artistic benefit
Teacher, Yachad Jewish Community School
Tutor, elementary Hebrew language
Volunteer, Humane Society, Big Brother Big Sisters

MAR 4'14 PM 4:33 TOV

ORO VALLEY VOLUNTEER APPOINTMENT APPLICATION
CONCEPTUAL DESIGN REVIEW BOARD

Dear Oro Valley Citizen:

We appreciate your interest in the Town of Oro Valley. This informational form, when completed, will allow us to quickly process your application by assisting us in understanding your talents and experience. This application form is only for citizens interested in serving on the **Conceptual Design Review Board (CDRB)**. The CDRB conducts public meetings to review conceptual site design, architecture and public art, as well as permanent sign applications that vary from adopted codes.

There are seven (7) voting members on the CDRB. Three (3) members are at-large and four (4) members must practice (current or previous) in the field of art, architecture, planning, engineering, development, construction, or otherwise qualified by a similar design background, training and experience. Information reflecting the procedures surrounding the appointment process to Boards is also attached. If appointed, your term on the CDRB will be for three (3) years. Your application will remain on file for two years from the date of receipt. We thank you kindly for volunteering to serve the Town!

Please note: No volunteer shall serve on more than one standing Board at any time.

Return this application to the Town Clerk's Office, 11000 N. La Cañada Drive, Oro Valley, Arizona 85737.

Name Herrington Jr. Jacob L.
Last First Middle Suffix

Address ___ Oro Valley AZ 85737
Street City State Zip

Home Phone ___ Business Phone ___ Cellular Phone ___

Number of Years in Oro Valley 3 Email Address ___

Signature [signature] Date 3/3/14

Listed below are fields of professional experience required for four (4) members of the CDRB. If you have relevant experience, please check all that apply and provide a generalized description of your professional design background. If you do not have the design related experience listed below, please continue to the following page.

Profession	Years of Experience	Description
☐ Art		
☐ Architecture		
☐ Planning		
☐ Engineering		
☑ Development	3 1/2	Multi-Family Housing + Single Family Commercial
☑ Construction	4	Single Family Construction
☐ Other Design Background		

Please list your volunteer services in Oro Valley and with other organizations including any boards or commissions on which you have served: (board/commission, civic, educational, cultural, social, etc.)

Copper Creek Home owners Association - Vice president

St. James United Methodist church - Staff Parish Chairman

Arizona Multi-housing Association Membership Committee

Please describe an issue or project you contributed to which related specifically to conceptual design?

Have you attended the Community Academy or CPI? _____ What Year? _____ If not, are you willing to attend? yes

Briefly describe your educational/vocational background.

IF DESIRED, ADDITIONAL INFORMATION MAY BE ATTACHED

www.orovalleyaz.gov

Town Council Regular Session **Item # D.**

Meeting Date: 04/16/2014

Requested by: Julie Bower **Submitted By:** Julie Bower, Town Clerk's Office

Department: Town Clerk's Office

Information

SUBJECT:

Appointment to the Parks and Recreation Advisory Board (PRAB)

RECOMMENDATION:

The selection committee for the PRAB recommends the appointment of Sarah Corning for a term expiring December 31, 2014.

EXECUTIVE SUMMARY:

A vacancy occurred due to the resignation of Valerie Pullara. Interviews of applicants were conducted by the selection committee. Members of the selection committee included the Council liaison, the staff liaison and the PRAB chair. Ms. Corning's application is attached.

BACKGROUND OR DETAILED INFORMATION:

The seven-member Parks and Recreation Advisory Board acts in an advisory capacity to the Council in matters pertaining to parks and recreation, parks design, open space and trail use.

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

I MOVE to (approve / deny) the appointment of Sarah Corning to the Parks and Recreation Advisory Board for a term expiring December 31, 2014. This partial term shall not count against the appointee's term limits.

Attachments

Application

ORO VALLEY VOLUNTEER APPOINTMENT APPLICATION

MAR 17 14 PM 4:49 TOV

Dear Oro Valley Citizen:

We appreciate your interest in the Town of Oro Valley. This informational form, when completed, will allow us to quickly process your application by assisting us in understanding how we can best use your talents and experience. A list describing the Town's Boards and Commissions is attached for your reference. Information reflecting the procedures surrounding the appointment process to Boards is also attached. Your application will remain on file for two years from the date of receipt. We thank you kindly for volunteering to serve the Town!

Please note: No volunteer shall serve on more than one standing Board at any time.

Return this application to the Town Clerk's Office, 11000 N. La Canada Drive, Oro Valley, Arizona 85737.

Name: Corning (Last) Sarah (First) Elizabeth (Middle) ____ (Suffix)

Address: ------Street ---------- City----------State ---------- Zip ----------

Home Phone ____ Business Phone ____ Cellular Phone ____

Number of Years in Oro Valley: 11 years Email Address ____

Signature: Sarah Corning Date: 3/15/2014

Please indicate the board or commission you wish to join: Parks and Recreation Advisory Board

Please list your volunteer services in Oro Valley and with other organizations including any boards or commissions on which you have served: (board/commission, civic, educational, cultural, social, etc.)*

In Oro Valley I have worked on boards within my church to help different areas function smoothly by organizing meeting and volunteers. Currently, I attend the monthly Friends of Catalina State Park board meetings and bring insight into planning and decision making. During my school years I volunteered with Parks and Recreational groups, including after school programs, one day events, and ongoing activities.

How does your previous volunteer service prepare you for the board or commission appointment for which you have applied? Please describe an issue considered at a meeting of the Board or Commission for which you are applying.

Working with a group to make decisions on recreational topics will not be new. I understand the impact this advisory board has as it makes social impacts on the community. I look forward to working with trail issues at board meetings as my Master Thesis was on community trails. I also am highly concerned about park issues as this is not only my career but my passion.

Have you attended the Community Academy or CPI? No What Year? ____ If not, are you willing to attend? Yes

Briefly describe your educational/vocational background.

After graduating from Canyon del Oro High School I attended Brigham Young University-Idaho, receiving a Bachelors in Recreational Leadership. Later, I received a Masters in Outdoor Recreation from Indiana University. I have worked a variety of jobs in this field both in the private and public sector with my current job as a Park Ranger at Catalina State Park.

IF DESIRED, ADDITIONAL INFORMATION MAY BE ATTACHED

www.orovalleyaz.gov

SARAH E CORNING

▪ Oro Valley, AZ 85737

PROFESSIONAL QUALIFICATIONS

Honest, personable, tenacious and creative in achieving results through teamwork. A proven leader and communicator with experience organizing programs and instilling life skills in youth and adults.

PROFESSIONAL EXPERIENCE

CATALINA STATE PARK, Tucson, AZ **2011-Present**
Rack Ranger II; Seasonal Park Ranger

- Coordinating the over 150 volunteers in their schedules, trainings, and assignments
- Established and maintained hiking, biking, and horse trails as well as daily park maintenance
- Assist customers at the park office with fees, reservations, interpretation, and use questions

ZION NATIONAL PARK, Springdale, UT **2012**
Visitor Use Assistant

- Front-line representative of the park, providing quality customer service by greeting visitors, collecting and accounting for fees, and disseminating information
- Controls traffic for oversize vehicles at the Zion-Mt. Carmel Tunnel
- Assist with traffic and parking control, radio dispatching, campground management, and trail patrol
- Operates high-volume fee collection entrance stations

RECREATIONAL EQUIPMENT INC., Tucson, AZ **2010-2012**
Sales Specialist

- Support management with the Action Sports Team and Department
- Listen to customers need and then communicated appropriate products and there uses
- Developed and maintained a customer friendly sales floor

NATIONAL OUTDOOR LEADERSHIP SCHOOL, Lander, WY **2010**
Office Assistant

- Completed daily and weekly office and shipping responsibilities, as well as various office projects
- Executed correct data entry and awarded proper certifications
- Supported coworkers in their position by quickly learning and accomplishing new assignments
- Communicated with customers through email, phone, and in person conversations

INDIANA UNIVERSITY, Bloomington, IN **2007-2008**
Graduate Assistant, Library Assistant for School of Health, Physical Education, and Recreation

- Perform research in the fields of health, physical education, and recreation
- Assist Library Coordinator and Supervisor in library administration duties
- Aided students and staff in helping to find and access materials

EDUCATION

INDIANA UNIVERSITY, Bloomington, IN **2009**
Masters of Science, Outdoor Recreation, GPA 3.8

BRIGHAM YOUNG UNIVERSITY-IDAHO, Rexburg, ID **2005**
Bachelor of Science, Recreation Leadership, Honors graduate, GPA 3.7
Minor: Communications, Theater Arts

BRIGHAM YOUNG UNIVERSITY-IDAHO, Rexburg, ID **2002**
Associates of General Studies-Emphases in Theater Arts

COMMUNITY SERVICE

WOMANS GROUP BOARD MEMBER, Tucson, AZ **2013- Present**
Organized and maintained a 180 person woman group that meets weekly

SUNDAY SCHOOL LEADER/TEACHER, Tucson, AZ; Lander, WY **2009-2012**
Organized classes, teaching assignments, and taught a weekly class for 6-8 and 12-13 year olds

WOMANS GROUP TEACHER, Tucson, AZ **2010**
Monthly Teacher

MEN'S AND WOMEN'S LITTLE 500 BIKE RACE, Bloomington, IN **2009**
Infield Judge

EVENING ACTIVITIES COORDINATOR, Bloomington, IN **2007-2009**
Weekly Activities Planner

YOUNG WOMEN'S CAMP LEADER, Tucson, AZ **1998-1999, 2006**
Youth Camp Leader, Adult Camp Leader

CATALINA COUNCIL BSA, Tucson, AZ **2005-2006**
Webelos Den Leader Assistant

CANADA VANCOUVER MISSION, British Columbia, Canada **2003-2005**
Full Time Voluntary Representative for 18 months

COMMUNITY SERVICE LEADER, Rexburg, ID **2002**
Scholarship Winner

LOCKS OF LOVE, Tucson, AZ/Rexburg, ID **1999-2003**
Area Volunteer and Service Coordinator

ASSOCIATION OF WOMAN STUDENTS, Rexburg, ID **2000, 2002**
Student Representative

INTERNATIONAL THESPIAN SOCIETY, Tucson, AZ **1999-2000**
Vice President of Troupe 3232

AWARDS AND GRANTS

VOLUNTEER COORDINATOR **2014**
Arizona State Parks

LEBERT H. WEIR MASTER STUDENT AWARD, Bloomington, IN **2009**
Most outstanding Master Student award by peer graduate students in the Department of Recreation, Park, and Tourism Studies

SCHOOL OF HEALTH, PHYSICAL EDUCATION, AND RECREATION FELLOWSHIP AWARD, Bloomington, IN **2008**
Student scholarship awarded by the facility of the Department of Recreation, Park, and Tourism Studies

SCHOOL OF HEALTH, PHYSICAL EDUCATION, AND RECREATION STUDENT RESEARCH GRANT, Bloomington, IN **2008**
Funding for thesis research on community trails

PUBLICATIONS AND PRESENTATIONS

JOURNAL OF URBAN PLANNING AND DEVELOPMENT **Dec. 2012**
Technical Paper - Corning, S. E., Mowatt, R. A., & Chancellor, H. C. *Multiuse Trails: Benefits and Concerns of Residents and Property Owners*

CAMPING MAGAZINE **Nov/Dec. 2009**
Research Column Article - Bishop, C.F., Corning, S.E., Yoshino, A., Shellman, A., & Bradford Woods Research Team, Indiana University. *Emerging Attitudes: A Preliminary Analysis of Environmental Education Programs at Bradford Woods Outdoor Center*

NATIONAL RECREATION AND PARKS ASSOCIATION LEISURE RESEARCH SYMPOSIUM, Salt Lake City, UT **Oct. 2009**
Research presentation – Corning, S. E., & Chancellor, H. C. *Benefits and Concerns of Adjacent Trail Neighbors*

ADVENTURE RESEARCH SYMPOSIUM, Bloomington, IN **April 2009**
Research presentation – Corning, S. E. *Expected Versus Actual: An Outcome Study for Environmental Education at Bradford Woods*

AMERICAN CAMPING ASSOCIATION, Orlando, FL **March 2009**
Poster and research presentation – Bishop, C. F., Corning, S. E., Yoshino, A., Shellman, A., & Bradford Woods Research Team, Indiana University. *Emerging Attitudes: A Preliminary Analysis of Environmental Education Programs at Bradford Woods Outdoor Center*

Town Council Regular Session **Item # E.**

Meeting Date: 04/16/2014
Requested by: Jose Rodriguez
Submitted By: Aimee Ramsey, Development Infrastructure Services
Department: Development Infrastructure Services

Information

SUBJECT:

Resolution No. (R)14-20, authorizing and approving Amendment Number 1 to the intergovernmental agreement between the Town of Oro Valley, the Town of Marana and Pima County for the design and construction of roadway improvements to Tangerine Road from Dove Mountain Boulevard/Twin Peaks Road to La Canada Drive

RECOMMENDATION:

Staff recommends approval.

EXECUTIVE SUMMARY:

On July 3, 2013, the Town Council approved an Intergovernmental Agreement (IGA) with the Town of Marana and Pima County to select an engineering consulting firm to prepare the final design plans for Tangerine Rd. between Dove Mountain Blvd./ Twin Peaks Rd. and La Canada Dr. Per this IGA, Agreement No. 9 stipulates that “the Project shall be constructed by a qualified construction contracting firm (the "Contractor"), who shall be selected using a low bid selection process.” This amendment will change the language to “the Project shall be constructed by a qualified construction contracting firm (the “Contractor”) who shall be selected using a process that is authorized by Arizona Revised Statutes Title 34.” This would allow the project team to select a construction firm based on experience.

The new verbiage will allow the Tangerine project team, made up of staff from the Town of Oro Valley, the Town of Marana and Pima County, to use the Construction Manager at Risk (CMAR) delivery method in lieu of the Design-Bid Build delivery method (low bid selection process) for the roadway construction.

The CMAR delivery methodology is better suited for a project of this magnitude and would allow for the hiring of a qualified contractor while the project is under design. As a result, time and money are saved during the actual roadway construction because the CMAR is included during the design process, allowing for collaboration with the designers while ensuring the project goals are met by serving as the project lead’s representative. Including the CMAR as part of the team during the pre-construction process benefits the overall project by allowing for the CMAR to provide critical feedback on costs, construction feasibility, materials selection, quality and scheduling. Construction is expected to start by spring 2016.

BACKGROUND OR DETAILED INFORMATION:

The Tangerine Road project is one of the thirty-five major roadway projects approved and listed in the Regional Transportation Authority (RTA) 20-year plan. It is a ten-mile corridor from Interstate 10 to La Cañada Drive and spans three jurisdictions: Town of Oro Valley, Town of Marana and Pima County. Seventy-seven percent (77%) is within the Town of Marana, twenty percent (20%) is within the Town of Oro Valley, and three percent (3%) is within Pima County.

The planning, design, construction and cash flow are scheduled in multiple periods over the 20-year plan. Accordingly, the RTA plan shows the Tangerine Road improvements in the Second (2011-2016), Third (2016-2021) and Fourth (2021-2026) Periods.

On May 6, 2009, the Town Council approved an Intergovernmental Agreement (IGA) with the Town of Marana and Pima County to select an engineering consulting firm to prepare a Design Concept Report (DCR) and 30% design plans for the widening of Tangerine Road between Interstate 10 and La Canada Drive. This work was completed in March 2013.

On July 3, 2013, the Town Council approved an IGA with the Town of Marana and Pima County to select an engineering consulting firm to prepare the final design plans between Dove Mountain Blvd./ Twin Peaks Rd. and La Canada Dr.

FISCAL IMPACT:

This change has no fiscal impact.

SUGGESTED MOTION:

I MOVE to (approve or not approve) Resolution No. (R)14-20, authorizing and approving Amendment Number 1 to the intergovernmental agreements between the Town of Oro Valley, the Town of Marana and Pima County for the design and construction of roadway improvements to Tangerine Road from Dove Mountain Boulevard/Twin Peaks Road to La Canada Drive.

Attachments

R14-20 Amendment 1 - Tangerine Rd Improvements

Amendment 1

Original IGA

RESOLUTION NO. (R)14-20

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE TOWN OF ORO VALLEY, ARIZONA, AUTHORIZING AND APPROVING AMENDMENT NUMBER 1 TO THE INTERGOVERNMENTAL AGREEMENT BETWEEN THE TOWN OF ORO V ALLEY, THE TOWN OF MARANA AND PIMA COUNTY FOR A DESIGN AND CONSTRUCTION OF ROADWAY IMPROVEMENTS TO TANGERINE ROAD - DOVE MOUNTAIN BOULEVARD/TWIN PEAKS ROAD TO LA CANADA DRIVE

PASSED AND ADOPTED by the Mayor and Town Council of the Town of Oro Valley, Arizona, this 16th day of April, 2014.

TOWN OF ORO VALLEY

_____

Dr. Satish I. Hiremath, Mayor

ATTEST:

_____

Julie K. Bower, Town Clerk

Date: _____

APPROVED AS TO FORM:

_____

Tobin Sidles, Legal Services Director

Date: _____

EXHIBIT “A”

PIMA COUNTY DEPARTMENT OF TRANSPORTATION **AMENDMENT TO INTERGOVERNMENTAL AGREEMENT NUMBER** 14*16 **PROJECT**: Design and Construction of improvements to Tangerine Road-Dove Mt Boulevard/Twin Peaks Road to La Canada Drive RTA-1 **PARTIES**: Marana, Oro Valley & Pima County **AMENDMENT NO.** 1	

ORIGINAL TERM: 8/6/2013-8/6/2019	**ORIGINAL AMOUNT:**	$0
CURRENT TERMINATION DATE: 8/6/2019	**PRIOR AMENDED AMOUNT:**	$0
AMENDED TERMINATION DATE: No Change	**AMOUNT THIS AMENDMENT:**	$0
	NEW AMENDED TOTAL:	**$No Change**

AMENDMENT NUMBER 1

WHEREAS, Pima County ("County") entered into an intergovernmental agreement with the Towns of Marana and Oro Valley, Pima County Contract Number 14*16 ("the IGA"), for design and construction of improvements to Tangerine Road-Dove Mountain Boulevard/Twin Peaks Road to La Canada Drive, and

WHEREAS, the IGA provided for a specific contractor selection process, and

WHEREAS, the parties now agree to modify the IGA to clarify the allowable contractor selection process to be used,

NOW, THEREFORE, the Agreement is amended as follows:

1. **REVISE: Provision 9. Contractor Selection. to read:**

   The Project shall be constructed by a qualified construction contracting firm (the "Contractor") who shall be selected using a process that is authorized by Arizona Revised Statutes Title 34.

The effective date of this Amendment shall be February 24, 2014. All other provisions not specifically changed by this Amendment shall remain in full force and effect.

IN WITNESS WHEREOF, the Town of Marana, the Town of Oro Valley and Pima County have caused this amendment to be executed by the Mayor and Council of the Town of Marana and the Town of Oro Valley, upon resolution of the their respective Mayor and Council, and by the Chairman and Board of Supervisors of Pima County upon resolution of said Supervisors and attested to by the Clerk of the Town of Marana, the Clerk of the Town of Oro Valley and Clerk of the Board of Supervisors of Pima County

TOWN OF MARANA

_____

Mayor

ATTEST:

_____

Town Clerk

Date: _____

TOWN OF ORO VALLEY

_____

DR. SATISH I. HIREMATH
Mayor

ATTEST:

_____

JULIE K. BOWER
Town Clerk

Date: _____

PIMA COUNTY

_____

Chair, Board of Supervisors

ATTEST:

_____

Pima County Clerk, Board of Supervisors

Date: _____

INTERGOVERNMENTAL DETERMINATION

The foregoing intergovernmental agreement among the Town of Marana, the Town of Oro Valley, and Pima County has been reviewed pursuant to A.R.S. § 11-952 by the undersigned, who have determined that it is in proper form and is within the powers and authority granted under the laws of the State of Arizona to the Party to this intergovernmental agreement represented by the undersigned.

TOWN OF MARANA:

_____
Town Attorney

Date: _____

TOWN OF ORO VALLEY:

_____
Town Attorney

Date: _____

PIMA COUNTY

_____
Deputy County Attorney

Date: _____

RESOLUTION NO. (R)13-46

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE TOWN OF ORO VALLEY, ARIZONA, AUTHORIZING AND APPROVING AN INTERGOVERNMENTAL AGREEMENT BETWEEN THE TOWN OF ORO VALLEY, THE TOWN OF MARANA AND PIMA COUNTY FOR A DESIGN AND CONSTRUCTION OF ROADWAY IMPROVEMENTS TO TANGERINE ROAD – DOVE MOUNTAIN BOULEDVARD/TWIN PEAKS ROAD TO LA CANADA DRIVE

WHEREAS, pursuant to A.R.S. § 11-952, the Town of Oro Valley, the Town of Marana and Pima County are authorized to enter into Intergovernmental Agreements for joint and cooperative action; and

WHEREAS, pursuant to A.R.S. § 9-276, the Town is authorized to lay out, maintain, control and manage public roads within its jurisdictional boundaries; and

WHEREAS, in May 2009, the Intergovernmental Agreement regarding the construction of roadway improvements on Tangerine Road between Interstate 10 and La Canada Drive, was approved through Resolution No. (R) 09-22; and

WHEREAS, the Town of Oro Valley, the Town of Marana and Pima County desire to enter into an Intergovernmental Agreement for the design and construction of roadway improvements on Tangerine Road – Dove Mountain Boulevard/ Twin Peaks Road to La Canada Drive; and

WHEREAS, all parties to the Intergovernmental Agreement shall have input into the Design Concept Report; and

WHEREAS, at no cost to the Town, the Design Concept Report shall be separately contracted for by the Town of Marana and paid for with Regional Transportation Authority funds; and

WHEREAS, it is in the best interest of the Town of Oro Valley to enter into the Intergovernmental Agreement, attached hereto as Exhibit "A", with the Town of Marana and Pima County to obtain a Design Concept Report regarding the construction of roadway improvements on Tangerine Road – Dove Mountain Boulevard/ Twin Peaks Road to La Canada Drive.

THEREFORE, BE IT RESOLVED, by the Mayor and Town Council of the Town of Oro Valley, Arizona that:

1. The Intergovernmental Agreement, attached hereto as Exhibit "A" and incorporated herein by this reference, by and between the Town of Oro Valley, the Town of Marana and Pima County for the design and construction of roadway improvements on Tangerine Road – Dove Mountain Boulevard/ Twin Peaks Road to La Canada Drive is hereby approved.

2. The Mayor and any other administrative officials are hereby authorized to take such steps necessary to execute and implement the terms of the Intergovernmental Agreement.

PASSED AND ADOPTED by the Mayor and Town Council of the Town of Oro Valley, Arizona this 3rd day of July, 2013.

TOWN OF ORO VALLEY

Dr. Satish I. Hiremath, Mayor

ATTEST:

Julie K. Bower, Town Clerk

7/5/13

Date

APPROVED AS TO FORM:

Tobin Sidles, Legal Services Director

7/5/13

Date

EXHIBIT "A"

CONTRACT
NO. CT-TR 14 00000 00000 000000 16
AMENDMENT NO. _____
This number must appear on all invoices, correspondence and documents pertaining to this contract.

INTERGOVERNMENTAL AGREEMENT BETWEEN AND AMONG THE TOWN OF MARANA, THE TOWN OF ORO VALLEY AND PIMA COUNTY FOR THE DESIGN AND CONSTRUCTION OF ROADWAY IMPROVEMENTS TO TANGERINE ROAD – DOVE MOUNTAIN BOULEVARD/ TWIN PEAKS ROAD TO LA CAÑADA DRIVE

This intergovernmental agreement (this "IGA") is entered into by and among the TOWN OF MARANA ("Marana"), an Arizona municipal corporation, the TOWN OF ORO VALLEY ("Oro Valley"), an Arizona municipal corporation, and PIMA COUNTY (the "County"), a political subdivision of the State of Arizona. Marana, Oro Valley, and the County are sometimes collectively referred to as the "Parties," any one of which is sometimes individually referred to as a "Party."

RECITALS

A. Marana has entered into or is in the process of entering into an intergovernmental agreement with the Regional Transportation Authority of Pima County (the "RTA") to facilitate the preparation of construction design drawings and the acquisition of right-of-way needed for the construction of improvements to Tangerine Road – Twin Peaks Road to La Cañada Drive (the "Project").

B. Marana has been identified by the RTA as the Lead Agency for the Project and will be responsible for all aspects of project implementation, including construction.

C. The Project is anticipated to be constructed from Dove Mountain Boulevard/Twin Peaks Road on the west to La Cañada Drive on the east, traversing approximately 2.65 miles within the town limits of Marana, approximately two miles within the town limits of Oro Valley, and approximately 1,600 feet within unincorporated Pima County.

D. Marana and Oro Valley are authorized by A.R.S. § 9-240(B)(3) to design, maintain, control and manage public roads within their respective jurisdictional boundaries.

E. Pima County is authorized by A.R.S. § 11-251 paragraph 4 to lay out, control and manage public roads in unincorporated Pima County.

F. The Parties enter into this IGA to work together collectively and cooperatively to accomplish the following tasks associated with the Project:

1. To select an engineering consulting firm to conduct and prepare design and bid documents (the "Bid Documents") for the Project.

2. To select a construction contractor to construct the Project.

3. To select one or more consultants to provide professional services in connection with the acquisition of needed rights-of-way for the Project.

4. To facilitate the administration and management of the Project.

G. The Parties are authorized to contract for services and enter into agreements with one another for joint and cooperative action pursuant to A.R.S. § 11-952, et seq.

AGREEMENT

NOW, THEREFORE, based on the foregoing recitals, which are incorporated by reference here, and in consideration of the matters and things set forth in this IGA, the Parties hereby agree as follows:

1. **Purpose.** The purpose of this IGA is to set forth the responsibilities of the Parties for the design, right-of-way acquisition, and construction of the Project and to address associated the legal and administrative matters among the Parties.

2. **The Project.** The Project consists of the design, right-of-way acquisition, and construction of the Project in a manner consistent with the Regional Transportation Plan approved by the voters at the special election held in Pima County, Arizona, on May 16, 2006

3. **Marana's responsibilities.** Marana shall have the following responsibilities with respect to the Project:

3.1. In connection with the Project generally, Marana shall:

3.1.1. Identify a Marana officer or employee who will act as Marana's representative for the Project (the "Marana Project Representative").

3.1.2. Take the lead management role for the Project.

3.1.3. Be responsible for the administration of the contract for the design, environmental clearance, and rights-of-way acquisition.

3.1.4. Be responsible for all costs associated with the Project as required by the RTA and as provided in the RTA-approved design concept report for the Project (the "DCR").

3.1.5. Be responsible for managing all Change Orders (see paragraph 10 below), including coordinating amendments and supplements to this IGA to identify and describe the cost sharing and funding mechanisms related to each Change Order before it is executed or authorized.

3.2. In connection with the Project bid documents, Marana shall:

3.2.1. Take the lead management role and be the lead agency for the solicitation, final selection and management of the Consultant procured to prepare the Bid Documents for the Project.

3.2.2. Be the lead agency for funding the design of the Project and the preparation of the bid documents for the Project through a separate agreement between Marana and the RTA

3.2.3. Appoint two Marana representatives to the panel responsible for selecting the Consultant (the "Consultant Selection Panel"), to work collectively and cooperatively with the representatives for the other Parties to select an additional Consultant Selection Panel member in accordance with this IGA.

3.2.4. Review and approve (in conjunction with representatives of the other Parties) all rights-of-way plans, legal descriptions and other right-of-way documents.

3.2.5. Review and approve (in conjunction with representatives of the other Parties) all design and bid documents required for construction of the Project.

3.3. In connection with right-of-way acquisition for the Project, Marana shall exercise its power of eminent domain, if necessary, to acquire property needed for the Project.

3.4. In connection with the Project construction, Marana shall:

3.4.1. Pursuant to and consistent with a separate agreement between Marana and the RTA, be the lead agency for funding the construction of the Project and the procurement of the Contractor to construct the Project (see paragraph 9 below).

3.4.2. Advertise for bids and award the construction contract for the Project, and administer contracts for the Project.

3.4.3. Be responsible for payment of any Contractor invoices, and pay all Project costs.

3.4.4. Be responsible for any traffic management, including public notification, associated with the Project.

3.4.5. Be responsible for all aspects of construction administration for the Project as required by the bid documents.

3.4.6. Be responsible to provide all necessary staff for Project inspection for all work performed within the Marana jurisdictional boundaries.

3.4.7. Submit monthly invoices for Project construction costs in a manner consistent with the Parties' programmed funding for the Project and Marana's intergovernmental agreement with the RTA relating to the Project.

3.4.8. Administer the claims process and be responsible for payment of any Contractor claim for extra compensation, allocating the cost of the settlement among the Parties according to each Party's percentage of fault, liability, and financial responsibility for the work associated with the claim.

3.5. After construction of the Project is completed, Marana shall be responsible for ownership and maintenance of the portions of the Project located within Marana's jurisdictional boundaries.

4. Oro Valley's responsibilities. Oro Valley shall have the following responsibilities with respect to the Project:

4.1. In connection with the Project generally, Oro Valley shall:

4.1.1. Identify an Oro Valley officer or employee who will act as Oro Valley's representative for the Project (the "Oro Valley Project Representative").

4.1.2. Provide feedback and direction on design, implementation, and construction of the portions of the Project located within or directly affecting Oro Valley.

4.1.3. Be responsible paying its fair share cost of Change Orders (see paragraph 10 below).

4.2. In connection with the Project bid documents, Oro Valley shall:

4.2.1. Appoint one Oro Valley representative to the Consultant Selection Panel, to work collectively and cooperatively with the representatives for the other Parties to select an additional Consultant Selection Panel member in accordance with this IGA.

4.2.2. Cooperate and coordinate with Marana's administration of the contract for the design, environmental clearance, and right-of-way acquisition for areas of the Project within Oro Valley's jurisdictional boundaries.

4.2.3. Be responsible for all costs attributable to Oro Valley associated with the Project as required by the RTA as provided in the DCR, with the understanding that the Parties expect to amend this IGA prior to construction of the Project to establish the then-determined actual cost estimate for the Project and Oro Valley's share of those costs.

4.2.4. Review and approve (in conjunction with representatives of the other Parties) all rights-of-way plans, legal descriptions and other right-of-way documents.

4.2.5. Review and approve (in conjunction with representatives of the other Parties) all design and bid documents required for construction of the Project.

4.3. In connection with right-of-way acquisition for the Project, Oro Valley shall cooperate and, if necessary, join with Marana in exercising the power of eminent domain as needed to acquire property needed for the Project.

4.4. In connection with the Project construction, Oro Valley shall:

4.4.1. Review and approve the advertisement for bids.

4.4.2. Participate in review and approval of the construction bids and the award of the construction contract for the Project.

4.4.3. Pay Project construction costs attributable to Oro Valley within 30 calendar days of receiving an invoice consistent with Oro Valley's programmed funding for the Project and Marana's intergovernmental agreement with the RTA relating to the Project.

4.4.4. Pay its fair share portion of the cost of any Contractor claim for extra compensation, according to Oro Valley's percentage of fault, liability, and financial responsibility for the work associated with the claim.

4.4.5. Provide all necessary staff for Project inspection for all work performed within Oro Valley's jurisdictional boundaries.

4.5. After construction of the Project is completed, Oro Valley shall be responsible for ownership and maintenance of the portions of the Project located within Oro Valley's jurisdictional boundaries.

5. The County's responsibilities. The County shall have the following responsibilities with respect to the Project:

5.1. In connection with the Project generally, The County shall:

5.1.1. Identify a County officer or employee who will act as the County's representative for the Project (the "County Project Representative").

5.1.2. Provide feedback and direction on design, implementation, and construction of the portions of the Project located within or directly affecting unincorporated Pima County.

5.1.3. Be responsible paying its fair share cost of Change Orders (see paragraph 10 below).

5.2. In connection with the Project bid documents, The County shall:

5.2.1. Appoint one County representative to the Consultant Selection Panel, to work collectively and cooperatively with the representatives for the other Parties to select an additional Consultant Selection Panel member in accordance with this IGA.

5.2.2. Cooperate and coordinate with Marana's administration of the contract for the design, environmental clearance, and right-of-way acquisition for areas of the Project within unincorporated Pima County.

5.2.3. Be responsible for all costs attributable to the County associated with the Project as required by the RTA as provided in the DCR and in accordance with the allowable use of County development impact fees (which are the sole source of funding for the County's contribution and are limited to the portion of the Project constructed in unincorporated Pima County), with the understanding that the Parties expect to amend this IGA prior to construction of the Project to establish the then-determined actual cost estimate for the Project and the County's share of those costs.

5.2.4. Review and approve (in conjunction with representatives of the other Parties) all rights-of-way plans, legal descriptions and other right-of-way documents.

5.2.5. Review and approve (in conjunction with representatives of the other Parties) all design and bid documents required for construction of the Project.

5.3. In connection with right-of-way acquisition for the Project, the County shall cooperate and, if necessary, join with Marana in exercising the power of eminent domain as needed to acquire property needed for the Project.

5.4. In connection with the Project construction, the County shall:

5.4.1. Review and approve the advertisement for bids.

5.4.2. Participate in review and approval of the construction bids and the award of the construction contract for the Project.

5.4.3. Pay Project construction costs attributable to the County within 30 calendar days of receiving an invoice consistent with the County's programmed funding for the Project and Marana's intergovernmental agreement with the RTA relating to the Project.

5.4.4. Pay its fair share portion of the cost of any Contractor claim for extra compensation, according to the County's percentage of fault, liability, and financial responsibility for the work associated with the claim.

5.4.5. Provide all necessary staff for Project inspection for all work performed within unincorporated Pima County.

5.5. After construction of the Project is completed, the County shall be responsible for ownership and maintenance of the portions of the Project located in unincorporated Pima County.

6. Bid Documents. Bid documents and construction drawings for the Project (collectively the "Bid Documents") shall be prepared by an engineering consulting firm (the "Consultant") selected by the Consultant Selection Panel.

7. Consultant Selection Panel.

7.1. Membership. The Consultant Selection Panel shall consist of five members. Marana shall select two members, and Oro Valley and the County shall each select one member. These four members shall select by unanimous vote one remaining Consultant Selection Panel member, who shall either possess a current Professional Engineering license issued by the State of Arizona or be designated as a certified planner by the American Institute of Certified Planners.

7.2. Selection criteria. The Consultant Selection Panel shall establish selection criteria and associated ratings before publishing the solicitation of qualifications for the Consultant.

7.3. Rating. The Consultant Selection Panel shall rate each bidder based upon the agreed criteria and rating system.

7.4. Interview. The Consultant Selection Panel shall select the three highest scoring bidders for an interview, unless the Consultant Selection Panel unanimously agrees that an interview is not necessary. If interviews are conducted, the Consultant Selection Panel shall agree upon the questions, presentation criteria and time frame, and ratings associated with each.

7.5. Consultant Selection Panel membership change.

7.5.1. If one member of the Consultant Selection Panel is removed or becomes ineligible due to change of employment, conflict of interest, or any other reason prior to the selection of the Consultant, the remaining members of the Consultant Selection Panel shall complete the selection process or, by unanimous vote, disband the Consultant Selection Panel.

7.5.2. If two or more members of the Consultant Selection Panel are removed or become ineligible due to change of employment, conflict of interest, or any other reason prior to the selection of the Consultant, the Consultant Selection Panel shall be disbanded.

7.5.3. If the Consultant Selection Panel is disbanded, a new Consultant Selection Panel shall be established and shall complete the selection of the Consultant using the procedures set forth in this paragraph 7. The new Consultant Selection Panel shall use the solicitations received in response to the original solicitation of qualifications unless the new Consultant Selection Panel unanimously chooses to begin the entire selection process again.

8. **Consultant's detailed scope of work and cost.** The Consultant shall provide a detailed scope of work and cost proposal to Marana, who shall distribute it to Oro Valley and the County. The Parties shall provide comments, changes and revisions to the Consultant for inclusion in or exclusion from the scope of work. All Parties shall agree in writing to the final scope of work and cost proposal.

9. **Contractor selection.** The Project shall be constructed by a qualified construction contracting firm (the "Contractor"), who shall be selected using a low bid selection process.

10. **Change Orders.** This paragraph addresses changes to the scope or elements of the Consultant's contract or to the scope or elements of the Contractor's contract, either of which is referred to in this IGA as a "Change Order." The Party or Parties responsible for a Change Order shall sign and pay for (or be responsible for obtaining additional third-party funding for) all costs associated with the Change Order. The Party or Parties signing the Change Order shall identify and describe the cost sharing and funding for the Change Order before the Change Order is approved or authorized.

11. **Effective date; term.** This IGA shall become effective upon filing a fully executed original with the office of the Pima County Recorder and shall continue in effect until the sixth anniversary of final payment to the Contractor.

12. **Design and construction standards.**

12.1. Approved roadway cross-sections.

12.1.1. Marana's approved roadway cross-sections shall be utilized for the areas of the Project located within Marana's jurisdictional limits.

12.1.2. Oro Valley's approved roadway cross-sections shall be utilized for the areas of the Project located within Oro Valley's jurisdictional limits.

12.1.3. The portion of the Project located in unincorporated Pima County shall utilize a roadway cross-section that transitions from Marana's approved roadway cross-section to Oro Valley's approved roadway cross-section.

12.2. General. The Project shall be designed and constructed in a manner consistent with the DCR and in accordance with the terms of this IGA and all applicable public roadway, traffic signal, and street lighting design and construction standards. Design Standards are federal, state, county or municipal standards for engineering, traffic, safety or public works facilities design. Examples of Design Standards include the American Association of State Highway and Transportation Officials and Federal Highway Administration standards for highway engineering and construction, the Manual on Uniform Traffic Control Devices, the Pima County/City of Tucson Standard Specifications for Public Improvements, the PAG Standard Specifications for Roadways and Public Improvements, the Pima County Roadway Design Manual, the Pima County Department of Transportation/City of Tucson Department of Transportation Pavement Marking Design Manual, and Pima County and municipal design guidelines for roadway lane widths and level of drainage protection.

13. Construction of this IGA.

13.1. Entire agreement. This instrument constitutes the entire agreement between the Parties pertaining to the subject matter of this IGA, and all prior or contemporaneous agreements and understandings, oral or written, are hereby superseded and merged in this IGA.

13.2. Exhibits. Any exhibits to this IGA are incorporated in this IGA by this reference.

13.3. Amendment. This IGA may be modified, amended, altered or changed only by written agreement signed by both Parties.

13.4. Construction and interpretation. All provisions of this IGA shall be construed to be consistent with the intention of the Parties as expressed in the Recitals section of this IGA.

13.5. Captions and headings. The headings used in this IGA are for convenience only and are not intended to affect the meaning of any provision of this IGA.

13.6. Severability. A declaration by statute or judicial decision that any provision of this IGA is invalid or void shall have no effect on other provisions that can be given effect without the invalid or void provision, and to this extent the provisions of this IGA are severable. If any provision of this IGA is declared invalid or void, the Parties agree to meet promptly in an attempt to reach an agreement on a substitute provision.

13.7. Conflict of interest. This IGA is subject to the provisions of A.R.S. § 38-511, which provides for cancelation in certain instances involving conflicts of interest.

14. Legal Jurisdiction. Nothing in this IGA shall be construed as either limiting or extending the legal jurisdiction of the Parties.

15. No Joint Venture. It is not intended by this IGA to, and nothing contained in this IGA shall be construed to, create any partnership, joint venture or employment relationship between the

Parties or create any employer-employee relationship between one Party and another Party's employees. No Party shall be liable for any debts, accounts, obligations or other liabilities whatsoever of another Party, including (without limitation) another Party's obligation to withhold Social Security and income taxes for itself or any of its employees.

16. **No Third Party Beneficiaries**. Nothing in the provisions of this IGA is intended to create duties or obligations to or rights in third parties not parties to this IGA or to affect the legal liability of either Party by imposing any standard of care different from the standard of care imposed by law.

17. **Compliance with Laws**. The Parties shall comply with all applicable federal, state and local laws, rules, regulations, standards and executive orders, without limitation to those designated within this IGA.

    17.1. Anti-Discrimination. The provisions of A.R.S. § 41-1463 and Executive Order Number 99-4 issued by the Governor of the State of Arizona are incorporated by this reference as a part of this IGA.

    17.2. Americans with Disabilities Act. This IGA is subject to all applicable provisions of the Americans with Disabilities Act (Public Law 101-336, 42 U.S.C. 12101-12213) and all applicable federal regulations under the Act, including 28 CFR Parts 35 and 36.

    17.3. Workers' Compensation. An employee of either Party shall be deemed to be an "employee" of both public agencies, while performing pursuant to this IGA, for purposes of A.R.S. § 23-1022 and the Arizona Workers' Compensation laws. The primary employer shall be solely liable for any workers' compensation benefits, which may accrue. Each Party shall post a notice pursuant to the provisions of A.R.S. § 23-1022(E) in substantially the following form:

> All employees are hereby further notified that they may be required to work under the jurisdiction or control or within the jurisdictional boundaries of another public agency pursuant to an intergovernmental agreement or contract, and under such circumstances they are deemed by the laws of Arizona to be employees of both public agencies for the purposes of workers' compensation.

18. **Waiver**. Waiver by either Party of any breach of any term, covenant or condition of this IGA shall not be deemed a waiver of any other term, covenant or condition, or any subsequent breach of the same or any other term, covenant, or condition of this IGA.

19. **Force Majeure**. A party shall not be in default under this IGA if it does not fulfill any of its obligations under this IGA because it is prevented or delayed in doing so by reason of uncontrollable forces. The term "uncontrollable forces" shall mean, for the purpose of this IGA, any cause beyond the control of the party affected, including but not limited to failure of facilities, breakage or accident to machinery or transmission facilities, weather conditions, flood, earthquake, lightning, fire, epidemic, war, riot, civil disturbance, sabotage, strike, lockout, labor dispute, boycott, material or energy shortage, casualty loss, acts of God, or action or non-action by governmental bodies in approving or failing to act upon applications for approvals or permits which are not due to the negligence or willful action of the parties,

order of any government officer or court (excluding orders promulgated by the parties themselves), and declared local, state or national emergency, which, by exercise of due diligence and foresight, such party could not reasonably have been expected to avoid. Either party rendered unable to fulfill any obligations by reason of uncontrollable forces shall exercise due diligence to remove such inability with all reasonable dispatch.

20. **Notification**. All notices or demands upon any party to this IGA shall be in writing, unless other forms are designated elsewhere, and shall be delivered in person or sent by mail addressed as follows:

To Marana:	To Oro Valley:	To the County:
TOWN OF MARANA Director, Public Works 11555 W. Civic Center Dr. Marana, Arizona 85653	TOWN OF ORO VALLEY Town Engineer 11000 N. La Cañada Dr. Oro Valley, Arizona 85737	PIMA COUNTY Transportation Director 201 N. Stone Ave, 4th Floor Tucson, Arizona 85701-1207

21. **Remedies**. Any Party may pursue any remedies provided by law for the breach of this IGA. No right or remedy is intended to be exclusive of any other right or remedy and each shall be cumulative and in addition to any other right or remedy existing at law or in equity or by virtue of this IGA.

22. **Counterparts**. This IGA may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. The signature pages from one or more counterparts may be removed and attached to a single instrument.

IN WITNESS WHEREOF, the Parties have executed this IGA as of the last signature date below.

TOWN OF MARANA	TOWN OF ORO VALLEY	PIMA COUNTY
Ed Honea, Mayor	Satish Hiremath, Mayor	Ramón Valadez, Chairman Board of Supervisors
Date: 5-7-13	Date: 7/5/13	Date: AUG 06 2013
ATTEST:	ATTEST:	ATTEST:
Town Clerk	Town Clerk	Clerk of the Board

INTERGOVERNMENTAL AGREEMENT DETERMINATION

The foregoing intergovernmental agreement among the TOWN OF MARANA, the TOWN OF ORO VALLEY, and PIMA COUNTY has been reviewed pursuant to A.R.S. § 11-952 by the undersigned, who have determined that it is in proper form and is within the powers and authority granted under the laws of the State of Arizona to the Party to this intergovernmental agreement represented by the undersigned.

TOWN OF MARANA:	TOWN OF ORO VALLEY:	PIMA COUNTY:
Frank Cassidy Town Attorney	Tobin Sidles Acting Town Attorney	Hal Gilbreath Deputy County Attorney
Date: 5/7/13	Date: 7/5/13	Date: 7/11/13

RESOLUTION NO. (R)13-46

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE TOWN OF ORO VALLEY, ARIZONA, AUTHORIZING AND APPROVING AN INTERGOVERNMENTAL AGREEMENT BETWEEN THE TOWN OF ORO VALLEY, THE TOWN OF MARANA AND PIMA COUNTY FOR A DESIGN AND CONSTRUCTION OF ROADWAY IMPROVEMENTS TO TANGERINE ROAD – DOVE MOUNTAIN BOULEDVARD/TWIN PEAKS ROAD TO LA CANADA DRIVE

WHEREAS, pursuant to A.R.S. § 11-952, the Town of Oro Valley, the Town of Marana and Pima County are authorized to enter into Intergovernmental Agreements for joint and cooperative action; and

WHEREAS, pursuant to A.R.S. § 9-276, the Town is authorized to lay out, maintain, control and manage public roads within its jurisdictional boundaries; and

WHEREAS, in May 2009, the Intergovernmental Agreement regarding the construction of roadway improvements on Tangerine Road between Interstate 10 and La Canada Drive, was approved through Resolution No. (R) 09-22; and

WHEREAS, the Town of Oro Valley, the Town of Marana and Pima County desire to enter into an Intergovernmental Agreement for the design and construction of roadway improvements on Tangerine Road – Dove Mountain Boulevard/ Twin Peaks Road to La Canada Drive; and

WHEREAS, all parties to the Intergovernmental Agreement shall have input into the Design Concept Report; and

WHEREAS, at no cost to the Town, the Design Concept Report shall be separately contracted for by the Town of Marana and paid for with Regional Transportation Authority funds; and

WHEREAS, it is in the best interest of the Town of Oro Valley to enter into the Intergovernmental Agreement, attached hereto as Exhibit "A", with the Town of Marana and Pima County to obtain a Design Concept Report regarding the construction of roadway improvements on Tangerine Road – Dove Mountain Boulevard/ Twin Peaks Road to La Canada Drive.

THEREFORE, BE IT RESOLVED, by the Mayor and Town Council of the Town of Oro Valley, Arizona that:

1. The Intergovernmental Agreement, attached hereto as Exhibit "A" and incorporated herein by this reference, by and between the Town of Oro Valley, the Town of Marana and Pima County for the design and construction of roadway improvements on Tangerine Road – Dove Mountain Boulevard/ Twin Peaks Road to La Canada Drive is hereby approved.

2. The Mayor and any other administrative officials are hereby authorized to take such steps necessary to execute and implement the terms of the Intergovernmental Agreement.

PASSED AND ADOPTED by the Mayor and Town Council of the Town of Oro Valley, Arizona this 3rd day of July, 2013.

TOWN OF ORO VALLEY

Dr. Satish I. Hiremath, Mayor

ATTEST:

Julie K. Bower, Town Clerk

7/5/13

Date

APPROVED AS TO FORM:

Tobin Sidles, Legal Services Director

7/5/13

Date

MARANA RESOLUTION NO. 2013-043

RELATING TO PUBLIC WORKS; APPROVING AND AUTHORIZING THE MAYOR TO EXECUTE AN INTERGOVERNMENTAL AGREEMENT BETWEEN AND AMONG THE TOWN OF MARANA, THE TOWN OF ORO VALLEY, AND PIMA COUNTY FOR THE DESIGN AND CONSTRUCTION OF ROADWAY IMPROVEMENTS FOR TANGERINE ROAD—DOVE MOUNTAIN BOULEVARD/TWIN PEAKS ROAD TO LA CAÑADA DRIVE

WHEREAS the Town of Marana has entered into an intergovernmental agreement with the Regional Transportation Authority (RTA) to facilitate the construction design and right-of-way acquisition for roadway improvements for Tangerine Road from Dove Mountain Boulevard/ Twin Peaks Road to La Cañada Drive; and

WHEREAS the Town has been identified by the RTA as the "Lead Agency" for the proposed roadway improvements for Tangerine Road from Dove Mountain Boulevard/Twin Peaks Road to La Cañada Drive; and

WHEREAS segments of the proposed roadway improvements for Tangerine Road from Dove Mountain Boulevard/Twin Peaks Road to La Cañada Drive are located in the town limits of Marana, unincorporated Pima County, and the town limits of Oro Valley; and

WHEREAS the Mayor and Council of the Town of Marana feel it is in the best interests of the citizens of Marana to enter into the intergovernmental agreement addressed by this resolution to coordinate these road improvements among the jurisdictions.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE TOWN OF MARANA, that the intergovernmental agreement between and among the Town of Marana, the Town of Oro Valley, and Pima County for the design and construction of roadway improvements for Tangerine Road—Dove Mountain Boulevard/Twin Peaks Road to La Cañada Drive attached to this resolution as Exhibit A is hereby approved, and the Mayor is authorized to execute it for and on behalf of the Town of Marana.

IT IS FURTHER RESOLVED that the Town Manager and staff are hereby directed and authorized to undertake all other and further tasks required or beneficial to carry out the terms, obligations, conditions and objectives of the intergovernmental agreement.

PASSED AND ADOPTED by the Mayor and Council of the Town of Marana, Arizona, this 7th day of May, 2013.

Mayor Ed Honea

ATTEST:

Jocelyn C. Bronson, Town Clerk

APPROVED AS TO FORM:

Frank Cassidy, Town Attorney

Town Council Regular Session **Item # F.**

Meeting Date: 04/16/2014
Requested by: David Williams
Submitted By: Michael Spaeth, Development Infrastructure Services
Department: Development Infrastructure Services

Information

SUBJECT:

Request for approval of a Final Plat Amendment for Steam Pump Village, Phase 3, Lot 1, located near the intersection of Steam Pump Way and N. Oracle Road

RECOMMENDATION:

Staff recommends approval.

EXECUTIVE SUMMARY:

BASIS Charter School, Oro Valley, requests approval of a Final Plat Amendment for Steam Pump Village, Phase 3, Lot 1. The proposed amendment will split Lot 1 into two (2) lots, Lot 8 and Lot 9. The plat amendment is requested to support the construction of the BASIS Primary School. Council approval is required for any additional lot splitting in accordance with the general notes recorded on the original plat.

BACKGROUND OR DETAILED INFORMATION:

This plat amendment is requested by BASIS Charter School, Oro Valley, for the specific purpose of constructing a primary school. Town Council approval of final subdivision plats is required prior to being recorded with Pima County.

Proposed Improvement

- 4.67 acre lot, split into two lots
- Lot Size: Lot 8 - 3.24 acres; Lot 9 - 1.43 acres
- Construction of the 48,600 sq.ft., two-story BASIS Primary School on proposed Lot 8
- Turf activity field to serve the existing High School and the future Primary School

Previous Approvals

- August 1988 - Steam Pump Village Planned Area Development (PAD)
- May 2004 - Development Plan (Phase 1)
- September 2005 - Development Plan (Phase 2)
- October 2005 - Steam Pump Village PAD Amendment (latest revision)
- May 2008 - Development Plan (Phase 3)

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

I MOVE to approve the Final Plat Amendment for Steam Pump Village, Phase 3, Lot 1, finding that it meets the requirements of Section 22.9.F of the Zoning Code.

OR

I MOVE to deny the Final Plat Amendment for Steam Pump Village, Phase 3, Lot 1, finding that _____.

Attachments

ATTACHMENT 1 - AMENDED FINAL PLAT

DEDICATION

WE, THE UNDERSIGNED, HEREBY WARRANT THAT WE ARE ALL AND THE ONLY PARTY HAVING ANY RECORD TITLE INTEREST IN THE LANDS SHOWN ON THIS PLAT AND WE CONSENT TO THE SUBDIVISION OF SAID LAND IN THE MANNER SHOWN HEREON.

UTILITY EASEMENTS AS SHOWN HEREON ARE GRANTED TO THE TOWN OF ORO VALLEY, PIMA COUNTY AND ALL UTILITY COMPANIES FOR THE PURPOSE OF ACCESS, INSTALLATION AND MAINTENANCE OF UTILITIES AND PUBLIC SEWERS.

WE, THE UNDERSIGNED, DO HEREBY HOLD HARMLESS THE TOWN OF ORO VALLEY AND THE PIMA COUNTY DEPARTMENT OF TRANSPORTATION AND FLOOD CONTROL DISTRICT, ITS SUCCESSORS AND ASSIGNS, THEIR EMPLOYEES, OFFICERS, AND AGENTS FROM ANY AND ALL CLAIMS FOR DAMAGE RELATED TO THE USE OF THE PROPERTY DEPICTED ON THIS PLAT NOW AND IN THE FUTURE BY REASONS OF FLOODING, FLOWAGE, EROSION, OR DAMAGE CAUSED BY WATER, WHETHER SURFACE FLOOD, OR RAINFALL. IT IS FURTHER UNDERSTOOD AND AGREED THAT NATURAL DRAINAGE SHALL NOT BE ALTERED, DISTURBED, OR OBSTRUCTED WITHOUT APPROVAL OF THE ORO VALLEY TOWN COUNCIL.

CROSS ACCESS FOR ALL PROPERTY OWNERS IS GRANTED BY THE COMMON OPERATION RECIPROCAL EASEMENT AGREEMENT (C.O.R.E.A.) AS RECORDED ON JULY 16, 2004, IN DOCKET 12345, PAGE 379, PIMA COUNTY RECORDS AND SUPPLEMENT NO. 1 RECORDED IN DOCKET 12345, PAGE 433, AS ASSIGNED IN DOCKET 12562, PAGE 9549, AS AFFECTED BY SUPPLEMENT NO. 2 RECORDED IN DOCKET 12562, PAGE 9554, AND SUPPLEMENT NO. 3 RECORDED IN DOCKET 12580, PAGE 5691 AND SUPPLEMENT NO. 4 RECORDED IN DOCKET 12674, PAGE 7240 AND SUPPLEMENT NO. 5 RECORDED IN DOCKET 12746, PAGE 6367. RESPONSIBILITY FOR MAINTENANCE, CONTROL, SAFETY AND LIABILITY FOR PRIVATE UTILITIES, PRIVATE SEWERS AND PRIVATE DRAINAGEWAYS WILL BE AS STIPULATED IN THE C.O.R.E.A.

BASIS SCHOOLS, INC, AN ARIZONA NON-PROFIT CORPORATION

BY:_____

STATE OF ARIZONA)
)SS
COUNTY OF PIMA)

ON _____, 2014, BEFORE ME, _____,
A NOTARY PUBLIC IN AND FOR THE STATE OF ARIZONA, PERSONALLY APPEARED
_____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON (S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF ARIZONA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

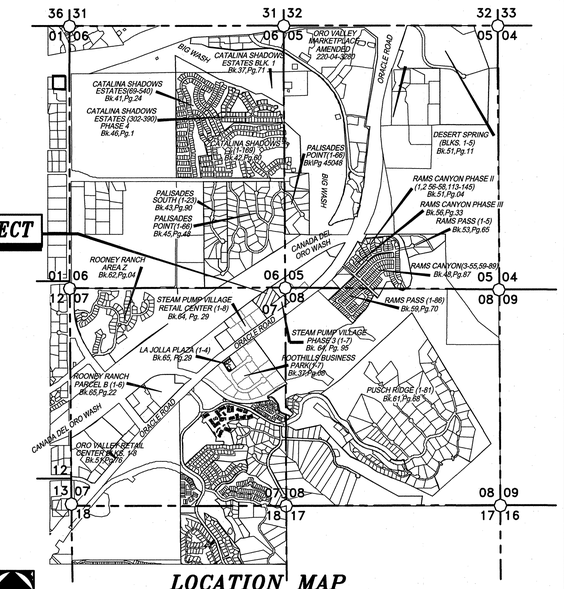
WITNESS MY HAND AND OFFICIAL SEAL.

_____
SIGNATURE OF NOTARY PUBLIC

(SEAL)

GENERAL NOTES

1. GROSS AREA OF SUBDIVISION = 4.67 ACRES (203,569 S.F.).
2. THE NUMBER OF COMMERCIAL LOTS = 2.
   THE MINIMUM LOT SIZE IS 1.43 AC (62,451 SF).
   THE AVERAGE LOT SIZE IS 2.34 AC (101,785 SF).
3. EXISTING ZONING IS STEAM PUMP VILLAGE P.A.D.
4. THE BUILDING SETBACKS AND MINIMUM BUILDING HEIGHTS MUST BE IN CONFORMANCE WITH THE STEAM PUMP VILLAGE P.A.D.
5. LOT SQUARE FOOTAGE AS FOLLOWS:
   LOT 8 141,118 S.F.
   LOT 9 62,451 S.F.
   TOTAL: 203,569 S.F.
6. THE PARKING REQUIREMENTS FOR EACH LOT MUST BE IN CONFORMANCE WITH THE STEAM PUMP VILLAGE P.A.D.
7. THE DEVELOPMENT STANDARDS FOR EACH DEVELOPMENT AREA ARE SPECIFIED IN THE STEAM PUMP VILLAGE P.A.D. AND SUBSEQUENT DEVELOPMENT PLANS.
8. THE INTENT OF THIS REPLAT IS TO SUPERSEDE ALL PRIOR LOT SPLITS PERTAINING TO THE SUBJECT PROPERTY.
9. NO FURTHER SUBDIVISION OF ANY LOT OR PARCEL SHOWN WILL BE DONE WITHOUT THE WRITTEN APPROVAL OF THE ORO VALLEY TOWN COUNCIL.
10. DRAINAGE WILL NOT BE ALTERED, DISTURBED, OR OBSTRUCTED WITHOUT APPROVAL OF THE ORO VALLEY TOWN COUNCIL.
11. THE PROFESSIONAL ENGINEER OF RECORD SHALL CERTIFY AS TO THE FORM, LINE AND FUNCTION OF ALL PUBLIC AND PRIVATE ROADWAYS AND DRAINAGE STRUCTURES BEFORE THE RELEASE OF ASSURANCES.
12. WATER SERVICE WILL BE PROVIDED BY ORO VALLEY WATER UTILITY.
13. ANY RELOCATION OR MODIFICATION OF EXISTING UTILITIES AND/OR PUBLIC IMPROVEMENTS REQUIRED BY THIS DEVELOPMENT WILL BE AT NO EXPENSE TO THE PUBLIC.
14. NO PERMANENT STRUCTURES (I.E. MASONRY WALLS, FENCES, ETC.) MAY BE CONSTRUCTED ON OR THROUGH ANY PUBLIC SEWER EASEMENTS SHOWN HEREON WITHOUT THE SEPARATE WRITTEN CONSENT OF PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT.
15. BASIS OF BEARING: THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 7, T. 12 S., R. 14 E, G.&S.R.M., SAID LINE BEARS N89°39'55"W, PER THE FINAL PLAT OF STEAM PUMP VILLAGE PHASE 3, RECORDED IN BOOK 64, PAGE 95, PIMA COUNTY RECORDER.
16. ALL APPLICABLE DEVELOPMENT PLAN/PRELIMINARY PLAT GENERAL NOTES FROM PHASE 3 (OV12-03-16C) SHALL APPLY TO THIS PLAT.



SCALE: 3"=1 MILE

LOCATION MAP

A PORTION OF SECTIONS 6 & 7, TOWNSHIP 12 SOUTH, RANGE 14 EAST, G.& S.R.M., PIMA COUNTY, ARIZONA
SCALE: 3" = 1 MILE

APPROVALS

I _____, CLERK OF THE TOWN OF ORO VALLEY, HEREBY CERTIFY THAT THIS PLAT WAS APPROVED BY THE MAYOR AND COUNCIL OF THE TOWN OF ORO VALLEY ON THE _____ DAY OF _____, 2014.

_____ _____
CLERK, TOWN OF ORO VALLEY DATE:

_____ _____
PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT DATE:

_____ _____
TOWN OF ORO VALLEY TOWN ENGINEER DATE:

_____ _____
PLANNING DIVISION MANAGER DATE:

ASSURANCES

ASSURANCE IN THE FORM OF _____, FROM _____, IN THE AMOUNT OF _____, AS RECORDED IN DOCKET _____, PAGE _____ HAS BEEN PROVIDED TO GUARANTEE DRAINAGE AND STREET IMPROVEMENTS, INCLUDING MONUMENTS, AND UTILITY IMPROVEMENTS (ELECTRIC, TELEPHONE, GAS, SEWER AND WATER) IN THIS SUBDIVISION.

_____ _____
MAYOR - TOWN OF ORO VALLEY DATE:

WATER ADEQUACY

THE TOWN OF ORO VALLEY HAS BEEN DESIGNATED BY THE ARIZONA DEPARTMENT OF WATER RESOURCES AS HAVING AN ASSURED WATER SUPPLY, PURSUANT TO ARS §45-576 AND HEREBY CERTIFIES IN WRITING TO SUPPLY WATER TO THIS SUBDIVISION.

_____ _____
WATER UTILITY DIRECTOR DATE:

CERTIFICATION

I HEREBY CERTIFY THAT THE BOUNDARY SURVEY SHOWN ON THIS PLAT WAS PERFORMED UNDER MY DIRECTION AND THAT ALL EXISTING AND/OR PROPOSED SURVEY MONUMENTS AND MARKERS SHOWN ARE CORRECTLY DESCRIBED. I FURTHER CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY DIRECTION.

_____
ROBERT L. LARSON, R.L.S. NO. 26923

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
26923
ROBERT L.
LARSON
3/31/14
EXPIRES 3/31
ARIZONA U.S.A.
EXPIRES 3/31/2014

REFERENCES

1. RECORD OF SURVEY/LOT SPLIT RECORDED IN BOOK 32, PAGE 62, PIMA COUNTY RECORDS.
2. RECORD OF SURVEY RECORDED IN BOOK 42, PAGE 40, PIMA COUNTY RECORDS.
3. PIMA COUNTY ASSESSOR'S BOOK 220, MAPS 04, 07, 08 & 11.
4. FINAL PLAT FOR STEAM PUMP VILLAGE RETAIL CENTER, RECORDED IN BOOK 64 OF MAPS, PAGE 29, PIMA COUNTY RECORDS.

RECORDING DATA

STATE OF ARIZONA)
)SS
COUNTY OF PIMA)

THIS INSTRUMENT WAS FILED FOR RECORD AT THE REQUEST OF THE WLB GROUP, INC. ON THIS _____ DAY OF _____, 2014, IN SEQUENCE _____ THEREOF AT_____

MY COMMISSION EXPIRES:_____

_____
SIGNATURE OF NOTARY PUBLIC

OWNER/DEVELOPER

BASIS.ED
7975 N. HAYDEN ROAD, SUITE B100
SCOTTSDALE, AZ. 85258
ATTN: JEFFREY HOUSER

REFERENCE NO.: OV1203-16 (PHASE 1)
OV1203-16A (PHASE 2)
OV1203-16C (PHASE 3)

The WLB Group Inc. **WLB**
Engineering Planning Surveying
Landscape Architecture Urban Design
Offices located in Tucson, Phoenix and Flagstaff, Arizona and Las Vegas, Nevada.
4444 East Broadway
Tucson, Arizona (520) 881-7480

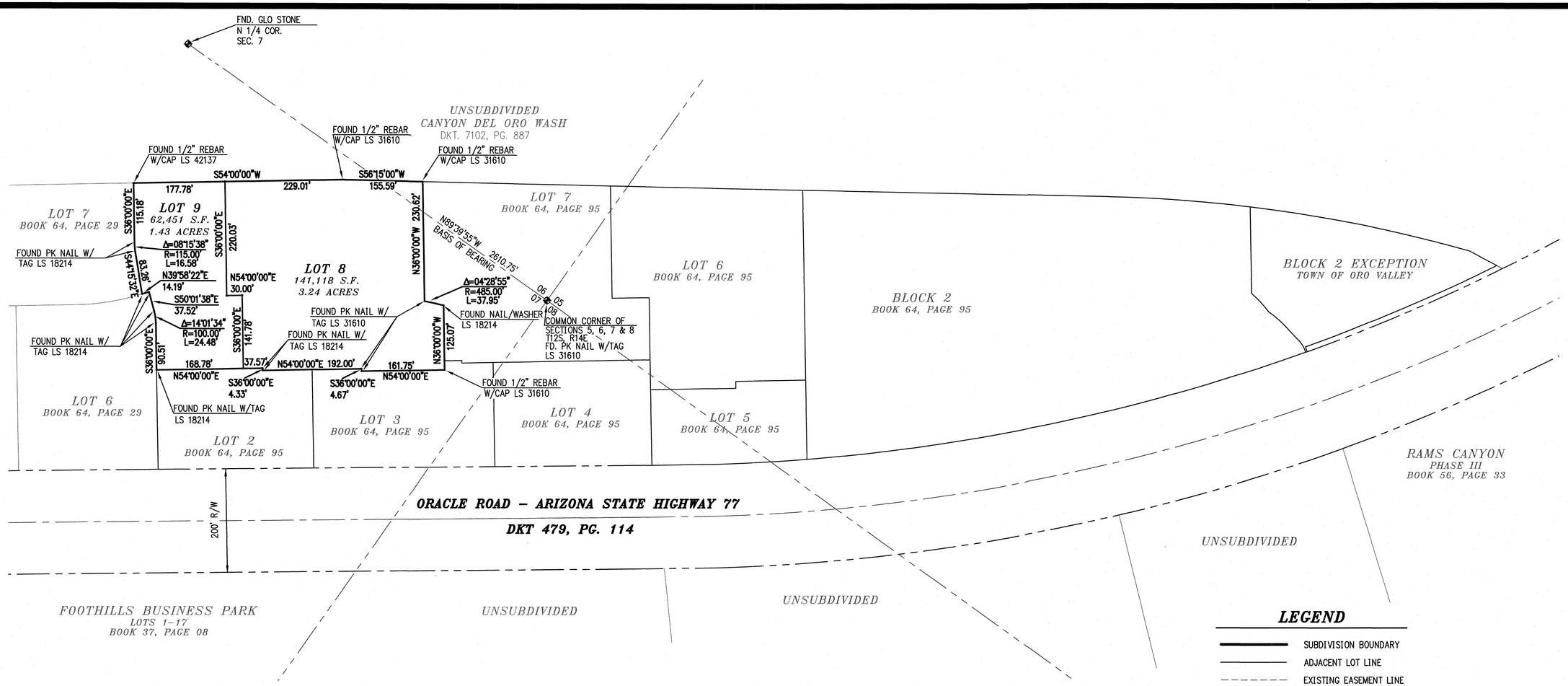
FINAL PLAT FOR
STEAMPUMP VILLAGE PHASE 3 RESUB. #1, LOTS 8 & 9

A RESUDIVISION OF LOT 1 OF STEAMPUMP VILLAGE PHASE 3
LOTS 1 THRU 7 AND BLOCK 1, RECORDED IN BOOK 64 M&P, PAGE 95
WITHIN OF SECTIONS 6 & 7,
TOWNSHIP 12 SOUTH, RANGE 14 EAST, G & S.R.M.
TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

JANUARY 2014
110046-E-001-0106

OV1214-05
SHEET 1 OF 3

N:\110046\BASIS\FINAL PLAT\FINAL PLAT 1.dwg



PROJECT LAYOUT

SCALE: 1"=100'

LEGEND

———	SUBDIVISION BOUNDARY
———	ADJACENT LOT LINE
- - - - - -	EXISTING EASEMENT LINE
———	PARCEL LINE
—·—·—	SECTION LINE
·····	RADIAL TIE LINE
○	1/2" IRON PIN SET PRIOR TO THE RECORDING OF THIS PLAT. TAG RLS 26923
5	LOT NUMBER
N.A.E.	NO ACCESS EASEMENT
R	INDICATES A RADIAL LINE TO A CURVE
P.U.E.	PUBLIC UTILITY EASEMENT
B.C.S.M.	BRASS CAP SURVEY MONUMENT
LS	LAND SURVEYOR
⊕	SECTION CORNER / QUARTER SECTION CORNER
●	FOUND SURVEY MONUMENT AS NOTED (IRON PIN, BRASS CAP, "X", ETC.)

0' 100' 200' 300'

The WLB Group Inc. **WLB**

Engineering Planning Surveying
Landscape Architecture Urban Design
Offices located in Tucson, Phoenix and Flagstaff, Arizona and Las Vegas, Nevada.
4444 East Broadway
Tucson, Arizona (520) 881-7480

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
26923
ROBERT L. LARSON
DATE SIGNED 3-28-14
Arizona U.S.A.
EXPIRES 3/31/2014

REFERENCE NO.: OV1203-16 (PHASE 1)
OV1203-16A (PHASE 2)
OV1203-16C (PHASE 3)

FINAL PLAT FOR
STEAMPUMP VILLAGE PHASE 3 RESUB. #1, LOTS 8 & 9

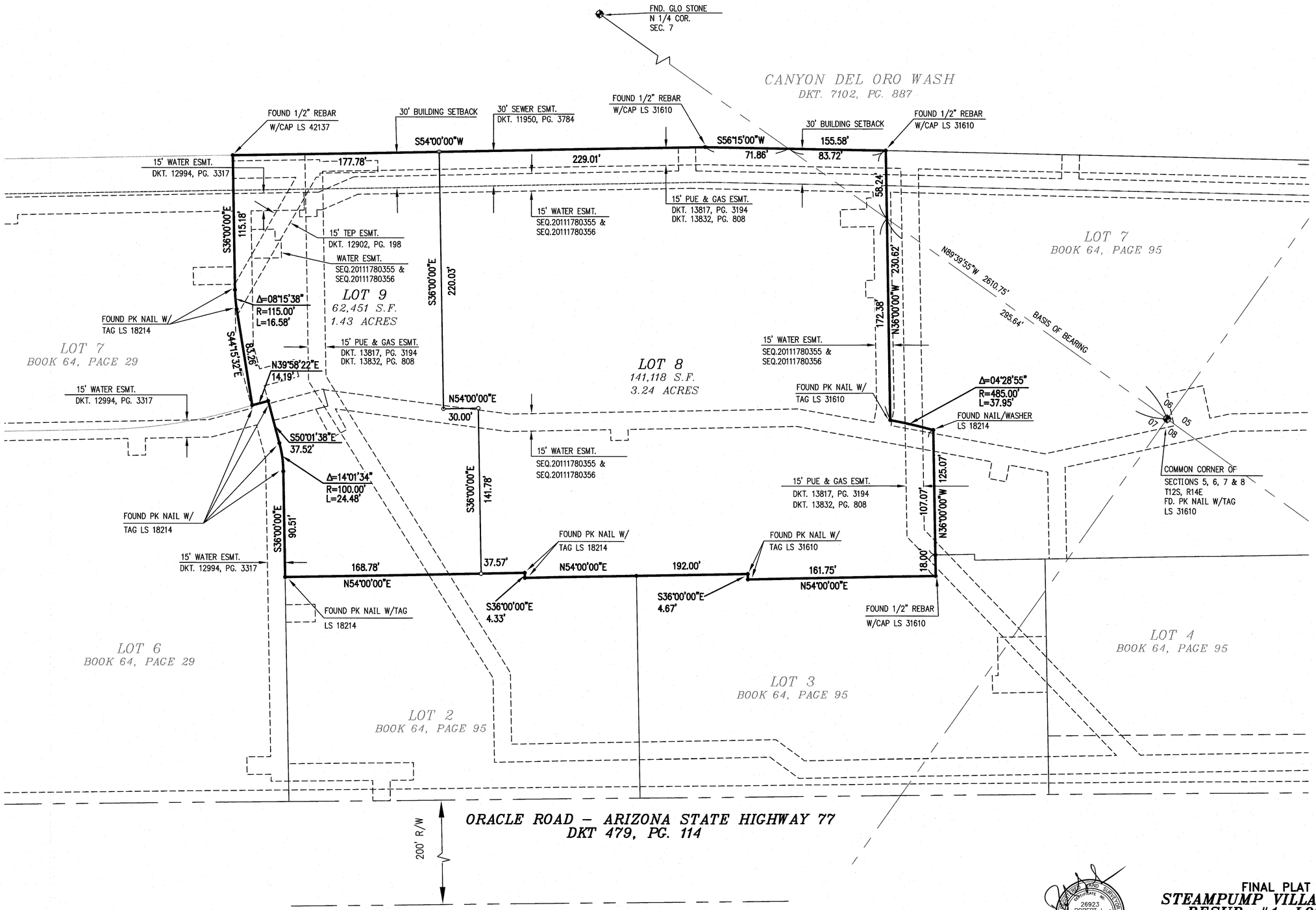
A RESUDIVISION OF LOT 1 OF STEAMPUMP VILLAGE PHASE 3
LOTS 1 THRU 7 AND BLOCK 1, RECORDED IN BOOK 64 M&P, PAGE 95
WITHIN OF SECTIONS 6 & 7,
TOWNSHIP 12 SOUTH, RANGE 14 EAST, G & S.R.M.
TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

OV1214-05

JANUARY 2014
110046-E-001-0106
SCALE: 1"=100'
SHEET 2 OF 3

N:\110046\BASIS\FINAL PLAT\FINAL PLAT 2.dwg

SEQUENCE NO._____



The WLB Group Inc.

WLB

Engineering Planning Surveying
Landscape Architecture Urban Design
Offices located in Tucson, Phoenix and Flagstaff, Arizona and Las Vegas, Nevada.
4444 East Broadway
Tucson, Arizona (520) 881-7480

0' 40' 80' 120'

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
26923
ROBERT L. LARSON
DATE SIGNED 3-20-14
Arizona U.S.A.
EXPIRES 3/31/2014

FINAL PLAT FOR
STEAMPUMP VILLAGE PHASE 3 RESUB. #1, LOTS 8 & 9

A RESUDIVISION OF LOT 1 OF STEAMPUMP VILLAGE PHASE 3
LOTS 1 THRU 7 AND BLOCK 1, RECORDED IN BOOK 64 M&P, PAGE 95
WITHIN OF SECTIONS 6 & 7,
TOWNSHIP 12 SOUTH, RANGE 14 EAST, G & S.R.M.
TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

REFERENCE NO.: OV1203-16 (PHASE 1)
OV1203-16A (PHASE 2)
OV1203-16C (PHASE 3)

JANUARY 2014
110046-E-001-0106

SCALE: 1"=40'

OV1214-05

SHEET 3 OF 3

N:\110046\BASIS\FINAL PLAT\FINAL PLAT 3.dwg

SEQUENCE NO._____

Town Council Regular Session **Item # G.**

Meeting Date: 04/16/2014
Requested by: David Williams
Submitted By: Matt Michels, Development Infrastructure Services
Department: Development Infrastructure Services

Information

SUBJECT:

Request for modification of a Conceptual Site Plan Condition of Approval related to provision of sidewalks for Phase I of the Enclave at Stone Canyon subdivision, located north of Tortolita Mountain Circle and east of Hohokam Village Place

RECOMMENDATION:

Staff recommends approval of the request to amend the Town Council condition of approval.

EXECUTIVE SUMMARY:

On October 2, 2013, the Town Council conditionally approved the Conceptual Site Plan for Phase I of the Enclave at Stone Canyon residential subdivision, located north of Tortolita Mountain Circle and east of Hohokam Village Place (see Attachment 1). The applicant now requests deletion of the Town Council-approved condition of approval requiring sidewalks throughout the subdivision (see Attachment 2, Planning Condition #1). The applicant's request is included as Attachment 3 and the Council approved Conceptual Site Plan is included as Attachment 4

BACKGROUND OR DETAILED INFORMATION:

Applicant's Request

According to the applicant, sidewalks are not necessary because the project which is within the Stone Canyon development, will have controlled, gated access and low traffic volumes. There are no sidewalks within Stone Canyon since the low traffic volumes and low posted speed limits allow for safe pedestrian circulation without the need for sidewalks. The applicant's request, including site and aerial photos of Stone Canyon, are included as Attachment 3.

Staff Analysis

The condition to require sidewalks within the subdivision was recommended to support pedestrian connectivity from homes to the Stone Canyon Swim and Fitness Center located to the north of the subdivision. However, the intended connectivity will not be achieved with the provision of pedestrian sidewalks since there are no existing or planned sidewalks along Hohokam Village Place, which accessed the Swim and Fitness Center. Based on these reasons, staff supports the request to delete the condition requiring sidewalks.

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

I MOVE to eliminate the condition requiring sidewalks throughout Phase I of The Enclave at Stone Canyon, as proposed by the applicant and depicted in Attachment 2.

OR

I MOVE to deny the proposed modification to the approved conditions for Phase I of The Enclave at Stone Canyon.

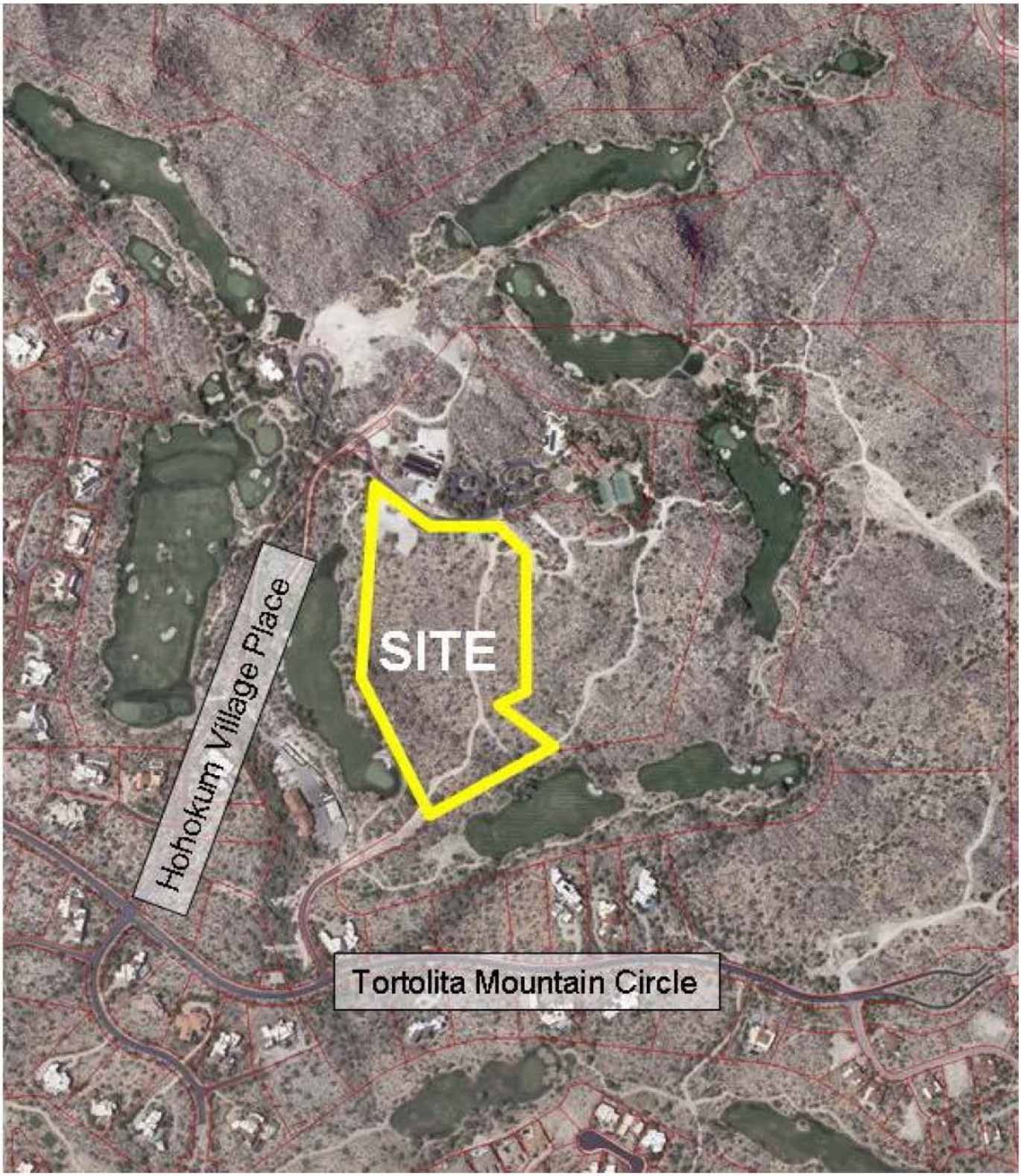
Attachments

Attachment 1 - Location Map

Attachment 2 - TC Approved Conditions of Approval

Attachment 3 - Applicant's Request

Attachment 4 - Conceptual Site Plan



LOCATION MAP

STONE CANYON ENCLAVE (OV1213-21)

Conditions of Approval
Stone Canyon Enclave Conceptual Site Plan
OV1213-21
October 2, 2013, Town Council

Planning:

The following condition is to be addressed with the Final Site Plan submittal:

1. Provide sidewalks throughout the development.
2. Lots shall be reconfigured to conform to the Golf Course Overlay Zone setback requirements.

Engineering:

3. Detention basins are typically located within common areas, not individual lots as depicted within the Conceptual Site Plan (see lots 10 and 11). Easements and deed restrictions will be required for access, maintenance, and drainage accommodations for any basins operated and maintained within individual private lots unless they are relocated into common areas during the Final Design process.
4. Detention basins are depicted within the traffic circle areas on the Conceptual Site Plan. Verification shall be required during the Final Design stage to verify that the basins will drain within a 12 hour period and that they do not discharge directly into the street.
5. Verification that safe and efficient access is provided for all proposed lots will be required during the Final Design stage. Driveways or constructed obstructions shall not be permitted within areas of limited sight visibility.

27 February 2014

Town of Oro Valley Development Services Department
11000 N La Canada Drive
Oro Valley, Arizona 85737

Attn: Mr. Matt Michels

RE: The Enclave at Stone Canyon – Request for Elimination of Required Sidewalks – OV1213-21

Dear Matt,

This letter is being provided as the formal request to the Town of Oro Valley to revisit the Conceptual Site Plan Condition of Approval regarding the requirement to provide sidewalks throughout the Stone Canyon Enclave development. Cypress Civil Development (hereinafter "CYPRESS") was provided with the Conditions of Approval – Stone Canyon Enclave Conceptual Site Plan (OV1213-21) letter (hereinafter the "Letter"), dated October 2, 2013, following meeting with the Oro Valley Town Mayor and Council. The Letter states five (5) Conditions to be met in order to obtain approval of the Conceptual Site Plan: two (2) related to Planning and three (3) related to Engineering. The first Condition listed states "Provide sidewalks throughout the development." This is the specific Condition from which relief is hereby requested and, in CYPRESS's opinion, justified due to the circumstances explained in the following paragraph.

The subject project encompasses the development of approximately 13 acres with 36 single-family, detached homes within the Stone Canyon master development in Oro Valley. The development area is accessed from the north via North Hohokam Village Place and has a single road extending south through the development area with one cul-de-sac road extending to the east from the main road and a second dead-end road extending to the east from the main road that will connect to a future development area. The main road then terminates at the south end where it connects with an existing access/maintenance road known as North Rockhaven Place. As mentioned, the proposed development area is within the Stone Canyon master planned community which is a high-end, custom-home lot development area built around a golf course. The area is nestled within the foothills of the Tortolita Mountains and presents a rural feel. The entire Stone Canyon development area is controlled access via a manned security station at the only entrance into the community which restricts traffic volumes throughout. In addition, there are no sidewalks within the area as the low volumes of traffic coupled with low posted speed limits allows for pedestrian traffic to utilize the existing roadways. The absence of sidewalks helps maintain the rural feel of the area.

It is hereby requested that the Enclave at Stone Canyon project not be required to construct sidewalks within its development boundaries. This request is being made in order to maintain the rural character within the Stone Canyon area and to not deviate from the existing development specifics of the area. It is the opinion of the development team that sidewalks will be rarely used, won't serve any connectivity purpose within Stone Canyon (as the other development areas do not have sidewalks) and will only serve to add to the "heat island" effect by creating more hard surfaces.

Please refer to the pictures on the following attached pages that exhibit the existing developed areas within Stone Canyon and the absence of sidewalks.

Thank you for your consideration of this matter and please contact me should you have any questions with the information presented herein.

Sincerely,
Cypress Civil Development

Jeff Hunt, PE
Principal

Giant Saguaro Pl
Giant Saguaro Pl
Giant Saguaro Pl
Giant Saguaro Pl
Giant Saguaro

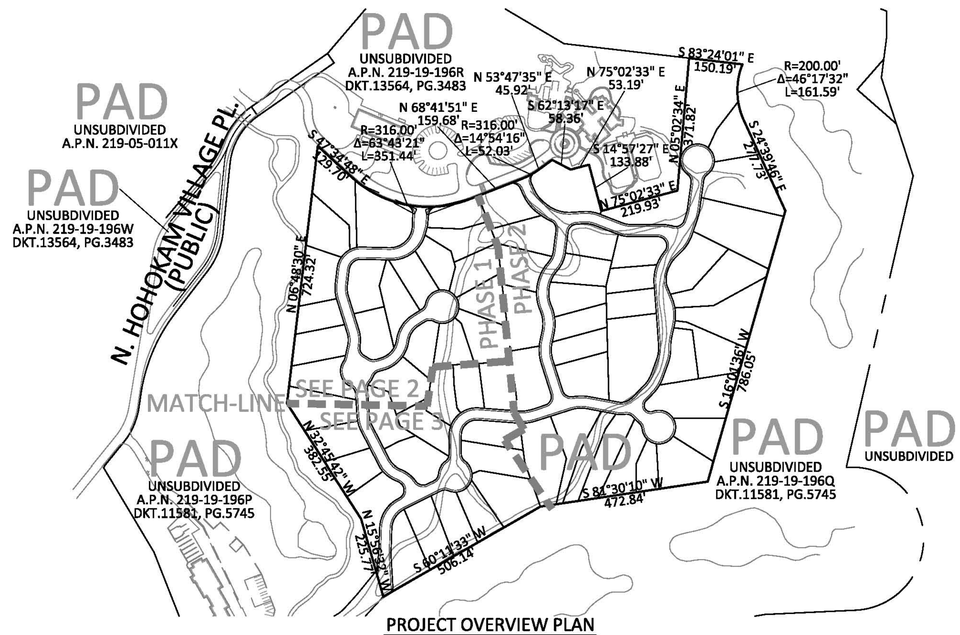
Mountain Cir
Tortolita Mountain Cir
W Tortolita Mountain Cir
Tortolita Mountain Cir

CONCEPTUAL SITE PLAN for THE ENCLAVE AT STONE CANYON - PHASE I
OV113-005

GENERAL NOTES

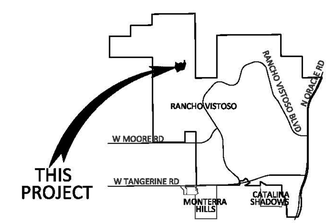
1. THE GROSS AREA OF THE DEVELOPMENT SITE IS 12.98 ACRES (565,441 SF).
2. RESIDENTIAL UNITS PER ACRE = 2.77
3. TOTAL MILES OF NEW PUBLIC STREETS IS 0 MILES.
4. TOTAL MILES OF NEW PRIVATE STREETS IS 0.4 MILES.
5. THE GROSS AREA OF ALL IMPERVIOUS SURFACES IS 65,339 +/- SF.
5. THERE ARE NO ZONING VARIANCES OR MODIFICATIONS APPLICABLE TO THIS PROJECT.
6. ASSURANCES FOR SITE IMPROVEMENTS, LANDSCAPING AND REVEGETATION BONDS MUST BE POSTED PRIOR TO ISSUANCE OF GRADING PERMITS.
7. MAXIMUM BUILDING HEIGHT PER THE PAD ZONING IS 30', TWO-STORIES. THE PROPOSED RESIDENCES WILL BE LIMITED TO SINGLE-STORY AT 23' OR LESS IN HEIGHT.
8. THIS PROJECT WAS DESIGNED TO MEET RIPARIAN HABITAT PROTECTION OVERLAY DISTRICT CRITERIA. XERORIPARIAN "C" LIES ON AT LEAST A PORTION OF LOTS 8, 9, 10, 12, 13, 14, AND 22.
9. AREA OF OPEN SPACE:
   - REQUIRED - 0 %
   - PROVIDED - 22 % (123,760 SF)
10. LANDSCAPED BUFFER-YARDS REQUIRED
   - NORTH (STREET) - 10' (INCLUDES SITE WALL)
   - EAST - 0'
   - SOUTH - 0'
   - WEST - 0'
11. REQUIRED BUILDING SETBACKS:
   - FRONT YARD - 20 FEET
   - SIDE YARD - 5 FEET (OR 0 FEET FOR A COMMON WALL)
   - REAR YARD - 10 FEET

   PROVIDED BUILDING SETBACKS:
   - FRONT YARD - 20 FEET MIN.
   - SIDE YARD - 5 FEET MIN.
   - REAR YARD - 10 FEET MIN.
12. EXISTING ZONING IS PAD (PLANNED AREA DEVELOPMENT). UNDERLYING ZONING IS MDR (MEDIUM DENSITY RESIDENTIAL).
13. ALL SIGNAGE AND LIGHTING TO BE ADDRESSED AS PART OF A SEPARATE REVIEW AND APPROVAL PROCESS.
14. THIS PROJECT IS SUBJECT TO THE RANCHO VISTOSO PAD PROVISIONS.
15. THE DESIGN SPEED FOR NEW STREETS IS 15 MPH. THE DESIGN VEHICLE IS SU-30.
16. ALL NEW PUBLIC ROADS WITHIN AND ADJACENT TO THIS PROJECT WILL BE CONSTRUCTED IN ACCORDANCE WITH APPROVED PLANS. SEPARATE PUBLIC IMPROVEMENT AND CONSTRUCTION PLANS WILL BE SUBMITTED TO THE TOWN ENGINEER'S OFFICE FOR REVIEW AND APPROVAL.
17. ANY RELOCATION OR MODIFICATION OF EXISTING UTILITIES AND/OR PUBLIC IMPROVEMENTS NECESSITATED BY THE PROPOSED DEVELOPMENT WILL BE AT NO EXPENSE TO THE PUBLIC.
18. THIS DEVELOPMENT MUST COMPLY WITH THE ORO VALLEY WATER UTILITY SPECIFICATIONS MANUAL DURING ALL PHASES OF CONSTRUCTION.
19. THIS PROJECT WILL BE SERVED BY ORO VALLEY WATER UTILITY WHICH HAS BEEN DESIGNATED AS HAVING AN ASSURED 100 YEAR WATER SUPPLY BY THE DIRECTOR OF WATER RESOURCES. ANY AND ALL WELLS MUST BE ABANDONED PER ADWR REGULATIONS.
20. A LINE EXTENSION AGREEMENT MUST BE IN PLACE PRIOR TO ANY WORK ON THE WATER INFRASTRUCTURE BEFORE THIS PROJECT BEGINS.
21. ALL METERS SHALL HAVE A BACKFLOW PROTECTION DEVICE INSTALLED ON THE CUSTOMER SIDE OF THE METER.
22. ALL FIRE SERVICES SHALL HAVE A BACKFLOW PROTECTION DEVICE INSTALLED ON THEM.
23. FIRE HYDRANTS CONNECTED TO AN APPROVED WATER SUPPLY OF 1500 GPM FOR FIRE PROTECTION MUST BE INSTALLED AND IN SERVICE PRIOR TO COMBUSTIBLE MATERIAL DELIVERY TO THE SITE. TEMPORARY CONSTRUCTION OFFICE TRAILERS ARE CONSIDERED COMBUSTIBLE MATERIAL.
24. APPROVED FIRE APPARATUS ACCESS ROADS MUST BE INSTALLED AND IN SERVICE PRIOR TO COMBUSTIBLE MATERIAL DELIVERY TO THE SITE.
25. APPROVED AUTOMATIC SPRINKLER SYSTEMS IN NEW BUILDINGS AND STRUCTURES SHALL BE PROVIDED THROUGHOUT ALL GROUP A, B, E, F, H, I, M, R, AND S OCCUPANCIES FOR EVERY FACILITY, BUILDING OR PORTION OF A BUILDING HEREAFTER CONSTRUCTED WITHIN OR MOVED INTO THE JURISDICTION. APPROVED AUTOMATIC SPRINKLER SYSTEMS SHALL BE PROVIDED THROUGHOUT ALL ONE- AND TWO- FAMILY DWELLINGS AND TOWNHOUSES USED AS MODEL HOMES WITH SALES OR CONSTRUCTION OFFICES, AND ONE- AND TWO- FAMILY DWELLINGS AND TOWNHOUSES WHICH EXCEED 3,600 SQUARE FEET IN FIRE-FLOW CALCULATION AREA HEREAFTER CONSTRUCTED WITHIN OR MOVED INTO THE JURISDICTION.
26. TEMPORARY STREET SIGNS MUST BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE OF VEHICLES. ALL STRUCTURES UNDER CONSTRUCTION MUST BE CLEARLY IDENTIFIED WITH AN APPROVED ADDRESS.
27. THE INSTALLATION OF TRAFFIC CONTROL SIGNALING DEVICES AND/OR ELECTRICALLY OPERATED GATES ON FIRE APPARATUS ACCESS ROADS SHALL INCLUDE PREEMPTIVE CONTROL EQUIPMENT COMPATIBLE WITH THE FIRE DEPARTMENT'S EXISTING SYSTEM.
28. SHOULD AN EASEMENT BE IN CONFLICT WITH ANY PROPOSED BUILDING LOCATION, VACATION OF THE EASEMENT IS TO OCCUR PRIOR TO ISSUANCE OF BUILDING PERMITS.



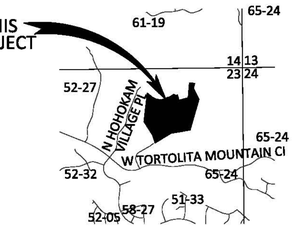
PROJECT OVERVIEW PLAN

SCALE: 1"=200'



PLANNED AREA DEVELOPMENT
DEVELOPMENT

NORTH
3" = 5 MILES



A PORTION OF THE N.E. ¼ OF SECTION 23, T. 11 S., R. 13 E., G.&S.R.M., ORO VALLEY, PIMA COUNTY, ARIZONA

LOCATION MAP

NORTH
3" = 1 MILE

LEGEND

2580	EXISTING CONTOUR
	EXISTING EASEMENT
	RIGHT-OF-WAY
	PARCEL BOUNDARY LINE
	OTHER PARCEL LINE
	ROADWAY CENTERLINE
	XERORIPARIAN "C" OVERLAY ZONE
	PAINT STRIPE
	EXISTING PAVEMENT EDGE
	EXISTING CONCRETE
	EXISTING CURB
—G—G—G—	EXISTING GAS
U	EXISTING UNKNOWN UTILITY
G	EXISTING GAS MARKER
T	EXISTING TELEPHONE PEDESTAL
C	EXISTING COMMUNICATION X
—E—E—E—	EXISTING UNDERGROUND ELECTRIC
E	EXISTING ELECTRIC BOX
	EXISTING TRANSFORMER
—W—W—W—	EXISTING WATER
W	EXISTING WATER METER
	EXISTING WATER VALVE
—S—S—S—	EXISTING SEWER
	EXISTING SEWER MANHOLE
R-2	ZONING DISTRICT
	FOUND/SET SURVEY MONUMENTATION

LOT AREA TABLE

LOT #	AREA (SQ. FT.)	AREA (ACRES)
1	21,575	0.495
2	17,395	0.399
3	13,930	0.320
4	9,337	0.214
5	12,994	0.298
6	13,666	0.321
7	16,694	0.383
8	12,487	0.287
9	11,749	0.270
10	16,573	0.380
11	14,707	0.338
12	14,524	0.333
13	12,488	0.287
14	10,519	0.241
15	18,135	0.416
16	13,363	0.307
17	10,823	0.248
18	12,279	0.282
19	9,530	0.219
20	10,913	0.251
21	11,830	0.272
22	14,191	0.325
23	11,681	0.269
24	14,838	0.326
25	10,181	0.234
26	10,589	0.243
27	15,105	0.347
28	11,776	0.271
29	12,399	0.285
30	9,863	0.238
31	10,484	0.241
32	12,345	0.284
33	11,532	0.307
34	13,109	0.301
35	12,126	0.267
36	10,556	0.243
AVERAGE LOT AREA		12,675 SQ. FT. (0.291 ACRES)

GENERAL NOTES cont'd

29. THE FOLLOWING CODES AND STANDARDS SHALL BE APPLICABLE TO THIS DEVELOPMENT:
   - A. 2006 INTERNATIONAL CODES WITH LOCAL AMENDMENTS.
   - B. 2005 NATIONAL ELECTRICAL CODE.
   - C. 2010 AMERICAN DISABILITIES ACT ACCESSIBILITY GUIDELINES.
   - D. GOLDER RANCH FIRE DISTRICT STANDARDS AND FORMS.
   - E. 2008 TOWN OF ORO VALLEY POOL CODE.
   - F. 2003 PC/COT STANDARD SPECIFICATIONS & DETAILS FOR PUBLIC IMPROVEMENTS.
   - G. 2010 TOWN OF ORO VALLEY DRAINAGE CRITERIA MANUAL.
   - H. 2004 TOWN OF ORO VALLEY SUBDIVISION STREET STANDARDS AND POLICIES MANUAL.
   - I. TOWN OF ORO VALLEY ZONING CODE, CURRENT REVISED.
   - J. ORO VALLEY TOWN CODE, CURRENT REVISED.
30. FIRE HYDRANTS CONNECTED TO AN APPROVED WATER SUPPLY OF 1000 GPM FOR FIRE PROTECTION SHALL BE INSTALLED AND IN SERVICE PRIOR TO COMBUSTIBLE MATERIAL DELIVERY TO SITE. TEMPORARY CONSTRUCTION OFFICE TRAILERS ARE CONSIDERED COMBUSTIBLE MATERIAL.
31. APPROVED FIRE APPARATUS ACCESS ROADS SHALL BE INSTALLED AND IN SERVICE PRIOR TO COMBUSTIBLE MATERIAL DELIVERY TO THE SITE.
32. APPROVED AUTOMATIC SPRINKLER SYSTEMS SHALL BE PROVIDED THROUGHOUT ALL ONE- AND TWO- FAMILY DWELLINGS AND TOWNHOUSES WHICH EXCEED 3,600 SQUARE FEET IN FIRE-FLOW CALCULATION AREA.
33. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE OF VEHICLES. ALL STRUCTURES UNDER CONSTRUCTION SHALL BE CLEARLY IDENTIFIED WITH AN APPROVED ADDRESS.

RANCHO VISTOSO PAD REQUIREMENTS

1. NO MORE THAN 2 REDUCED SETBACK HOMES SHALL BE BUILT NEXT TO EACH OTHER.
2. TWO-STORY HOMES SHALL BE RESTRICTED AS FOLLOWS:
   - A. NO MORE THAN TWO SHALL BE BUILT ADJACENT TO EACH OTHER ALONG MAJOR STREETS
   - B. NO MORE THAN THREE SHALL BE BUILT ADJACENT TO EACH OTHER ALONG INTERIOR STREETS
   - C. SHALL NOT BE BUILT ON ALL CORNER LOTS
   - D. SHALL NOT BE BUILT ALONG GOLF COURSES
3. THE FRONT SETBACKS WILL VARY FOR 2 ABUTTING HOUSES
4. THE SIDE ENTRY GARAGES SHALL HAVE AN ARTICULATION (E.G. WINDOWS) ON THE SIDE FACING THE STREET.
5. THE GARAGES FOR THREE CARS SHALL HAVE THE THIRD POTION OFFSET FROM THE OTHER TWO.
6. THE FRONT GARAGE(S) SHALL NOT CONSIST OF MORE THAN 50% OF THE TOTAL BUILDING FRONTAGE.
7. THE GARAGES SHALL NOT PROJECT MORE THAN 5-FEET IN FRONT OF A HOUSE (UNLESS SIDE-ENTRY).
8. THE SECOND STORY MUST HAVE LESS AREA THAN THE FIRST STORY IN ORDER TO REDUCE BUILDING MASS.
9. REDUCED SETBACKS ONLY APPLY TO HOMES WITH SIDE ENTRY GARAGE.

OV113-005
REF:

DATE: 07/01/13	SITE ADDRESS	DEVELOPER	ARCHITECT
SCALE: 1"=200'	14200 N. HOHOKAM VILLAGE PL. ORO VALLEY, ARIZONA 85755	STONE MOUNTAIN BUILDERS LLC 700 E BROADWAY, SUITE 200 TUCSON, ARIZONA 85719 ATTN: DAVID WILLIAMSON P: (520) 404-7681	DANIELLIAN ASSOCIATES ARCHITECTURE + PLANNING 60 CORPORATE PARK IRVINE, CA 92606 ATTN: ART DANIELLIAN P: (949) 474-6030
C.I.: N/A			

A PORTION OF THE N.E. ¼ OF SECTION 23, T. 11 S., R. 13 E., G. & S. R. M., TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA.

CYPRESS PROJECT NO: 12.038

CONCEPTUAL SITE PLAN for THE ENCLAVE AT STONE CANYON - PHASE I

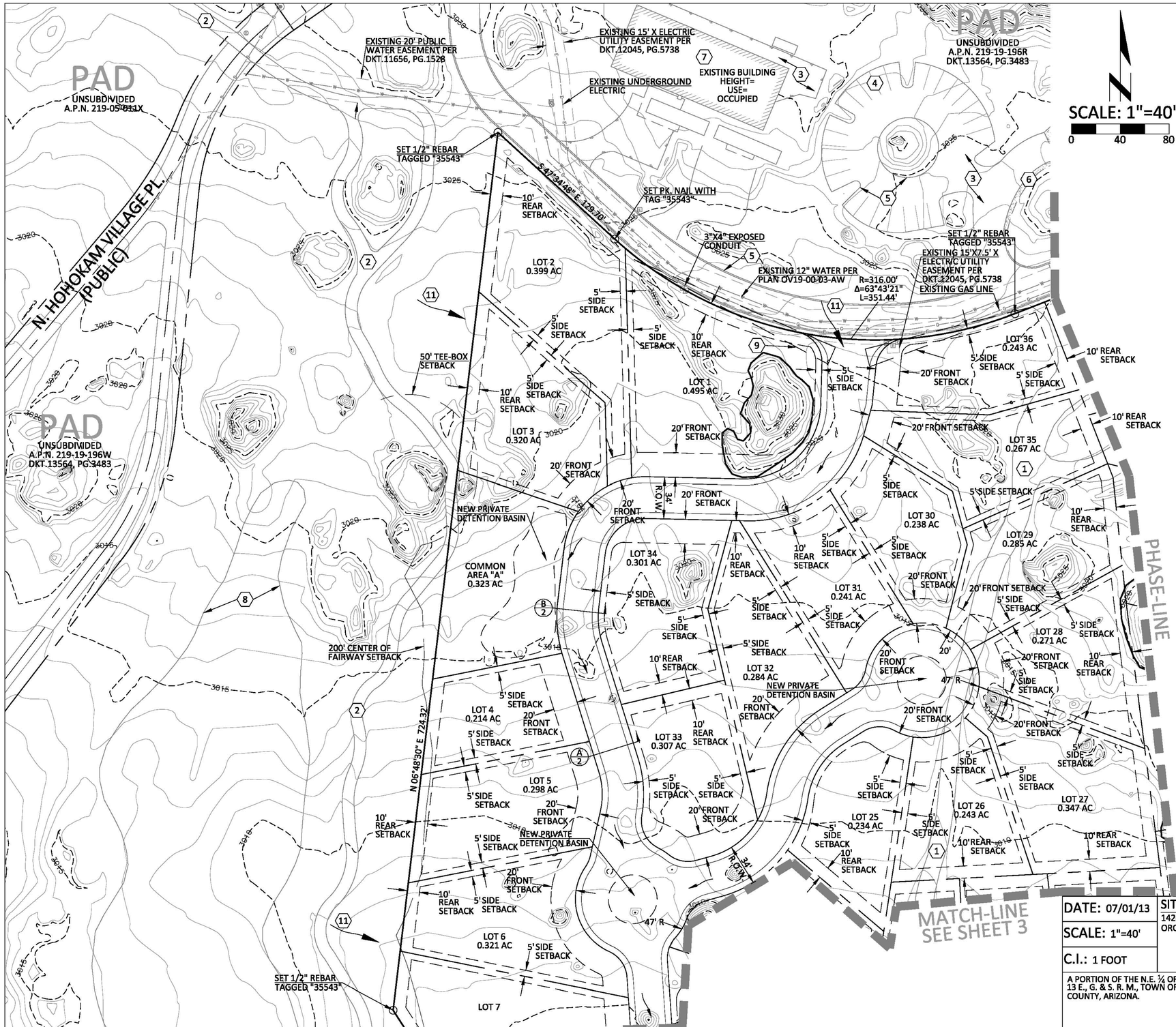
cover sheet

CYPRESS CIVIL DEVELOPMENT
strength + sustainability

2102 north country club road
suite #9
tucson, arizona 85716
p: 520.991.5213
e: kmhall@cypresscivil.com

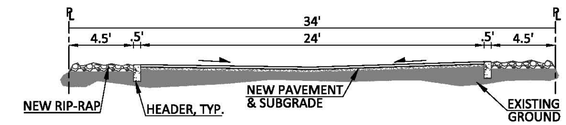
Registered Professional Engineer (Civil) CERTIFICATE NO. 53640 JEFFREY P. HUNT Date Signed 07/01/13 ARIZONA, U.S.A. Expires 06/30/2016

NO.	DATE	REVISION	BY

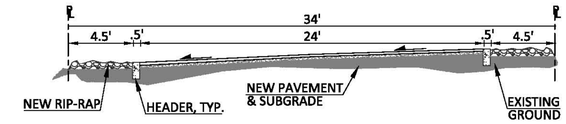


SCALE: 1"=40'

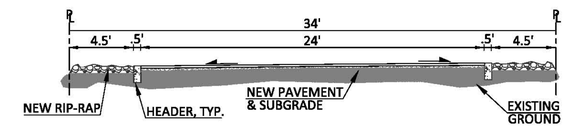
0 40 80



A ROADWAY CROSS-SECTION
SCALE: N.T.S.



B ROADWAY CROSS-SECTION
SCALE: N.T.S.



C ROADWAY CROSS-SECTION
SCALE: N.T.S.

KEYNOTES

1. EXISTING DIRT ROAD.
2. EXISTING CART-PATH TO REMAIN.
3. EXISTING PAVEMENT TO REMAIN.
4. EXISTING STRIPING TO REMAIN.
5. EXISTING CURB TO REMAIN
6. EXISTING CONCRETE/SIDEWALK TO REMAIN.
7. EXISTING BUILDING TO REMAIN.
8. EXISTING GOLF COURSE TO REMAIN.
9. 15'x180' SIGHT VISIBILITY TRIANGLE.
10. 15'x140' SIGHT VISIBILITY TRIANGLE.
11. LOCATION OF OFF-SITE WATER SITE IMPACT.

SHEET INDEX MAP NORTH

OV113-005
REF:

DATE: 07/01/13	SITE ADDRESS	DEVELOPER	ARCHITECT
SCALE: 1"=40'	14200 N. HOHOKAM VILLAGE PL. ORO VALLEY, ARIZONA 85755	STONE MOUNTAIN BUILDERS LLC 700 E BROADWAY, SUITE 200 TUCSON, ARIZONA 85719 ATTN: DAVID WILLIAMSON P: (520) 404-7681	DANIELLIAN ASSOCIATES ARCHITECTURE + PLANNING 60 CORPORATE PARK IRVINE, CA 92606 ATTN: ART DANIELLIAN P: (949) 474-6030
C.I.: 1 FOOT			

A PORTION OF THE N.E. ¼ OF SECTION 23, T. 11 S., R. 13 E., G. & S. R. M., TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA.

CYPRESS PROJECT NO: 12.038

CONCEPTUAL SITE PLAN for THE ENCLAVE AT STONE CANYON - PHASE I

site plan (northwest) + cross section

CYPRESS CIVIL DEVELOPMENT
strength + sustainability
2102 north country club road
suite #9
tucson, arizona 85716
p: 520.991.5213
e: kmhall@cypresscivil.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 53840 JEFFREY P. HUNT Date Signed 07/01/13 ARIZONA, U.S.A. Expires 06/30/2014

NO.	DATE	REVISION	BY

STONE CANYON 5

MATCH-LINE, SEE SHEET 2

SCALE: 1"=40'
0 40 80

KEYNOTES

1. EXISTING DIRT ROAD.
2. EXISTING CART-PATH TO REMAIN.
3. EXISTING PAVEMENT TO REMAIN.
4. EXISTING STRIPING TO REMAIN.
5. EXISTING WALL TO REMAIN.
6. EXISTING BUILDING TO REMAIN.
7. EXISTING GOLF COURSE TO REMAIN.
8. LOCATION OF OFF-SITE WATER SITE IMPACT.

TEMPORARY TURN-AROUND FOR PHASE 1

PHASE-LINE

LOT 25
LOT 24 0.326 AC
LOT 23 0.269 AC
LOT 22 0.325 AC
LOT 21 0.272 AC
LOT 20 0.251 AC
LOT 19 0.219 AC
LOT 18 0.282 AC
LOT 17 0.248 AC
LOT 16 0.307 AC
LOT 15 0.416 AC
LOT 14 0.241 AC
LOT 13 0.287 AC
LOT 12 0.333 AC
LOT 11 0.338 AC
LOT 10 0.380 AC
LOT 9 0.270 AC
LOT 8 0.287 AC
LOT 7 0.383 AC

R.O.W. 34'
47' R

NEW PRIVATE DETENTION BASIN

SET 1/2" REBAR TAGGED "35543"

200' CENTER OF FAIRWAY SETBACK

150' EDGE OF GREEN SETBACK

N 32°45'42" W 382.55'

S 60°11'33" W 506.14'

EXISTING MANHOLE PER PLAN PV-2001-016
RIM (N) = 2996.54
D.S. INV = 2989.79
U.S. INV = 2989.89

EXISTING MANHOLE PER PLAN PV-2001-016
RIM (N) = 2994.99
D.S. INV = 2988.56
U.S. INV = 2988.56

EXISTING 20' PRIVATE SEWER EASEMENT PER DKT.11656, PG.1528

PAD
UNSUBDIVIDED
A.P.N. 219-19-196P
DKT.11581, PG.5745

PAD
UNSUBDIVIDED
A.P.N. 219-19-196Q
DKT.11581, PG.5745

EXISTING BUILDING
HEIGHT=
USE=
OCCUPIED

SHEET INDEX MAP NORTH

OV113-005
REF:

DATE: 07/01/13	SITE ADDRESS	DEVELOPER	ARCHITECT
SCALE: 1"=40'	14200 N. HOHOKAM VILLAGE PL. ORO VALLEY, ARIZONA 85755	STONE MOUNTAIN BUILDERS LLC 700 E BROADWAY, SUITE 200 TUCSON, ARIZONA 85719 ATTN: DAVID WILLIAMSON P: (520) 404-7681	DANIELLIAN ASSOCIATES ARCHITECTURE + PLANNING 60 CORPORATE PARK IRVINE, CA 92606 ATTN: ART DANIELLIAN P: (949) 474-6030
C.I.: 1 FOOT			

A PORTION OF THE N.E. ¼ OF SECTION 23, T. 11 S., R. 13 E., G. & S. R. M., TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA.

CYPRESS PROJECT NO: 12.038

CONCEPTUAL SITE PLAN for THE ENCLAVE AT STONE CANYON - PHASE I

site plan (southwest)

CYPRESS CIVIL DEVELOPMENT
strength + sustainability

2102 north country club road
suite #9
tucson, arizona 85716
p: 520.991.5213
e: kmhall@cypresscivil.com

Registered Professional Engineer (Civil)
CERTIFICATE NO. 53840
JEFFREY P. HUNT
Date Signed 07/01/13
ARIZONA, U.S.A.
Expires 06/30/2014

NO.	DATE	REVISION	BY

Town Council Regular Session **Item # H.**

Meeting Date: 04/16/2014
Requested by: Kristy Diaz-Trahan
Submitted By: Kristy Diaz-Trahan, Parks and Recreation
Department: Parks and Recreation

Information

SUBJECT:

Resolution No. (R)14-21, approving Oro Valley Historical Society License Agreement Amendment

RECOMMENDATION:

Staff recommends approval.

EXECUTIVE SUMMARY:

The Oro Valley Historical Society has a license agreement with the Town to do work at Steam Pump Ranch, specifically regarding a historical garden, site tours, and educational outreach. The Society wishes to expand the scope of the license to include "Hands on Archaeology."

BACKGROUND OR DETAILED INFORMATION:

The Town of Oro Valley entered in to an agreement with the Oro Valley Historical Society (Society) in 2007, which was later renewed in 2012. The primary scope of this agreement includes the Society's work at Steam Pump Ranch's historical garden, site tours, and educational outreach.

The Historical Society is a 501(c)(3) organization that has individual, family, and business memberships available. Archaeology Southwest, also a 501(c)(3), is a "business member" of the Society. For three decades, Archaeology Southwest has practiced a holistic, conservation-based approach to exploring places of the past, which they call Preservation Archaeology. Much of their work is in consort with that of the Society's.

Archaeology Southwest recently launched their public program titled *Hands on Archaeology*. This program provides interested members of the public an opportunity to participate in experimental archaeology research. As a member of the Society, they are requesting that this research take place in the historic garden at Steam Pump Ranch.

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

I MOVE to adopt Resolution No. (R)14-21, approving the amended Oro Valley Historical Society License Agreement as submitted.

or

I MOVE to deny the amended Oro Valley Historical Society License Agreement as submitted.

Attachments

R14-21 OVHS License Amendment

RESOLUTION NO. (R)14-21

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE TOWN OF ORO VALLEY, ARIZONA, AUTHORIZING AND EXECUTING AN AMENDMENT TO THE LICENSE AGREEMENT BETWEEN THE TOWN OF ORO VALLEY AND THE ORO VALLEY HISTORICAL SOCIETY TO EXPAND THE SCOPE OF THE LICENSE TO INCLUDE HANDS ON ARCHEOLOGY AND ARCHEOLOGY SITE RECREATION IN THE NATIVE AMERICAN AND PIONEER GARDENS AREA AT STEAM PUMP RANCH

WHEREAS, The Town of Oro Valley (the "Town") is a municipal corporation within the State of Arizona and is vested with all the rights, privileges and benefits and entitled to the immunities and exemptions granted to municipalities and political subdivisions under the Laws of the State of Arizona; and

WHEREAS, In February or 2012 the Town entered into a license with the Oro Valley Historical Society ("OVHS"), the "License", for the purpose of planting and maintenance of historical gardens; and

WHEREAS, the OVHS and the Town are now interested in expanding the scope of the license to include "Hands on Archeology" as explained in Exhibit "A"; and

WHEREAS, expanding the scope of the license to include "Hands on Archeology" activities is consistent with the Town's adopted Master Plan for Steam Pump Ranch.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Town that the License between the Town the OVHS, is hereby amended adding new Section 3. F. as follows:

F. Hands On Archeology: Licensee may partner with Archeology Southwest for the purpose of constructing one or more full-scale replicas of a thousand-year-old Hohokam pit-house, other domestic features, and development of replicated tools and other objects for educational purposes.

BE IT FURTHER RESOLVED that the that the Mayor and any other administrative officials of the Town of Oro Valley are hereby authorized to take such steps as are necessary to execute and implement the terms of the Agreement.

PASSED AND ADOPTED by the Mayor and Town Council of the Town of Oro Valley, Arizona, this 16th day of April, 2014.

TOWN OF ORO VALLEY

_____

Dr. Satish I. Hiremath, Mayor

ATTEST:

_____
Julie K. Bower, Town Clerk

Date: _____

APPROVED AS TO FORM:

_____
Tobin Sidles, Legal Services Director

Date: _____

-Exhibit A-

Archaeology Southwest's Program in Experimental Archaeology and the Public

Hands-On Archaeology is Archaeology Southwest's public program that incorporates interested members of the public in experimental archaeology research. The research is guided by current questions and topics of interest to Southwestern archaeologists and participation is supervised by professional archaeologists. Much of the actual work is carried out by volunteers who serve as citizen scientists. Archaeology Southwest proposes a partnership with Oro Valley and the Oro Valley Historical Society to be implemented in conjunction with current programs at the historic Steam Pump Ranch. The program is intended to be compatible with the adopted Steam Pump Ranch Master Plan.

What Is Experimental Archaeology?

Because archaeologists generally study artifacts or other materials from the distant past, it is often not obvious how such items were made or used, or how well they performed a specific task. Archaeologists have found that one effective approach to this problem is to figure out how to make an ancient tool and then to conduct experiments that use the tool in different ways to better understand it. Similarly, reconstructing ancient buildings using tools and materials appropriate to the time is a very useful approach. Archaeologists in southern Arizona have excavated multiple thousands of Hohokam houses from roughly a thousand years ago. These are known as pithouses, and in the Tucson area it has been found that nearly 60 percent of these houses were burned. By building a replica pithouse, a great deal can be learned about the effort involved. By using it for a period of time, its longevity can also be assessed. Then, a controlled burning would give new insights into what archaeologists find in the ground. This kind of experimentation has been found to be a very important part of archaeological research, and the diversity of questions asked and experimental tasks undertaken has expanded greatly over time. Another important advantage of this approach is that it is a great way to involve the public in the experimental process.

A Pilot Program

Archaeology Southwest proposes a partnership with the Town of Oro Valley and the Oro Valley Historical Society at the historic Steam Pump Ranch as a venue to implement an element of our Hands-On Archaeology program. The work of Ms. Joyce Rychener (Historical Society Volunteer), who has been growing a heritage garden on the north side of the Steam Pump property since 2009, is already a small program of experimental archaeology. She has worked with a number of local archaeologists. Some are interested in the techniques and the productivity of older types of corn that are more similar to those grown in the past. Others have used seeds and plant material raised by Ms. Rychener to experiment with ways of processing them into edible food. While Ms. Rychener has already developed a number of outreach programs that integrate the garden into experiential opportunities for both youth and general audiences, expanding the experimental program can provide even greater public involvement.

Discussions with Ms. Rychener identified the creation of a full-scale replica of a thousand-year-old Hohokam pithouse as an opportunity for substantial volunteer involvement and significant expansion of the content of the programs that she has been offering. A partnership with Archaeology Southwest in the construction of such a pithouse and development of replicated tools and other objects is proposed as a pilot study.

Construction of two experimental pithouses guided by archaeological information from excavations at Honey Bee Village in Oro Valley is an initial priority. This will yield substantial information regarding construction methods as well as data on the human time and energy costs of construction and maintenance. After several years of use as an interpretive facility, it also anticipated that the initial pithouse will be intentionally burned and then excavated to assess the kinds of evidence that is preserved (or lost) through burning.

Most of the activities related to this program have great potential to stimulate public interest and involvement. Building a pithouse can incorporate volunteers into a variety of tasks that contribute to the assembly and processing of the needed raw materials to their integration into a standing structure. Opportunities for media coverage are significant at multiple stages in this process.

The Project Team

Dr. William Doelle, President and CEO of Archaeology Southwest, will serve as the overall project coordinator. Archaeology Southwest is assembling an advisory team of four persons that will assist with this pilot program. They will review the research plan and provide comments to ensure that this program produces information that will be useful for archaeologists working with ancient material remains. Questions could range from “how is this type of artifact manufactured, and what are the energy costs of making it?” to “what are the performance characteristics of pithouse architecture in different environmental settings?”

The Archaeology Southwest Project Leader, Mr. Allen Denoyer, will be responsible for working with the advisory team to frame current research questions and devise the experimental protocols that can help address those research questions. Mr. Denoyer has extensive archaeological field experience, and he has developed a diversity of skills in replicating ancient technologies. He is also an enthusiastic communicator with public audiences. For this pilot project, Archaeology Southwest will support Mr. Denoyer at a quarter-time level of effort.

Ms. Joyce Rychener, Oro Valley Historical Society Volunteer. Joyce has developed the Heritage Garden at Steam Pump Ranch and already implements a variety of programs for public audiences. She has collaborated with Dr. Doelle and Mr. Denoyer in the development of this proposal.

Town Council Regular Session **Item # I.**

Meeting Date: 04/16/2014

Requested by: Daniel G. Sharp **Submitted By:** Colleen Muhr, Police Department

Department: Police Department

Information

SUBJECT:

Resolution No. (R)14-22, adopting the Pima County Community Wildfire Protection Plan as the official Town plan

RECOMMENDATION:

Staff recommends approval.

EXECUTIVE SUMMARY:

The Community Wildfire Protection Plan (CWPP) has been developed after more than one year of research and work by the Golder Ranch Fire District in cooperation with a multi-jurisdictional, fire department and fire district planning team to identify at risk public and private lands. The intention is to better protect the area from severe wildfire threat, to improve fire prevention and suppression activities, to identify funding needs and opportunities in mitigating the risk of wildfire, and to provide public outreach to at risk areas.

BACKGROUND OR DETAILED INFORMATION:

The CWPP was developed in response to the Healthy Restoration Act of 2003, which established incentives for communities to develop comprehensive wildfire protection plans in a collaborative and inclusive process to reduce the wildfire threat through Wildland Urban Interface areas. During the planning process, participating jurisdictions and fire departments or districts completed hazard assessments to help define wildfire risks to their communities and service areas, and to identify potential mitigation activities. Adoption of the CWPP allows participating jurisdictions, fire departments, and fire districts to qualify for available federal grant money to complete mitigation projects which will reduce and manage wildfire risk.

FISCAL IMPACT:

There is no fiscal impact with the adoption of this plan.

SUGGESTED MOTION:

I MOVE to (adopt or deny) Resolution No. (R)14-22, adopting the Pima County Community Wildfire Protection Plan as the official Town plan.

Attachments

R14-22 Community Wildfire Protection Plan

2013 Community Wildfire Protection Plan

RESOLUTION NO. (R)14-22

A RESOLUTION OF THE MAYOR AND COUNCIL FOR THE TOWN OF ORO VALLEY, ARIZONA, ADOPTING THE PIMA COUNTY COMMUNITY WILDFIRE PROTECTION PLAN

WHEREAS, the Community Wildfire Protection Plan was developed in response to the Healthy Restoration Act of 2003 which established incentive to communities to develop comprehensive wildfire protection plans to reduce the wildfire threat through wildland urbane interface (WUI) areas; and

WHEREAS, the Community Wildlife Protection Plan had been developed after more than one year of research and work by the Golder Ranch Fire District, in association and cooperation with a multi-jurisdictional, fire department and fire district planning team to identify at risk public and private lands to better protect the area from severe wildfire threat; and

WHEREAS, it is in the best interest of the Town to adopt the Pima County Community Wildfire Protection Plan, attached hereto as Exhibit "A" and incorporated herein by the reference as the official Town plan.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Town Council of the Town of Oro Valley that:

SECTION 1. The Mayor and Council hereby the Pima County Community Wildfire Protection Plan attached hereto as Exhibit "A" as the official Town plan.

SECTION 2. The Pima County Community Wildfire Protection Plan shall be implemented, monitored and maintained by the officials/staff designated in the Plan.

PASSED AND ADOPTED by the Mayor and Council of the Town of Oro Valley, Arizona, this 16th day of April, 2014.

TOWN OF ORO VALLEY

_____

Dr. Satish I. Hiremath, Mayor

ATTEST:

_____
Julie K. Bower, Town Clerk

Date: _____

APPROVED AS TO FORM:

_____
Tobin Sidles, Legal Services Director

Date: _____

EXHIBIT “A”

PIMA COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN

July 2013

Pima County Board of Supervisors
City of Oro Valley
City of Sahuarita
Town of Marana
City of South Tucson
City of Tucson
Altar Valley Conservation Alliance
Southern Arizona Buffelgrass Coordination Center
Salt River Project
Tucson Electric Power
TRICO Electric Cooperative
Ajo-Gibson Volunteer Fire Department
Arivaca Fire District
Avra Valley Fire District
Cascabel Volunteer Fire Department
Corona de Tucson Fire Department
Drexel Heights Fire District
Elephant Head Volunteer Fire Department
Golder Ranch Fire District
Green Valley Fire District
Helmet Peak Volunteer Fire Department
Mescal-J6 Fire District
Mount Lemmon Fire District
Northwest Fire District
Pascua Yaqui Tribe Fire Department
Picture Rocks Fire District
Rincon Valley Fire District
Rural Metro Fire Department
Sonoita-Elgin Fire Department
South Tucson Fire Department
Three Points Fire District
Tucson Fire Department
Why Fire Department
Arizona State Forestry Division
Bureau of Land Management
Pascua Yaqui Tribe
Coronado National Forest
Saguaro National Park
Buenos Aires National Wildlife Refuge

DEDICATION

The citizens of Pima County dedicate this Pima County Community Wildfire Protection Plan to the 19 members of the Prescott Fire Department's interagency Granite Mountain Hotshots who died protecting the community of Yarnell from the Yarnell Hill Fire on June 30, 2013, and to all the firefighters who have perished before them responding to fires in the wildland-urban interface. May this plan help reduce the number of fires, lessen fire behavior, and protect lives and property so that such tragedies will never occur in our County.

Graphic donated by Palo Verde Signs Tucson, AZ

TABLE OF CONTENTS

Acronyms and Abbreviations iv

Executive Summary v

I. Introduction 1
- A. Background 5
- B. WUI and Delineation Process 8
- C. Desired Future Condition and Wildfire Mitigation in the WUI 12
- D. Goals for the Pima County CWPP 15
- E. Planning Process 16

II. Pima County CWPP Community Assessment and Analysis 18
- A. Fire Regime and Condition Class 25
- B. Fuel Hazards 27
- C. Conditions of Ignition and Past Fire Occurrence 54
- D. Community Values at Risk 58
- E. Summary of Community Assessment and Cumulative Risk Analysis 65
- F. Cumulative Risk Analysis 85

III. Community Mitigation Plan 90
- A. Fuel Reduction Priorities 90
- B. Prevention and Loss Mitigation 104
  1. Establish Pima County CWPP Administration and Implementation 105
  2. Improve Protection Capability and Reduce in Structural Ignitability 105
  3. Promote Community Involvement and Improve Public Education, Information, and Outreach 106
  4. Encourage Use of Woody Material from WUI Fuel Mitigation Programs 107

IV. Pima County CWPP Priorities: Action Recommendations and Implementation 109
- A. Administrative Oversight 109
- B. Priorities for Mitigation of Hazardous Wildland Fuels 111
- C. Identified Action Items for Protection Capability and Reduced Structural Ignitability 111
- D. Priorities for Promoting Community Involvement through Education, Information, and Outreach 115

V. Monitoring Plan 117
- A. Administrative Oversight, Monitoring, and Pima County CWPP Reporting 117
- B. Effectiveness Monitoring 118

VI. Declaration of Agreement and Concurrence 120

VII. References 124

VIII. Glossary of Fire Management Terms 130

APPENDIXES

Appendix A. Descriptions of Vegetation Association 150

Appendix B. National Fire Danger Rating System Fuel Model Selection Key 158

Appendix C. Educational Resources 161

Appendix D. Information Data Sheet and Contacts 165

Appendix E. Invasive Species 166

Appendix F. Guidance for Implementation of Federal Wildland Fire Management Policy 181

LIST OF TABLES

Table 1.1 Pima County CWPP recommended at-risk community WUIs and communities 4
Table 2.1 Land management within the Pima County Community WUI 18
Table 2.2 Fire regime information 25
Table 2.3 Fuel model, fire-danger ratings, and intensity levels on vegetative associations in the WUI 32
Table 2.4 Fuel hazard components 45
Table 2.5 Ignition history and wildfire occurrence 54
Table 2.6 Community values 61
Table 2.7 Cumulative risk levels by percentage of the WUI area 86
Table 3.1 Fuel modification and treatment plans 92
Table 3.2 Identified treatment management units 94
Table 3.3 Acres of wildland fuels mitigation treatment conducted by ASFD fire and fuels crew during a 10-hour on-site workday units 103
Table 4.1 Action recommendations for wildland fuel modification 112
Table 4.2 Action recommendations for structural ignitability and public outreach 114
Table 4.3 Action recommendations for enhanced public education, and information 116
Table 5.1 Performance measures to assess Pima County CWPP progress. 119

LIST OF FIGURES

Figure 1.1 Pima County CWPP Analyses Area 3
Figure 1.2 Pima County CWPP Process 10
Figure 2.1a. Pima County CWPP Landownership North 20
Figure 2.1b. Pima County CWPP Landownership South 21
Figure 2.1c. Pima County CWPP Landownership West 22
Figure 2.2a. Landcovers of the Pima County WUI North 28
Figure 2.2b. Landcovers of the Pima County WUI South 29
Figure 2.2c. Landcovers of the Pima County WUI West 30
Figure 2.3a. Normal Year Fuel Hazard of the Pima County WUI North 46
Figure 2.3b. Normal Year Fuel Hazard of the Pima County WUI South 47
Figure 2.3c. Normal Year Fuel Hazard of the Pima County WUI West 48
Figure 2.4a. Extraordinary Year Fuel Hazard of the Pima County WUI North 49

Figure 2.4b. Extraordinary Year Fuel Hazard of the Pima County WUI South 50
Figure 2.4c. Extraordinary Year Fuel Hazard of the Pima County WUI West 51
Figure 2.5. Areas of Known Buffelgrass Invasions (2009) in the Tucson Basin 53
Figure 2.6a. Wildland Fire Ignition History North 55
Figure 2.6b. Wildland Fire Ignition History South 56
Figure 2.6c. Wildland Fire Ignition History West 57
Figure 2.7a. Wildfire Risk to Community Values North 62
Figure 2.7b. Wildfire Risk to Community Values South 63
Figure 2.7c. Wildfire Risk to Community Values West 64
Figure 2.8. Mt. Lemmon Community WUI Analysis Area 76
Figure 2.9a. Cumulative Community Wildfire Risk North 87
Figure 2.9b. Cumulative Community Wildfire Risk South 88
Figure 2.9c. Cumulative Community Wildfire Risk West 89
Figure 3.1a. Pima County CWPP Treatment Management Units North 100
Figure 3.1b. Pima County CWPP Treatment Management Units South 101
Figure 3.1c. Pima County CWPP Treatment Management Units West 102

LIST OF PHOTOS

Photo 1.1 Salt Cedar Infested Riparian Corridor in Pima County 7
Photo 1.2 Pima County CWPP Core Planning Team Meeting 11
Photo 1.2 Wildland fire in Pima County 11
Photo 1.3 Type 6 wildland fire truck 15
Photo 2.1 Desert Shrub-Scrub vegetation association 39
Photo 2.2 Shrubland vegetation association 40
Photo 2.3 Woodland vegetation association 40
Photo 2.4 Oak Pinyon-Juniper woodlands 41
Photo 2.5 Deciduous Southwest Riparian vegetation association 42
Photo 2.6 Timber type vegetation association 43
Photo 2.7 Desert grasslands vegetation association 44
Photo 2.8 Roadway with heavy buffelgrass infestation 52

ACRONYMS AND ABBREVIATIONS

ASLD	Arizona State Land Department
ASFD	Arizona State Forestry Division
BAER	burned area emergency response
BANWR	Buenos Aires National Wildlife Refuge (US Fish and Wildlife Service)
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CWPP	community wildfire protection plan
CNF	Coronado National Forest
drc	diameter at root collar
EMS	emergency medical service
FMU	fire management unit
FRCC	fire regime condition class
FS	Forest Service
GIS	geographic information system
GPS	Global Positioning System
HFRA	Healthy Forests Restoration Act of 2003
IGA	intergovernmental agreement
IMS	Internet Mapping Service (Federal Wildland Fire Occurrence)
ISO	Insurance Services Office
NPS	National Park Service
NRCS	Natural Resources Conservation Service
PCOEM	Pima County Office of Emergency Management
NFPA	National Fire Protection Association
NPS	National Park Service
R_x	prescribed fire
SABCC	Southern Arizona Buffelgrass Co4dination Center
SR	state route
SRP	Salt River Project
SWReGAP	Southwest Regional Gap Analysis Project
TEP	Tucson Electric Power
USDA	US Department of Agriculture
USDI	US Department of the Interior
USFWS	US Fish and Wildlife Service
WFLC	Wildland Fire Leadership Council
WUI	wildland-urban interface

EXECUTIVE SUMMARY: PIMA COUNTY COMMUNITY WILDFIRE PROTECTION PLAN

The Pima County Community Wildfire Protection Plan (CWPP) was developed in response to the Healthy Forests Restoration Act of 2003 (HFRA) for the at-risk communities and unincorporated areas in Pima County, Arizona, located in and around public lands administered by the US Department of the Interior Bureau of Land Management (USDI BLM) Gila District Office, Coronado National Forest (CNF), US Department of Interior Fish and Wildlife Service Buenos Aires National Wildlife Refuge (BANWR), the Tohono O'odham Nation, and the Pascua Yaqui Tribe. HFRA established unprecedented incentives for communities to develop comprehensive wildfire protection plans in a collaborative, inclusive process. Furthermore, this legislation gives direction to BLM and the US Forest Service to address local community priorities in fuel reduction treatments, even on nonfederal lands. For a community to take full advantage of the opportunities provided in HFRA, it must first prepare a CWPP. A CWPP developed in accordance with HFRA is the most effective way to acquire federal funding for fire preparedness and planning. Pima County, partner agencies, and participating communities wish to adopt a CWPP to better protect their communities from wildfire risk, to better prepare citizens, and to become eligible to apply for and receive federal and other grant monies to implement wildland fire mitigation projects and programs.

To ensure that all residents of Pima County were represented in this planning process, three core teams were formed to implement the agency and public collaboration necessary to develop a CWPP compliant with HFRA: the Northern Planning Zone Core Team consists of the communities of Oro Valley; Lukeville; Ajo; Why; Pima County lands adjacent to the Catalina Mountains; Rincon Mountains; Marana; Avra Valley; and Picture Rocks to the Gates Pass area, including Saguaro National Park West and Tucson Mountain Park. The Southern Planning Zone Core Team consists of the developed lands adjacent to the Pascua Yaqui Tribe, Robles Junction, Green Valley, Sahuarita, Arivaca-Sasabe CWPP lands, South Tucson, Vail, Corona de Tucson, Saguaro National Park East, and Pima County lands to the Cochise County boundary. The Central Core Team is composed of the Cities of Tucson and South Tucson.

Section I. Introduction

A primary objective of a CWPP is to help local governments, fire departments and districts, and residents identify at-risk public and private lands to better protect those lands from severe wildfire threat. Additional functions of a CWPP are to improve fire prevention and suppression activities, as well as to identify funding needs and opportunities to reduce the risk of wildland fire and enhance public and firefighter safety. Identifying at-risk areas and improving fire protection capabilities helps the communities to prioritize high-risk projects and to expedite overall project planning. Pima County's CWPP was created to meet these objectives at a local level while integrating with overall federal- and state-level fire planning.

The Core Teams identified needed agency and organization partners and interested parties to initiate the collaborative process and to establish the following overarching goals of the Pima County CWPP:

- Improve fire prevention and suppression, emphasizing firefighter and public safety
- Reduce hazardous fuels, emphasizing public and private property protection
- Restore forest, rangeland, and riparian health

- Promote community involvement and provide for community protection
- Recommend measures to reduce structural ignitability in the wildland-urban interface (WUI)
- Encourage economic development in the communities from vegetative treatments
- Promote development of wildfire emergency evacuation and communication plans
- Integrate use of the CWPP with surrounding community and agency fire management plans

The Core Teams developed and concurred with the process that was to be followed in developing the Pima County CWPP. This section establishes all necessary planning components and clearly articulates the intent of the Pima County CWPP, discloses the communities identified for analysis, and ensures that the Pima CWPP is compliant with HFRA.

Section II. Community Assessment

Section II covers the methods used in community wildfire risk assessments; the identification of the WUI; and the identification of communities with high, moderate, and low wildland fire risk within the WUI. The Pima County CWPP was developed through quantitative analyses of wildland fire risk across Pima County, designing mitigation measures and priority needs to implement mitigation measures, whether for wildland fire fuel manipulations, resource response, reduced structural ignitibility or public education and outreach.

Environmental elements used by the Core Teams to identify the WUI include wildland vegetative fuel hazards, comparison of normal and extreme rainfall years, consideration of aspect and local topography, historical fire occurrence, and wildfire ignition history. These environmental factors were coupled with community-based characteristics and values, such as local fire resource preparedness, infrastructure, evacuation routes, and population/structure density. An external element, the Fire Insurance Service Organization ratings, was also used in determining wildland fire risk to communities within the WUI. These elements were all identified and combined using spatial analysis within a geographic information system (GIS). As a result of the GIS analysis, a WUI and sub-WUI boundary map and a wildfire risk rating map were created. Sub-WUIs were divided into treatment management areas, according to high, moderate, and low fuel hazard. Several components, including slope, aspect, fire behavior models for each vegetation type, and presence of nonnative/invasive plants, were used to make fuel hazard determinations. The Pima County CWPP analysis consisted of 5,877,578 acres of federal, state, and private lands, of which 1,579,699 acres were classified as the WUI. Cumulative risk levels across the Pima County CWPP community WUIs include 121,511 acres (8%) of high wildland fire risk, 926,760 acres (59%) of moderate risk, and 531,189 acres (34%) of low risk.

Section III. Community Mitigation Plan

Section III prioritizes the areas in need of wildland fuel mitigation and recommends the types and methods of treatment and management necessary to mitigate the potential for catastrophic wildland fire in the WUI. Also presented in this section are the Pima County CWPP communities' recommendations for enhanced wildland fire protection capabilities; public education, information, and outreach; and support for businesses and industries centered on local wood products, woody biomass, and wildland vegetative fuel management.

As part of the community mitigation plan, the Core Teams identified the Pima County CWPP administrators—Pima County fire chiefs, Pima County Office of Emergency Management (PCOEM), CNF, Arizona State Forestry Division (ASFD), Tohono O'odham Nation, Pascua Yaqui Tribe and BLM—who will be mutually responsible for implementing and monitoring Pima County CWPP action recommendations in coordination with the future-established countywide community CWPP Working Group. Pima County CWPP administrators are responsible for ensuring implementation of the Pima County CWPP, for preparing reports and work plans, and for developing community bulletins and public service announcements that inform residents of wildfire dangers and preventive measures. Additional tasks include assisting federal and state agencies and private landowners to identify appropriate funding sources to implement action recommendations of the Pima County CWPP, as well as continued coordination with communities outside the analysis area. Pima County CWPP administrators are also responsible for the monitoring and reporting of implementation actions that will allow for enhanced coordination of management programs and that will reduce inconsistencies among local, state, and federal agencies.

To prioritize treatments, the Core Teams identified 95 wildland treatment management units within 23 sub-WUI designations of the WUI. These treatment units were analyzed and categorized according to potential risk for wildfire. The Core Teams ranked and described each unit, then provided a recommendation for each unit's preferred treatment type and method. Preferred treatments were recommended for treatment management units identified as high risk. These treatments are designed to meet the fuel reduction and modification objectives of the Pima County CWPP.

Section IV. Pima County CWPP Priorities: Action Recommendations and Implementation

To achieve the goals outlined in the CWPP, the Core Teams identified priority action recommendations, which are presented in Section IV. The first action recommendation was to identify priority treatment areas for fuel reduction projects. Treatment areas were identified within community WUIs to create survivable space through treatments within the home ignition zone, the use of strategically placed fuelbreaks, and the modification of hazardous wildland fuels. The objective of a fuels reduction project is to create an acceptable vegetation condition class for community and infrastructure protection and public and firefighter safety. Priority treatment management areas were designated in areas identified as high risk. Table 4.1 in Section IV lists the priority action recommendations for the reduction of hazardous fuels within the Pima County CWPP area. The second action recommendation identified by the Core Teams was to reduce structural ignitability. Reduction of structural ignitability is achieved through evaluation; maintenance; and, at times, upgrades to community response facilities, capabilities, and equipment. The third action recommendation identified was to promote community involvement through education, information, and outreach.

Section V. Monitoring Plan

The monitoring plan, outlined in Section V, describes how monitoring the implementation of the Pima County CWPP will occur. The Pima County CWPP administrators are responsible for implementation and monitoring. Implementation begins by securing grants and other funding necessary to execute the action items.

The Pima County CWPP administrators will report successful grant awards and projects implemented as a result of those awards to the CWPP signatories. The administrators will also update work plans based on projects completed in the previous years.

Acknowledgments

The following communities and agencies were involved in the collaborative process in preparation of and are assisting as appropriate in the implementation of the Pima County CWPP:

- Pima County Office of Emergency Management
- Arizona State Forestry Division
- Municipal fire departments and local fire districts and fire chiefs from the following communities:

Ajo-Gibson Volunteer Fire Department	Tucson Fire Department	Helmet Peak Volunteer Fire Department
Arivaca Fire District	Green Valley Fire District	Sonoita-Elgin Fire Department
Avra Valley Fire District	Cascabel Volunteer Fire Department	Picture Rocks Fire District
Three Points Fire District	South Tucson Fire Department	Mescal-J6 Fire District
Golder Ranch Fire District	Elephant Head Volunteer Fire Department	Pascua Yaqui Tribe Fire Department
Rural Metro Fire Department	Why Fire Department	Drexel Heights Fire District
Corona de Tucson Fire Department	Arivaca Fire District	Northwest Fire District
Mount Lemmon Fire District	Rincon Valley Fire District	

- US Department of the Interior, Bureau of Land Management
- US Forest Service, Coronado National Forest
- National Park Service, Saguaro National Park
- US Fish and Wildlife Service Buenos Aires National Wildlife Refuge
- Pascua Yaqui Tribe
- Southern Arizona Buffelgrass Coordination Center
- Altar Valley Conservation Alliance
- Salt River Project
- Tucson Electric Power
- TRICO Electric Cooperative

I. INTRODUCTION

The Pima County Community Wildfire Protection Plan (CWPP) was developed in response to the Healthy Forests Restoration Act of 2003 (HFRA) for the at-risk cities and unincorporated areas in Pima County, Arizona (Figure 1.1), located around public lands administered by the following agencies: the US Department of the Interior, Bureau of Land Management (USDI BLM), Gila District Field Office; the Coronado National Forest (CNF); the National Park Service (NPS), Saguaro National Park (SNP); Organ Pipe Cactus National Monument (OPCNM); the US Fish and Wildlife Service (USFWS), Buenos Aires National Wildlife Refuge (BANWR); the Arizona State Land Department (ASLD); and the Pascua Yaqui Tribe. HFRA established unprecedented incentives for communities to develop comprehensive wildfire protection plans in a collaborative, inclusive process. Furthermore, this legislation gives direction to BLM and the US Forest Service (FS) to address local community priorities in fuel reduction treatments, even on nonfederal lands.

Congress passed HFRA in November 2003, and the President signed it into law that December. When certain conditions are met, Title I of HFRA authorizes the Secretaries of Agriculture and the Interior to expedite the development and implementation of hazardous fuel reduction projects on federal, tribal, state, and private lands. HFRA requires federal agencies to collaborate with communities in developing hazardous fuel reduction projects and places priority on treatment areas identified by communities through the creation of a CWPP. Priority areas include the wildland-urban interface (WUI), municipal watersheds, areas affected by windthrow or by insect or disease epidemics, and critical wildlife habitat that would be negatively affected by a catastrophic wildfire.

In compliance with Title I of HFRA, the CWPP requires agreement among local governments, local fire departments and districts, and the state agency responsible for forest management. For the Pima County CWPP, this agency is the Arizona State Forestry Division (ASFD). The CWPP must also be developed in consultation with interested parties and the applicable federal agency managing the public lands surrounding the at-risk communities. The majority of lands surrounding the at-risk communities and unincorporated intermixed community zones within Pima County are located adjacent to “public lands,” as defined in Sections 3.1.A and B of HFRA; Indian tribal lands, as defined in Section 3.2 of HFRA; and Arizona State Trust lands.

The Pima County CWPP has been developed to assist local governments, fire departments and districts, and residents to identify lands—including federal lands—at risk from severe wildfire threat and to identify strategies for reducing hazardous vegetative fuels within the WUI while improving watershed and rangeland health, restoring ecosystem processes, creating resilient ecosystems, keeping people engaged, supporting local industry and local economies, and improving public and firefighter safety and response capabilities through innovative and scientific approaches. The Pima County CWPP is based on the *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* (USDI BLM 2004a); the *Arizona BLM Gila District Fire Management Plan* (USDI BLM 2013), the *Coronado National Forest Plan* (US Department of Agriculture [USDA] CNF 1988, as amended); the *Coronado Fire Management Plan* (USDA FS 2010); the Arizona FireScape Project (http://www.azfirescape.org); the *Saguaro National Park Fire Management Plan* (USDI NPS 2007); the *Tohono O’odham Fire Management Plan* (Tohono O’odham Nation 2004); the *Wildland Fire Management*

Plan Pascua Yaqui Tribe (Bureau of Indian Affairs [BIA] 2012a); and the *Statewide Strategy for Restoring Arizona's Forests* (Governor's Forest Health Councils 2007). This CWPP has been developed in consultation with the BLM Gila District, the NPS Saguaro National Park, and CNF to help Pima County, local municipalities, and the State of Arizona implement the recommendations of the Pima County CWPP. Cooperating fire agencies include the Pascua Yaqui Tribe and the participating fire departments/districts of South Tucson, Tucson, Ajo, Arivaca, Avra Valley, Casabel, Corona de Tucson, Drexel Heights, Elephant Head, Golder Ranch, Green Valley, Helmet Peak, Hidden Valley, Picture Rocks, Mountain Vista, Mount Lemmon, Northwest, Rincon Valley, Sonoita-Elgin, Rural Metro, Sabino Vista, Tanque Verde Valley, Tucson Country Club Estates, and Three Points. The Pima County CWPP also encourages these entities to identify strategies for reducing vegetative fuels within the WUI while improving health of native habitats and undeveloped lands within Pima County, making recommendations for reducing structural ignitability, developing wildfire public education and outreach programs, and improving public and firefighter safety and response capabilities. The Pima County CWPP is based on guidance from the *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (Communities Committee et al. 2004), the *Community Guide to Preparing and Implementing a Community Wildfire Protection Plan* (Communities Committee 2008), and the *Southwest Community Wildfire Protection Plan Guide* (Southwest Strategy 2004).

To ensure that all residents of Pima County were represented in this planning process, three core teams were formed to implement the agency and public collaboration necessary to develop a CWPP compliant with HFRA: the Northern Planning Zone Core Team consists of the communities of Mount Lemmon; Oro Valley; northwest Tucson; Lukeville, Ajo; Why; Pima County lands adjacent to the Catalina Mountains; Rincon Mountains; Marana; Avra Valley; and Picture Rocks to the Gates Pass area, including Saguaro National Park West and Tucson Mountain Park. The Southern Planning Zone Core Team consists of the developed lands adjacent to the Pascua Yaqui Tribe, Robles Junction, Green Valley, Sahuarita, adjoining the Arivaca-Sasabe CWPP, South Tucson, Vail, Corona de Tucson, Saguaro National Park East, and Pima County lands to the Cochise County boundary. The Central Core Team is composed of the city of Tucson. The Core Teams agreed to and established an efficient process to be followed throughout the Pima County CWPP development. The Core Teams analyzed 5,877,578 acres for potential risk from catastrophic wildland fire within Pima County (Figure 1.1). This analysis resulted in describing 1,579,572 acres of community WUI to be managed for the protection of 33 communities determined to be "at risk" from wildland fire (Table 1.1).

In addition, the Core Teams were formed to ensure that local, state, and federal management recommendations for wildland fire protection, watershed, and riparian health were addressed in the Pima County CWPP. The Core Teams represent all identified at-risk communities and developed areas within Pima County. As additional guidance documents become available, changes or amendments will be incorporated into the Pima County CWPP as necessary.

The following sections detail the background and process used to develop the Pima County CWPP and define the associated WUI. In addition, the desired future condition of lands covered by the Pima County CWPP is described; current fire policies and programs are identified; and current projects and future needs are discussed. Finally, the goals of the Pima County CWPP are presented along with an outline of planning methods to achieve those goals.

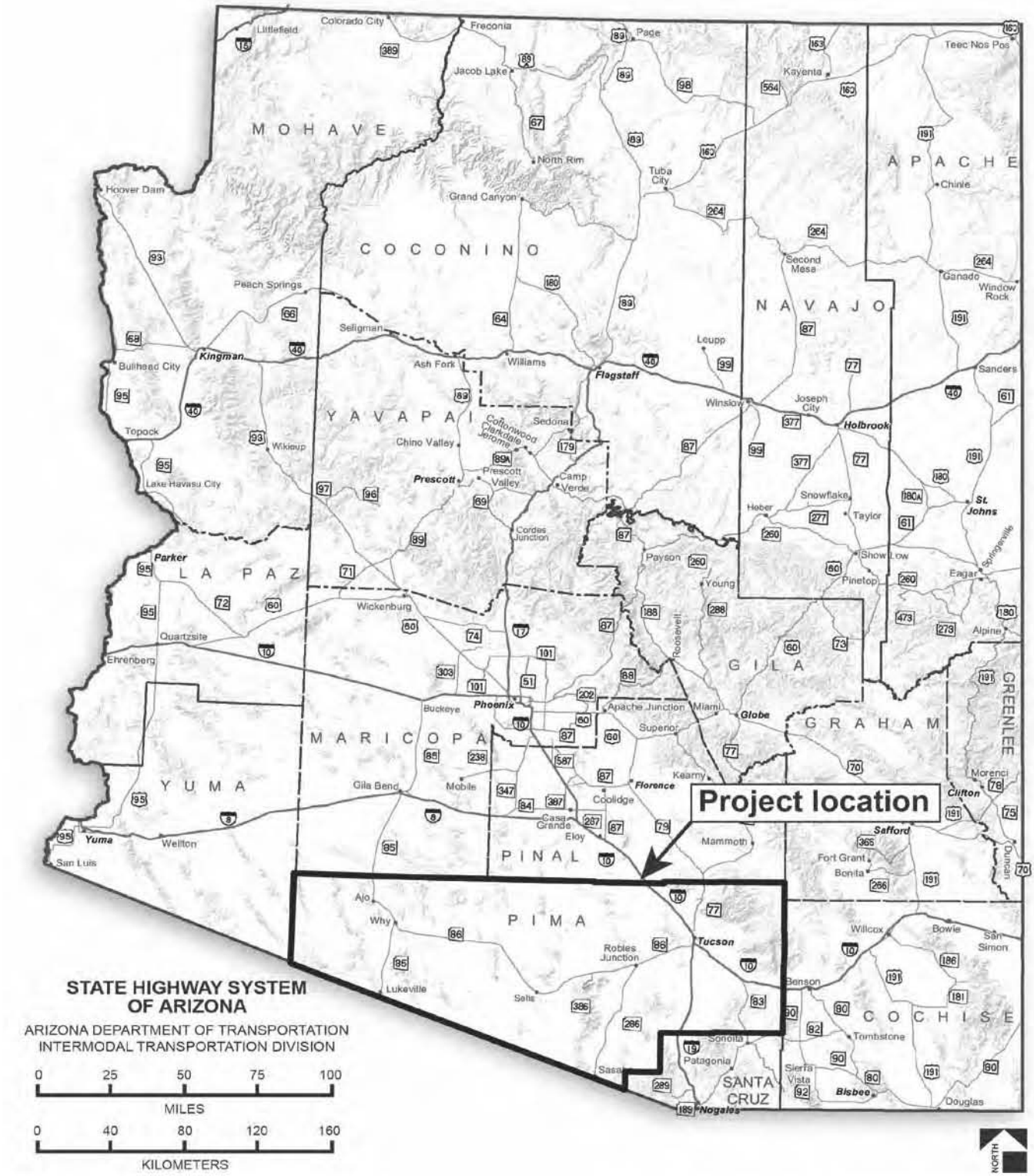


Figure 1.1 Pima County CWPP Analysis Area

Table 1.1. Pima County CWPP Recommended At-Risk Community WUIs and Communities

Community WUI[a]	Communities in Each WUI and Risk[b]	Fire Department/ District	Community WUI[a]	Communities in Each WUI and Risk[b]	Fire Department/ District
Ajo	Ajo	Ajo-Gibson Volunteer Fire Department	Cascabel	Redington	Cascabel Volunteer Fire Department
Arivaca	Arivaca	Arivaca Fire District	Tucson/ South Tucson	Tucson South Tucson	Tucson Fire Department South Tucson Fire Department
Avra Valley	Avra Valley	Avra Valley Fire District	Lukeville	Lukeville and Port of Entry	NA
Three Points	Robles Junction	Three Points Fire District	Picture Rocks	Picture Rocks	Picture Rocks Fire District
Golder Ranch	Catalina Saddle Brook 1 and 2 Florence Junction Mountain Vista Fire Department Oro Valley	Golder Ranch Fire District	Mescal-J6	Mescal-J6 Ranch and developments	Mescal-J6 Fire District
Catalina Foothills*	Tucson Country Club Estates Sabino Vista Hidden Valley Tanque Verde Valley	Rural Metro Fire Department	Pascua Yaqui	Pascua Yaqui Indian Communities	Pascua Yaqui Tribe Fire Department
Corona de Tucson	Corona de Tucson	Corona de Tucson Fire Department	Rincon Valley	Vail	Rincon Valley Fire District
Mount Lemmon	Summerhaven Loma-Sabino Pines, Willow Canyon, Soldier's Camp, Mt. Lemmon Ski Valley, Fern Ridge, Soldier Camp, Bear Wallow, Willow Canyon, Organization Ridge	Mount Lemmon Fire District	Sasabe	Sasabe and Port of Entry	Buenos Aires National Wildlife Refuge
Drexel Heights	Drexel Heights communities	Drexel Heights Fire District	Why	Why	Why Fire Department
Tohono O'odham	Tohono O'odham Indian Communities, including Sells and Kitt Peak San Xavier	Tohono O'odham Nation Fire Department	Green Valley	Green Valley Sahuarita Helmet Peak	Green Valley Fire District Elephant Head Volunteer Fire Department Helmet Peak Volunteer Fire Department
Northwest WUI	Marana Flowing Wells Tucson Mountains Dove Mountain	Northwest Fire District			

[a] Summerhaven listed as high; Arivaca, Kitt Peak, and Catalina listed as moderate; and Sasabe listed as low on the 2009 *Arizona Communities at Risk Matrix* (www.azsf.az.gov).

[b] Wildland fire risk: L = low, M = moderate, H = high.

* Through agreement with Rural Metro Fire Department.

A. Background

The process for developing this CWPP consisted of evaluating Pima County—including tribal trust lands—to identify communities, infrastructure, and remote private lands at risk from catastrophic wildland fire. During this analysis the County solicited federal, state, and local governments; fire chiefs; and interested individuals to participate in the Core Teams. The Core Teams were created to define and locate interface and intermix communities in which significant community values and infrastructure are at risk because of the potential of wildland fire.[1] The Pima County Office of Emergency Management (PCOEM) requested that local governments, fire departments and districts, BLM, NPS, CNF, ASFD, and interested individuals throughout Pima County participate in the Core Teams to develop the Pima County CWPP. Pima County is the local government authority for the unincorporated communities identified as at risk, while the city or town councils of the Cities of Marana, Oro Valley, Sahuarita, South Tucson, and Tucson are the appropriate municipal government authorities for cooperating fire departments in developing and agreeing to the Pima County CWPP. Pima County and the Core Teams recognize the value of conveying information developed from the Pima County CWPP process to local citizens. This process established by the Core Teams ensures an open public process, with the goal of all community interests being represented during the development of the Pima County CWPP. The Core Teams, in association with planned public involvement, meets all collaborative guidance criteria established by the Wildland Fire Leadership Council (WFLC 2002).

The Core Teams and collaborators developed this CWPP to increase preparedness, to reduce hazardous wildland fuels, to reduce impacts from catastrophic wildfire, and to prepare recommendations for reducing structural ignitability. In addition, the Core Teams developed this CWPP to increase communication with local, county, state, and federal emergency response personnel by determining areas of high risk from unwanted wildland fire; by developing mitigation measures to reduce hazardous wildland fuels; by improving emergency response to unplanned wildfire; by preventing wildfire ignitions from state and public lands from spreading into the WUI and into the communities; and by preventing wildfire ignitions within the WUI from spreading to adjacent state and public lands.

During initial analyses for the proposed wildland fuel mitigation recommendations, as well as the development of the Pima County CWPP, the Core Teams reviewed the following documents:

- "*Urban Wildland Interface Communities within the Vicinity of Federal Lands That Are at High Risk from Wildfire*," Federal Register Vol. 66, Nos. 3 and 160 (Federal Register 2001a, 2001b)
- *Field Guidance: Identifying and Prioritizing Communities at Risk* (National Association of State Foresters 2003)
- *Arizona Wildland Urban Interface Assessment* (Arizona State Forester 2004)
- *Arizona-Identified Communities at Risk* (Arizona State Forester 2009)
- *Statewide Strategy for Restoring Arizona's Forests* (Governor's Forest Health Councils 2007)

[1] *Interface communities* exist where structures directly abut wildland fuels; *intermix communities* exist where structures are scattered throughout a wildland area (USDA and USDI 2001a).

- *Forest Health Landscape-scale Restoration Recommendations.* (Western Governors' Association Forest Health Advisory Committee 2010)
- *Landscape Conservation and Restoration Strategic Action Plan* (USDA FS 2011)
- *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan* (USDA FS and USDI BLM 2002)
- *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* (USDI BLM 2004a)
- *Arizona BLM Gila District Fire Management Plan* (USDI BLM 2013)
- *Coronado National Forest Plan* (USDA CNF 1988, as amended)
- *Coronado National Forest Fire Management Plan* (USDA FS 2010)
- *Saguaro National Park Fire Management Plan* (USDI NPS 2007)
- *Organ Pipe Cactus NM Fire Management Plan* (USDI NPS 2004)
- *Tohono O'odham Nation Wildland Fire Management Plan* (Tohono O'odham Nation 2004)
- *Pascua Yaqui Tribe Wildland Fire Management Plan* (BIA 2012a)
- *Pascua Yaqui Tribe Fuels Management Plan* (BIA 2012b)
- Arizona FireScape Project (http://www.azfirescape.org/home)
- *Southern Arizona Buffelgrass Strategic Plan. A Regional Guide for Control, Mitigation and Restoration* (Buffelgrass Working Group 2008)
- *Mt Lemmon Wildland-Urban Interface Plan for Forest Health and Wildland Fire Management* (2004)
- *Catalina Community Wildfire Protection Plan* (Golder Ranch Fire Department 2007)
- *Sonoita Elgin Community Wildfire Protection Plan* (Sonoita Fire Department 2007)
- *Arivaca Sasabe Community Wildfire Protection Plan* (Arivaca Fire Department 2007)
- *Cascabel Community Wildfire Protection Plan* (Cascabel Fire Department 2006)
- *Altar Valley Fire Management Plan* (Natural Resources Conservation Service [NRCS] 2008)

The Core Teams also reviewed Section 101.16.B.iii of HFRA to determine an area adjacent to an evacuation route for hazardous fuel reduction measures to provide safer evacuation from an at-risk community. Since 1980, there have been 3,226 wildfire ignitions reported in federal and state databases within the Pima County analysis area. Large wildfires have become increasingly common in the desert vegetation zones due to the presence of invasive plant species, primarily nonnative annual and perennial grasses. In total, there have been nine large wildfires which burned approximately 137,000 acres of wildland habitat within and adjacent to the Pima County CWPP WUI in the 6-year period of 2002 through 2007. In 2003, a wildfire destroyed more than 314 buildings, including most of the businesses in

Summerhaven and the Mt Lemmon WUI. The fire departments and districts within the county have responded to and suppressed numerous wildland fires within the WUI during the past several years. The areas with the greatest potential for fire ignition, either from natural or human (though unplanned) causes, are found within the communities of Sells, Summerhaven, and along the eastern edge of Pima County (http://wildfire.cr.usgs.gov/firehistory/). Many of these wildland fire ignitions have occurred within areas infested with nonnative grasses such as buffelgrass (*Pennisetum ciliare*), red brome (*Bromus rubens*), and Mediterranean grass (*Schismus barbatus*); xeroriparian corridors; and higher-elevation chaparral and woodland vegetation associations that threaten the at-risk communities of Pima County with the potential for catastrophic wildland fire. Continued extreme weather conditions, dry fuels, increased nonnative invasive vegetation, and increased fuel loading on federal and nonfederal lands contribute to the potential for catastrophic wildland fires within Pima County (Photo 1.1). As a result, the fire departments and districts and governmental agencies have initiated fire preparedness and land-treatment planning efforts to deal with the types and densities of wildland fuels that significantly threaten communities with potential catastrophic wildfire.

Photo 1.1. Saltcedar-Infested Riparian Corridor in Pima County (courtesy of Northwest Fire Department)

Wildland fire behavior as it relates to weather can be basically divided into four periods equating to the four seasons. Wildfires occurring during the late spring and early summer often exhibit erratic behavior due to dry light and heavy fuels from high average daily temperatures and seasonal droughts. In recent years, the southwest United States has experienced widespread and intense drought, which has been stressing forests (Karl et al. 2009). Record wildfires are also being driven by rising temperatures and related reductions in spring snowpack and soil moisture (Westerling et al. 2006). Associations between wildfire and hydroclimate in western forests indicate that increased wildfire activity over recent decades may be tied to reduced winter precipitation and an early spring snowmelt, particularly in mid-elevation forests (Westerling et al. 2006). If the Southwest becomes warmer and drier, as projected by many climate models, wildland fire seasons are anticipated to increase in length and severity driven by rising spring and summer

temperatures and related reductions in spring snowpack and soil moisture (Karl et al. 2009; Westerling et al. 2006; USDA 2012). If periods of extended drought and warmer temperatures become more common in Pima County, increases in wildland fire occurrences, particularly in higher-elevation vegetation associations, and fire severity can be anticipated.

In 2003, Governor Janet Napolitano created the Forest Health Advisory Council and the Forest Health Oversight Council in response to the increasing number, frequency, and intensity of unwanted wildfires threatening Arizona communities and forests (Executive Order 2003-16). The councils were directed to develop scientific information and policy recommendations to advise the Governor's administration on matters of forest health, unnaturally severe forest fires, and community protection. In 2005, the councils established a subcommittee to begin work on a 20-year strategy to restore forest health, protect communities from fire, and encourage forest-based economic activity. Governor Napolitano approved and signed the *Statewide Strategy for Restoring Arizona's Forests* in June 2007. Governor Janice Brewer issued Executive Order 2007-17, re-establishing the Forest Health Council on July 9, 2009. The Core Teams have reviewed the strategy—specifically, the Sky Islands landscapes—to ensure that the recommendations adopted by the Core Teams and presented within the Pima County CWPP comply with, and complement, the *Statewide Strategy for Restoring Arizona's Forests*. The Core Teams have also reviewed the goals and objectives of the Arizona FireScape Project to ensure that the Pima County CWPP is compatible with and complementary to the FireScape Project. Using the information gathered from these supporting documents, the Core Teams and collaborators agreed that the Pima County communities listed in the *Arizona-Identified Communities at Risk* (Arizona State Forester 2009), as well as other developed areas identified as at risk within the Pima County CWPP WUI, constitute interface or intermix communities (see USDA and USDI 2001a; Arizona State Forester 2007) at risk from wildland fire.

B. WUI and Delineation Process

In 2009, five Pima County communities (Kitt Peak, Summerhaven, Arivaca, Sasabe, and Catalina) were included in *Arizona-Identified Communities at Risk* (Arizona State Forester 2009) and were given a WUI risk rating for catastrophic wildland fire. The Core Teams and collaborators concur with this 2009 listing of at-risk communities maintained by the Arizona State Forester. The Core Teams and collaborators recommend maintaining the listing of those five communities, based on the results of the Pima County CWPP wildland fire analysis, and further recommend including 28 other Pima County communities, along with their associated WUI risk ratings, in the 2009 *Arizona-Identified Communities at Risk* (see Table 1.1).

The Pima County CWPP analyzes risk and makes recommendations to reduce the potential for unwanted wildland fire to the 23 at-risk community WUIs composed of 33 individual communities in Pima County, including tribal trust lands. The Pima County CWPP analysis further refines components of wildland fire risk and prioritizes community recommendations for reducing wildland fire potential through vegetative fuel management and public outreach/education for reducing structural ignitability. Figure 1.2 summarizes the process that the Core Teams followed to produce the Pima County CWPP. At the far right of each tier is the "product" resulting from the activities in that tier. These tiers correspond to the sections in the Pima County CWPP and serve as a guide for the rest of this document.

According to HFRA, an "(1) At-risk community . . . means an area – (A) that is comprised of – (i) an interface community . . . or (ii) a group of homes and other structures with basic infrastructure and services . . . within or adjacent to Federal land; (B) in which conditions are conducive to a large-scale wildland fire disturbance event; and (C) for which a significant threat to human life or property exists as a result of a wildland fire disturbance event" (Secs. 101.1.A.i–ii, 101.1.B, and 101.1.C).

The at-risk communities within Pima County are adjacent to federal lands, including public lands administered by BLM, NPS, and CNF, and are consistent with the Arizona State Forester's definition of an *intermix* or *interface community* (ASF 2007:1):

> The Intermix Community exists where structures are scattered throughout a wildland area. There is no clear line of demarcation; wildland fuels are continuous outside of and within the developed area. The developed density in the intermix community, ranges from structures very close together to one structure per forty acres. Local fire departments and/or districts normally provide life and property fire protection and may also have wildland fire protection responsibilities.
>
> The Interface Community exists where structures directly abut wildland fuels. There is a clear line of demarcation between wildland fuels and residential, business, and public structures. Wildland fuels do not generally continue into the developed area. The development density for an interface community is usually three or more structures per acre, with shared municipal services. Fire protection is generally provided by a local fire department with the responsibility to protect the structure from both an interior fire and an advancing wildland fire.

In addition to a community's listing status, the current condition of the wildland fuels within and adjacent to at-risk communities significantly contributes to the possibility of a catastrophic wildfire capable of damaging or destroying community values, such as houses, infrastructure, recreational sites, businesses, wildlife, and unique plant communities, especially desert areas with saguaro cactus, which are important economically for maintaining property values and tourism. Establishing a CWPP to enhance the protection of community values and to minimize the potential loss of property while ensuring public and firefighter safety during a catastrophic wildfire remains the overriding priority recommendation of the Pima County CWPP.

The WUI is commonly described as the zone where structures and other features of human development meet and intermingle with undeveloped wildland or vegetative fuels. Communities in the WUI face substantial risk to life, property, and infrastructure. Wildland fire in the WUI is one of the most dangerous and complicated situations firefighters face. The *National Cohesive Wildland Fire Management Strategy Phase II National Report* (WFLC 2012) emphasizes working collaboratively with communities in the WUI to reduce their risk from large-scale wildfire. HFRA builds on existing efforts to restore healthy wildland conditions in the WUI and empowers local communities to determine the extent of the WUI; determine appropriate wildland fuel mitigation measures; enhance public education for the prevention of wildland fire; and to authorize expedited environmental assessments, administrative appeals, and legal review for qualifying projects on federal land.

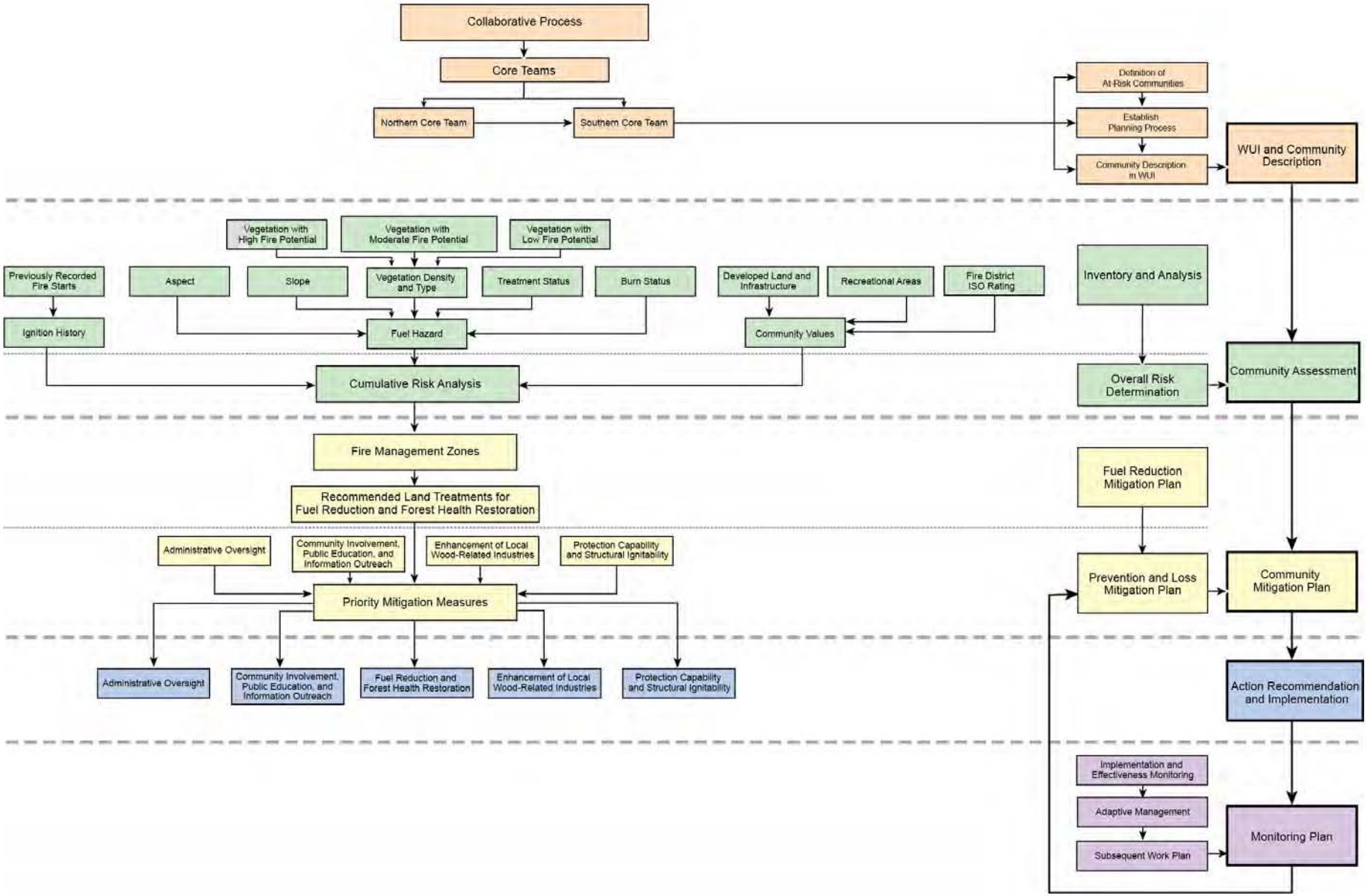


Figure 1.2. Pima County CWPP Process

The Pima County CWPP process of delineating WUI boundaries for at-risk communities involved collaboration among local, state, and federal government representatives, as well as interested individuals within the communities (Photo 1.2).

Photo 1.2. Pima County CWPP Core Planning Team Meeting

The Pima County CWPP WUI is the minimum area needed to provide protection to each community and its surrounding community values. The identified WUI includes a total of 1,579,572 acres composed of a mix of private, county, state, tribal trust, and federal lands. The WUI lands that surround the communities are in a condition conducive to a large-scale wildland fire, and such a wildfire could threaten human life and properties (Photo 1.3.).

Photo 1.3. Wildland Fire in Pima County (courtesy of Northwest Fire Department)

General elements used in creating the WUI for Pima County at-risk communities include the following:

- Fuel hazards, local topography, vegetative fuels, and natural firebreaks
- Historical fire occurrence
- Community development characteristics
- Firefighting preparedness and response capabilities
- Infrastructure and evacuation routes
- Recreation, scenic, and wildlife values

C. Desired Future Condition and Wildfire Mitigation in the WUI

The desired future condition of Pima County CWPP lands includes the maintenance of, or return to, wildland fire resiliency status and the maintenance of, or return to, the vegetation component of the historical plant potential community and appropriate management of nonnative vegetation across Pima County. The historical plant potential community is composed of desert scrublands, shrublands (mesquite uplands), riparian corridors, and semidesert grasslands, oak woodland, pine-oak woodland, and pine and mixed conifer forests, all of these plant communities have an associated understory of grasses and shrubs. Some historic plant communities have become invaded and colonized by invasive grasses or woody species and may have undergone a permanent type conversion (NatureServe 2004; Gori and Enquist 2003). The Core Teams intend the Pima County CWPP to complement BLM, NPS, and CNF wildland fire management objectives; the *Statewide Strategy for Restoring Arizona's Forests* (Governor's Forest Health Councils 2007); the *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* (USDI BLM 2004a); the *Coronado National Forest Plan* (USDA CNF, 1988 as amended), *Coronado National Forest Fire Management Plan* (USDA FS 2010) and the *Saguaro National Park Fire Management Plan* (USDI NPS 2007), *Organ Pipe Cactus NM Fire Management Plan* (USDI NPS 2004), *Arizona BLM Gila District Fire Management Plan* (USDI BLM 2010*),* and the Arizona FireScape Project (http://www.azfirescape.org/home).

The desired future condition of public lands is consistent with those described by the Core Teams—community wildfire protection, watershed and rangeland restoration, and protection of community values, as well as the restoration of native vegetation to historical wildfire return intervals. However, in the face of changing climate conditions historical vegetation communities may not be achievable. The Core Teams encourage land-management agencies to develop landscape-scale restoration of vegetation communities that restore critical wildlife habitat, ensure healthy functioning watersheds, and safeguard our communities. Vegetative types maintained in this condition allow natural processes such as fire to be incorporated into long-term management practices to both sustain habitat health and meet Pima County CWPP management goals while providing for community protection from unwanted wildland fire. Public education and land treatment projects in the Pima County CWPP area—coupled with current efforts of local governments, fire departments and districts, CNF, NPS, Pascua Yaqui Tribe, and BLM—will create a better-informed constituency capable of protecting at-risk communities through restoration and vegetative fuels mitigation efforts within the WUI. Federal wildfire reduction policy on public lands is planned and administered primarily by BLM, NPS, USFWS, Pascua Yaqui Tribe, and CNF, which are the federal

governing agencies for the public lands associated with the Pima County CWPP planning area. These agencies and tribes manage wildland fire to help reduce unnaturally high wildland fuel loads that contribute to catastrophic wildland fire, to help encourage the return of fire to a more natural role in fire-adapted ecosystems, to achieve ecosystem goals, to keep fire out of fire-sensitive desert and riparian plant communities, reduce economic impacts, and to enhance public and firefighter safety.

The desired future condition of federal lands includes improving public and firefighter safety from wildland fire, using wildland fire as a management tool to achieve resource objectives where appropriate, managing hazardous wildland fuels within and adjacent to the WUI, providing adaptive wildland fire response and suppression, and returning public lands to Condition Class I status. Federal lands in this condition class can carry wildfire without significant impacts on habitat components. Current federal fire policy allows wildland fires to be concurrently managed for one or more objectives, and, objectives can change as the fire spreads across the landscape (USDA and USDI 2009). The BLM, NPS, Pascua Yaqui Tribe, and CNF adhere to federal policy when managing all unplanned wildfire ignitions on public lands within the WUI. Federal policy for reducing wildfires on public lands (that is, BLM, NPS, Pascua Yaqui Tribe, and FS lands) is planned and administered locally through the BLM's field offices, Saguaro National Park, Pascua Yaqui Tribe, and the CNF. In Saguaro National Park, all fires are suppressed in desert areas where plants are not adapted to fire. In fire-adapted plant communities at higher elevations, fire may be managed to achieve resource objectives depending on the current and predicted situation. At Organ Pipe Cactus National Monument, desert areas are protected from fire. The Tohono O'odham Nation and Pascua Yaqui Tribe manage tribal wildland fire programs.

Under the proposed action described in the *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* (USDI BLM 2004a), BLM-administered public lands are assigned one of two land use allocations for fire management: Allocation 1 includes areas suitable for wildland fire use for resource-management benefit, and Allocation 2 includes areas not suitable for wildland fire use for resource benefit. The *CNF Fire Management Plan* (USDA FS 2010) has identified two fire management units (FMUs). These FMUs maintain consistency with the management objectives as outlined in the CNF Plan (1988, as amended). FMU 1 includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired CNF Plan objectives when risk is within acceptable limits. FMU 2 is generally located at elevations less than 4,500 feet on the Santa Catalina, Santa Rita, Galiuro, and Tumacacori Ecosystem Management Areas. In this FMU, resource protection is the only objective, as it contains non-fire-adapted vegetation, which within the CNF is the southwestern desert scrub vegetation associations.

The basic objectives of the management policies at Saguaro National Park are the protection and perpetuation of naturally operating ecosystems to the fullest extent consistent with safeguarding public safety, cultural resources and private property. As described in the *Saguaro National Park Fire Management Plan (*USDI NPS 2007*)*, fire is a natural process in the Park's ecosystems, and consequently, fire must be managed so that it can assume its natural role, either as wildland fire use or through prescribed burning. Management-ignited prescribed fire will be used to re-establish the natural influence of fire and restore natural fuel loadings through the reduction of hazardous fuel accumulation. All projects that include prescribed burning will include specific burning prescriptions that will ensure that the fire can be

controlled within established boundaries and that the burning will meet the desired fire management objectives for the resource.

The desired future condition of private lands in the WUI is for landowners to comply with the National Firewise Communities program (www.Firewise.org) or to meet home-ignition-zone landscaping (www.fireadapted.org) or fire-safe landscaping recommended by the Pima County CWPP fire departments and districts in compliance with local ordinances. The Fire Adapted Communities Web site offers information and specific actions homeowners can take to reduce risk of wildfire. Firewise is a national program that helps communities reduce wildfire risks and provides them with information about protecting themselves against catastrophic wildfires and mitigating losses from such fires. Within Arizona, the State Forester administers the Firewise certification program. Fire departments and districts and local governments in Pima County would like to make this information available to their citizens and to encourage its application. Residential and other structures that comply with Firewise standards significantly reduce fire-ignition risks in a community, as well as the potential for fires to spread to surrounding habitats. Additionally, structures that comply with Firewise recommendations are more likely to survive wildland fires that do spread into a community (Cohen 2008).

The Core Teams are aware that wildland fuel accumulations primarily associated with the invasion of woody species and nonnative grasses, together with community growth in the WUI, have produced areas at high risk from catastrophic wildfire. The Core Teams aspire to achieve restored, self-sustaining, biologically diverse habitats of mixed open space and developed areas that contribute to a quality of life demanded by Pima County citizens. The Core Teams recognize that protection from catastrophic wildland fire requires collaboration and implementation through all levels of government and through an informed and motivated public. The Core Teams considered restoring the health of forest, rangeland, desert and riparian areas, community protection, and public and firefighter safety while developing this CWPP.

Financial commitments required to reduce the risk of catastrophic wildfire can be extensive for municipal, county, state, and federal governments; for fire districts; and for the small rural communities surrounded by public lands. Pima County, CNF, NPS, Pascua Yaqui Tribe, and BLM have implemented wildland fuel mitigation projects within or near the Pima County CWPP WUI. Fire departments and districts have improved wildland fire suppression response and continue public education and outreach programs concerning wildland fire threat and home-ignition-zone recommendations. However, the availability of federal, state, and local funding for mitigation of wildland fire risk, enhanced response and public education will drive the ability of the Cooperators to meet the goals of the Pima County CWPP (i.e., treatments depend on fund availability). The CWPP Core Team recognizes the importance or partnering with organizations such as the Southern Arizona Buffelgrass Coordination Center (SABCC) and others to assist in meeting CWPP goals and objectives. Pima County fire departments and districts have standing automatic-aid agreements allowing for closest resources to provide initial attack response. The fire departments and districts of Pima County maintain wildland fire response teams supported by various engines and support equipment including ambulances, brush trucks, fire engines, ladder trucks, and heavy-rescue vehicles, and various other specialized response vehicles to help suppress wildland fires (Photo 1.4.).

Photo 1.4. Type 6 Wildland Fire Truck (courtesy of Northwest Fire Department)

Additionally, the fire departments and districts have taken proactive measures to encourage willing property owners to reduce fire risk on private property (HFRA, Sec.103.d.2.B). Wildland fire response teams are composed of personnel with various levels of wildland firefighting training, including red-carded firefighters. The response teams have coordinated radio frequencies to improve communications between initial-attack and responding firefighting agencies and departments. Specially trained wildland fire response teams not only provide suppression response to brush fires but also provide community awareness programs and structural-fire risk assessments. The Core Teams, BLM, NPS, Pascua Yaqui Tribe, and CNF collaborators are proposing additional wildland fuel treatments and wildland fire suppression enhancements and have been proactive in pursuing funding for wildland fire public outreach programs and fire-suppression training and equipment.

D. Goals for the Pima County CWPP

To reduce the risks to life and property from catastrophic wildland fire, and as a collaboration of communities and agencies, the Core Teams have agreed on the following primary goals of the Pima County CWPP:

- Improve fire prevention and suppression, emphasizing firefighter and public safety
- Reduce hazardous fuels, emphasizing public and private property protection
- Maintain and appropriately restore forest, rangeland, and riparian health
- Promote community involvement and provide for community protection
- Recommend measures to reduce structural ignitability in the WUI
- Encourage economic development in the communities from vegetative treatments

- Promote development of wildfire emergency evacuation and communication plans
- Use the CWPP in conjunction with surrounding community and agency fire management plans

E. Planning Process

During initial analysis, and to aid the overall development of this plan, the Core Teams reviewed the following documents and studies:

- "Urban Wildland Interface Communities within the Vicinity of Federal Lands That Are at High Risk from Wildfire," *Federal Register* Vol. 66, Nos. 3 and 160 (USDA and USDI 2001a, 2001b)
- *Healthy Forests: An Initiative for Wildfire Prevention and Stronger Communities (Presidential Policy 2002)*
- *HFRA*
- *The Healthy Forests Initiative and Healthy Forests Restoration Act: Interim Field Guide* (USDA FS and USDI BLM 2004)
- *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (Communities Committee et al. 2004)
- *Field Guidance: Identifying and Prioritizing Communities at Risk* (National Association of State Foresters 2003)
- *Arizona Wildland Urban Interface Assessment* (Arizona State Forester 2004)
- *Arizona-Identified Communities at Risk* (Arizona State Forester 2009)
- *Identifying Arizona's Wildland/Urban Interface Communities at Risk: A Guide for State and Federal Land Managers* (Arizona State Forester 2007)
- *Statewide Strategy for Restoring Arizona's Forests* (Governor's Forest Health Councils 2007)
- *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan* (USDA FS and USDI BLM 2002)
- *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* (USDI BLM 2004a)
- *Arizona BLM Gila District Fire Management Plan* (USDI BLM 2013)
- *Coronado National Forest Plan* (USDA CNF 1986, as amended)
- *Coronado National Forest Fire Management Plan* (USDA FS 2010)
- *Saguaro National Park Fire Management Plan* (USDI NPS 2007)
- *Organ Pipe Cactus National Monument Fire Management Plan* (USDI NPS 2004)
- *Southern Arizona Buffelgrass Strategic Plan* (Rogstad 2008)
- *Wildland Fire Use Implementation Procedures Reference Guide* (USDI and USDA 2005)

- *Wildland Fire Suppression (Including Wildland Fire Use) and Rehabilitation in Riparian and Aquatic Habitats (RA)* (USDI BLM 2004b)
- *Guidance for Implementation of Federal Wildland Fire Management Policy* (USDA and USDI 2009)
- *Pima County Multi-Jurisdictional Hazard Mitigation Plan* (PCOEM 2012)
- *Pascua Yaqui Wildfire Management Plan* (BIA 2012a)
- *Pascua Yaqui Fuels Management Plan* (BIA 2012b)
- *Tohono O'odham Wildfire Management Plan* (Tohono O'odham Nation 2004)
- *Pima County Ordinance No 2012-34. Adopting the 2012 International Wildland-Urban Interface Code applicable to areas designated Rural Forest Village under the Pima County Comprehensive Plan*
- Arizona FireScape Project (http://www.azfirescape.org/home)

Action recommendations for at-risk areas within the Pima County CWPP WUI boundaries have been developed as part of this planning process. Treatments for wildland vegetative fuels and additional wildland fire mitigation measures are recommended to be implemented in specific time frames and with associated monitoring to determine and document measurable outcomes. Successful implementation of the Pima County CWPP will require collaboration by fire departments and districts, governments, resource-management agencies, and private landowners. The cooperating agencies must develop processes and systems that ensure recommended actions of the Pima County CWPP comply with applicable local, state, and federal environmental regulations. The dedication of the Core Teams and collaborators in implementing the Pima County CWPP ensures that all agencies, groups, and individuals involved will develop any additional formal agreements necessary for the timely implementation, monitoring, and reporting of the Pima County CWPP. The Core Teams were formed not only to meet collaborative requirements of HFRA but also to represent all of the different interests and diversity within Pima County communities, with all parties being involved and committed to the development and implementation of the Pima County CWPP.

II. Pima County CWPP Community Assessment and Analysis

The community risk assessment is an analysis of the potential for catastrophic wildland fire to Pima County communities. This risk analysis incorporates the current fire regime-condition class, wildfire fuel hazards, risk of ignition, local preparedness and protection capabilities, and at-risk community values. In addition, the Arizona State Forester's *Identifying Arizona's Wildland/Urban Interface Communities at Risk: A Guide for State and Federal Land Managers* (2007), *Arizona Forest Resource Assessment* (ASFD 2010a), *Arizona Forest Resource Strategy* (ASFD 2010b) and the *National Cohesive Wildland Fire Management Strategy* (USDA and USDI 2011) were reviewed and incorporated as appropriate to ensure that the Pima County CWPP is compatible with and complementary to national and statewide CWPP planning efforts. This analysis includes all risk factors required by the Arizona State Forester for a compliant CWPP. The areas of concern for wildland fuel hazards, risk of ignition and wildfire occurrence, local preparedness, and protection capabilities and loss of community values are evaluated to determine areas of highest wildland fire risk within Pima County. The initial analysis area included all of Pima County, including tribal trust lands. The initial analysis depicted all areas within the county at risk for unwanted wildland fire. Subsequent to the initial analysis, the Core Teams identified each Pima County community WUI in accordance with the Arizona State Forester's guidance. The initial analysis area comprises 5,877,578 acres of land, of which 1,579,699 acres are designated as community WUI (Table 2.1; Figures 2.1a–2.1c).

Table 2.1. Land Management within the Pima County Community WUIs

Ownership Type	WUI Acres	% of WUI Acres
Barry M. Goldwater Air Force Range	538	0
Buenos Aires National Wildlife Refuge (BANWR)	20,131	1
Bureau of Land Management (BLM)	94,969	6
Bureau of Reclamation (BOR)	2,992	0
Coronado National Forest (CNF)	75,129	5
Davis Monthan Air Force Base	10,728	1
Arizona Game and Fish Department	1,556	0
Military Reservation	40	0
Organ Pipe Cactus National Monument	1,389	0
Other/Unclassified	22	0
Parks and Recreation	11,192	1
Pascua Yaqui Tribe	557	0
San Xavier Indian Reservation	71,227	5
Tohono O'odham Nation	24,256	2
Private Land	727,999	46
Saguaro National Park	33,302	2
State Trust Lands	503,672	32
Total	1,579,699	100

*Actual total may not add to 100 because of rounding.

The Pima County CWPP planning area primarily includes private lands (46%), state trust lands (32%), BLM (6%), and CNF (5%) lands, and SNP (2%). Tribal trust lands consisting of Pascua Yaqui, San Xavier, and Tohono O'odham lands collectively compose over 7 percent of the Pima County CWPP WUI.

Outside tribal trust lands, primary landownership in the Pima County CWPP planning area is a mosaic of privately owned lands and lands administered by the ASLD, BLM, and CNF (Figures 2.1a–2.1c). Private lands within the Pima County CWPP planning area include urban areas with associated adjacent urban development in proximity to undeveloped public and state lands (such as Oro Valley), rural communities with minimal development (such as Arivaca), and undeveloped land parcels.

Of the publicly owned lands within the analysis area, Arizona State Trust lands (state lands) compose the largest acreage—503,672 acres, or 32 percent—of land within the analysis area. State lands were established in 1912 under the terms of the Arizona Enabling Act. With statehood, Arizona was granted ownership of four sections per township. The ASLD manages state lands to produce revenue for the Arizona State Trust beneficiaries, including the state's school system. Within the Pima County CWPP area, State lands are managed primarily for recreation, natural resource protection, and livestock grazing.

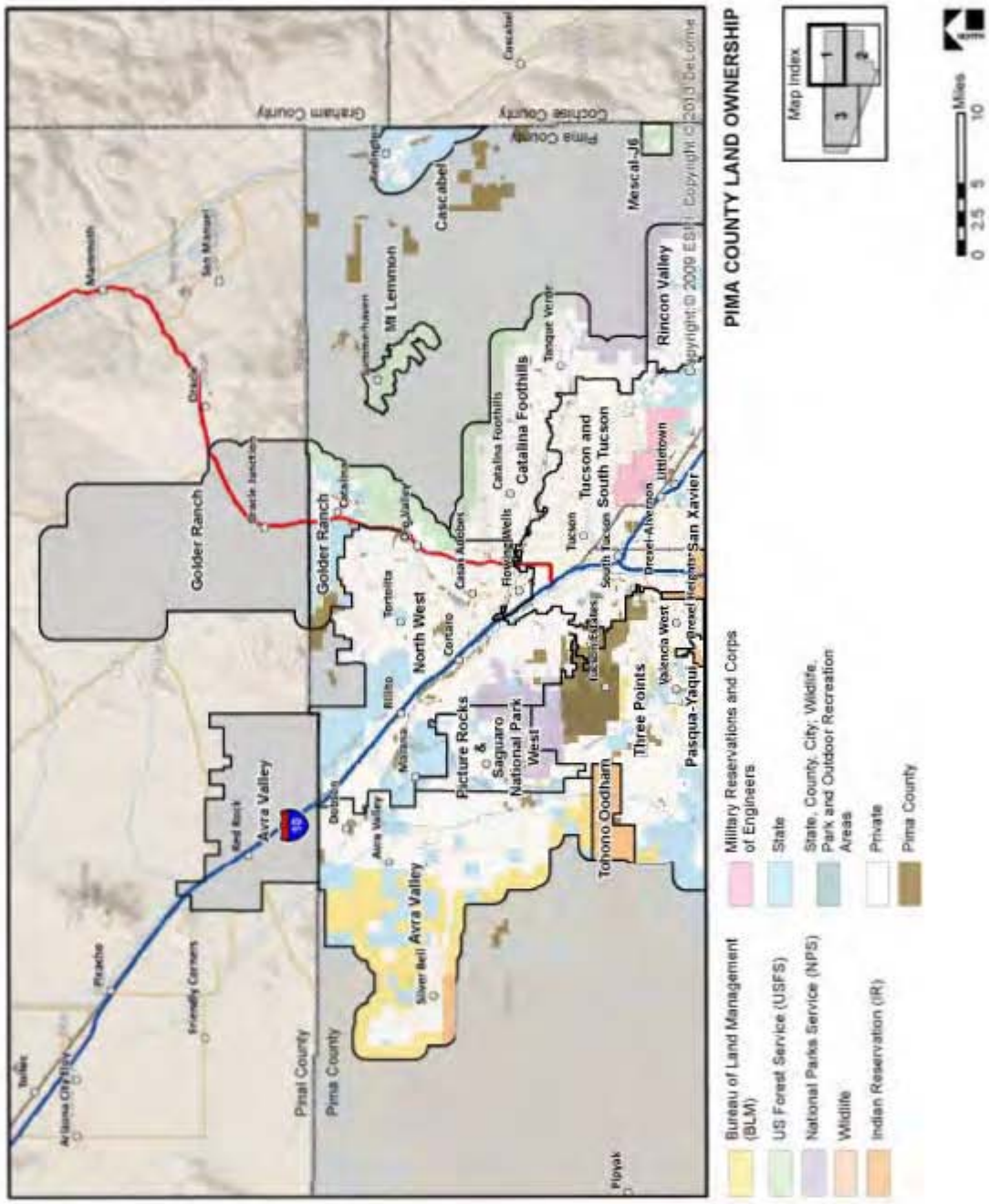
There are several large county, state, and national parks within the analysis area. These include Tucson Mountain Park, Catalina State Park, and Saguaro National Park. There are a large number of popular hiking trails within these designated parks as well as within the CNF, such as the Sabino Canyon Recreation Area. Designated parks and recreation areas adjacent to the major communities of the Tucson Basin can increase potential wildfire fire risk due to human-caused ignitions.

Of the remaining publicly owned lands within the analysis area, CNF lands compose 75,129 acres, or approximately 5 percent, of the analysis area. CNF lands within the WUI recreational residences such as Greater Soldier Camp and Willow Canyon, organizational recreational areas such as the Camp Lawton Boy Scout Camp and the Whispering Pines Girl Scout Camp, as well as the First Southern Baptist Church, Sycamore Canyon Academy-Rite of Passage, Camp Zion, Amphi Camp, St. Marks Presbyterian Church, Pima County Sheriff's Department, as well as communications sites, observatories, and University of Arizona research sites. These federal lands provide extensive popular hiking, hunting, and recreational areas within or adjacent to the analysis area.

Private land within the analysis area composes the largest ownership within the CWPP at 727,999 acres, or roughly 46 percent, of the analysis area. Private lands are mostly clustered near the communities, with some scattered private in-holdings located throughout the analysis area. The municipalities/unincorporated communities of Ajo, Catalina, Green Valley, Marana, Oro Valley, Sahuarita, Sells/Tohono O'odham, Summerhaven, South Tucson, Tucson, and Vail contain the majority of private land acreage within the analysis area. Commercial structures are clustered along state and federal highways and community centers, and they are assumed to remain as the principal commercial corridors within the Pima County at-risk communities.

Pima County has experienced considerable growth in population and housing during past decades. The 1900 decennial census recorded 14,689 residents in Pima County. In 2010, the population center moved southwest, closer to the intersection of South Park Avenue and East Aviation Parkway. The earlier north-south pattern of expansion appears to be recurring, and future development in Pima County is expected to be oriented around I-10 and I-19 corridors. The majority of the population lives in the eastern half of the

county, which contains all of the five incorporated jurisdictions, the Tohono O'odham Nation, Pascua Yaqui Tribe, San Xavier District, and a large, urbanized unincorporated area. Approximately 85 percent of the county's land is federal, state or Native American owned (http://www.pagnet.org/RegionalData/Demographics/).


PIMA COUNTY LAND OWNERSHIP
Copyright:© 2009 ESRI, Copyright:© 2013 DeLorme
Map Index
1
2
3
4
0 2.5 5 10 Miles
Bureau of Land Management (BLM)
US Forest Service (USFS)
National Parks Service (NPS)
Wildlife
Indian Reservation (IR)
Military Reservations and Corps of Engineers
State
State, County, City, Wildlife, Park and Outdoor Recreation Areas
Private
Pima County
Graham County
Cochise County
Pinal County
Golder Ranch
Avra Valley
Picture Rocks
Saguaro National Park West
North West
Catalina Foothills
Tucson and South Tucson
Rincon Valley
Mt Lemmon
Cascabel
Mescal-J6
Tohono Oodham
Three Points
Pasqua-Yaqui
San Xavier
Littletown
Drexel-Alvernon
Valencia West
Tortolita
Catalina Foothills
Tanque Verde
Casas Adobes
Flowing Wells
Tucson
South Tucson
Drexel Heights
Corona
Cortaro
Marana
Rillito
Dove Valley
Avra Valley
Silver Bell
Debbie
Red Rock
Tortolita
Oracle
Oracle Junction
San Manuel
Mammoth
Winkelman
Hayden
Kearny
Superior
Florence
Coolidge
Casa Grande
Eloy
Picacho
Friendly Corners
Tucson
Arizona City
Pinal County
Pima County
Flowing Wells
Catalina Foothills
Tanque Verde
Casas Adobes
Drexel Heights
Valencia West
Littletown
Drexel-Alvernon
Cascabel
Pima County
Cochise County
Graham County
Mescal-J6
Rincon Valley
Mt Lemmon
Cascabel
Golder Ranch
Avra Valley
Picture Rocks
Saguaro National Park West
North West
Catalina Foothills
Tucson and South Tucson
Three Points
Tohono Oodham
Pasqua-Yaqui
San Xavier
Tucson
South Tucson
Tortolita
Rillito
Marana
Cortaro
Corona
Dove Valley
Avra Valley
Silver Bell
Debbie
Red Rock
Tortolita
Oracle
Oracle Junction
San Manuel
Mammoth
Winkelman
Hayden
Kearny
Superior
Florence
Coolidge
Casa Grande
Eloy
Picacho
Friendly Corners
Tucson
Arizona City
Pinal County
Pima County
Pinal County
Pima County
Golder Ranch
Avra Valley
Picture Rocks
Saguaro National Park West
North West
Catalina Foothills
Tucson and South Tucson
Rincon Valley
Mt Lemmon
Cascabel
Mescal-J6
Tohono Oodham
Three Points
Pasqua-Yaqui
San Xavier
Littletown
Drexel-Alvernon
Valencia West
Tortolita
Catalina Foothills
Tanque Verde
Casas Adobes
Flowing Wells
Tucson
South Tucson
Drexel Heights
Corona
Cortaro
Marana
Rillito

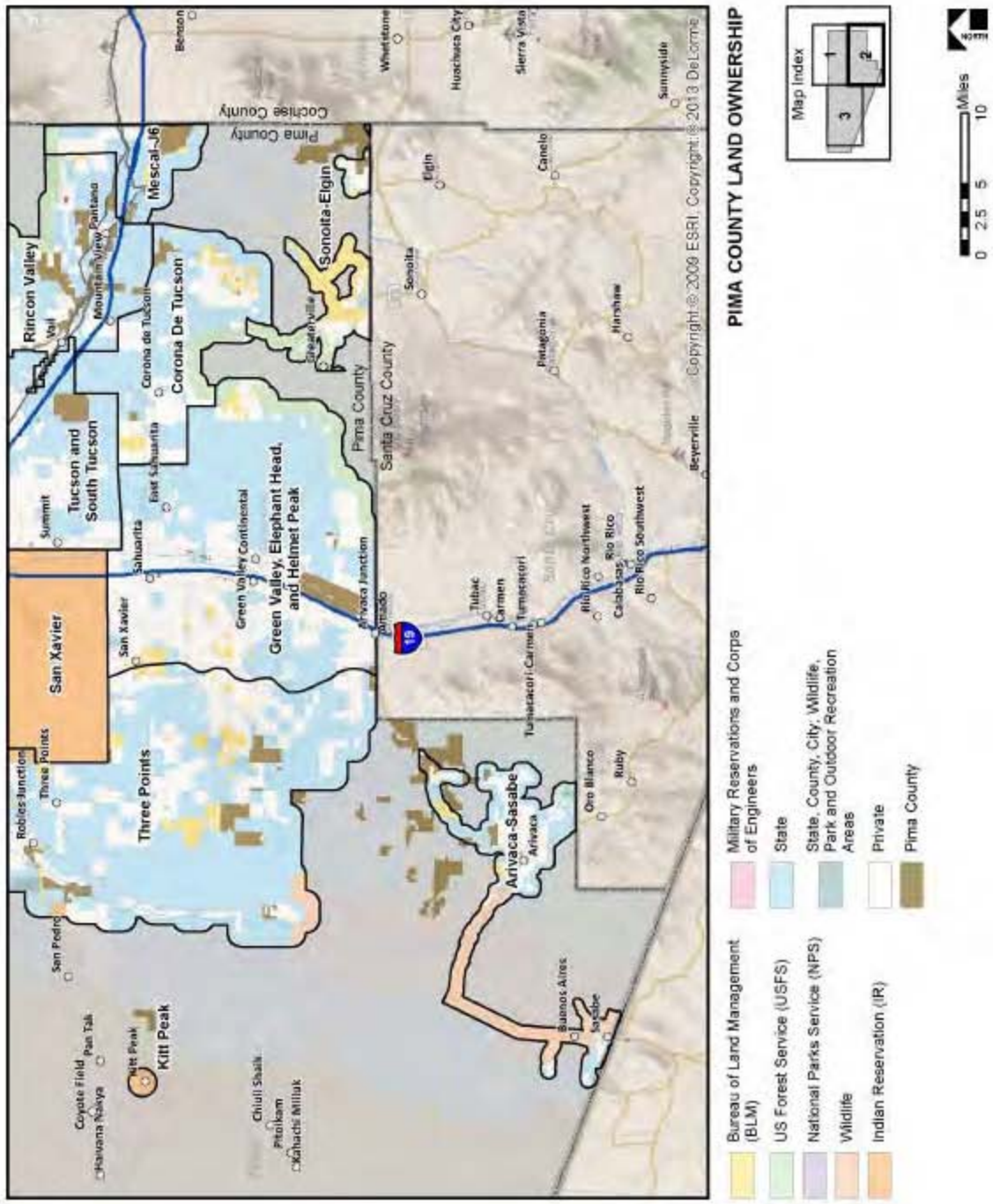


Figure 2.1b. Pima County CWPP Landownership, South

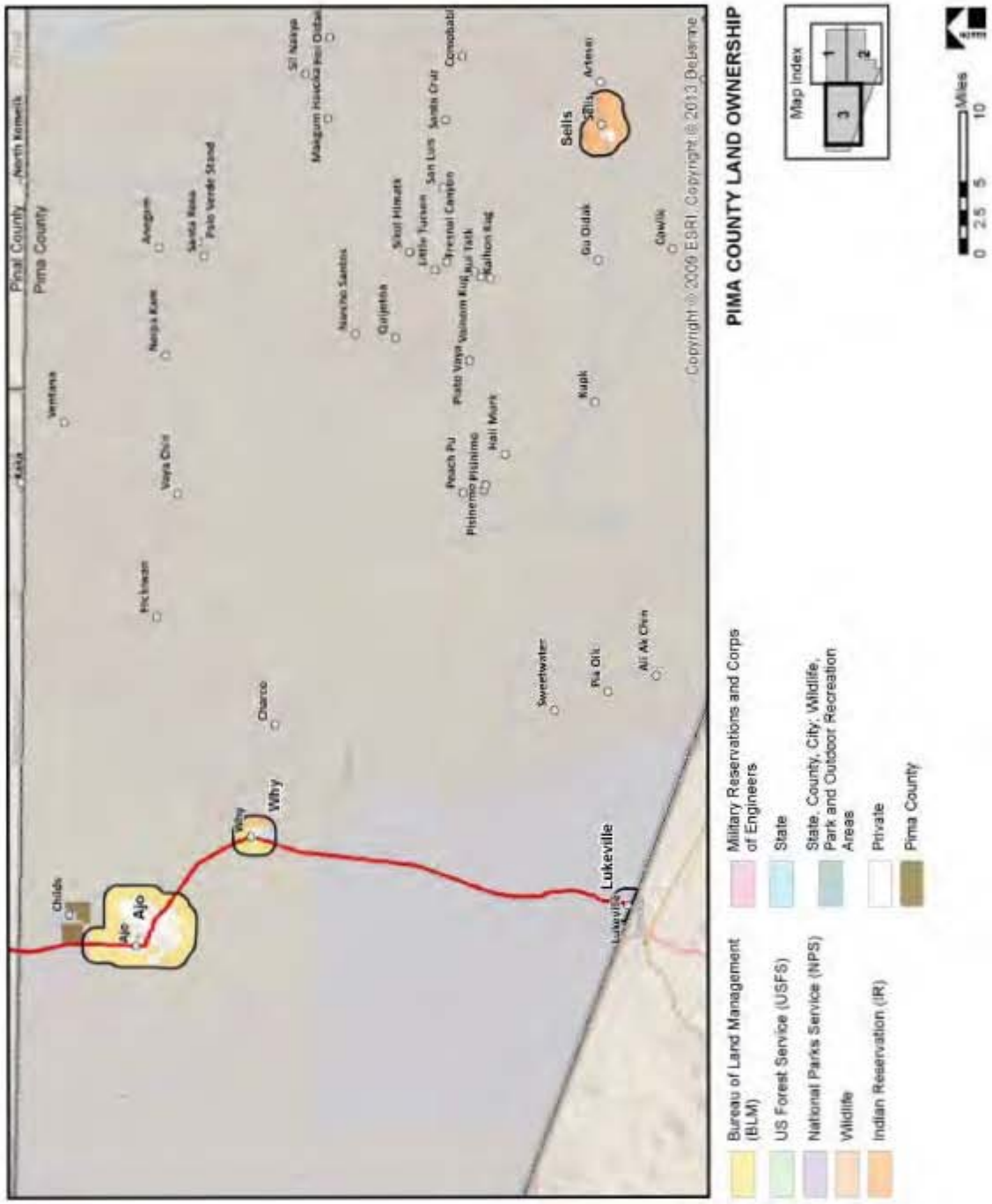


Figure 2.1c. Pima County CWPP Landownership, West

The 2010 population estimate for Pima County was reported as 980,263 residents living in 442,484 housing units. This represents an approximate 48 percent increase in population over the 666,880 residents reported in the 2000 census. Growth is anticipated to continue in both urban and rural settings in Pima County (http://quickfacts.census.gov/qfd/states/04/04019.html).

Some portions of the Pima County analysis area are included within the *Statewide Strategy for Restoring Arizona's Forests* (Governor's Forest Health Councils 2007), which distinguishes nine forested landscapes. A portion of one of these identified forested landscapes, the Sky Islands, occurs in Pima County.

The Sky Islands region is located at the confluence of four major bioregions—the southern Rocky Mountains, the northern Sierra Madre Mountains, the Sonoran Desert, and the Chihuahuan Desert. The Sky Islands region of the *Statewide Strategy for Restoring Arizona's Forests* is circumscribed by the Gila Mountains to the north, the Baboquivari Mountains to the west, and the Mexican border to the south. Landscape vegetation within the Sky Islands ranges from cold, wet, spruce-fir forests above 8,000 feet to mixed conifer and ponderosa pine forest occurring at 6,500 to 8,000 feet to the Madrean encinal oak woodlands at elevations occurring from 3,600 to 6,500 feet (Governor's Forest Health Councils 2007:109). Due to high levels of topographical complexity and gradient within the portion of the Sky Islands landscape within the Pima County analysis area, fire characteristics are variable. Single fires can cross multiple vegetation associations. Unnaturally high fuel loads and drought continue to contribute to high wildland fire risk. Recommendations for "Future Restoration Needs" (Governor's Forest Health Councils 2007:115) of the Sky Islands landscape applicable to the analysis area include (1) conducting educational outreach to stakeholders that will highlight the ecological and socioeconomic benefits of ecological restoration; (2) providing incentives and assistance for restoration of privately owned forests (or lands within the Pima County CWPP); (3) integrating restoration planning with long-term planning and zoning processes, which will require outreach and education to planning and zoning commissions; (4) encouraging Firewise landscaping and building in communities; and (5) encouraging the restoration-based harvesting of firewood as opposed to importing firewood from Mexico.

Wildland fire is identified as a critical issue within the *Arizona Forest Resource Assessment* (ASFD 2010a). Higher elevations of the Santa Catalina, Rincon, and Baboquivari mountains are focus landscapes for wildland fire, as derived from two primary datasets: (1) the 2004 *Arizona Wildland Urban Interface Assessment* report and (2) communities identified as at-risk by the Arizona State Forester. The analysis includes all risk components and is constructed to be compatible with all influencing factors identified in the *Arizona Forest Resource Assessment* (ASFD 2010a).

The climate of Pima County is varied—ranging from semiarid desert shrub-scrub vegetative associations with relatively low precipitation, low humidity, and high summer temperatures to vegetative communities associated with the oak, pinyon-juniper, ponderosa pine, and mixed conifer woodlands with mild summers and cool winters. Precipitation averages 12 inches per year in Tucson but is variable throughout the county and occurs primarily during two rainy periods—summer rainfall, which usually occurs in local torrential convection showers, and winter rainfall, which is usually slow and can occur over several days. The average maximum annual air temperature ranges from a high of 99 to a low of 64 degrees Fahrenheit, while minimum annual temperatures range from 38 to 73 degrees Fahrenheit.

The majority of federally managed public lands outside tribal trust lands, national parks and monuments, and national wildlife refuges in Pima County are administered by the BLM and locally managed through the BLM, Gila District, Tucson Field Office. In accordance with the *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* and the *Wildland Fire Suppression (Including Wildland Fire Use) and Rehabilitation in Riparian and Aquatic Habitats* (USDI BLM 2004a and USDI BLM 2004b), BLM-administered public lands are assigned to one of two land use allocations for fire management. Allocation 1 lands include areas where fire is desired and there are few or no constraints for its use. Wildland fire may be used to achieve resource objectives, such as improved watershed or wildlife habitat. Where fuel loading is high and conditions are not initially suitable for wildland fire, fuel loads may be reduced by mechanical, chemical, or biological means to acceptable levels and to meet resource objectives. Allocation 2 lands include areas where mitigation and suppression are required to prevent direct threats to life or property. It also includes areas where fire never played a large role in ecosystem management and where unplanned ignitions would have negative effects on resources. In these areas BLM will implement programs to reduce unwanted ignitions and emphasize prevention, detection, and rapid suppression. The *Gila District Fire Management Plan* (USDI BLM 2010) refers to these two land use allocations and identifies areas where wildland fires can be managed for than one fire management objective and that mechanical, biological, or chemical means may be used to maintain nonhazardous levels of fuels to reduce the hazardous effects of unplanned wildland fires and meet resource objectives. The Fire Management Plan will also identify areas for exclusion from fire (through fire suppression), chemical, mechanical, and/or biological treatments. In addition to both land use allocations, BLM will undertake education, enforcement, and administrative fire-prevention measures to reduce human-caused fire.

National forest lands are administered by the CNF and consist of two FMUs: FMU 1–FS lands, except southwestern desert scrub vegetation type, and FM2–southwestern desert scrub vegetation type (USDA FS 2005, 2010):

> **FMU 1** – Forest-wide, except within in the southwestern desert scrub (Upper Sonoran Desert) vegetation type. This FMU includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired Land and Resource Management Plan objectives when risk is within acceptable limits.
>
> **FMU 2** – Generally, this FMU is located at elevations less than 4,500 feet on the Santa Catalina, Santa Rita, Galiuro and Tumacacori Ecosystem Management Areas (EMAs). In this FMU, resource protection is the only objective, as it contains non-fire adapted vegetation. The vegetation type on the Coronado this applies to is the Southwestern Desert scrub, which contains the following species: saguaro (*Carnegiea gigantea*), palo verde (*Cercidium* spp.), creosote bush (*Larrea tridentata*), ocotillo (*Fouquieria splendens*), and brittle bush (*Encelia* spp.). Due to the limitations of accurate mapping, on-scene resources will need to identify the vegetation type at both the point of ignition and in the direction of likely spread, prior to making resource objective decisions

NPS suppresses all fires in desert vegetation types because they are not adapted to fire, and fires cause unacceptable resource damage. Saguaro National Park fire management goals include giving primary consideration to firefighter, employee, and public safety; managing fire to minimize threats of unacceptable

effects of fire to property outside the park and sensitive cultural and natural resources; and restoring and maintaining fire-adapted ecosystems through the ecologically appropriate use of fire. In the WUI, Saguaro National Park can use herbicides and manually remove invasive plant species (especially buffelgrass) to protect park resources and private property.

Organ Pipe Cactus National Monument fire management goals involve protecting human life and property and employing strategies to suppress all wildland fires within monument boundaries that minimize costs and resource damage consistent with values at risk. The monument is currently undergoing a planning effort to potentially broaden and increase fuel treatment possibilities.

A. Fire Regime and Condition Class

Before European settlement of North America, fire played a natural (historical) role in the landscape. Five historical fire regimes have been identified based on the average number of years between fires (fire frequency) combined with the severity (amount of overstory replacement) of fire on the dominant overstory vegetation (Table 2.2).

Table 2.2. Fire Regime Information

	Frequency	Severity[a]
Regime I	0–35 years	Low
Regime II	0–35 years	High
Regime III	35–100 years	Low
Regime IV	35–100 years	High
Regime V	200+ years	High

Source: FRCC Guidebook Version 3.0, Sept. 2010.
http://www.fire.org/niftt/released/FRCC_Guidebook_2010_final.pdf p.15.
[a]Low = less than 75% of the dominant overstory vegetation replaced. High = greater than 75% of the dominant overstory vegetation replaced (stand replacement).

The condition class of wildland habitats describes the degree to which the current fire regime has been altered from its historical range, the risk of losing key ecosystem components, and the vegetative attribute changes from historical conditions. The following descriptions of condition classes are provided by the Arizona State Forester (2007:3):

> Condition Class 1:
>
> Fire regimes are within a historical range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within the historical range.
>
> Condition Class 2:
>
> Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased). This results in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation attributes have been moderately altered from their historical range.

Condition Class 3:

Fire regimes have been significantly altered from their historical range. The risk of losing key ecosystem components is high. Fire frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes have been significantly altered from their historical range.

The Pima County analysis area covers 5,877,578 acres, including 142,917 acres of land classified as developed and low-density open space and barren landscape (<3% of analysis area acres), 32,573 acres of unclassified lands (<1% of analysis area), and 24,680 acres of agricultural land (<1% of analysis area acres). The analysis area includes 4,007,788 acres (69% of analysis area acres) of Fire Regime Condition Class (FRCC) I lands, 850,206 acres (15% of analysis area acres) of FRCC II lands, and 814,480 acres (14% of analysis area acres) of FRCC III lands, as described in *Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management* (Schmidt et al. 2002).

Because condition-class categories are based on coarse-scale data that are intended to support national-level planning, any interpolation of national data for localized conditions may not be valid (FRCC Interagency Working Group 2005a, 2005b) due to invasive perennial and annual grasses, exotic forbs, and woody-species encroachment in native habitats altering local fire regimes. Therefore, local agencies are asked to provide data for localized vegetative conditions that reflect an accurate, current FRCC (USDA FS 2000). In addition to effects of invasive grasses and perennial woody species, the Southwest has experienced widespread and intense drought in recent years (Karl et al. 2009). Record wildfires occurring in the last decade are being driven by rising temperatures and related reductions in spring snowpack and soil moisture (Westerling et al. 2006). If the Southwest becomes warmer and drier, as projected by many climate models, the wildland fire season is anticipated to increase in length and severity driven by rising spring and summer temperatures and related reductions in spring snowpack and soil moisture (Karl et al. 2009; Westerling et al. 2006). If periods of extended drought and warmer temperatures become more common in Pima County, increases in wildland fire occurrences—particularly in higher-elevation vegetation associations and severity can be anticipated. The amount of land disturbance causing the growth of flammable annuals (pigweed [*Amaranth* spp.], mustards, and thistles) and invasive grasses (such as buffelgrass [*Pennisetum ciliare*], red brome [*Bromus rubens*], and Mediterranean grass [*Schismus barbatus*]) in the analysis area can rapidly alter the potential of a vegetation association to support unwanted wildland fire. In addition, increasing woody-species invasions, especially saltcedar (*Tamarix* spp.) within the riparian corridors, indicate that the perennial and ephemeral riparian, upland, and desert grassland habitats no longer conform to components of Condition Class 1 lands. Invasive nonnative plants have severe ecological impacts on vegetative structure (Arizona Wildlands Invasive Plant Working Group [AZ-WIPWG] 2005). Therefore, local conditions indicate that the majority of wildland habitats within the analysis area may actually fall within Condition Classes 2 and 3.

As reported in the *Statewide Strategy for Restoring Arizona's Forests* (Governor's Forest Health Councils 2007:46), the majority of the Sky Islands landscape (92%) has been classified as Condition Classes 2 and 3 in which there is a "moderate to high risk of losing key ecosystem components

to fire." Within the Sky Islands landscape, fire exclusion combined with recent drought has exacerbated heavy fuel loading in some areas that in turn increases the probability of uncharacteristic wildfire.

The desired future condition of federal land within the Pima County CWPP area is to return to or maintain wildland within Condition Class 1, as described in *Fire Regime and Condition Class (FRCC) Interagency Handbook Reference Conditions* (2005a):

> Open park-like savanna grassland, or woodland, or shrub structures maintained by frequent surface or mixed severity fires . . . Surface fires typically burn through the understory removing fire-intolerant species and small-size classes and removing less than 25 percent of the upper layer, thus maintaining an open single-layer overstory of relatively large trees . . . Mosaic fires create a mosaic of different-age, postfire grassland, savannah woodlands, or open shrub patches by leaving greater than 25 percent of the upper layer (generally less than 40 hectares [100 acres]). Interval[s] can range up to 50 [years] in systems with high temporal variability.

Desired future conditions for Sonoran Desert habitats "are for an adequate cover and mix of natural plant species that have good vigor" and for riparian habitats the "Desired Future Condition are that annual weeds cover and density is controlled and ladder fuels and downed woody debris are limited or not present. Disturbances such as livestock grazing, mining and off road vehicle travel, that can potentially reduce natural vegetation cover and vigor, are managed to maintain adequate cover and mix of natural plant species" (USDI BLM. 2004a).

However, a growing body of evidence shows that climate has changed substantially since 1900, that this change is accelerating, and that even greater change is likely to occur in the next 100 years (USDA 2012) and such climate change will alter natural ecosystems and affect their ability to provide goods and services (USDA 2012). Additionally, post wildfire conditions and fire management activities can create ideal opportunities for invasions by nonnative plants undermining the benefits of fire management actions (Brooks and Lusk. 2008). While it may be possible to maintain or revert some areas to historical fire regimes during the life of this plan, land management agencies recognize that due to the effects of climate change, urbanization, increasing human use, increasing distribution and abundance of invasive plant species, and continued expansion of the wildland interface, currently described historical fire regimes and plant communities may not be achievable in the larger landscape in both fire- and non-fire-adapted vegetation associations in the future.

B. Fuel Hazards

The arrangement of vegetative fuel, relative flammability, and potential of vegetation to support wildland fire varies throughout the analysis area. Wildland fuel hazards depend on a specific composition, type, arrangement, or condition of vegetation such that if the fuel were ignited, an at-risk community or its infrastructure could be threatened. Table 2.3 identifies the vegetative associations in the analysis area that were evaluated for vegetative fuel hazards. Historically, fire played an important role in keeping woody species in check and light ground fuels low (USDI BLM 2004b:3–8; Gori and Enquist 2003). However, with the suppression of natural wildfires within the last century, fire return intervals have increased, increasing fuel loading. In addition, invasion by nonnative plant species (such as salt cedar, buffelgrass, red brome, and Mediterranean grass) have introduced fire into desert areas that were formerly nearly fire-proof and

converted them into grasslands (Schmid and Rogers 1988; Stevens and Falk 2009) while salt cedar is invading riparian areas and increasing fuel load and volatility (Brooks 2008).

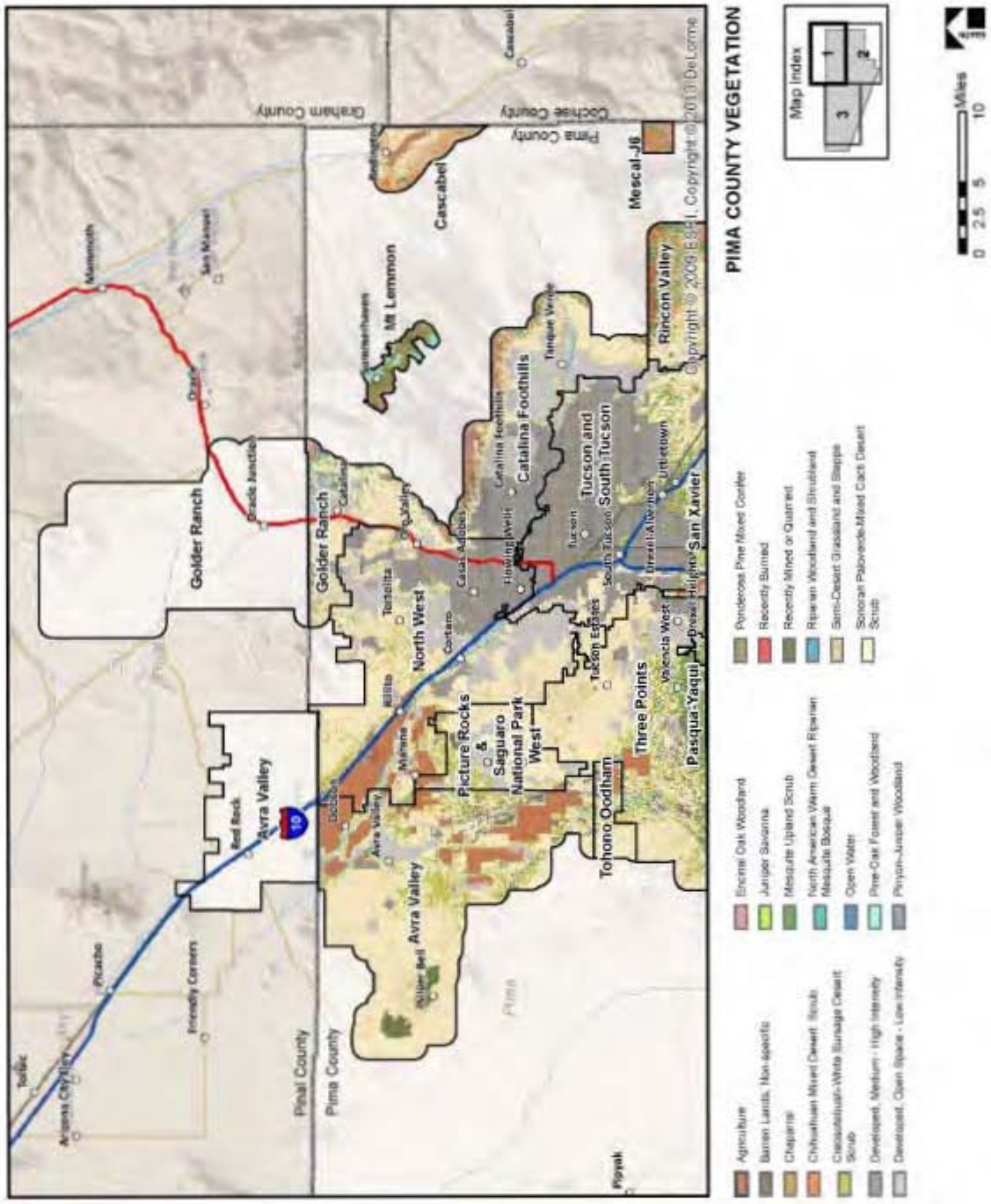


Figure 2.2a. Landcovers of the Pima County WUI, North

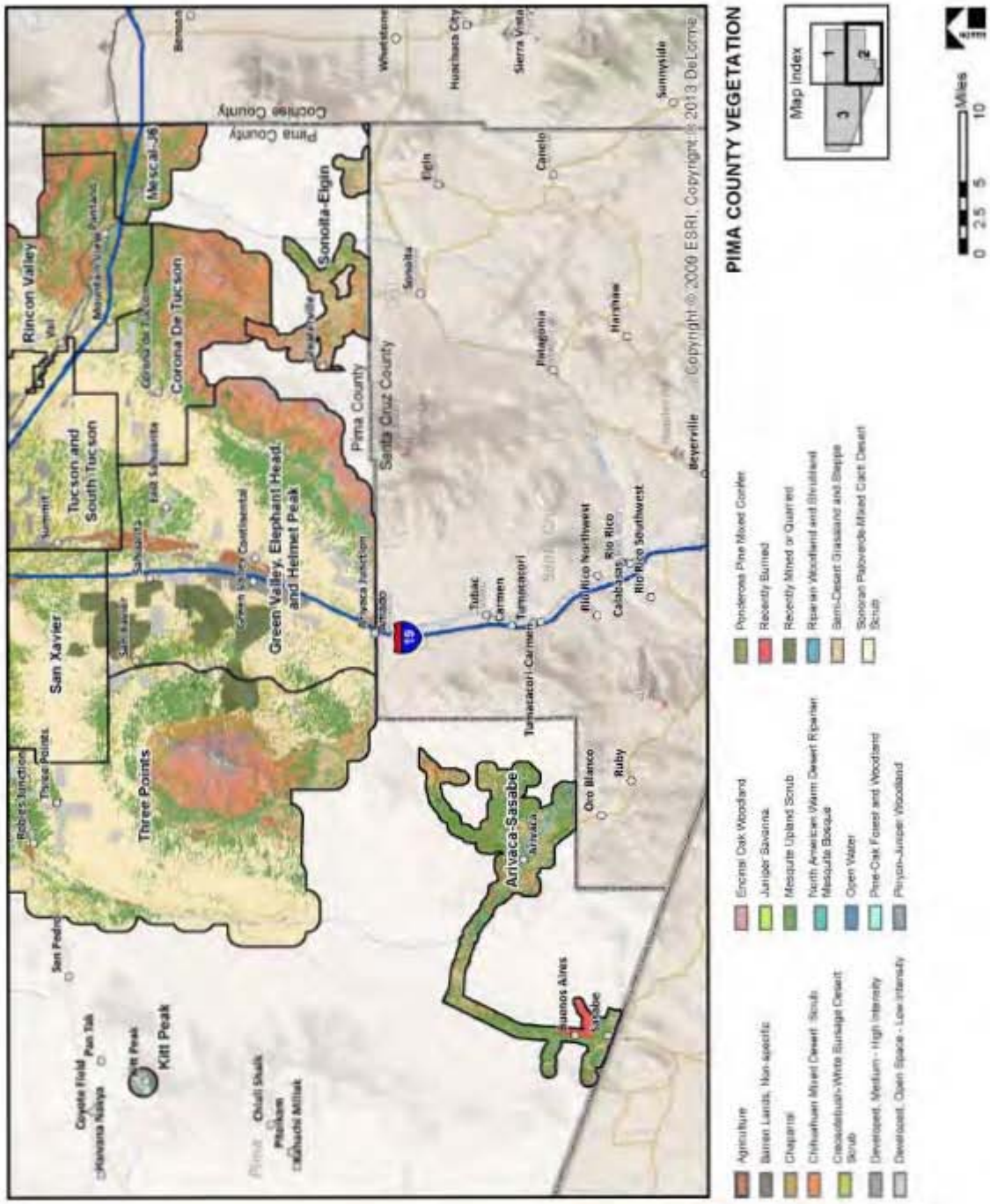


Figure 2.2b. Landcovers of the Pima County WUI, South

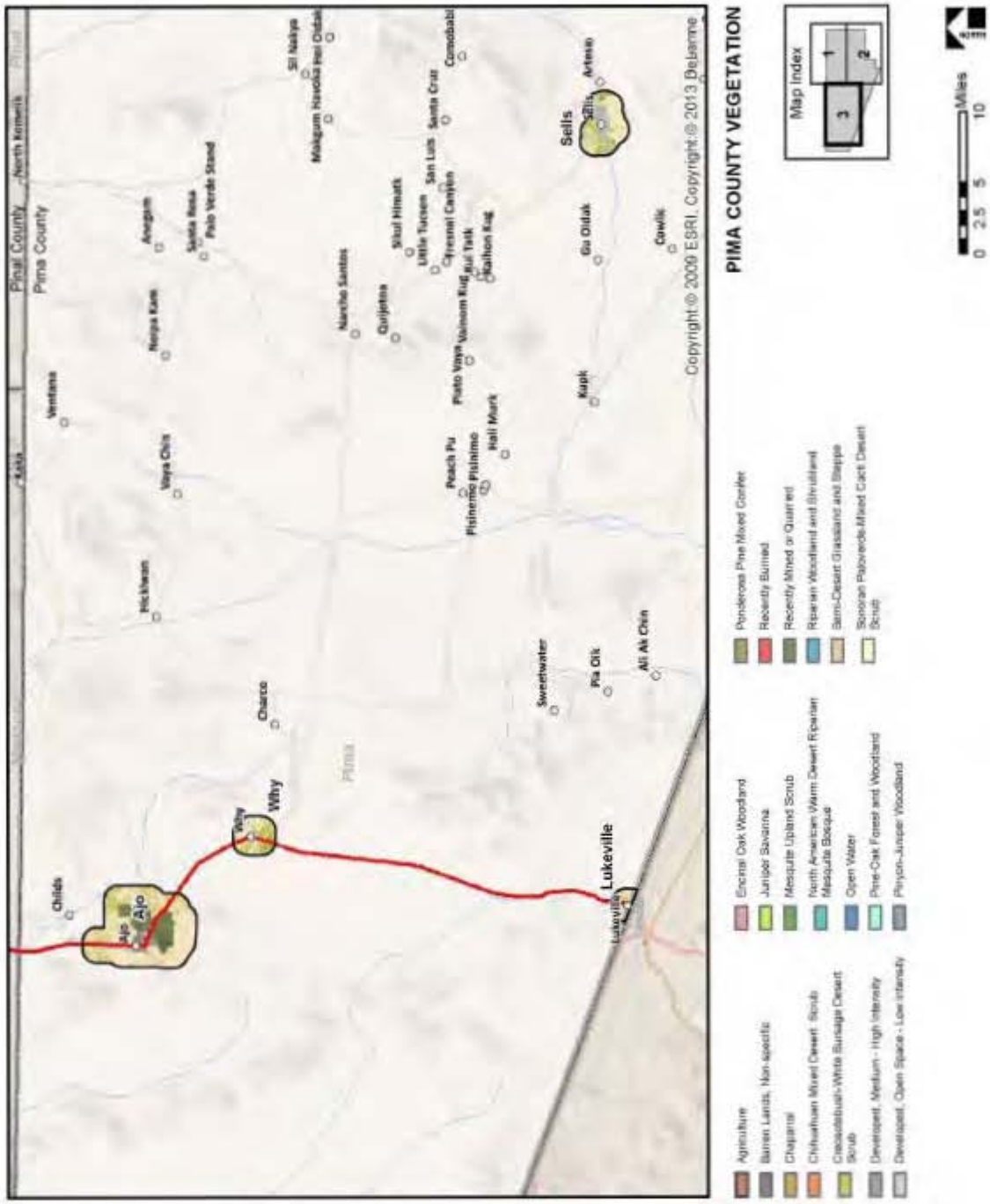


Figure 2.2c. Landcovers of the Pima County WUI, West

The vegetation associations within the analysis area were identified and mapped using Southwest Regional Gap Analysis Project (SWReGAP) data (USGS 2005; NatureServe 2004) (Figures 2.2a–2.2c). These datasets provide the level of landscape description and vegetative landcover detail necessary for aligning wildland fuel flammability with existing vegetation. The major distinguishing types for each Pima County vegetation association were field verified.

Vegetation data for the community of Summerhaven and the Mount (Mt.) Lemmon WUI was derived from the Catalina Rincon FireScape program. The current vegetative landscape of the Catalina Mountains has been mapped in great detail according to several different criteria. The recent work by the FireScape program allows for much greater detail and fire behavior modeling based on current landcover, geology, topography, and land form. The Core Teams incorporated the data from ecological units, which are patches of the landscape that share similar vegetation cover (http://www.azfirescape.org/catalina/landscape_types), into the risk assessment of the Mt. Lemmon WUI. This detailed data allows for site-specific fire behavior modeling within each ecological unit. Each separate ecological unit then may show several fuel models based on these varying biophysical conditions. The data used to map FireScape products (for example, fuel models, fire behavior models) were obtained from the Catalina Rincon FireScape program and are embedded in Table 2.3 to be comparable with SWReGAP landcover data used for other community WUI landcover descriptions, fire behavior models, and vegetative fuel risk ratings.

The existing arrangement and flammability of vegetation associations largely determine wildland fire behavior. Areas at risk from wildland fire were determined by evaluating vegetative fuels on federal and nonfederal land in the analysis area through spatial analysis using geographic information system (GIS) technology in a series of overlays. For the analysis area, the vegetation type, density, and distribution were analyzed to help categorize areas at highest risk for fire intensity and spread from wildland fuels.

Vegetative data for predicting wildfire behavior was quantified by developing descriptions of associated fuel properties that are described as fuel models. The fuel model (as described by Anderson 1982; Scott and Burgan 2005) and vegetation fuel fire-risk rating within the analysis area are shown in Table 2.3.

Table 2.3. Fuel Model, Fire-Danger Ratings, and Intensity Levels on Vegetative Associations in the WUI

Fuel Type	Vegetation Association	Wildfire Risk Rating[a]	Anderson Fuel Model	Fire-Danger Rating Model[b]	Flame Length (ft)	Fire Intensity Level from Fire-Danger Rating Model[e]	Rate Of Spread ft/hr (ch/hr)	Fire Behavior Fuel Model[c]	Flame Length (ft) Low Dead Fuel Moisture	Fire Intensity Level from Fire Behavior Fuel Model[e]	Rate of Spread ft/hr (ch/hr)— Low Dead Fuel Moisture	Acre (%)
Desert shrub-scrub	Creosotebush, mixed desert, and thorn scrub	L	1,2	T	4–6	4	2310–5150 (35–78)	GR1	0.5–1.7	GR1: 1	GR1, 0–990 (0–15)	80,250
								GR2	1.0–8.0	GR2: 1–4	GR2, 0–7920 (0–15)	(5%)
								SH1	0.2–0.7	SH1,1	SH1, 7–132 (0– 2)	
	Sonoran paloverde-mixed cacti desert scrub (25, 26, 27, 28, 29)[d]	M	1,3	L and T	4–6	3	2310–5150 (35–78)	GR1	0.5–1.7	GR1,1	GR1, 0–990 (0–15)	641,402
								GR2	1.0–8.0	GR2, 1-4	GR2, 0–7920 (0–120)	(41%)
								GR4	1.0-22	GR4, 1-4	GR4, 0-33,000 (0-500)	
								GS1	1.0–6.0	GS1, 1-3	GS1, 0–3960 (0–60)	
								GS2	1.5->10.0	GS2, 1-5	GS2, 0->6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–132 (0– 2)	
								SH4	1.0-16	SH4, 1-6	SH4, 0-11880 (0-180)	
								SH5	4.0–>25.0	SH5, 2-6	SH5, 0–16500 (0–250)	
								SH7	4.0->25.0	SH7, 2-6	SH 7, 0-11889 (0-180)	
								TL2	4.0->25.0	TL2, 2-6	TL2, 0-132 (0-2)	
								TL6	1.0-7.0	TL6, 1-4	TL6, 2-1650 (2-25)	
								TU2	1.0–8.0	TU2, 1-5	TU2, 0-5,280 (0-80)	
	Creosotebush-white bursage desert scrub	L	1	L and T	4–6	3	2110–5150 (32–78)	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	99,170
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0.1–1.7)	(6%)
	Chihuahuan Mixed-desert scrub (1,2,3)[d]	L	1,2	L and T	4–6	3	2310–5150 (35–78)	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	
								GR2	1.0–8.0	GR2, 1–4	GR2, 0–7920 (0–120)	
								GS1	1.0–6.0	GS1, 1-3	GS1, 0–3960 (0–60)	
								GS2	1.5->10.0	GS2, 2-5	GS2, 0->6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0.1–1.7)	
								SH5	4.0–>25.0	SH5, 3-6	SH5, 0–16500 (0–250)	
								SH7	4.0->25.0	SH7, 3-6	SH 7, 0-11889 (0-180)	
Shrublands	Mesquite upland scrub Mesquite grasslands (9, 10, 11, 12, 13, 14, 15)[d]	M	1,3	B and T	4–12	6	5150–6860 (78–104)	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	230,189
								GR2	1.0–8.0	GR2, 1-4	GR2, 0–7920 (0–120)	(15%)
								GR4	1.0-22	GR4, 1-6	GR4, 0-33,000 (0-500)	
								GR7	5.0-45	GR7, 3-6	GR7, 1-33,000 (0-500)	
								GS1	1.0–6.0	GS1, 1-3	GS1, 0–3960 (0–60)	
								GS2	1.5->10.0	GS2, 1-5	GS2, 0-6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0– 2)	
								SH2	1.0–4.5	SH2, 1-3	SH2, 0–1188 (0–18)	
								SH4	1.0-16	SH4, 1-6	SH4, 0-11880 (0-180)	
								SH5	4.0–>25.0	SH5, 3-6	SH5, 0–16500 (0–250)	
								SH7	4.0–>25.0	SH7, 3-6	SH 7, 0-11889 (0-180)	
								TL2	4.0->25.0	TL2, 3-6	TL2, 0-132 (0-2)	
								TU2	1.0–8.0	TU2, 1-4	TU2, 0-5,280 (0-80)	

Table 2.3. Fuel Model, Fire-Danger Ratings, and Intensity Levels on Vegetative Associations in the WUI

Fuel Type	Vegetation Association	Wildfire Risk Rating[a]	Anderson Fuel Model	Fire-Danger Rating Model[b]	Flame Length (ft)	Fire Intensity Level from Fire-Danger Rating Model[e]	Rate Of Spread ft/hr (ch/hr)	Fire Behavior Fuel Model[c]	Flame Length (ft) Low Dead Fuel Moisture	Fire Intensity Level from Fire Behavior Fuel Model[e]	Rate of Spread ft/hr (ch/hr)— Low Dead Fuel Moisture	Acre (%)
												Continued
Grasslands	Semi-desert grassland and steppe	L	1,2	F and T	4–6	3	2310–5150 (35–78)	GS1	1.0–6.0	GS1, 1-3	GS1, 0–3960 (0–60)	70,377
								GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	(4%)
								GR2	1.0–8.0	GR2, 4	GR2, 0–7920 (0–120)	
								GR4	1.0-22	GR4, 1-6	Gr4, 0-33,000 (0-500)	
Woodlands	Chaparral (19)[d]	H	4, 6	B and T	6–19	4–6	2110–4950 (32–75)	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	12,299
								GR2	1.0–8.0	GR2, 1-4	GR2, 0–7920 (0–120)	(1%)
								GS2	1.5->10.0	GS2, 1-5	GS2, 0-6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0– 2)	
								SH4	1.0-16	SH4, 1-6	SH4, 0-11880 (0-180)	
								SH5	4.0–>25.0	SH5, 3-6	SH5, 0–16500 (0–250)	
								SH7	4.0–>25.0	SH7, 3-6	SH7, 0-11889 (0-180)	
								TL8	1.0-8.0	TL8, 1-4	TL8, 0-2640 (0-40)	
								TU2	1.0–8.0	TU2, 1-4	TU2, 0-5,280 (0-80)	
	Encinal Oak Woodland Desert oak transition (4, 5, 6, 9)[d]	M	1,3	B and T	2.6–6	4	495–2310 (7.5–35)	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	34,453
								GR2	1.0–8.0	GR2 , 1-4	GR2, 0–7920 (0–15)	(1%)
								GS1	1.0–6.0	GS1, 1-3	GS1, 0–3960 (0–60)	
								GS2	1.5->10.0	GS2, 1-5	GS2, 0-6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0.– 2)	
								SH5	4.0–>25.0	SH5 , 3-6	SH5, 0–16500 (0–250)	
								SH7	4.0->25.0	SH7, 3-6	SH 7, 0-11889 (0-180)	
								TL2	0.3–1.0	TL2, 1	TL2, 0-132 (0-2)	
								TL3	0.4-1.3	TL3, 1	TL3 0-198 (0-3)	
	Pinyon-juniper Woodland Oak-pinyon-juniper woodlands (20, 21, 22, 23)[d]	H	2,3	F	6-19	4-6	2110-4950 (32-75)	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	12,815
								GR2	1.0–8.0	GR2, 1-4	GR2, 0–7,920 (0–15)	(1%)
								GS1	1.0–6.0	GS1, 1-3	GS1, 0–3960 (0–60)	
								GS2	1.5->10.0	GS2, 1-5	GS2, 0-6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0– 2)	
								SH4	1.0-16.0	SH4, 1-6	SH4, 0-11880 (0-180)	
								SH5	4.0–>25.0	SH5, 3-6	SH5, 0–16500 (0–250)	
								SH7	4.0->25.0	SH7, 3-6	SH 7, 0-11889 (0-180)	
								TL1	0.0-0.5	TL1, 1	TL1, 0-66 (0-1)	
								TL2	0.3–1.0	TL2, 1	TL2, 0-132 (0-2)	
								TL3	0.4-1.3	TL3, 1	TL3, 0-198 (0-3)	
								TL8	1.0-8.0	TL8, 1-5	TL8. 0-2640 (0-40)	
								TU1	1.0-4.0	TU1, 1-3	TU1, 0-990 (0-15)	

Table 2.3. Fuel Model, Fire-Danger Ratings, and Intensity Levels on Vegetative Associations in the WUI

Fuel Type	Vegetation Association	Wildfire Risk Rating[a]	Anderson Fuel Model	Fire-Danger Rating Model[b]	Flame Length (ft)	Fire Intensity Level from Fire-Danger Rating Model[e]	Rate Of Spread ft/hr (ch/hr)	Fire Behavior Fuel Model[c]	Flame Length (ft) Low Dead Fuel Moisture	Fire Intensity Level from Fire Behavior Fuel Model[e]	Rate of Spread ft/hr (ch/hr)— Low Dead Fuel Moisture	Acre (%)
												Continued
	Juniper savanna	M	2,6	F	6-8	4	2110-2310 (32-75)	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	639
	Juniper mesquite grasslands							GR2	1.0–8.0	GR2, 1-4	GR2, 0–7,920 (0–15)	(0%)
								GS1	1.0–6.0	GS1, 1-3	GS1, 0–3960 (0–60)	
								GS2	1.5->10.0	GS2, 1-5	GS2, 0-6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0– 2)	
								SH4	1.0-16.0	SH4, 1-6	SH4, 0-11880 (0-180)	
								SH5	4.0–>25.0	SH5, 3-6	SH5, 0–16500 (0–250)	
								SH7	4.0->25.0	SH7, 3-6	SH 7, 0-11889 (0-180)	
								TL1	0.0-0.5	TL1, 1	TL1, 0-66 (0-1)	
								TL2	0.3–1.0	TL2, 1	TL2, 0-132 (0-2)	
								TL3	0.4-1.3	TL3, 1	TL3 0-198 (0-3)	
								TU1	1.0-4.0	TU1, 1-3	TU1, 0-990 (0-15)	
Timber	Ponderosa Pine	H	2,9	E and T	2.6->8	4-5	495-2310	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	4,624
	Mixed conifer						(7.5-35)	GR2	1.0–8.0	GR2, 1-4	GR2, 0–7,920 (0–15)	(0.2%)
	(16, 17, 24)[d]							GS2	1.5->10.0	GS2, 1-5	GS2, 0-6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0– 2)	
								SH4	1.0-16.0	SH4, 1-6	SH4, 0-11880 (0-180)	
								SH5	4.0–>25.0	SH5, 3-6	SH5, 0–16500 (0–250)	
								SH7	4.0->25.0	SH7, 3-6	SH 7, 0-11889 (0-180)	
								TL1	0.0-0.5	TL1, 1	TL1, 0-66 (0-1)	
								TL3	0.4-1.3	TL3, 1	TL3 0-198 (0-3)	
								TL6	1.0-7.0	TL6, 1-4	TL6 0-1650 (2-25)	
								TL8	1.0-8.0	TL8, 1-5	TL8, 0-2,649 (0-40)	
								TU1	1.0-4.0	TU1, 1-3	TU1, 0-990 (0-15)	
								TU2	1.0–8.0	TU2, 1-4	TU2, 0-5,280 (0-80)	
								TU5	2.0-13.0	TU5, 2-6	TU5, 0-2,772 (0-42)	

Continued

Table 2.3. Fuel Model, Fire-Danger Ratings, and Intensity Levels on Vegetative Associations in the WUI

Fuel Type	Vegetation Association	Wildfire Risk Rating[a]	Anderson Fuel Model	Fire-Danger Rating Model[b]	Flame Length (ft)	Fire Intensity Level from Fire-Danger Rating Model[e]	Rate Of Spread ft/hr (ch/hr)	Fire Behavior Fuel Model[c]	Flame Length (ft) Low Dead Fuel Moisture	Fire Intensity Level from Fire Behavior Fuel Model[e]	Rate of Spread ft/hr (ch/hr)— Low Dead Fuel Moisture	Acre (%)
	Pine-oak Forest and Woodland (7, 8)[d]	M	2,9	F and E	2.6-8	4-5	495-2310 (7.5-35)	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	3,323 (0.2%)
								GR2	1.0–8.0	GR2, 1-4	GR2, 0–7,920 (0–15)	
								GR4	1.0-22.0	GR4, 1-6	GR4, 0-33,000 (0-500)	
								GS1	1.0–6.0	GS1, 1-3	GS1, 0–3960 (0–60)	
								GS2	1.5->10.0	GS2, 1-5	GS2, 0-6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0– 2)	
								SH4	1.0-16.0	SH4, 1-6	SH4, 0-11880 (0-180)	
								SH5	4.0-25.0	SH5, 3-6	SH5, 0–16500 (0–250)	
								SH7	4.0->25.0	SH7, 3-6	SH 7, 0-11889 (0-180)	
								TL1	0.0-0.5	TL1, 1	TL1, 0-66 (0-1)	
								TL2	0.3–1.0	TL2, 1	TL2, 0-132 (0-2)	
								TL3	0.4-1.3	TL3, 1	TL3 0-198 (0-3)	
								TL8	1.0-8.0	TL8, 1-4	TL8, 0-2,649 (0-40)	
								TU1	1.0-4.0	TU1, 1-3	TU1, 0-990 (0-15)	
								TU5	2.0-14.0	TU5, 2-6	TU5, 0-2,772 (0-42)	
Deciduous Southwest Riparian	North American Warm Desert Riparian Mesquite Bosque	H	6,9	E and T	2.6–12	6	495–2110 (7.5–32)	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	10,319 (0.6%)
								GR2	1.0–8.0	GR2, 1-4	GR2, 0–7,920 (0–15)	
								GR4	1.0-22.0	GR4, 1-6	GR4, 0-33,000 (0-500)	
								GS2	1.5->10.0	GS2, 1-5	GS2, 0-6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0– 2)	
								SH4	1.0-16.0	SH4, 1-6	SH4, 0-11880 (0-180)	
								SH5	4.0-25.0	SH5, 3-6	SH5, 0–16500 (0–250)	
								TL1	0.0-0.5	TL1, 1	TL1, 0-66 (0-1)	
								TL2	0.3–1.0	TL2, 1	TL2, 0-132 (0-2)	
								TL3	0.4-1.3	TL3, 1	TL3 0-198 (0-3)	
								TL8	1.0-8.0	TL8, 1-4	TL8, 0-2,649 (0-40)	
								TU1	1.0-4.0	TU1, 1-3	TU1, 0-990 (0-15)	

Continued

Table 2.3. Fuel Model, Fire-Danger Ratings, and Intensity Levels on Vegetative Associations in the WUI

Fuel Type	Vegetation Association	Wildfire Risk Rating[a]	Anderson Fuel Model	Fire-Danger Rating Model[b]	Flame Length (ft)	Fire Intensity Level from Fire-Danger Rating Model[e]	Rate Of Spread ft/hr (ch/hr)	Fire Behavior Fuel Model[c]	Flame Length (ft) Low Dead Fuel Moisture	Fire Intensity Level from Fire Behavior Fuel Model[e]	Rate of Spread ft/hr (ch/hr)— Low Dead Fuel Moisture	Acre (%)
	Invasive Southwest Riparian Woodland and Shrub (18)[d]	H	4	G and T	19	6	4950 (75)	GR1	0.5–1.7	GR1, 1	GR1, 0–990 (0–15)	1,944 (0.1%)
								GR2	1.0–8.0	GR2, 1-4	GR2, 0–7,920 (0–15)	
								GR4	1.0-22	GR4, 1-6	GR4, 0-33,000 (0-500)	
								GS1	1.0–6.0	GS1, 1-3	GS1, 0–3960 (0–60)	
	Riparian Woodland and Shrubland (18)[d]	H	8 and 9	E and T	2.6-6	4-6	495-2110 (7.5-32)	GS2	1.5->10.0	GS2, 1-5	GS2, 0-6600 (0-100)	
								SH1	0.2–0.7	SH1, 1	SH1, 7–112 (0– 2)	
								SH4	1.0-16.0	SH4, 1-6	SH4, 0-11880 (0-180)	
								SH5	4.0-25.0	SH5, 3-6	SH5, 0–16500 (0–250)	
								SH7	4.0->25.0	SH7, 3-6	SH 7, 0-11889 (0-180)	
								TL1	0.0-0.5	TL1, 1	TL1, 0-66 (0-1)	
								TL2	0.3–1.0	TL2, 1	TL2, 0-132 (0-2)	
								TL3	0.4-1.3	TL3, 1	TL3 0-198 (0-3)	
								TL6	1.0-7.0	TL6, 1-4	TL6, TL6 0-1650 (2-25)	
								TL8	1.0-8.0	TL8, 1-4	TL8, 0-2,649 (0-40)	
								TU1	1.0-4.0	TU1, 1-3	TU1, 0-990 (0-15)	
								TU2	1.0–8.0	TU2, 1-4	TU2, 0-5,280 (0-80)	
Other	Agriculture	L	NA	NA	NA	NA	NA	NB3	NA	NA	NA	45,269 (3%)
	Developed, Open Space–Low Intensity	L	NA	NA	NA	NA	NA	NB1	NA	NA	NA	117,627 (8%)
	Developed, Medium–High Intensity	L	NA	NA	NA	NA	NA	NB1	NA	NA	NA	157,603 (10%)
	Barren Lands, Non-Specific	L	NA	NA	NA	NA	NA	NB9	NA	NA	NA	18,745 (1%)
	Recently mined or quarried	L	NA	NA	NA	NA	NA	NB9	NA	NA	NA	36,186 (2%)
	Recently Burned	L	NA	NA	NA	NA	NA	NB9	NA	NA	NA	1,847 (0%)
	Open water	L	NA	NA	NA	NA	NA	NB9	NA	NA	NA	513 (0%)
											Total	100%

Source: National Fire Danger Rating System (USDA FS 1983; Burgan 1988).

[a]L = low, M = moderate, H = high, NA = not applicable.

[b]See Appendix B for the National Fire Danger Rating System definitions.

[c]Fire Behavior Fuel Models are designed for wildland vegetation and do not accurately predict fire behavior when structures are involved

[d]Ecological Unit Map Legends included in vegetation associations from http://www.azfirescape.org/catalina/ecounit_map

[e]Fire Intensity Level (FIL) an expression of fireline intensity based on flame length as an indicator of fire intensity, FIL1 = 0-2' Flame length (FL in feet): FIL2 = 2.1 - 4' FL; FIL3 = 4.1 - 6' FL; FIL4 = 6.1 - 8' FL; FIL5 = 8.1-12 'FL, FIL6 > 12'FL

The Arizona State Forester (2007:1) defines the term *at-risk community* as follows:

> **EVALUATE RISK TO COMMUNITIES:** Not all structures and/or communities that reside in an "interface" area are at significant risk from wildland fire. It is a combination of factors, including the composition and density of vegetative fuels, extreme weather conditions, topography, density of structures, and response capability that determines the relative risk to an interface community. The criteria listed below are intended to assist interagency teams at the state level in identifying the communities within their jurisdiction that are at significant risk from wildland fire. The application of these risk factors should allow for greater nationwide consistency in determining the need and priorities for Federal projects and funding.

Wildland fire behavior potential in the analysis area is consistent with the Risk Classification Situations 1, 2, and 3 as described by the Arizona State Forester (2007:1–2):

> Risk Factor 1: Fire Behavior Potential
>
> Situation 1: In these communities, continuous fuels are in close proximity to structures. The composition of surrounding fuels is conducive to crown fires or high intensity surface fires. Likely conditions include steep slopes, predominantly south aspects, dense fuels, heavy duff, prevailing wind exposure and/or ladder fuels that reduce fire fighting effectiveness. There is a history of large fire and/or high fire occurrence.
>
> Situation 2: In these communities, intermittent fuels are in proximity to structures. Likely conditions include moderate slopes and/or rolling terrain, broken moderate fuels, and some ladder fuels. The composition of surrounding fuels is conducive to torching, spotting, and/or moderate intensity surface fires. These conditions may lead to moderate fire fighting effectiveness. There is a history of some large fires and/or moderate fire occurrence.
>
> Situation 3: In these communities, fine and/or sparse fuels surround structures. There is infrequent wind exposure and flat terrain to gently rolling terrain. The composition of surrounding fuels is conducive to low intensity surface fires. Fire fighting generally is highly effective. There is no large fire history and/or low fire occurrence.

Pima County is composed of three major land resource areas (Natural Resources Conservation Service [NRCS] 2011): Southeast Arizona Basin and Range, Sonoran Basin and Range, and Mogollon Transition. The Southeastern Arizona Basin and Range division is composed of mountain ranges that trend southeast to northwest and has relatively smooth valleys between the mountains extending to the Continental Divide in New Mexico. The Sonoran Basin and Range region is in the Sonoran Desert section of the Basin and Range province of the Intermontane Plateaus and is characterized by many short, fault-block mountain ranges trending southeast to northeast that rise abruptly from the smooth, gently sloping desert valley floors. Elevation ranges from 980 to 3,600 feet in most areas, with mountains reaching 4,590 feet. The Mogollon Transition region is within the Mexican Highland section of the Basin and Range province of the Intermontane Plateaus. The area is characterized by canyons and structural troughs and valleys with elevations ranging from 3,000 to 5,500 feet in most areas, with mountains reaching 5,100 to 7,500 feet.

Vegetative production within these major land resource areas ranges from over 4,000 lb per acre in highest-elevation sites in the >12-inch precipitation zone during favorable precipitation years to <50 lb per

acre in lower desert scrub–mudstone hills range sites in the <7-inch precipitation zone during unfavorable precipitation years. Precipitation ranges from 7 to 14 inches annually though as much as 20 inches of precipitation may occur in highest elevations. More than half of the precipitation occurs as high-intensity convective thunderstorms during July, August and September producing a winter-summer rainfall ratio of 40:60. Warm-season rains (July–September) originate in the Gulf of Mexico and are usually brief and intense. Cool-season rains (December–March) originating in the Pacific Ocean are generally frontal, widespread, long, and less intense. May and June are the driest months of the year, with many natural fire ignitions occurring before the monsoon rains. Humidity is generally low, with mostly mild winters and hot summers in lower elevations to mild summers and cold winters in higher elevations. During May and June temperatures can exceed 100 degrees Fahrenheit. Cool-season vegetation growth begins in early spring and matures in early summer. Warm-season vegetation initiates growth after the summer rains and may remain green throughout the year in lower elevations.

The analysis area includes 6 major vegetative fuel types composed of 20 major vegetation associations (including agricultural lands), 3 mostly nonvegetation associations, and 2 open-space residential developed landcovers, recently burned lands, as well as open water (NatureServe 2004, http://www.azfirescape.org/catalina/landscape_types). Each vegetative community is assigned to an array of fuel models that predicts the rate of spread, flame length, and fire-intensity levels possible for each vegetation association during an average fire season under average weather conditions. Assigning a fuel model to each vegetation association within the analysis area will help predict wildfire behavior and thus proper suppression response (for detailed fuel model descriptions, see Anderson 1982; Scott and Burgan 2005).

The mean fire return interval is highly variable among vegetation associations across the analysis area. Habitat or stand replacement wildfires or wildfires resulting in a major loss of habitat components, in conjunction with drought, will be reduced in frequency and intensity in lower desert habitats. However, moist periods may increase fire frequency and intensity in desert habitats due to increased production of annual grasses and forbs and increased annual growth of perennial grasses and shrubs (FRCC Interagency Working Group 2005b), in synergy with increased production of invasive grasses and forbs. Total wildland fuel load ranges from less than 500 lb per acre in desert and scrub/shrub types to over 20 tons/acre in dense woodland habitats. Buffelgrass fuel loads have been documented to reach 4 tons per acre in undisturbed desert in Saguaro National Park and over 5 tons per acre in old agricultural fields in Avra Valley (McDonald 2009).

Vegetation Associations

The Desert Shrub-Scrub vegetation association is the largest natural landcover within the analysis area; it occurs on drier upland sites and includes areas of bare ground and rock habitats supporting a variety of grass, herbaceous, scrub, and shrub species (Photo 2.1). This major vegetative fuel type ranges from lower desertscrub-creosotebush-bursage associations to mixed desert scrub types to paloverde-mixed cacti desertscrub association. The Desert Shrub-Scrub association constitutes 820,822 acres (52%) of WUI acres. During normal rainfall years and the typical fire season, the majority of the lowest-elevation associations (mixed desert scrub and creosotebush-white bursage associations) do not support high-intensity wildfires with high rates of spread, and many wildfires self-extinguish from a lack of contiguous

ground or aerial fuels. However, during periods of extraordinary rainfall in the fall, winter, and spring months, the growth of winter annuals and forbs, in synergy with the presence of invasive grasses and forbs (for example, buffelgrass, Mediterranean grass, red brome, and mustards), can produce areas with the potential for extreme rates of spread and enough intensity to ignite overstory vegetation. Buffelgrass is increasing at an exponential rate in Sonoran Desert habitats, and it responds mostly to precipitation received in summer months (Olsson et al. 2012).

Photo 2.1. Desert Shrub-Scrub Vegetation Association

The Shrublands vegetation association includes the mesquite upland scrub and mesquite grasslands occurring in the upland vegetative type within the analysis area, accounting for 230,189 acres (15%) of WUI acres (Photo 2.2). The xeroriparian area within this association provides movement corridors and foraging areas for a variety of wildlife species. Adjacent vegetation associations are often a mix of semidesert grassland and desert scrub. The understory of the shrub types will vary from a mix of nonnative grass with some areas of native grasses, depending on canopy closure. Areas of higher canopy closure (>60%) support little herbaceous and perennial grass cover, which limits fine fuels needed for fire laddering and limits rate of spread. Stands of mature upland mesquite habitats can include trees with trunks and limbs greater than 6 inches diameter at breast height, providing habitat for a variety of cavity-nesting bird species. This shrubland association also provides recreational use, day use, and camping areas. Plant communities dominated by mature mesquites may include native or invaded grass understory, creating areas of open woodlands and savannas to areas of high canopy.

Photo 2.2. Shrublands Vegetation Association

The Woodlands vegetation association includes the chaparral, pinyon-juniper, oak-pinyon-juniper, Madrean pine-oak, juniper savannas, juniper mesquite grasslands, transitional desert oak, encinal oak, and desert oak woodlands (Photo 2.3). The Madrean pine-oak forest and woodland are composed of Madrean pines including Arizona pine (*Pinus arizonica*), Apache pine (*Pinus engelmannii*), and Chihuahua pine (*Pinus leiophylla)* with an understory of chaparral species. Fires in the Madran Pine-oak forest and woodlands may be more frequent than ponderosa pine forests and woodlands (NatureServe 2004).The woodland association fuel type covers 60,206 acres (4%) of WUI acres and is the third largest upland vegetative fuel type within the analysis area.

Photo 2.3. Woodlands Vegetation Association

A major vegetative association of shrubland fuel types includes Mogollon chaparral. This ecological system occurs across central Arizona, western New Mexico, southwestern Utah, and southeast Nevada. It often dominates along the mid-elevation transition from the Mojave, Sonoran, and northern Chihuahuan deserts. It occurs on foothills, mountain slopes, and canyons in drier habitats below the encinal woodlands. Stands are often associated with more xeric and coarse-textured substrates such as limestone, basalt, or alluvium, especially in transition areas with more mesic woodlands. The moderate to dense shrub canopy includes species such as oak, sumac, and ceanothus. Most chaparral species are fire-adapted, resprouting vigorously after burning or producing fire-resistant seeds. Substrates are normally shallow/rocky and shaley soils at lower elevations.

The woodland vegetation associations include Madrean encinal oak woodlands which are the defining feature of the Sky Islands mountains (Governor's Forest Health Councils 2007: 107) occurring on foothills, canyons, bajadas, and plateaus in Mexico, extending north into sub-Mogollon Arizona. These woodlands are dominated by Madrean evergreen oaks along a low-slope transition normally occurring at higher elevations and within moister habitats than Mogollon chaparral (Photo 2.4). Lower-elevation stands are typically open woodlands or savannas where they transition into desert grasslands, chaparral, or, sometimes, desertscrub. Common evergreen oak species include Emory, Arizona white, and scrub live oak. Other species include Manzanita, chaparral species, and, at higher elevations, pinyon and juniper species. The grass layer usually prominent between trees is grassland or steppe that is dominated by warm-season grasses typical of semidesert grasslands. This association can also be composed of stands dominated by shrubby Madrean oaks, typically with a strong grass layer and, in some instances, invasive grasses and forbs. In transition areas with drier chaparral systems, stands of chaparral are not dominated by the Madrean encinal association; however, it may extend down along drainages.

Photo 2.4. Madrean oak/conifer/manzanita on Hills with Extensive Rock Outcrops
(http://www.azfirescape.org/content/madrean_oakconifermanzanita_hills_and_mountains_extensive_rock_outcrops)

The Deciduous Southwest Riparian vegetation association consists of the North American warm-desert riparian mesquite bosque, southwest invasive riparian woodland and shrub, and riparian woodland and shrubland associations (Photo 2.5). This vegetative association covers 12,263 acres (less than 1%) of WUI acres. The Pima County analysis area includes the riparian corridor of the Santa Cruz and a small section of the San Pedro River near the community of Redington. This ecological system consists of low-elevation riparian corridors along intermittent streams in valleys of southern Arizona into adjacent New Mexico and Mexico. Dominant trees include mesquite species, and dominant shrubs include desert broom and desert willow. Vegetation, especially the mesquites, tap groundwater below the streambed when surface flows stop with high local densities of mesquites being dependent on an annual rise in the water table for growth and reproduction. This association can be intermixed with an understory of grasses and shrubs and often includes areas of near monocultures of saltcedar. This vegetation association may be underrepresented because of some xeroriparian association acres included with the shrubland associations. In general, riparian areas have characteristics that reduce the frequency and severity of fire relative to the surrounding uplands. These characteristics include less steep slopes, surface water, saturated soils, shade, fewer lightning ignitions, cooler air temperatures, lower daily maximum temperature, higher relative humidity, higher fuel moisture content, and lower wind speed. However, there tend to be more human-caused ignitions in these areas. Late seral-stage riparian vegetation supports wildland fire similar to the surrounding potential natural vegetation group (PNVG) when a stand replacement fire occurs in surrounding PNVG during extreme drought and wind events. Late seral-stage riparian and bosque habitats can support nonreplacement fire in greater proportion of total fire frequency than surrounding PNVGs (FRCC Interagency Working Group 2005b: PNVG Code RIPA).

Photo 2.5. Deciduous Southwest Riparian Vegetation Association

The Timber-Type vegetation association is found only in the Mt. Lemmon WUI but does occur in higher elevations of the Sky Islands throughout Pima County. The timber fuel type is composed of the mixed conifer and ponderosa pine vegetation associations (Photo 2.6). The mixed conifer vegetation group is a transitional forest and therefore best thought of as a continuum that follows a moisture gradient driven by

elevation and aspect. The mixed conifer associations will have less ponderosa pine than the warm/dry slopes and exposures; however, ponderosa pine will occur in small groups or isolated places usually in open areas, at the edges of meadows, and along ridges (LFRA_Region_SW_Model_Descriptions_Aug08). The mixed conifer association is found along the summit of the Santa Catalina Mountains ranging from 7,500 feet elevation to the summit at 9,157 feet. About two-thirds of the mixed conifer association occurs on 18 percent or steeper north-facing slopes dominated by Douglas fir (*Pseudotsuga menziesii*), white fir (*Abies concolor*), and southwestern white pine (*Pinus strobiformis*). South-facing slopes and flats make up the remaining one-third of the mixed conifer association and include areas of primarily Ponderosa pine (*Pinus ponderosa*) and white pine with silverleaf oak (*Quercus hypoleucoides*). Many of these drier stands burned during the 2003 Aspen fire, including the southern aspects of Marshall Gulch, Carter Canyon, and Upper Sabino Canyon along the highway from Summerhaven to Ski Valley, as well as the slopes below Sykes Knob and Inspiration Rock (http://www.azfirescape.org). Ponderosa pine associations will have a dominant overstory of ponderosa pine with mixed co-dominant and understory vegetation associations such as silverleaf oak, netleaf oak (*Quercus rugosa*), Arizona white oak (*Quercus arizonica*), and Emory oak (*Quercus emoryi*) or a grassy understory of bunchgrasses such as Arizona fescue (*Festuca arizonica*), mountain muhly (*Muhlenbergia montana*), and June grass *(Koeleria macrantha)*. The ponderosa vegetation associations ranges from approximately 4,875 feet to over 8,600 feet in elevation on a variety of topographic features, including mountains, mesas, and canyons. In the Catalinas the ponderosa pine association includes the town of Summerhaven and upper Sabino Canyon.

Photo 2.6. Timber-Type Vegetation Association

The Desert Grasslands vegetation association is primarily represented by the semi-desert grassland and steppe association (Photo 2.7). This is the smallest of the naturally occurring vegetative associations, covering 70,377 acres (4%) of WUI acres. This ecological system consists of a broadly defined desert grassland, mixed shrub-succulent, or tree savannas that are typical of the borderlands of Arizona, New Mexico, and northern Mexico, but it extends west to the Sonoran Desert, north into the Mogollon Rim, and throughout much of the Chihuahuan Desert. It is found on gently sloping bajadas that supported frequent fire throughout the Sky Islands and on mesas and steeper piedmont and foothill slopes in the Chihuahuan Desert. Diverse perennial grasses typically characterize this association. Common grass species include grama grasses*, Eragrostis intermedia, Muhlenbergia porteri, Muhlenbergia setifolia,* and succulent species of *Agave,* and *Yucca*, and tall shrub/short tree species of mesquite and various oaks. Many of the historical

desert grassland and savanna areas have been converted, some to mesquite upland scrub types from woody species invasions through intensive grazing and other land uses.

Photo 2.7. Desert Grasslands Vegetation Association

Included within the total analysis area are residential and open-space community lands occurring in the developed areas of the community.

As depicted in Figures 2.2a–2.2c, the SWReGAP landcover shows that within the CWPP approximately 275,230 acres (18%) of lands evaluated for wildland fire potential are “developed,” with at least 20 percent of the landcover consisting of nonpervious surfaces. However, private lands within the analysis area account for approximately 46 percent of all WUI lands. Therefore, much of the analysis area lands analyzed include private lands that are predominantly naturally landscaped. Developed, Open Space–Low Intensity lands include areas with some constructed surfaces, but mostly consist of native vegetation associations. Impervious surfaces account for less than 20 percent of total cover and most commonly include large-lot single-family housing units or multiple-acre private lands in single ownership, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes. These areas most commonly include single-family housing units. Developed, Medium–High Intensity lands include areas with a mixture of constructed materials and vegetation. Impervious surface accounts for 50 to 79 percent of the total cover. These areas most commonly include single-family housing units, including highly developed areas where people reside or work in high numbers—examples include apartment complexes, and commercial/industrial areas. These lands are generally considered at low risk for wildland fire. However, the threat of fire (structural or wildland ignition) spreading from developed lands to wildlands has been considered in determining risk within the analysis area. In addition, wildland fires can ignite areas with high-density homes, and the structures themselves can then carry a fire, especially in strong winds (Rehm et al. 2002).

Several fuel hazard components, including vegetation type and density, previously burned areas, and slope and aspect, were analyzed for wildland fire potential. For example, some areas of the WUI can be heavily dissected, with some areas having slopes exceeding 20 percent that are heavily vegetated. Slopes greater than or equal to 20 percent and areas with south-, southwest-, or west-facing slopes in areas of high

wildland fuels were identified as having greater risks because of fuel-ladder fire effects and convectional preheating of vegetative fuels associated with steep terrain and decreased humidity associated with the microclimates created by southerly exposed aspects. Areas with moderate fuel hazards on slopes greater than or equal to 20 percent are considered a high fuel hazard, while the same fuel type on slopes less than 20 percent is still considered a moderate fuel hazard. During extraordinary rainfall years, when rainfall is above average during the fall, winter, and spring months, increased germination and growth of Mediterranean grass, and other invasive annual grasses and forbs, can result in more continuous fine fuel cover. The areas within the WUI that are heavily infested with invasive perennial grasses such as buffelgrass can have altered fire behavior from increased fuel loading from less than one ton per acre to over 5 tons per acre. This change in fine-fuel continuity can result in increased flame heights, faster rates of spread and increased intensity levels in desert shrub-scrub and shrubland habitats that do not normally sustain wildland fire. These areas of low-risk vegetation associations, including lower-elevation desert shrub-scrub associations in combination with “thermic semiarid soils” (Hendricks 1985 p 93), will be favored by some invasive grasses (Hauser 2008; Rogstad 2008) and will, under these extraordinary circumstances, become areas of extremely high wildfire risk.

During a normal fire season, low-risk vegetative associations will be enhanced to a moderate level by influencing effects of slope and aspect; in a similar manner, moderate-risk vegetative associations will increase to high risk from these same influencing factors. (Figures 2.3a–2.3c). Other untreated or unburned areas that fall under the category of moderate ground fuels and that do not overlap areas with steep slopes or with south, southwest, or west aspects are considered a moderate risk from fuel hazards. All other areas have a low risk from fuel hazards, including the areas that have been treated or burned within the last decade. The wildland fuel hazards component influence was compiled to depict areas of high, moderate, and low wildland fire potential based on vegetation type, density, and arrangement and to show areas with high wildfire risk and therefore of greater wildland fire risk during years of extraordinary rainfall and enhanced fire conditions creating extreme fire behavior. Visual representations of these fuel hazard components during extreme fire seasons are mapped in Figures 2.4a–2.4c. Table 2.4 identifies these various fuel hazards components and their assigned values.

Table 2,4. Fuel Hazard Components

Component	Influence[a]
Vegetation type and density	
Woodlands and timber in Fuel Models 2,3 4,6, and 9; Deciduous Riparian >100 stems/acre; or moderate fuel types in slopes ≥20%	H
Upland Shrubland associations in Fuel Models 1 and 3 and desert shrublands and grasslands 2, 3, and 6	M
Desert Scrub associations, barren land types, and agriculture and developed areas	L
Burned areas	L
Slopes ≥20%	H
Aspect (south-, southwest-, or west-facing slopes)	M

Source: Logan Simpson Design Inc.
[a] H = high, M = moderate, L = low

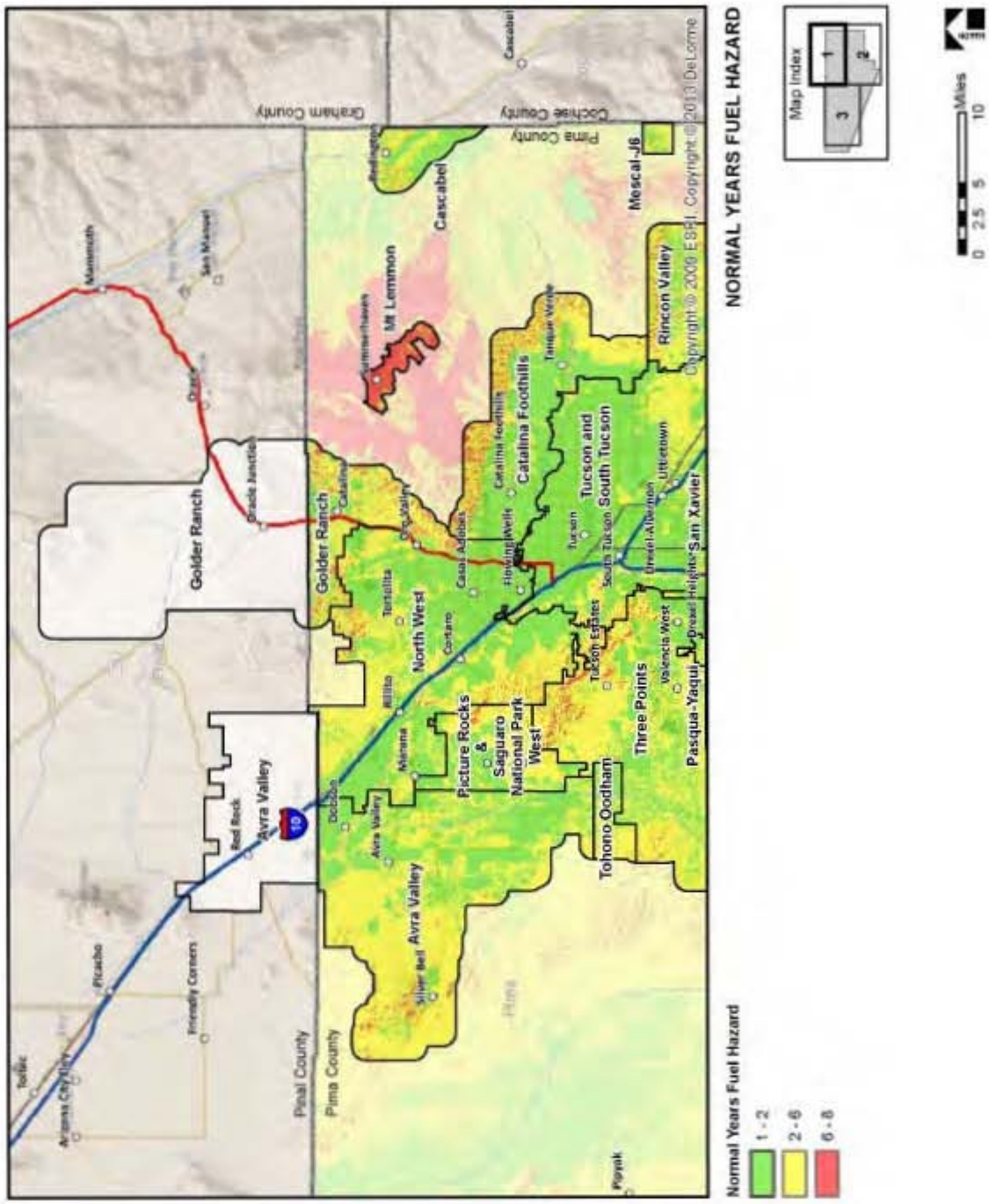


Figure 2.3a. Normal-Year Fuel Hazard of the Pima County WUI, North

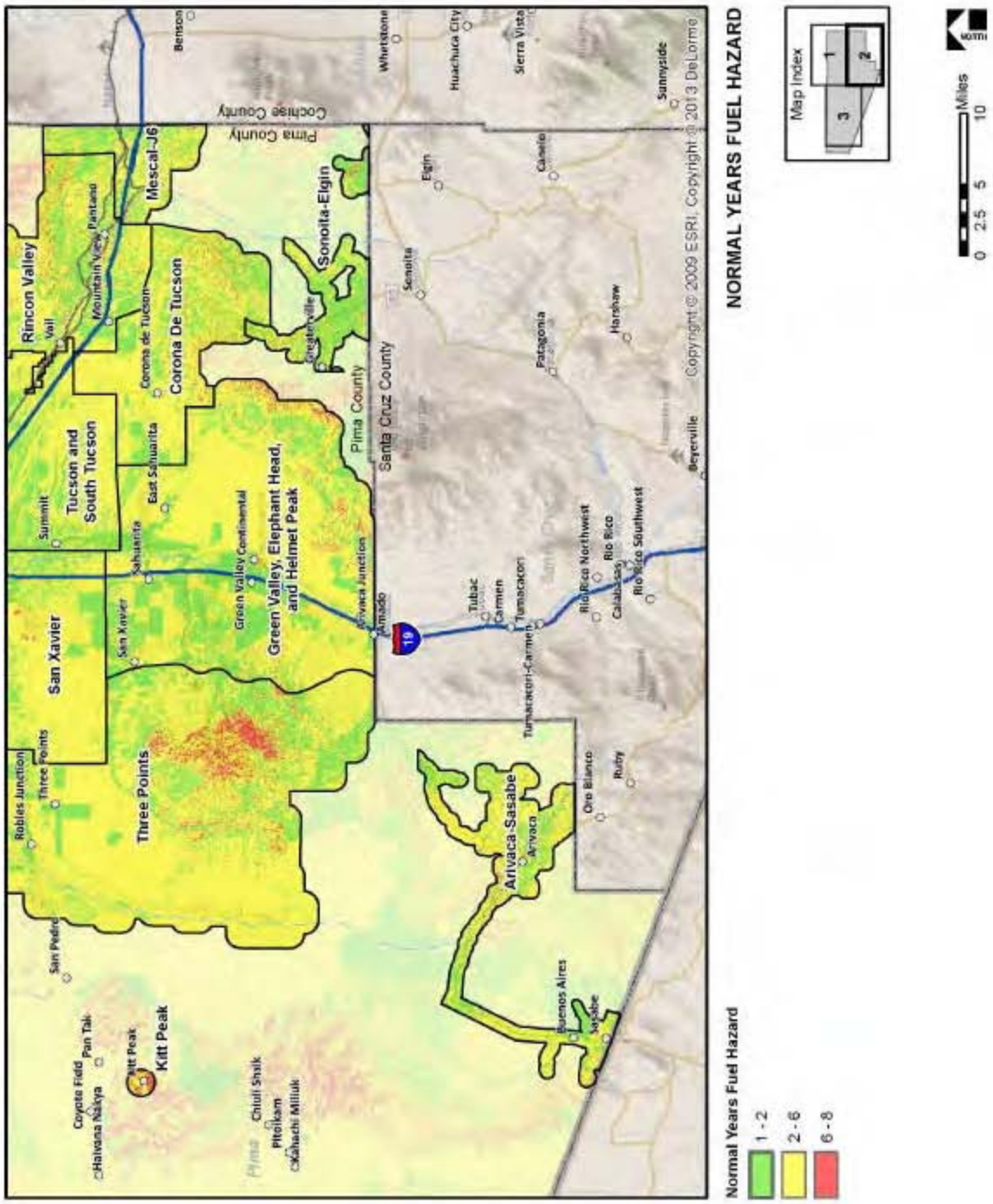


Figure 2.3b. Normal-Year Fuel Hazard of the Pima County WUI, South

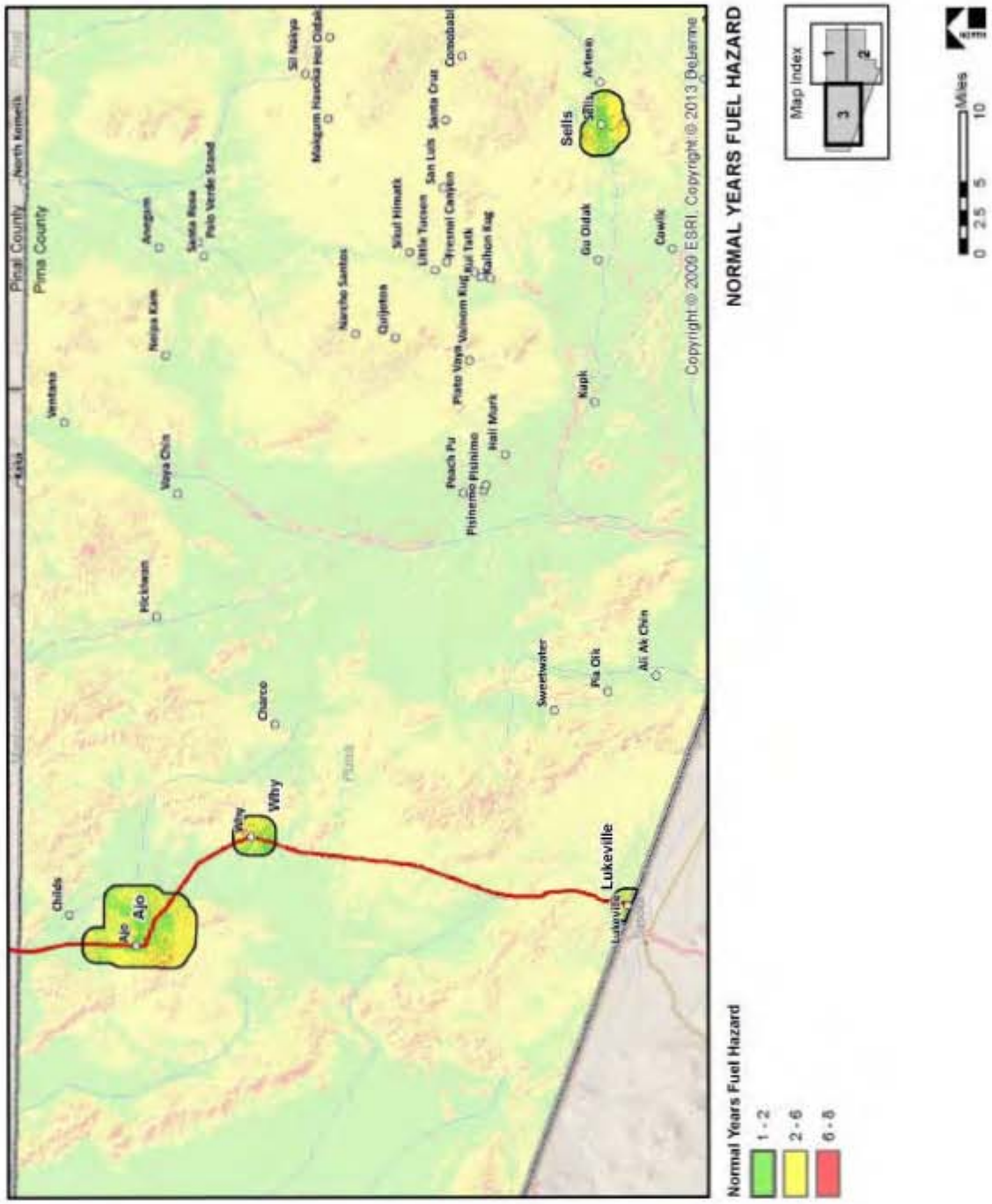


Figure 2.3c. Normal-Year Fuel Hazard of the Pima County WUI, West

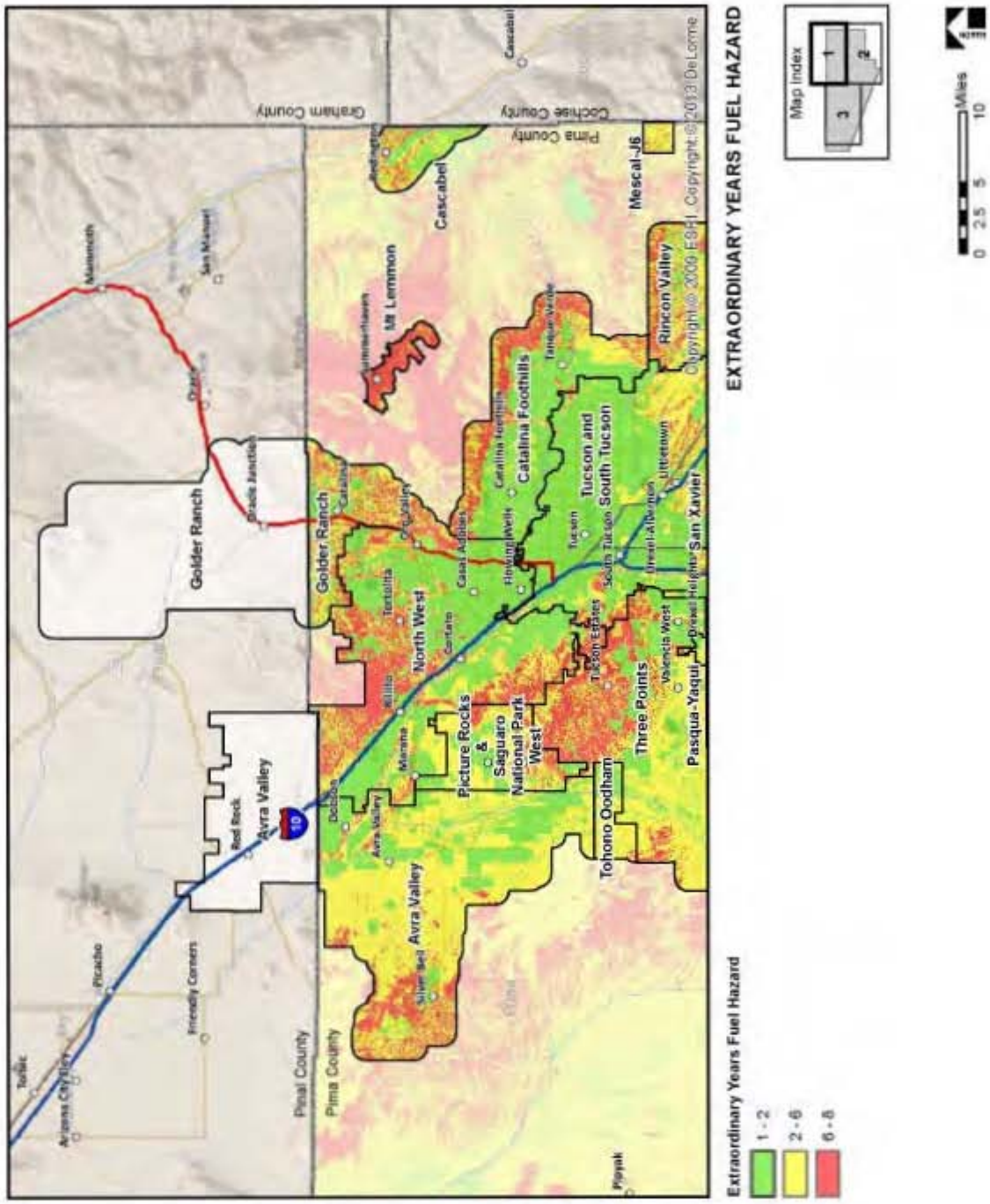


Figure 2.4a. Extraordinary-Year Fuel Hazard of the Pima County WUI, North

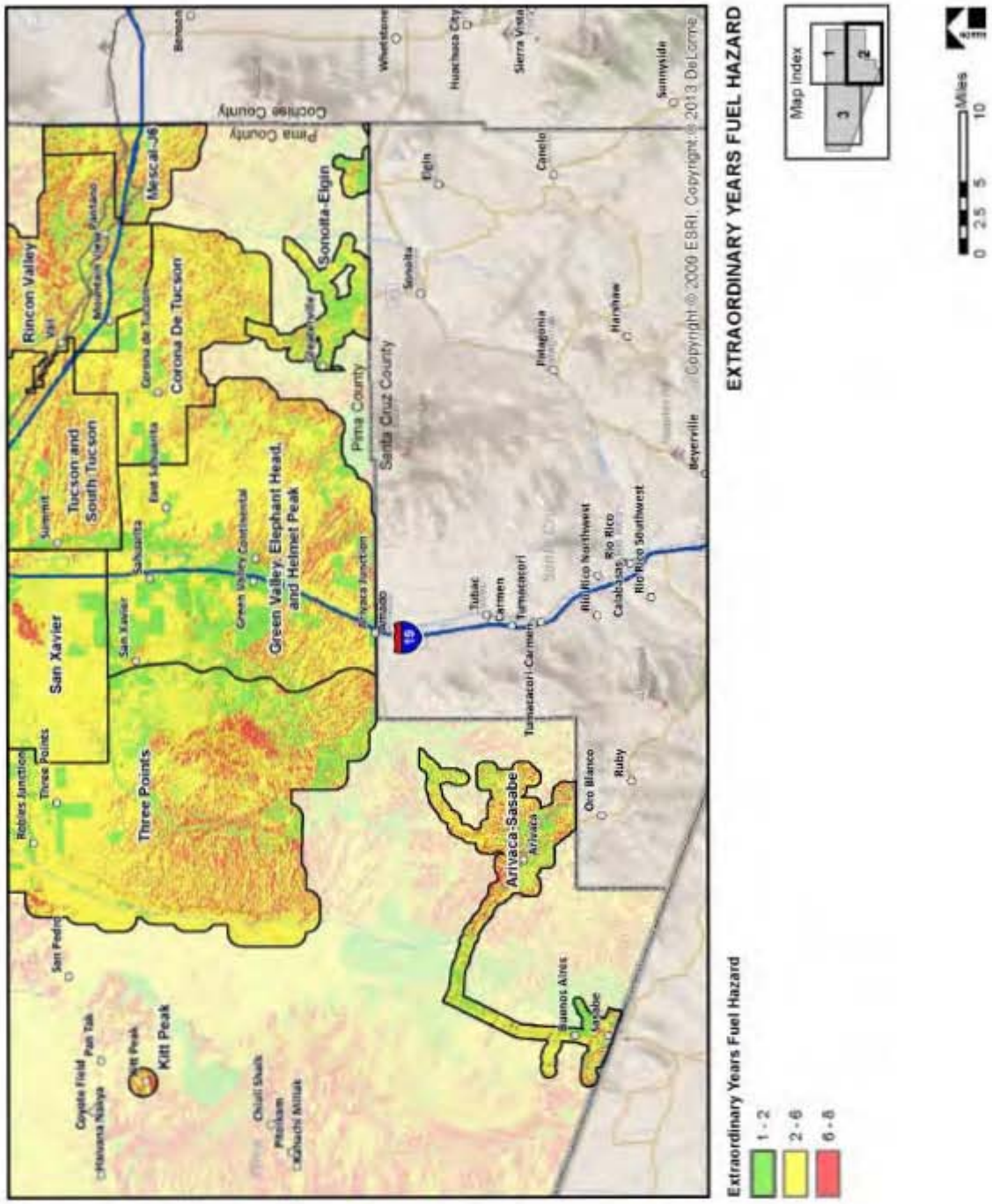


Figure 2.4b. Extraordinary-Year Fuel Hazard of the Pima County WUI, South

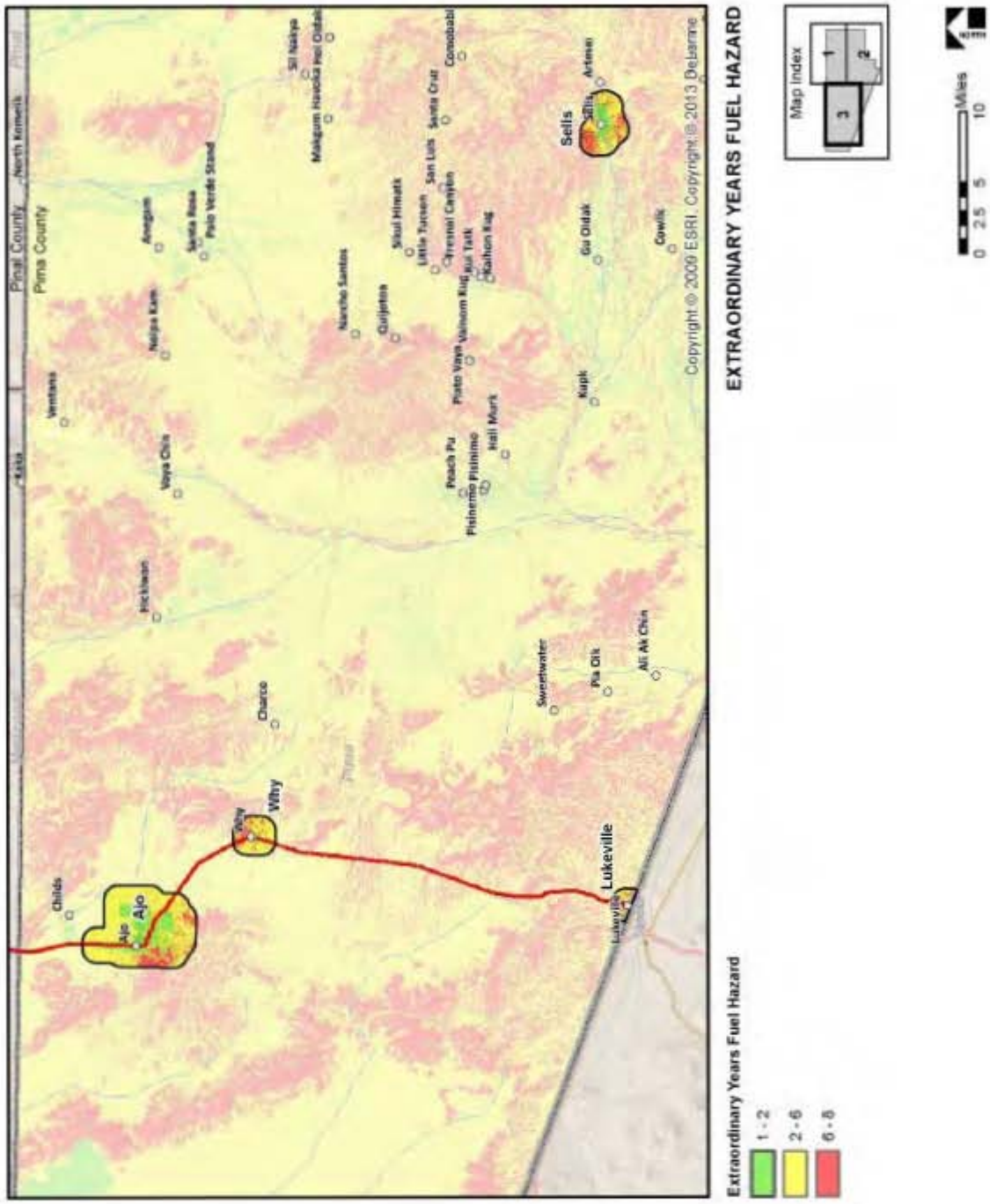


Figure 2.4c. Extraordinary-Year Fuel Hazard of the Pima County WUI, West

Riparian corridors, shrublands, and vegetation associations occurring in steep slopes with a south or southwest aspect are the greatest wildland fuel hazards within the CWPP. Saltcedar-invaded and early-seral-stage riparian habitats constitute a second major wildland fire risk vegetative association. Shrubland areas constitute the next greatest wildland fire risk, in relation to high slopes and south or southwest aspects. In invaded riparian vegetation associations where riparian deciduous tree species are located, total wildland fuels can exceed 20 tons per acre and produce flame lengths greater than 6 feet above the overstory with a rate of spread of over 525 feet (8 chains) per hour. In addition, some shrublands with heavy invasions of nonnative grasses can produce wildfires of high intensity and high rates of spread that are capable of igniting adjacent overstory vegetation. Buffelgrass infestations that comprise a 25 percent landcover will produce approximately 1 ton of fuel; at 50 percent landcover, infestations can produce up to 3 tons of fuel, and at 80 percent landcover, they can produce over 5 tons of fuel that can produce flame lengths in excess of 25 feet and rates of spread in excess of 700 chains per hour with a mid-flame wind speed of 15 mph (Grissom 2010). Buffelgrass readily invades disturbed habitats such as trails, roadways, utility easements and desert washes and also invades undisturbed desert (Photo 2.8). Areas with heavy infestations of buffelgrass will significantly alter wildland fire behavior increasing severity with high rates of spread and flame heights from native vegetation. This potentially leads to devastating fires that can convert the ecologically rich Sonoran Desert into a more monotypic exotic grassland environment. Buffelgrass fires are highly detrimental to cacti and native trees and can eliminate them from the landscape. The occurrence of fire in ecosystems that evolved in the absence of fire often can lead to species loss and future restructuring of plant and animal interactions, favoring fire-adapted exotic species over natives (Hobbs and Huenneke 1992). Such wildfires do not significantly impact the buffelgrass stands which can come back more vigorously than before the fire (Cox et al. 1990). Areas of known buffelgrass invasions in 2009 for the Tucson basin are shown in Figure 2.5 (SABCC 2010). As additional investigations into buffelgrass invasions are completed, areas of buffelgrass infestations where landcover is 50 percent or higher should be defaulted to high wildland fire risk.

Photo 2.8. Roadway with Heavy Buffelgrass Infestation

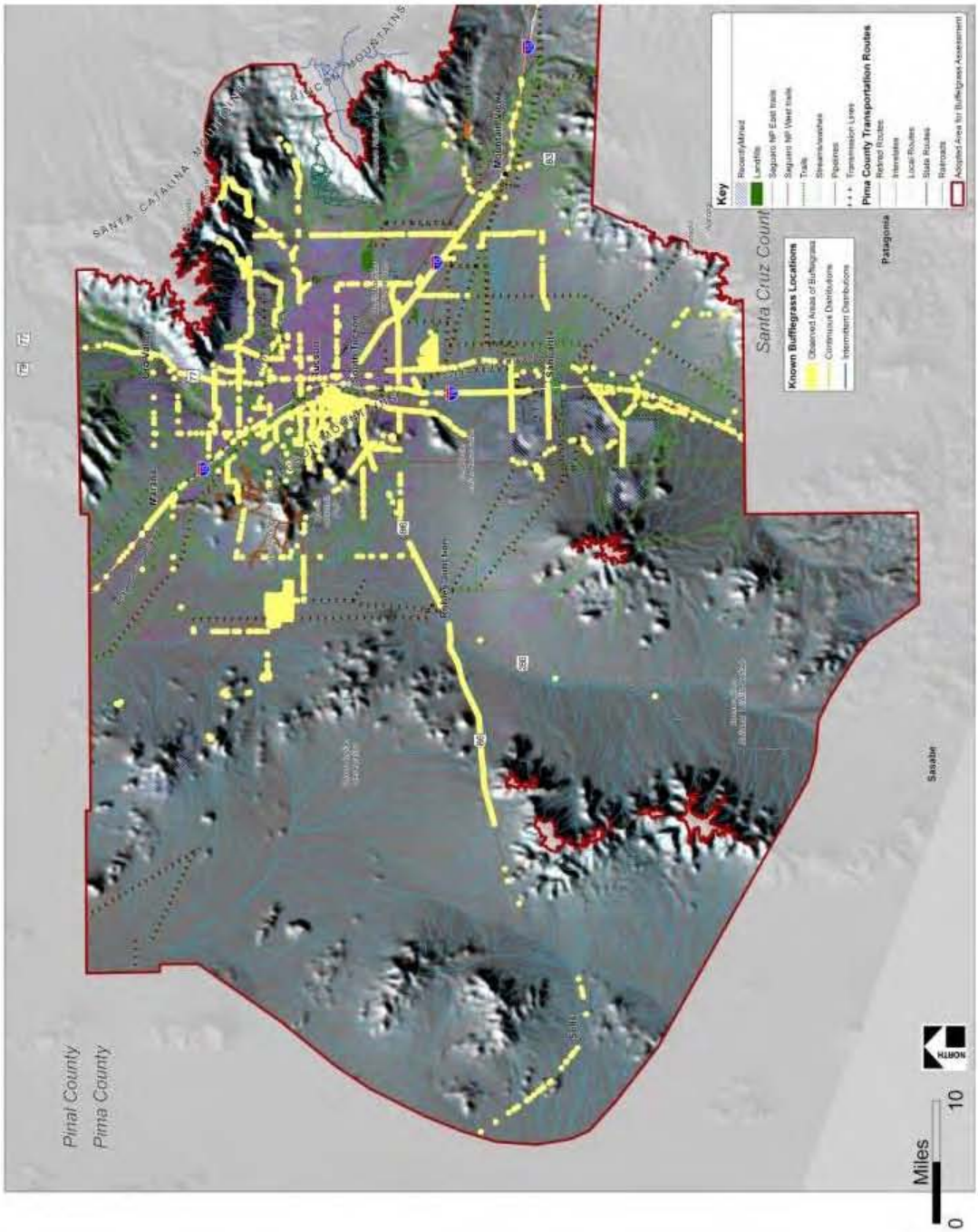


Figure 2.5. Areas of Known Buffelgrass Invasions (2009) in the Tucson Basin

Moderate wildland fuel risk is associated with the ecotone of the riparian and desert upland vegetation associations. In areas where shrub canopy exceeds 35 percent, light fuels produced by the herbaceous understory are reduced because of overstory shading and competition from overstory shrub species. Under extreme fire conditions, upland shrub communities can carry crown fires with moderate intensities and high rates of spread. Lower wildland fire risk occurs in desert scrub communities in which total fuel loading is low with no continuous arrangement of ground or aerial fuels. Desert upland vegetation associations are not fire-dependent communities, and wildfires within desert vegetation associations will be suppressed during years of above-normal rainfall when wildfires occurring in these vegetative associations may not self-extinguish.

C. Conditions of Ignition and Past Fire Occurrence

Past regional wildfire events are important for determining the potential of an area to support wildland fire. Because of the combination of current drought conditions and a regional history of fires, there will be wildland fire ignitions within the CWPP planning area that must be suppressed. The fire history of the CWPP, including recent large wildfires that have occurred within or close to the analysis area, has been included in this analysis to determine the most likely areas for either natural or human wildland fire ignition. Table 2.5 details the high, moderate, and low positive-influence values assigned to fire-start incidents. These include concentrated areas of lightning strikes and human-caused ignitions. High-potential areas have the greatest number of fire starts per square mile. Wildland fire ignition data is obtained from the Federal Wildland Fire Occurrence Internet Mapping Service (IMS) Web site and database (http://wildfire.cr.usgs.gov/firehistory/) and from the Arizona State Forester's Office. The Federal Fire Occurrence IMS is an interactive GIS for use in the wildland fire and GIS community. The datasets used in this GIS are based on official fire occurrence data collected from five federal and state agencies that have been merged into one fire history point layer. According to these data, 3,226 wildfire ignitions have been reported within the analysis area since 1980. There were nine large fires which burned approximately 137,000 acres in the 6-year period of 2002 through 2007. The areas with the greatest potential for fire ignition, either from natural or human (though unplanned) causes, are found within the communities of Sells and Summerhaven and along the eastern edge of Pima County. Visual representations of these large wildfire and ignition-point locations are mapped in Figures 2.6a–2.6c.

Table 2.5. Ignition History and Wildfire Occurrence

Wildfire Occurrence	Value	Sum of Acres
0–2 fire starts/square mile	L	1,377,947
2–4 fire starts/ square mile	M	174,781
>4 fire starts/square mile	H	26,964

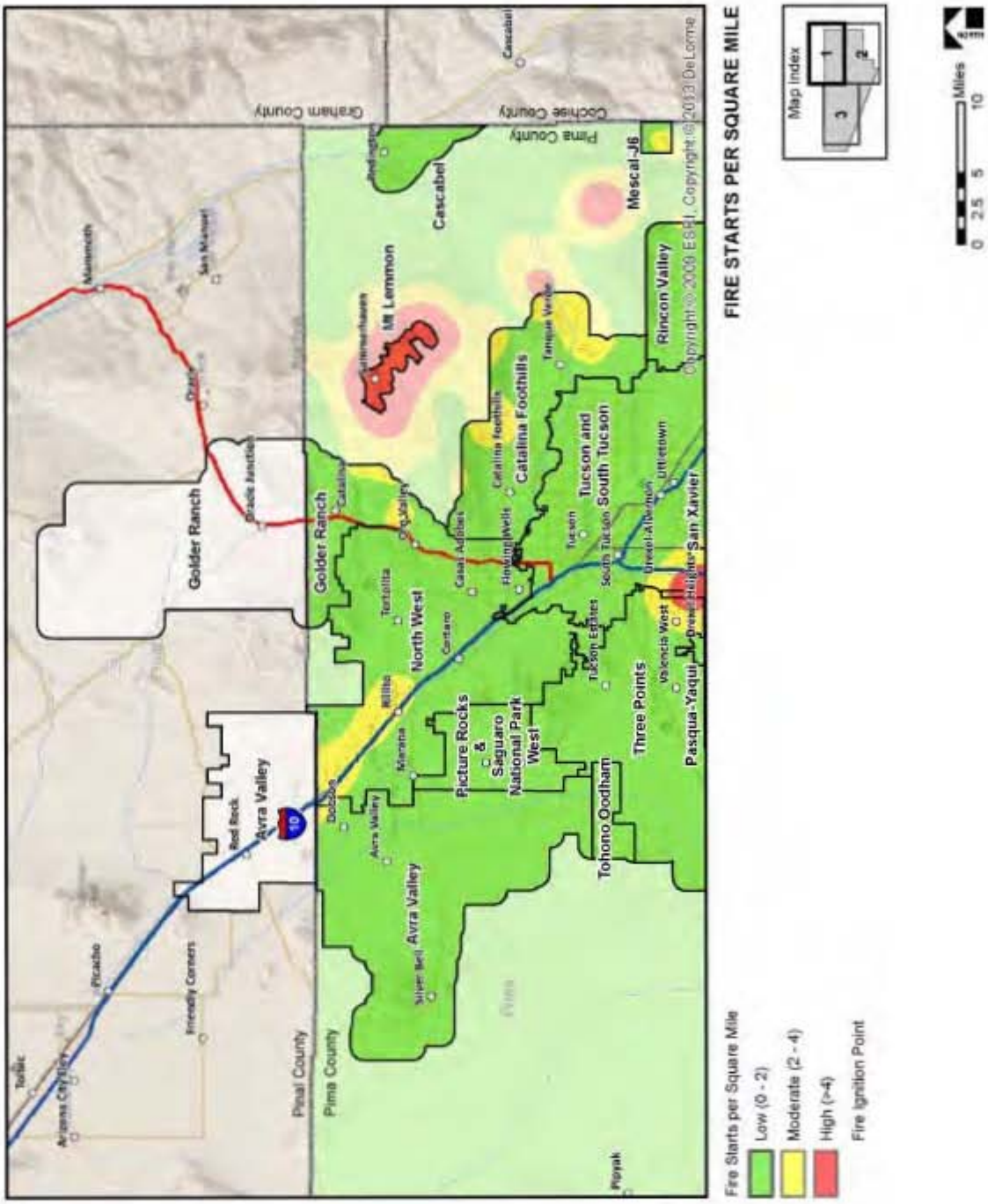


Figure 2.6a. Wildland Fire Ignition History, North (http://wildfire.cr.usgs.gov/firehistory and ASFD 2009)

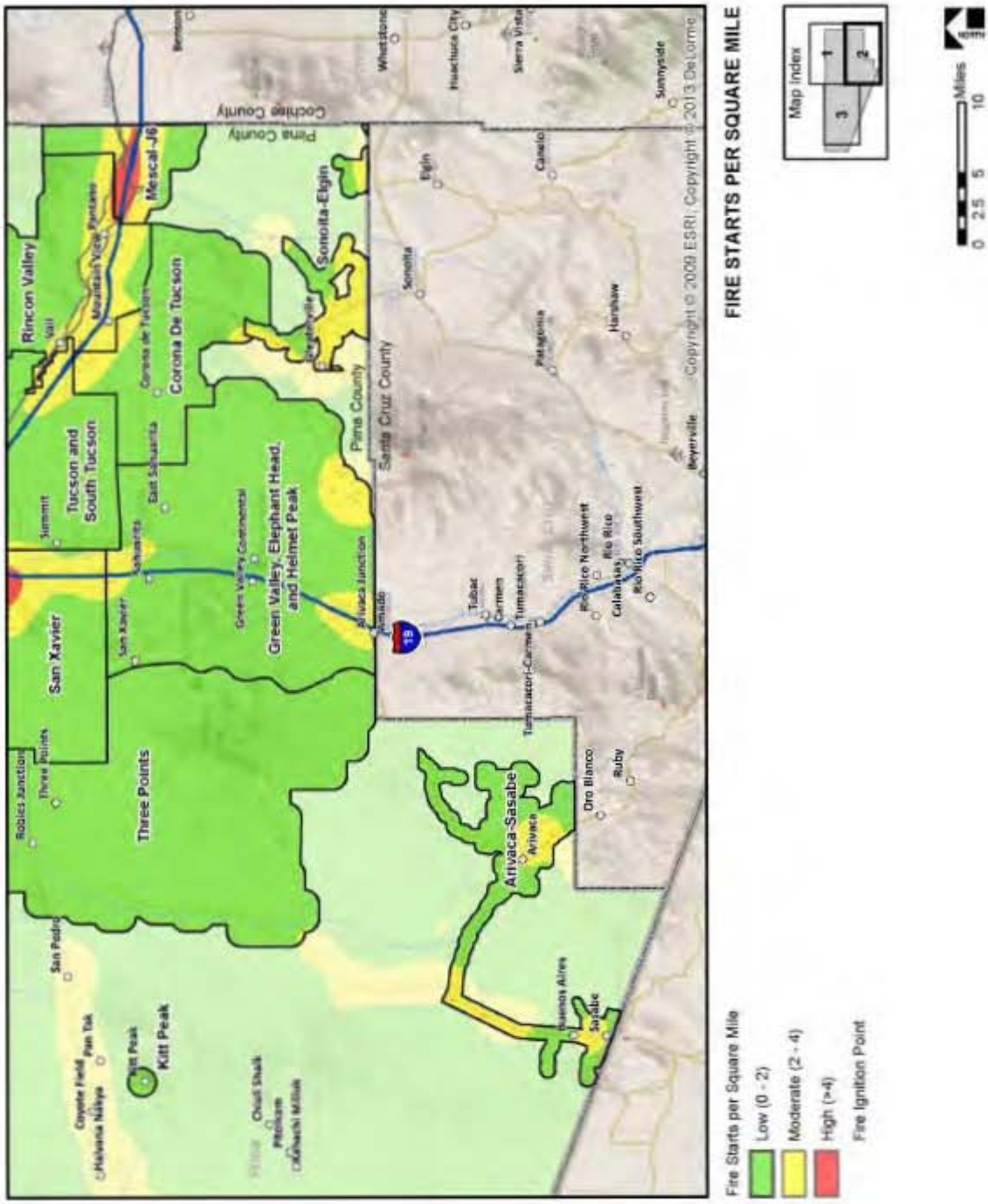


Figure 2.6b. Wildland Fire Ignition History, South (http://wildfire.cr.usgs.gov/firehistory and ASFD 2009)

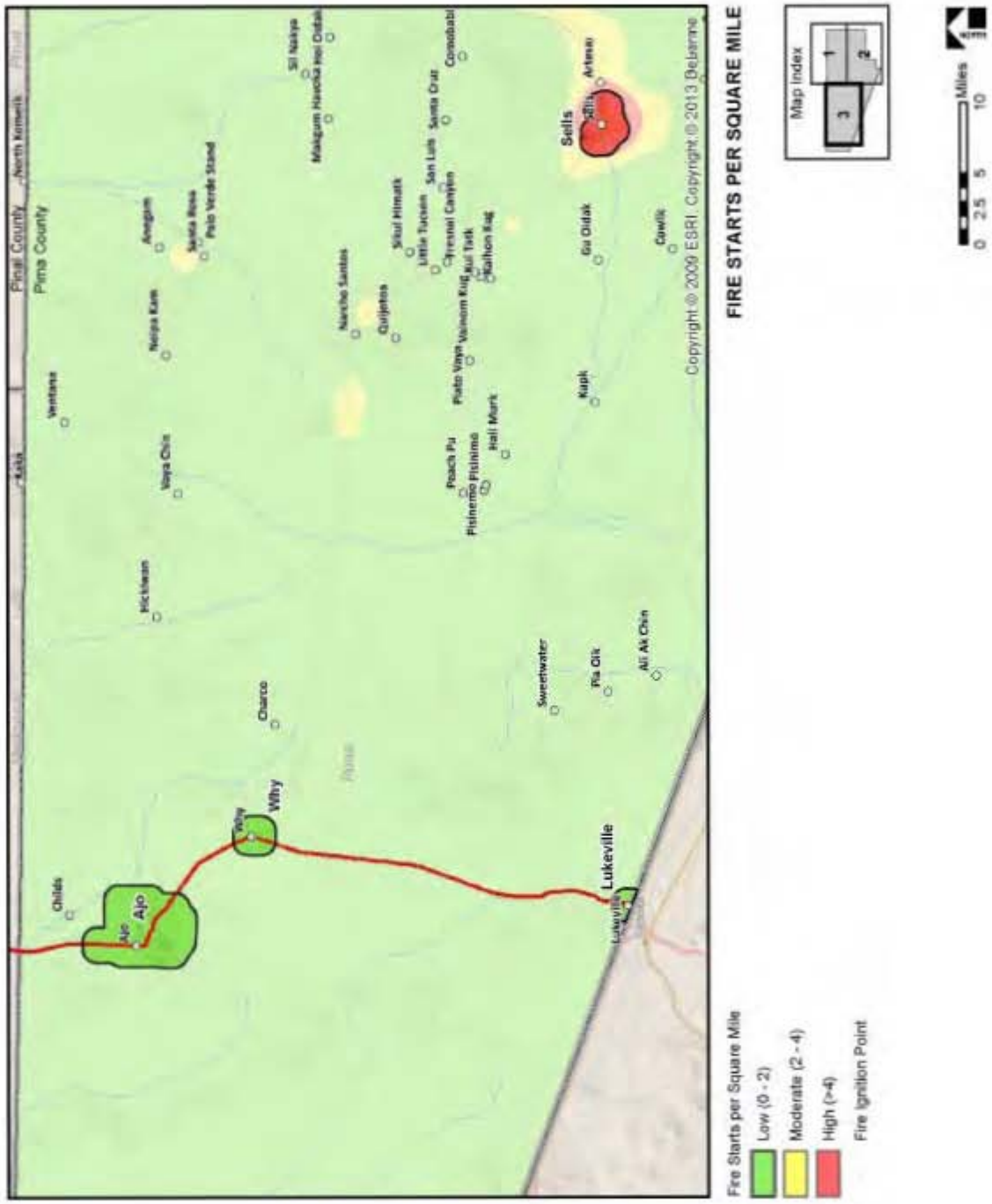


Figure 2.6c. Wildland Fire Ignition History, West (http://wildfire.cr.usgs.gov/firehistory and ASFD 2009)

D. Community Values at Risk

Valued at-risk community resources include private and community structures, communication facilities, power lines, local recreation areas, cultural and historic areas, sensitive wildlife habitat, watersheds, natural resources, and air quality. The community values were determined based on the sum of five components: housing density, Insurance Services Office (ISO) ranks, vacant lands, preserve lands, and sensitive species habitats as derived from Pima County Map Guide data (http://gis.pima.gov/maps/mapguide/). High community values include areas where more than three of these influencing factors occur collectively on the landscape. Areas where at least one but less than three of these factors occur on the landscape were assigned moderate values, and areas where these factor do not appear on the landscape were not assigned values.

Risk-influencing factors of developed land and other infrastructures within the area of highest flammability were given the highest priority for protection. In areas where community values occur within or adjacent to areas of high risk due to the fuel hazards of vegetation associations, a cumulative risk from catastrophic wildland fire was created. These areas of cumulative risk are of greatest concern to Pima County. In accordance with "Risk Factor 2: Risk to Social, Cultural and Community Resources" identified by the Arizona State Forester (2007:2), the Pima County analysis area does include lands consistent with Risk Factor 2, Situations 1, 2, and 3, as follows:

> Risk Factor 2: Risk to Social, Cultural and Community Resources
>
> Situation 1: This situation most closely represents a community in an urban interface setting. The setting contains a high density of homes, businesses, and other facilities that continue across the interface. There is a lack of defensible space where personnel can safely work to provide protection. The community watershed for municipal water is at high risk of being burned to other watersheds within the geographic region. There is a high potential for economic loss to the community and likely loss of housing units and/or businesses. There are unique cultural, historical or natural heritage values at risk.
>
> Situation 2: This situation represents an intermix or occluded setting, with scattered areas of high-density homes, summer homes, youth camps, or campgrounds that are less than a mile apart. Efforts to create defensible space or otherwise improve the fire-resistance of a landscape are intermittent. This situation would cover the presence of lands at risk that are described under state designations such as impaired watersheds or scenic byways. There is a risk of erosion or flooding in the community of vegetation burns.
>
> Situation 3: This situation represents a generally occluded setting characterized by dispersed single homes and other structures that are more than a mile apart. This situation may also include areas where efforts to create a more fire-resistant landscape have been implemented on a large scale throughout a community or surrounding watershed.

1. Housing, Businesses, Essential Infrastructure, and Evacuation Routes

The analysis identifies high-risk areas—including the major community cores and portions of I-10, I-19, US 60, State Route (SR) 77, SR 86, SR 83, SR 85, and SR 286,—as the focus of commercial

development. Residential community development is occurring throughout the analysis area in a mix of high-density, single-family, and multi-acre parcels. Parcel data developed by Pima County was reviewed to determine the distribution of private lands and lands uses within the analysis area. These data were then portioned into risk categories depending on the level of development and presence of natural landcover types. This includes areas of highly developed lands that lack significant open space or natural landcovers; moderately developed private lands where an intermingling of public and private lands occur and the major portion of the landscape comprise natural landcover types; and lightly developed private lands where the majority of landcover is composed of natural landcover. Areas of highest development were considered at moderate risk of wildfire, areas of moderate development are considered at high risk of wildfire, and areas of light or no development are considered at low risk of structure/infrastructure loss due to wildfire. Therefore, structures associated with housing and commercial development located in isolated subdivisions and in more dispersed areas of the analysis area with higher ISO ratings are at highest risk.

2. Preserve and Sensitive Lands

Recreational features within and adjacent to the analysis area—including camping and recreation areas associated with several regional parks; designated camping and recreation areas in Saguaro National Park, on the CNF, and on BLM-managed public lands; wildlife areas; and major FS trailheads—are located throughout Pima County. These parks and recreational areas provide scenic vistas of deep canyons, dry washes, sheer cliffs, distant mountain ranges, colorful soils and rock formations, and mosaics of different vegetation, particularly of the iconic saguaro cactus.

These features are environmental, economic, and aesthetic resources for the surrounding communities and provide year-round recreational opportunities. Because of the benefits that these recreation areas provide to local citizens and community visitors and the potential for increased human-caused wildfire ignitions with increased recreational use, these areas have been analyzed as community values and have an increasing influence factor on wildland fire risk.

The analysis area also includes known and potential habitat areas for several threatened, endangered, and sensitive species and lands acquired by the City of Tucson and Pima County in support of their proposed habitat conservations plans currently under review by the USFWS. The land-management agencies use accepted conservation strategies to mitigate risk to these species by implementing programs that meet natural resource management goals and objectives and to maintain conservation values. Wildland fuel and vegetative restoration treatments within sensitive species habitat may require additional site-specific analysis due to the extraordinary circumstances created by the presence of sensitive species or their habitats. Before any vegetation treatment by the NPS, BLM, or CNF, an assessment will be conducted by the appropriate agency biologist. Site-specific evaluations of individual recommended wildland fuel mitigation projects will determine whether sensitive wildlife species and habitats would benefit from habitat-enhancing treatments that would lessen the threat of catastrophic wildland fire in the vegetative communities of the analysis area while also protecting the recreational values that local residents and visitors associate with the community. The presence of sensitive wildlife and botanical species habitats, in conjunction with areas of high recreational value and human use, have an increasing influence factor on wildland fire risk.

3. Local Preparedness and Protection Capability

For many years, the ISO has conducted assessments and rated communities on the basis of available fire protection. The rating process grades each community's fire protection on a scale from 1 to 10 (1 is ideal and 10 is poor) based on the ISO's Fire Suppression Rating Schedule. Five factors make up the ISO fire rating: water supply—the most important factor—accounts for 40 percent of the total rating, while type and availability of equipment, personnel, ongoing training, and the community's alarm and paging system account for the remaining 60 percent of the rating. Some areas within the Pima County analysis area are not within a fire district; the ISO rating for these areas is 10. Other communities and municipalities within the analysis area are within a fire department or district and have ISO ratings ranging from 1 to 9; these areas are included in the overall risk analysis as reducing the potential of catastrophic wildland fire. ISO ratings will vary within each fire department's or district's service area, depending on housing densities and distance of structures isolated (usually 3 to 5 miles) from a fire station.

The wildland and structural fire response within the analysis area is provided by local fire departments and districts. BLM, CNF, ASFD, BANWR, Tohono O'odham, Pascua Yaqui, and local fire departments and districts provide support for initial wildland fire attack for areas within the Pima County analysis area. Initial-attack response from additional local fire departments and districts can occur under the authority of automatic-aid system and mutual-aid agreements between individual departments or under the intergovernmental agreements (IGAs) that individual fire departments and districts have with the Arizona State Forester and adjacent fire departments and districts.

Land use in the planning area consists primarily of residences; military ranges and airfields; agriculture; livestock production; community businesses; and community services, such as hospitals, schools, organized-sports facilities, and airports. Surrounding areas are dominated by state lands; NPS, BLM, and CNF lands; and private properties. Land uses within or close to the analysis area include fuelwood cutting, hunting, and other recreational activities (for example, hiking, bird watching, nature study, photography, and off-road-vehicle use). State lands occur on the periphery of the communities and often surround developed private land parcels. State lands are administered by ASLD, are managed for a variety of uses, and account for 15 percent (861,623 acres) of the analysis area. State lands within and adjacent to the analysis area could be identified for sale for residential and commercial development or leased for commercial land development.

The primary block of federal land in the Pima County CWPP area consists of portions of BLM lands located throughout the analysis area, with NPS and CNF lands located in the northern, eastern, and southern portions of the analysis area. Pima County provides extensive outdoor recreational opportunities. The open space provided by federal lands and recreational opportunities, in association with the significant wildlife habitats found within the county, provide the quality-of-life amenities that many county residents desire to protect and enhance.

Table 2.6 identifies the different values given to these community value components. Visual representations of these community value components are mapped in Figures 2.7a–2.7c.

Table 2.6. Community Values

Component	Value[a]	WUI Acres (% of WUI)
Recreation areas and infrastructure in the analysis area ≥500 and <1,000 households/square mile	H	289,526 (18)
Housing and business structures and infrastructure in the analysis area ≥1,000 households/square mile	M	859,858 (54)
All other areas	L	430,162 (27)

Source: Logan Simpson Design Inc.

[a]H = high; M = moderate; L = low

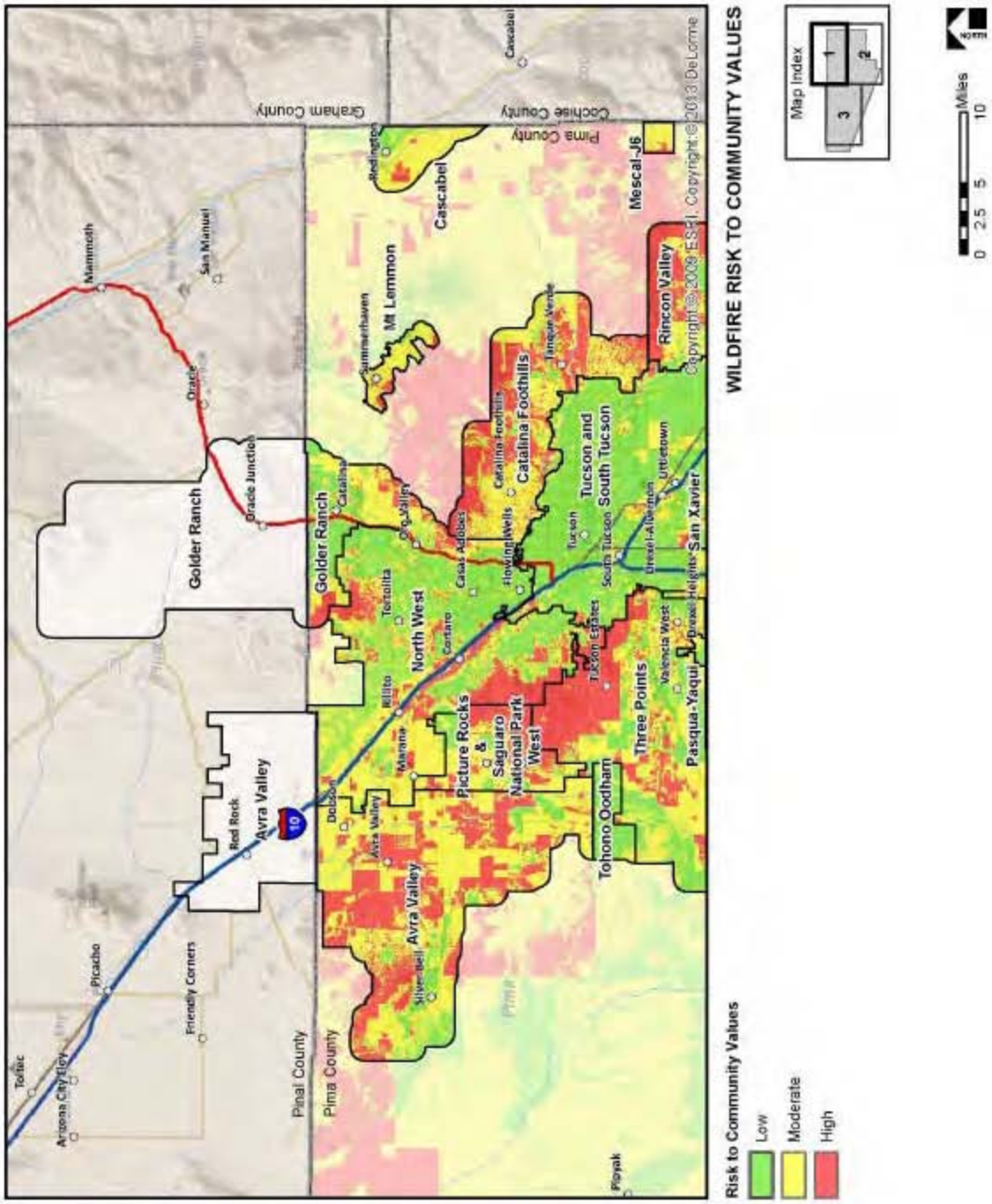


Figure 2.7a. Wildfire Risk to Community Values, North

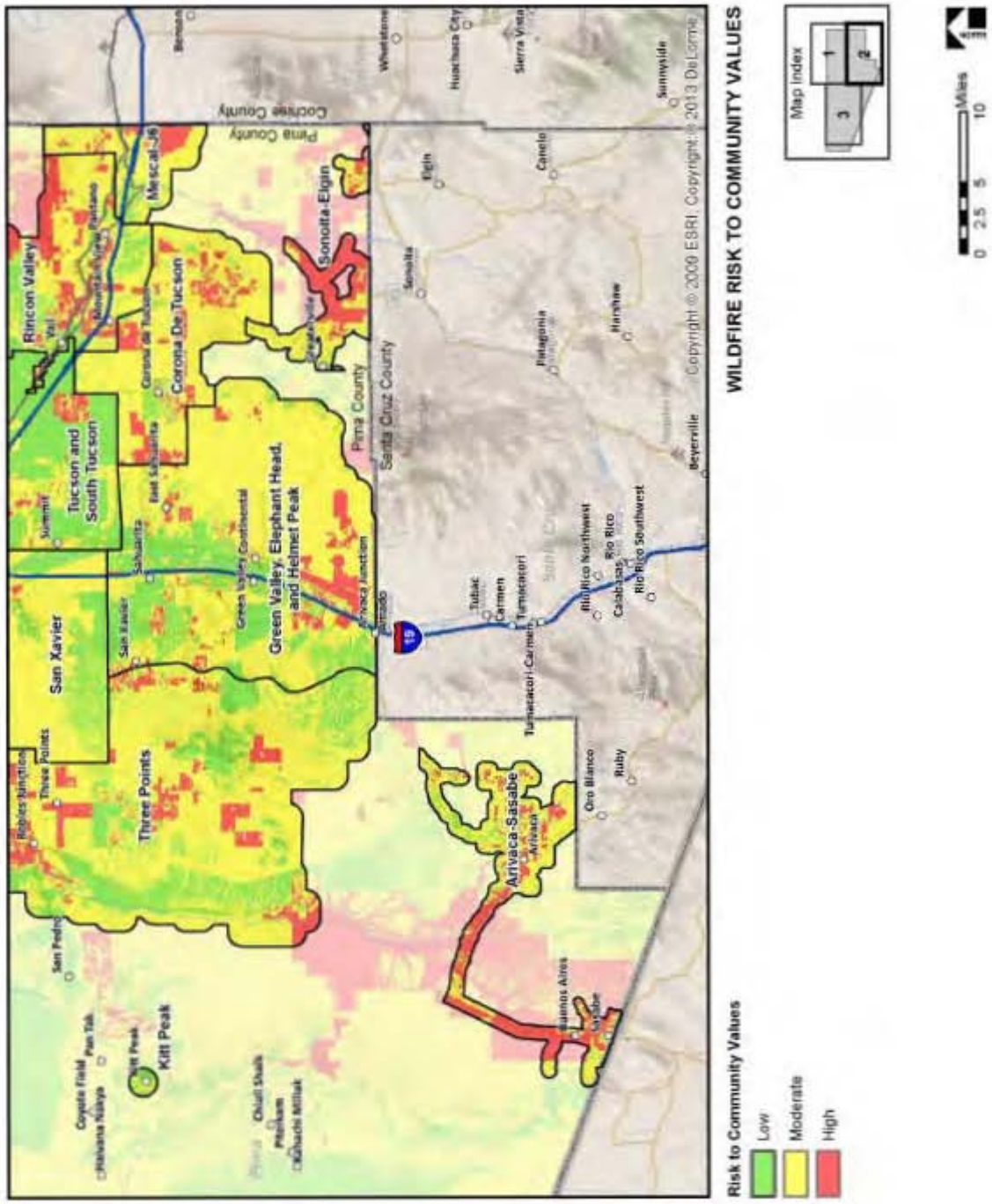


Figure 2.7b. Wildfire Risk to Community Values, South

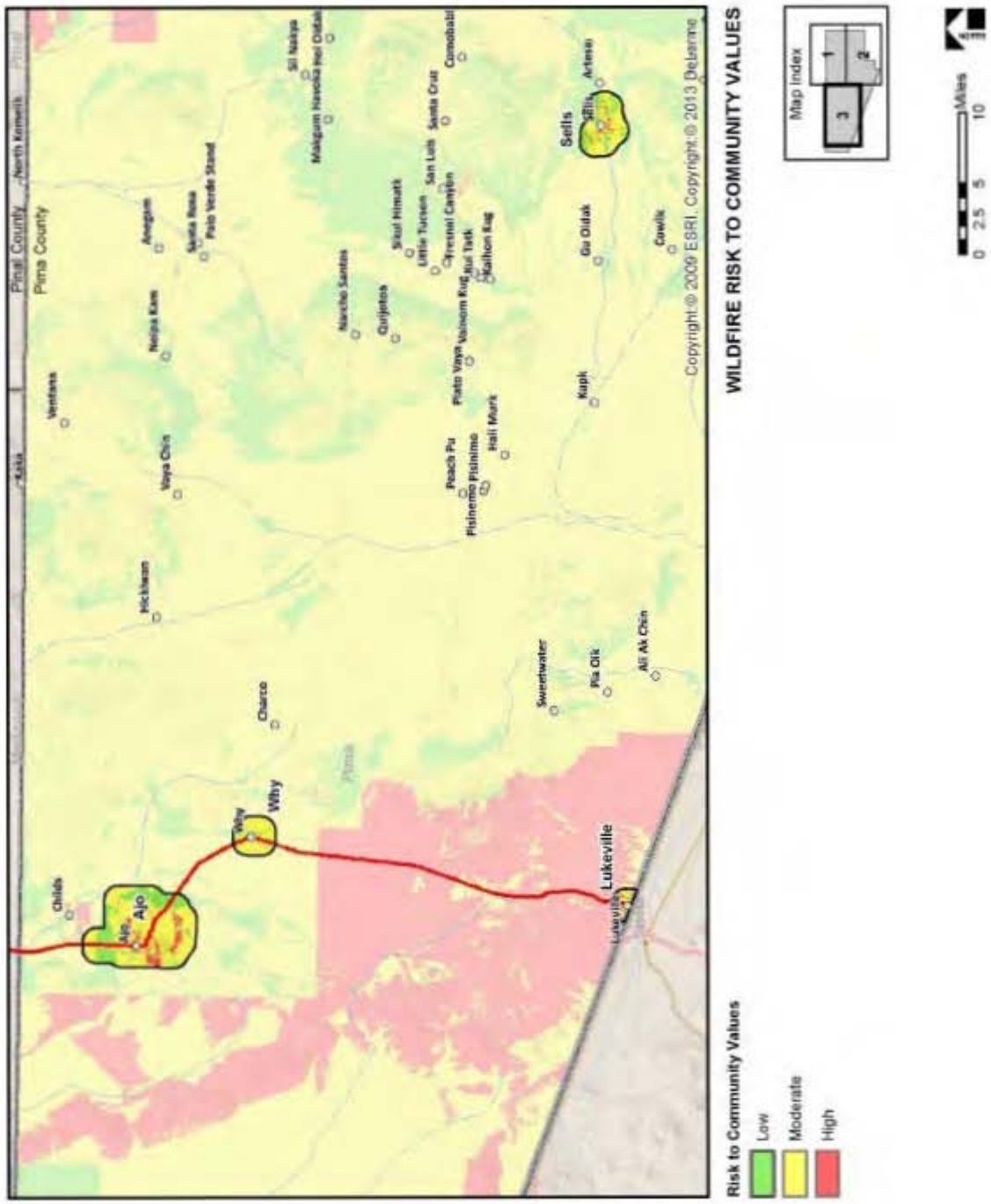


Figure 2.7c. Wildfire Risk to Community Values, West

E. Summary of Community Assessment and Cumulative Risk Analysis

Pima County and local jurisdictions recognize the consequences of disasters and the need to reduce the impacts of natural and human-caused hazards. The County and jurisdictions also know that with careful selection, mitigation actions in the form of projects and programs can become long-term, cost-effective means for reducing the impact of natural and human-caused hazards.

In addition, largely unincorporated areas of the analysis area that are not under the jurisdiction of a fire department or fire district and that may or may not be serviced by individual fire protection are included with the nearest community sub-analysis area and potential wildland fire risk rating.

Community WUI Descriptions and Risk Rating

Arivaca Community WUI

The Arivaca Community WUI is composed of lands within and immediately adjacent to the Arivaca Fire District boundary, the community of Sasabe, lands immediately adjacent to SR 286, Arivaca Road, and Ruby Road that serve as emergency evacuation and fire response corridors. In 2007 the PCOEM and the Arivaca Fire District completed the *Arivaca-Sasabe Community Wildfire Protection Plan*. The Arivaca Fire District provides structural and wildland fire protection to the community, while the BANWR provides wildland fire protection to the community of Sasabe through an agreement with the ASLD. The 2007 Arivaca-Sasabe CWPP analyzed 50,752 acres for wildfire risk. The BANWR is a signatory to the Arivaca Sasabe Community Wildlife Protection Plan and continues to support implementation of priority recommendations of the Arivaca Sasabe CWPP and those of the Pima County CWPP. The Pima County CWPP incorporates by reference the 2007 Arivaca-Sasabe CWPP. The Arivaca-Sasabe CWPP area has an estimated population in 2010 of 695 residents in Arivaca occupying 492 housing units. The 2010 population estimate for the community of Sasabe is 545 residents occupying 50 housing units. The 2010 population residing within the census tract which includes these communities is estimated at 3,600 residents in approximately 1,800 housing units. (http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml/Census tract 43.16). The Arivaca Fire District has an ISO rating of 10. The Pima County CWPP estimates that 14 percent of the 2013 Arivaca Community WUI is at high risk and 71 percent is at moderate risk for unwanted wildland fire. The majority of wildfire starts around the communities of Arivaca and Sasabe have occurred within the riparian corridor of Arivaca Creek in and adjacent to the community of Arivaca. Wildland fire also occurs in the vicinity of Sasabe within the upland vegetative types primarily within the vicinity of Altar Wash and SR 286.

This Arivaca Community WUI does include areas of high risk in lower elevations and in grassland and mesquite vegetation associations during extreme rainfall years. Wildfire ignitions within the Arivaca Community WUI are low. Public use within the WUI is considered moderate in undeveloped areas and high within the BANWR. The risk to community values is considered high due to proximity of the BANWR. The WUI is mostly composed of large developed private land parcels and residential lots within the communities. The combination of low housing density on large private land parcels intermixed with invaded vegetative associations and a high ISO rating creates areas of high risk to community values. Due to areas of high wildfire risk, a low ignition history, and a relatively high density of community values, the overall wildland fire risk rating of the sub-WUI is high.

The Arivaca Fire District and CWPP cooperators are not recommending revisions to the CWPP goals and objectives or fuel mitigation and fire prevention strategies and priorities. The Pima County CWPP signatories support the priority recommendations of the Arivaca-Sasabe CWPP. The Pima County CWPP assimilates by reference the Arivaca-Sasabe CWPP and recommends reviewing that CWPP for detailed risk assessment and mitigation recommendations.

Avra Valley Community WUI

The Avra Valley Community WUI is composed of lands within the Avra Valley Fire District boundary and public and private lands immediately adjacent the fire district boundary, including portions of the community of Marana.

The primary transportation corridors in the Avra Valley Community WUI include I-10 east of the WUI; Sandario, Anway, Trico, and Sanders Roads from the south and north; and Avra Valley Road and Trico Marana Road from the east. The Union Pacific Railroad parallels I-10 traversing the Avra Valley Community WUI from east to west. These roadways include the major business corridors in the WUI. Fire protection services in the Avra Valley Community WUI are provided by the Avra Valley Fire District. The Avra Valley Fire District is capable of responding to structure fires, wildland fires, emergency medical calls, motor vehicle accidents, and hazardous material calls. The Avra Valley Community WUI has an estimated population of 12,450 residents occupying approximately 4,500 housing units (http://factfinder2.census.gov census blocks 44.19 and 44.25) over a 325-square-mile area. The fire district is composed of 3 fire stations that are staffed 365 days a year and is currently building their fourth fire station which estimated to be completed in November 2013. The Avra Valley Fire District has a current ISO rating of 5/9. Subsequent to the 2013 ISO re-rating the Avra Valley Fire District ISO rating will change to 3/8B in July 2013.

Major vegetation associations include desert wash/xeroriparian corridors, creosote bush-bursage desert scrub types with paloverde-mixed cacti desert scrub, and mesquite upland associations occurring in higher elevations of the Silver Bell, Waterman, and Roskruge mountains. The areas of highest wildfire risk are located along the foothills of the Silver Bell, Waterman, and Roskruge mountains and along the Brawley Wash xeroriparian corridor. This portion of the WUI does include areas of high risk in lower elevations during extreme rainfall years from increased light fuels produced from winter annual and perennial invasive grasses such as Mediterranean grass, red brome, and buffelgrass. Wildfire ignitions within the Avra Valley Community WUI are low. Public use within the WUI is considered low to moderate in undeveloped areas. The WUI is mostly composed of large developed private land parcels. The combination of low housing density on large private land parcels, intermixed with invaded vegetative associations, and a high ISO rating creates areas of high community value risk. The Avra Valley Community WUI analyses found that 4 percent of the WUI is at high risk and 74 percent of the WUI at moderate risk for wildland fire. Due to a moderate wildfire risk, a low ignition history, and a relatively high density of community values, the overall wildland fire risk rating of the sub-WUI is moderate.

Ajo Community WUI

The Ajo Community WUI is composed of private and public lands within 1 mile of developed areas of the community of Ajo, including the Ajo Municipal Airport. The Cabeza Prieta National Wildlife Refuge is

adjacent to the Ajo Community WUI. The Organ Pipe Cactus National Monument lies south of the WUI; however, Ajo provides many services to the visitors of this national monument. The Pima County CWPP analyzed 23,957 acres within the Ajo Community WUI for the potential risk to wildland fire. The Ajo-Gibson Volunteer Fire Department provides fire protection services to the community of Ajo and to portions of western Pima County. The primary transportation corridor in the community of Ajo is SR 85 from the north and south. The SR 85 corridor is the major business corridor in the WUI. The 2010 estimated population of the Ajo census-designated place is 3,304 residents occupying 2,175 housing units.

Major vegetation associations include desert wash/xeroriparian corridors and creosote bush-bursage desert scrub types with paloverde-mixed cacti desert scrub occurring in higher elevations of the Little Ajo Mountains. The areas of highest wildfire risk are located along the foothills of the Little Ajo Mountains to the south of the community of Ajo. This portion of the WUI does include areas of high risk in lower elevations to the north and east of the community during extreme rainfall years from increased light fuels produced from winter annual and perennial invasive grasses such as Mediterranean grass, red brome, and buffelgrass. Wildfire ignitions within the Ajo Community WUI are low. Public use within the WUI is considered moderate due to the adjacent Cabeza Prieta National Wildlife Refuge. The WUI is mostly composed of large developed private land parcels with traditional home lots found in the community center. The combination of low housing density on large private land parcels, intermixed with invaded vegetative associations, and areas with a high ISO rating creates areas of high risk to community values. The Pima County CWPP analyses determined that 2 percent of the Ajo Community WUI is at high risk and 55 percent is at moderate risk for wildland fire. Due to areas of moderate to high wildfire risk, a low ignition history, and a moderate density of community values, the overall wildland fire risk rating of the Ajo Community WUI is moderate.

Cascabel Community WUI

The Cascabel Community WUI is composed of private lands along the San Pedro River riparian corridor, including the community of Cascabel and developed lands in the vicinity of Redington. In 2006 the *Cascabel Community Wildfire Protection Plan* was developed and approved by the Pima County Board of Supervisors. The 2006 Cascabel CWPP was a cooperative effort between the citizens of Cascabel, the Cascabel Fire Department, The Nature Conservancy in Arizona, Redington Natural Resources Conservation District, ASFD, BLM, and Cochise County in Arizona. The 2006 CWPP was restricted to developed lands within the San Pedro River riparian corridor within the Cascabel Fire Department boundary in Cochise County. The Pima County CWPP expands the community WUI along the San Pedro River riparian corridor into Pima County, including developed lands in the vicinity of Redington approximately 12 miles north of the community of Cascabel. The 2006 CWPP wildfire risk assessment found areas of high risk associated with invaded vegetation within the San Pedro riparian corridor. The 2006 Cascabel CWWP analyzed 16,350 acres within Cochise County for the risk of wildfire. The Pima County CWPP analyzed an additional 13,599 acres, beginning immediately north of the 2006 CWPP and extending north along the San Pedro River riparian corridor to developed lands north of the Redington area. The 2006 Cascabel CWWP found that 34 percent of the Cascabel WUI is at high risk for wildland fire. The Pima County CWPP found 3 percent of the Pima County Cascabel Community WUI to be at high risk and 51 percent to be at moderate risk for wildland fire. With the exception of the WUI boundary, revised vegetative landcover descriptions, and associated fuel models, the goals and objectives of the 2006 CWPP

are still valid; therefore, they have been included in the Pima County CWPP by reference and have been expanded to include the Cascabel Community WUI within Pima County. The primary transportation corridor in the Cascabel Community WUI is San Pedro Road, which provides access from the south through the community of Pomerene and from SR 77 through San Manuel from the north. There are no retail businesses within the WUI; the closest amenities are located in San Manuel approximately 12 miles north of Redington. The Cascabel Volunteer Fire Department provides fire protection (both structure and wildland) to the southern portion of the community WUI including Pima County and to the area immediately south of Redington. The northern portion of the community WUI is not within a fire district and is assigned an ISO rating of 10. Major vegetation associations within the Cascabel Community WUI area include the warm-desert riparian mesquite bosque and warm-desert riparian woodland and shrublands within the riparian corridor, with mesquite uplands and Sonoran paloverde-mixed cacti shrub associations occurring in adjacent uplands. The major wildfire risk within the Cascabel WUI is within the invaded areas of the San Pedro riparian corridor, though there are areas of high vegetation risk associated with upland associations during years of extraordinary rainfall. Wildfire ignitions within the Cascabel Community WUI are low. Public use within the WUI is considered moderate from off-highway-vehicle use, hiking trails, and undeveloped areas of the WUI. The WUI has an overall low community value rating. Due to the complexity of wildland fuels, limited access, intermixed recreation sites, the Cascabel Community WUI is rated at moderate risk to wildland fire.

Catalina Foothills Community WUI

The Catalina Foothills Community WUI is composed of private and public lands that are mostly north and east of the City of Tucson Fire Department boundary and southeast to about the northern border of Saguaro Park East, including the Hidden Valley, Tanque Verde, Sabino Vista Volunteer, and Tucson Country Club Estates fire districts. Actual fire services with the Catalina Foothill Community WUI, is provided under contact to the Rural Metro Fire Department. The Sabino Canyon Trail, one of the heaviest recreational use trails in the CNF, is located in the WUI, along with Saguaro National Park East bordering the WUI to the southeast. The Pima County CWPP analyzed 72,529 acres within the Catalina Foothills Community WUI for the potential risk to wildland fire. The Rural Metro Fire Department maintains eight fire stations staffed by firefighters and emergency medical personnel. Rural Metro Fire Department is the sole fire protection agency for the Catalina Foothills, including the fire districts of Mountain Vista, Hidden Valley, Sabino Vista, Tanque Verde, and Tucson Country Club Estates. The Rural Metro Fire Department maintains three fire stations and an administrative office within the Catalina Foot hills Community WUI. Unlike fire-district residents who pay for their fire protection services through property taxes, residents, business owners, and property owners in the unincorporated areas of Pima County are responsible for setting up an account directly with Rural Metro. This means that fire protection and emergency services are not paid for through taxes and that residents are responsible for establishing fire service directly with Rural Metro Fire Department. The fire department maintains an ISO rating of 4 in the Sabino Vista Fire District, a rating of 3 in the Tucson Country Club Estates Fire District, and a rating of 3 in the Mountain Vista Fire District. The Tanque Verde Fire District has not yet been rated.

The primary transportation corridors in the WUI communities are River Road, an east-west corridor at the southern end of the WUI, and Skyline/Sunrise Road, an east-west corridor in the central portion of the WUI.

Sunrise/Skyline and River road corridors are the major business corridors in the WUI. The 2010 estimated population for the Catalina Foothills Community WUI includes 22 census tracts with a total estimated population of approximately 75,000 residents occupying approximately 36,000 housing units. The Catalina Foothills Community WUI analysis area includes approximately 115 square miles.

Major vegetation associations include desert wash/xeroriparian corridors and paloverde-mixed cacti desert scrub in lower elevations, with desert oak transition associations occurring in higher elevations toward the foothills of the Santa Catalina Mountains. The areas of highest wildfire risk are located along the numerous desert washes originating from the foothills of the Santa Catalina and terminating at Tanque Verde and Rillito creeks. The northern portion of the WUI does include areas of high risk in the foothills of the Santa Catalina Mountains due to heavy fuel loads, invasive grasses, and winter annuals occurring in areas of steep slopes. Wildfire ignitions within the Catalina Foothills Community WUI are moderate to low, with high wildfire ignitions occurring above the WUI. Public use within the WUI is considered high due to the high use of Sabino Canyon and other community and CNF trails in the WUI. The WUI is mostly composed of large developed private land parcels of high assessed value. The combination of low housing density on large private land parcels, intermixed with invaded vegetative associations, and some areas with a high ISO rating and some with moderate wildfire ignition history creates areas of high risk to community values. The Pima County CWPP analyses determined that 22 percent of the Catalina Foothills Community WUI is at high risk and 47 percent is at moderate risk for wildland fire. Due to areas of high wildfire risk, a moderate ignition history, and a high density of community values, the overall wildland fire risk rating of the Catalina Foothills Community WUI Community WUI is high.

Corona de Tucson Community WUI

The Corona de Tucson Community WUI is composed of lands within the Corona de Tucson Fire District boundary and public and private lands immediately adjacent the fire district boundary. The Corona de Tucson Community WUI lies immediately north of the Santa Rita Mountains within the CNF and adjacent to the north boundary of the Santa Rita Experimental Range managed by the University of Arizona. The primary transportation corridors in the Corona de Tucson Community WUI are Houghton Road connecting to I-10 to the north and Sahuarita Road connecting to SR 83 to the east and to I-19 to the west. The major retail businesses within the WUI are located at or near the intersection of Houghton and Sahuarita roads. Fire protection services in the Corona De Tucson Community WUI are provided by the Corona De Tucson Fire Department. The Corona De Tucson Fire Department was established approximately 35 years ago and provides 24-hour, 7-day staffing with employees who have advanced-life-support training and employees who have Firefighter II certification from the Arizona state fire marshal. The Corona De Tucson Fire Department provides a wide range of services, from fire protection, emergency medical services, desert pest removal, vehicle/home lock-out, child car-seat installation assistance, CPR training, wildland firefighting, residential sprinkler program services, and many others. The Corona De Tucson Fire Department is supported by the taxpayers of Corona De Tucson, Arizona. Fire protection service is provided when available to the nearby un-incorporated areas of Vail, Arizona, for a fee and/or subscription.

The 2010 estimated population of the Corona de Tucson census-designated place is 5,675 residents occupying 2,165 housing units. The Pima County CWPP analyzed 125 square miles as the Corona de Tucson Community WUI. The 2010 census block for the Corona de Tucson Community WUI analyzed for

the Pima County CWPP is composed of 8,521 residents occupying 3,307 housing units. The Corona de Tucson Fire District has an ISO rating of 5 in proximity to the Fire Stations 180 and 182. Outlying areas of the district have an ISO rating of 8.

Major vegetation associations include desert wash/xeroriparian corridors, semi-desert grassland, mesquite uplands, paloverde-mixed cacti desert scrub, and mid-elevation desert shrub associations occurring in higher elevations of the foothills of the Santa Rita Mountains. The areas of highest wildfire risk are located along the foothills of the Santa Rita Mountains and within the numerous xeroriparian areas flowing to the northwest and terminating in the Santa Cruz River. This portion of the WUI does include areas of high risk in lower elevations during extreme rainfall years from increased light fuels produced from winter annual and perennial invasive grasses such as Mediterranean grass, red brome, Lehmann lovegrass, and buffelgrass. Wildfire ignitions within the Corona de Tucson Community WUI are generally low, though high ignition history is present immediately north of the WUI along the I-10 corridor. Public use within the WUI is considered low in undeveloped areas. The WUI is mostly composed of large developed private land parcels with more traditional home lots present in the community core. The combination of low housing density on large private land parcels, intermixed with invaded vegetative associations, and some areas of low ignition history and some with a high ISO rating creates areas of moderate risk to community values. The Pima County CWPP analyses determined that 3 percent of the Corona de Tucson Community WUI is at high risk and 87 percent is at moderate risk for wildland fire. Due to areas of moderate wildfire risk, a low ignition history, and a relatively low density of community values, the overall wildland fire risk rating of the Corona de Tucson Community WUI is moderate.

Green Valley-Elephant Head-Helmet Peak Community WUI

The Green Valley-Elephant Head-Helmet Peak Community WUI is composed of private and public lands within and adjacent to the Green Valley, Elephant Head, and Helmet Peak fire districts, located mostly south of the city of Tucson generally adjacent to the I-19 corridor including the communities of Sahuarita, and Green Valley, and south along I-19 to Arivaca junction. The Helmet Peak Fire Department provides fire protective services to developed lands immediately south of the San Xavier Indian Reservation. Fire services within the Green Valley-Elephant Head-Helmet Peak Community WUI are provided by the Green Valley-Elephant Head-Helmet Peak Fire Departments. The 2010 population of Green Valley is estimated to be 21,391 residents occupying 17,322 housing units. The estimated population of the Helmet Peak area from the 2010 census (census block 43.27) is 4,815 residents occupying 2,446 housing units. The 2010 population of Sahuarita is estimated to be 25,259 residents occupying 10,615 housing units. The 2010 population estimate of the Arivaca junction area is 1,090 residents occupying 388 housing units (http://factfinder2.census.gov/, accessed March 2013). The Green Valley Fire Department was established in 1975, and provides fire protection and emergency services to more than 40,000 constituents residing in a 40-square-mile area within Green Valley and portions of the town of Sahuarita. The Green Valley Fire Department operates out of 4 stations, covering both residential and commercial areas, and maintains an ISO rating of 4 and 6. The Helmet Peak Fire Department covers about 35 square miles in the area of South Mission and Helmet Peak roads, east of I-19 and south of the San Xavier Indian Reservation. The Helmet Peak Fire Department maintains 30 members and answers about 130 calls per year, mainly brush fires and emergency services. The Helmet Peak Fire Department portion of the WUI is considered to have an ISO

rating of 10. The Elephant Head Fire Department was established in 1994 and provides fire protection services to approximately 5,800 residents in the Arivaca Junction, Lakewood, Half-way Trailer Park, and Elephant Head communities. The Elephant Head Fire Department has 33 volunteers serving in various roles with 14 firefighters trained in structure fires, 10 emergency medical technicians (EMTs), 5 first responders trained in basic life-saving techniques, and 7 support personnel who are board members. The Elephant Head Fire Department volunteers respond to an average of about 350 calls per year, including structure fires, brush fires, vehicle fires, and medical emergencies. The Elephant Head portion of the WUI is considered to have an ISO rating of 10. The Pima County CWPP analyzed 208,440 acres within the Green Valley-Elephant Head-Helmet Peak Community WUI for the potential risk to wildland fire.

The primary transportation corridors in the WUI communities are I-19 and South Mission Road, providing a north-south corridor, and Sahuarita Road, providing access from the east. The I-19 and Sahuarita Road corridors are the major business corridors in the WUI.

Major vegetation associations include desert wash/xeroriparian corridors, creosotebush-white bursage desert scrub, and paloverde-mixed cacti desert scrub in lower elevations, with desert juniper transition associations occurring in higher elevations toward the foothills of the Santa Rita Mountains to the east and Sierrita Mountains to the west of the WUI. The areas of highest wildfire risk are located along the numerous desert washes originating from the mountain foothills. A moderate history of wildfire ignitions occurs along I-19 immediately north of Sahuarita; all others areas of the WUI have a low ignition history. Public use within the WUI is considered low; however, access to the west slopes of the Santa Rita Mountains and to the CNF originates from I-19 in this WUI. The WUI is composed of a mix of large developed private land parcels and traditional housing subdivisions of varied assessed value. The combination of mixed housing density, intermixed with areas of vegetative associations with low fire potential, and some areas with a high ISO rating and some with low wildfire ignition history creates areas of low risk to community values. The Pima County CWPP analyses determined that 3 percent of the Green Valley-Elephant Head-Helmet Peak Community WUI is at high risk and 66 percent is at moderate risk for wildland fire. Due to areas of low-moderate wildfire risk, areas of moderate ignition history, and a low density of community values, the overall wildland fire risk rating of the Green Valley-Elephant Head-Helmet Peak Community WUI Community WUI is moderate.

Golder Ranch Community WUI

The Golder Ranch Community WUI is composed of lands within and immediately adjacent to the Golder Ranch Fire District boundary. In 2007 the PCOEM and the Golder Ranch Fire District completed the *Catalina Community Wildfire Protection Plan*. In 2009 the Pinal County Office of Emergency Management and Golder Ranch Fire District participated in the development and approval of the *Pinal County Community Wildfire Protection Plan*. These two CWPPs encompass the Golder Ranch Fire District boundary and adjacent lands within both Pima and Pinal counties. The Golder Ranch Fire District serves a 210-square-mile area with a population of nearly 65,000 residents. Included in this district are the communities of Oro Valley, Catalina, and SaddleBrooke and southern Pinal County.

The 2007 Catalina CWPP planning area analyzed 22,504 acres of land including Catalina State Park, Pima County, CNF, ASLD, and private lands. The 2009 Pinal County CWPP includes that portion of Golder

Ranch Fire District north of Pima County, including Oracle Junction, developed lands in Falcon Valley, and SaddleBrooke Estates 2. The Pima County CWPP Golder Ranch Community WUI has expanded the Catalina analysis area to 31,095 acres through the addition of a 1-mile buffer along the CNF boundary and the lands adjacent to the Tortolita Mountain Park. The Pima County CWPP analyses confirm a wildland fire threat to the WUI from the heavily vegetated upland habitats along the foothills of the Catalina Mountains, the xeroriparian corridor of Cañada del Oro, and the associated drainages where heavy xeroriparian vegetation associations occur in relation to higher slopes and southerly and southwesterly exposures increase wildfire risk. The Pima County CWPP determined that 8 percent of the Golder Ranch WUI is at high risk and 49 percent is at moderate risk for unwanted wildland fire. The lands within the Golder Ranch Community WUI that are located within 5 miles of a Golder Ranch fire station have an ISO rating of 3.

The Catalina and Pinal County CWPPs outlined vegetative fuel reduction priorities, as well as wildfire prevention priorities. The Golder Ranch Fire District, community members, and the CNF have been working to complete fuel-reduction priorities within the WUI. The Golder Ranch Fire Department and CWPP cooperators are not recommending revisions to the CWPPs' goals and objectives or fuel mitigation and fire prevention strategies and priorities. The Pima County CWPP signatories support the priority recommendations of the Catalina and Pinal County CWPPs.

The Pima County CWPP assimilates by reference the Catalina CWPP and that portion of the Pinal County CWPP which includes the Golder Ranch Fire District and adjacent lands.

Kitt Peak WUI

The Kitt Peak WUI is identified as a "community at risk" with a "moderate WUI risk rating" in the 2009 Arizona State Forester's *Arizona-Identified Communities at Risk* for Pima County (http://www.azsf.az.gov/). The Kitt Peak WUI includes the National Observatory, visitor center, and picnic areas. Kitt Peak is located 56 miles southwest of Tucson, Arizona, in the Schuk Toak District on the Tohono O'odham Nation. The Kitt Peak National Observatory is part of the National Optical Astronomy Observatory and supports the most diverse collection of astronomical observatories on Earth for nighttime optical and infrared astronomy and daytime study of the Sun (http://www.noao.edu/kpno).

Kitt Peak has an elevation of 6,875 feet and is the highest point in the Quinlan Mountains. Major vegetation associations include desert wash/xeroriparian corridors and paloverde-mixed cacti desert scrub within the lower elevations of the Quinlan Mountains. The higher elevations of Kitt Peak are composed of the Madrean pine-oak woodlands. The areas of highest wildfire risk are located within the higher vegetative fuel loads of the pine-oak woodlands. Wildfire ignitions within the Kitt Peak WUI are low but there have been several large fires nearby. Public use within the WUI is considered high due to the high public visitation and significant scientific values of the observatory. There is no formal fire protection for Kitt Peak; therefore, the WUI is assigned an ISO rating of 10. The Pima County CWPP analyses of the 2,009-acre Kitt Peak WUI determined that 63 percent is at moderate risk for wildland fire. Due to areas of moderate wildfire risk, a low ignition history, and a high density of community values, the overall wildland fire risk rating of the Kitt Peak Community WUI is moderate.

Lukeville Community WUI

The Lukeville Community WUI is composed of private and public lands within 1-mile of developed areas of the community of Lukeville, including the Lukeville Port of Entry border crossing into Sonoyta, Sonora, Mexico. Lukeville is the terminus of SR 85 and is located entirely within the Organ Pipe Cactus National Monument. SR 85 provides access to the community and existing services are located along the SR 85 corridor. The town of Ajo provides most services to the visitors of the Organ Pipe National Monument and residents of Lukeville. The 2010 US census estimated a population of 39 residents occupying 24 housing units within the community WUI. The Pima County CWPP analyzed 1,741 acres within the Lukeville Community WUI for the potential risk to wildland fire. The Lukeville Community is not within a fire district and is assigned an ISO rating of 10.

Major vegetation associations include desert wash/xeroriparian corridors, creosote bush-bursage desert scrub types, with paloverde-mixed cacti desert scrub occurring in higher elevations to the west of the community in the Sonoyta Mountains. The Lukeville Community WUI does include areas of high risk in lower elevations to the north and east of the community during extreme rainfall years from increased light fuels produced from winter annual and perennial invasive grasses such as Mediterranean grass, red brome, and mustards. Wildfire ignitions within the Lukeville Community WUI are low. Public use within the WUI is considered moderate due to the adjacent Organ Pipe National Monument and traffic associated with the port of entry. The WUI is mostly composed of small developed private land parcels with traditional home lots found in the community center. The combination of low housing density, intermixed with invaded vegetative associations, and areas with a high ISO rating create areas of moderate risk to community values. The Pima County CWPP analyses determined that 3 percent of the Lukeville Community WUI is at high risk and 87 percent is at moderate risk for wildland fire. Due to areas of moderate wildfire risk, a low ignition history, and a moderate density of community values, the overall wildland fire risk rating of the Lukeville Community WUI is moderate.

Mescal-J6 Community WUI

The Mescal-J6 Community WUI is composed of private and public lands within and adjacent to the Mescal-J6 Fire District, located in eastern Pima County adjacent to I-10 at the Pima County–Cochise County border. The Mescal-J6 Fire District provides fire, rescue, and emergency services to the Mescal, J6, Skyline, Empire Acres, and Salcido Acres communities. The Mescal-J6 Fire District also covers the Titan and Dark Star road areas just west of the Benson City limits and I-10 from Mileposts 302 to 289 for fire response. The Mescal-J6 Fire District covers approximately 14 square miles with a total response area of approximately 225 square miles. The Mescal-J6 Fire District responds to wildland fires throughout Southern Arizona in accordance with requests from ASLD, FS, and BLM. The Mescal-J6 Fire District still operates in a strictly volunteer capacity with no full-time personnel employed. The Mescal-J6 Fire District responded to 365 calls for service in 2011 and has responded to 288 calls for service as of September 4, 2012. The 2010 population of the Mescal-J6 Community WUI is estimated to be 9,464 residents occupying 5,049 housing units (http://factfinder2.census.gov/, accessed March 2013). The Mescal-J6 Community WUI is considered to have an ISO rating of 10. The Pima County CWPP analyzed 30,378 acres within the Mescal-J6 Community WUI for the potential risk to wildland fire.

The primary transportation corridors in the WUI communities are I-10 traversing the WUI from the east and west, Mescal Road to the north, and South J6 Ranch Road to the south providing a north-south corridor in the WUI. The Union Pacific Railroad parallels I-10 to the north. The major business and community services are located adjacent to the I-10 frontage road or to Mescal and South J6 Ranch roads.

Major vegetation associations include desert wash/xeroriparian corridors, Apacherian-Chihuahuan mesquite upland scrub, Apacherian-Chihuahuan semi-desert grasslands and steppe, and Chihuahuan-creosotebush mixed desert and thorn scrub vegetations in lower elevations, with desert-oak transition associations occurring in higher elevations toward the foothills of the Rincon Mountains to the northwest of the WUI. The areas of highest wildfire risk are located along the numerous desert washes and grassland fan terraces originating from the mountain foothills. This portion of the WUI does include areas of high risk in lower elevations during extreme rainfall years within the desert grasslands, particularly from increased light fuels produced from winter annual and perennial native and invasive grasses. Areas with a high and moderate history of wildfire ignitions occur along I-10 and within the northern portion of the WUI in the eastern foothills of the Rincon Mountains within the vicinity of Happy Valley. Public use within the WUI is considered low. The WUI is composed of a mix of large developed private land parcels and traditional housing subdivisions of varied assessed value. The combination of mixed housing density, intermixed with areas of vegetative associations with high fire potential, and some areas with a high ISO rating and high wildfire ignition history create areas of high risk to community values. The Pima County CWPP analyses determined that 23 percent of the Mescal-J6 Community WUI is at high risk and 71 percent is at moderate risk for wildland fire. Due to areas of high-moderate wildfire risk, areas of high ignition history, and a low density of community values, the overall wildland fire risk rating of the Mescal-J6 Community WUI is high.

Mt. Lemmon Community WUI

The Mt. Lemmon Community WUI is composed of private lands within the Mt. Lemmon Fire District boundary and within FS lands managed by the CNF adjacent to and within the fire district boundary. The community of Summerhaven, which includes the Loma Sabino Pines tract, comprises a majority of the private land. The WUI portion on FS land includes Mt. Lemmon Ski Valley, recreation residence tracts (Fern Ridge, Soldier Camp, Bear Wallow, Willow Canyon), organization camps (Organization Ridge), observatories and communications sites (Radar Base/Radio Ridge, Mt. Bigelow), and CNF administrative sites (Palisades, Sollers Point). There are also numerous national forest recreation areas along the General Hitchcock Highway. The Mt. Lemmon Community WUI lies adjacent to and includes part of the 56,933-acre Pusch Ridge Wilderness area. In 2004 the *Mt Lemmon Wildland-Urban Interface Plan for Forest Health Wildland Fire Management* was developed and approved by the Pima County Board of Supervisors.

The 2004 WUI Plan was a cooperative effort between the citizens of Mt. Lemmon, Mt. Lemmon Fire Department, Trees for Mount Lemmon, Pima County, ASLD, and CNF. Subsequent to the adoption of the 2004 WUI Plan, Pima County adopted and has continued to adopt revised editions of the International WUI Code that is applicable to a Rural Forest Village which under the Pima County Comprehensive Plan included Summerhaven in this special land use designation. The goal of the 2004 WUI Plan “to create a healthy, vigorous forest and simultaneously reduce potential for a return of catastrophic wildlife fire” remains current. With the exception of the WUI boundary, revised vegetative landcover descriptions, and

associated fuel models, the goals and objectives of the 2004 WUI Plan are still valid have been included in the Pima County CWPP by reference.

The primary transportation corridor in the Mt. Lemmon Community WUI is the General Hitchcock (Mt. Lemmon) Highway, which connects Summerhaven to the Tucson Basin. The major retail businesses within the WUI are located in the community of Summerhaven. TRICO Electric Cooperative is the utility provider for the community of Summerhaven and is included as a cooperator in the Mt Lemmon Community WUI. The Pima County CWPP cooperators are supportive of the revision of the 2004 Mount Lemmon CWPP boundary that has been collaboratively developed by the 2004 Cooperators and the Arizona FireScape project. The 2013 WUI is modified to follow topographic features and trails encircling the community at approximately the 8,000-foot mean sea level contour. The 2013 proposed Mount Lemmon WUI boundary is more logical because it follows the topography and developed features instead of a straight line through rugged country. It follows access for firefighters and fuel maintenance crews so they can enter the area and start action to more readily identify, suppress, or manage wildland fire. It also defines an area for preventive treatment to better protect lives and property. Portions of the revised boundary are adjacent to and within the northern and eastern sections of the Pusch Ridge Wilderness boundary. The approval and concurrence of the Pima County CWPP will serve as revising the 2004 Mount Lemmon WUI boundary to the 2013 WUI boundary as depicted in Figure 2.8. The Pima County CWPP analyzed 12 square miles as the Mt. Lemmon Community WUI, as depicted in Figure 2.8. The Mt. Lemmon Fire District provides fire protection (both structure and wildland), emergency medical services, rescue, and public assistance to the community WUI centered in the community of Summerhaven. Established in 1979 as a fully volunteer agency, the district has grown into a combination department with a fire chief and a full-time staff of officers, firefighters, and paramedics, as well as over a dozen volunteers. The 2010 estimated population of the Mt. Lemmon census-designated place is 40 full-time residents; however, the community is estimated to have 259 housing units. The Mt. Lemmon Fire District has an ISO rating of 5. Major vegetation associations within the Mt. Lemmon WUI are derived from the ecological units developed by the FireScape program (http://www.azfirescape.org/catalina/landscape_types). Major vegetation associations include the Madrean pine-oak, ponderosa pine, and mixed conifer forest. The Mt. Lemmon Community WUI is the only Pima County community WUI which includes the ponderosa pine, mixed conifer, and Madrean pine-oak forest vegetation associations. As evidenced by previous wildfires, these vegetation types can support extreme fire behavior. Wildfire ignitions within the Mt. Lemmon Community WUI are common, with an average of 13 fires per year. Public use within the WUI is considered high in residential areas, recreation sites, and undeveloped areas of the WUI. The wildland fire risk influencing factor of housing density may not accurately reflect community values risk due to the high recreation capacity, recreational development, communication towers, and research facilities. Due to the complexity of wildland fuels, limited access, intermixed recreation sites, communication and research facilities, and private residents, the Mt. Lemmon Community WUI is rated at high risk for wildland fire.

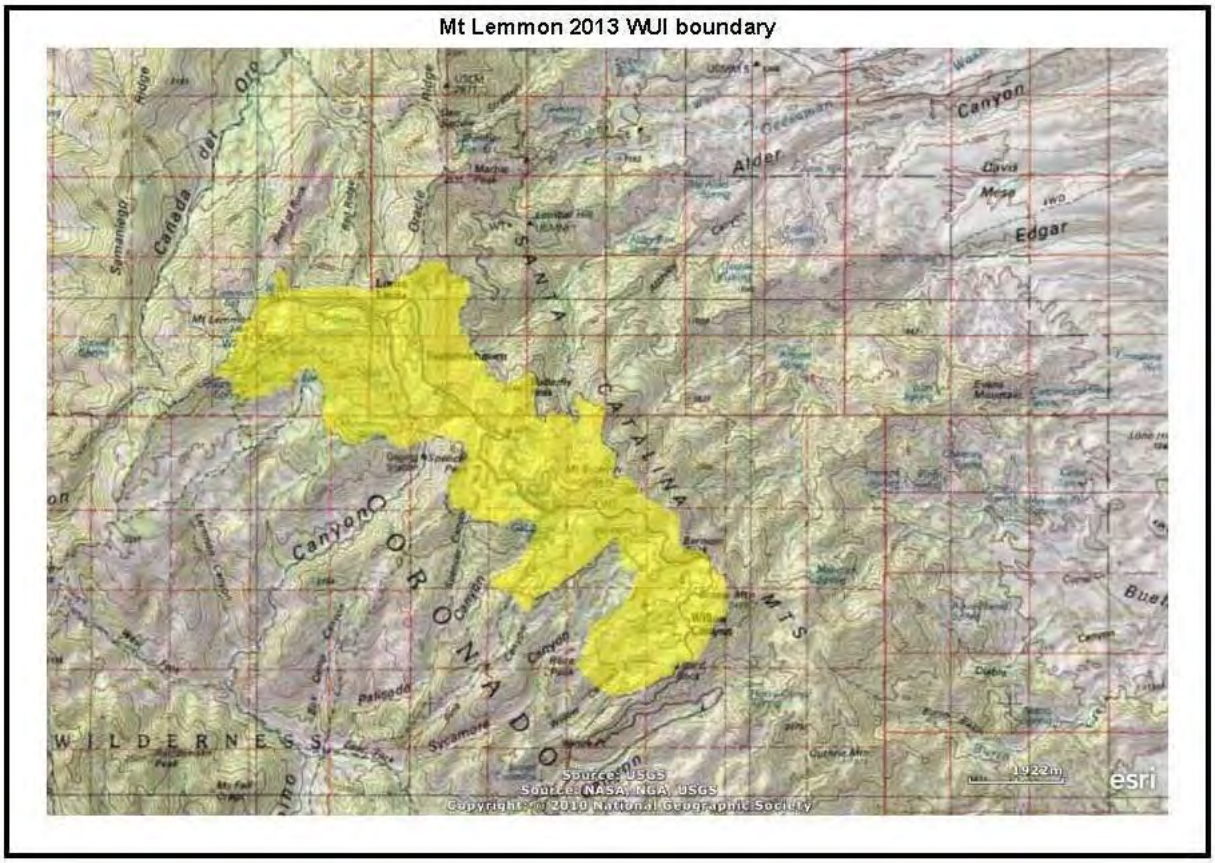


Figure 2.8. Mt. Lemmon Community WUI Analysis Area

Northwest Community WUI

The Northwest Community WUI is composed of lands within the Northwest Fire District boundary and public and private lands immediately adjacent the fire district boundary, including portions of the communities of Oro Valley and Marana.

The primary transportation corridors in the Northwest WUI include I-10 from the northwest to southeast; Tangerine Road in the northeast; Silver Bell Road paralleling I-10; and Avra Valley, Sanders, and Trico-Marana roads in the west. These roadways include the major business corridors in the WUI. The Northwest Community WUI is composed of 236 square miles and includes private and public lands that are located within a fire district. Fire protection services in the Northwest Community WUI are provided by the Northwest Fire District. The district currently provides emergency and community services to 110,000 residents and 3,300 commercial occupancies over a 140-square-mile area. The district is composed of 10 fire stations that are staffed 365 days a year with 192 firefighters who are paramedics or EMTs, along with a seasonal wildland team which responds locally as well as nationally to wildland fires. Full staffing for the in-district brush trucks normally begins in April each year and is staffed through August or when sufficient

monsoon moisture has occurred. The wildland team has one or two trucks staffed daily, with at least one full-time person and one or two seasonal employees. The wildland team responds to fires in the CNF, as well as other agencies in southern Arizona if requested. In 2009, the in-district brush trucks responded to 42 public-assistance calls and 20 brush-fire calls and have assisted, when possible, with some of the district's structure fires.

Major vegetation associations within the WUI community include the paloverde-mixed cacti desert scrub, with mesquite upland and chaparral associations occurring in higher elevations to the north of the community. Portions of the riparian corridors of Cañada de Oro, Rillito, and Santa Cruz rivers occur in the WUI. The areas of highest wildfire risk are located along xeroriparian corridors and the foothills of the Tucson, Catalina, and Tortolita mountains. These areas of highest wildfire risk include desert wash/xeroriparian corridors and creosote bush-bursage desert scrub types, with paloverde-mixed cacti desert scrub and mesquite upland associations occurring in higher elevations of the Tucson, Catalina, and Tortolita mountains. Parts of the Santa Cruz River riparian corridor and the Canada del Oro are heavily infested with the highly flammable, non-native tree, salt cedar. This portion of the sub-WUI does include areas of high risk along I-10 from Cortaro Road north to the Pima-Pinal county boundary, and the foothills of the Tucson, Catalina, and Tortolita mountains have a moderate wildfire risk during extraordinary rainfall years. Wildfire ignitions within the Northwest Community WUI are low with the exception of the area adjacent to I-10 at the Pima-Pinal county boundary. However, the adjacency of the Northwest Community WUI to the Ironwood National Monument and public use along the Santa Cruz River corridor is considered as moderate to high human use in undeveloped areas of the sub-WUI. The Pima County CWPP analyses classified 10 percent of the Northwest Community WUI at high risk and 44 percent at moderate risk for wildland fire. Due to a moderate to high wildfire risk, a moderate ignition history, and a moderate to high density of community values, the overall wildland fire risk rating of the sub-WUI is moderate.

Pascua Yaqui Community WUI

The Pascua Yaqui Tribe is located in Pima County on less than 2 square miles in the southwestern part of the Tucson metropolitan area. Private lands within the communities of Drexel Heights and Valencia West border the Pascua Yaqui Tribe on the north, east, and west, and the San Xavier Indian Reservation borders the tribe on the south. The 2010 population estimate for the Pascua Yaqui Tribe is 4,247 residents occupying 939 housing units (shttp://factfinder2.census.gov/census_tract_9410). On September 18, 1978, the Pascua Yaqui Tribe of Arizona became a federally recognized Indian tribe. The tribe has a status similar to other Indian tribes of the United States, making it eligible for specific services due to the federal trust responsibility that exists between the United States and American Indian tribes. Fire protection services for the tribe are provided by the Pascua Pueblo Fire Department. The Pascua Yaqui Tribe maintains one fire station with three engines, consisting of two Type 1 engines and one Type 6 engine, for response to wildland fires. In 2012, the BIA Salt River Agency developed a fire management plan (2012a) and a fuels management plan (2012b) that included analyses of the Pascua Yaqui Tribe. The 2012 *Fuels Management Plan* shows the Pascua Yaqui Tribe to be an intermix of variable housing density primarily in the northern portion of the Pascua Yaqui Tribe and open lands composed of native vegetation in the southern portion. Major vegetation associations within the Pascua Yaqui Tribe include desert wash and North American warm-desert riparian systems (32 acres), Apacherian-Chihuahuan mesquite upland scrub

(14 acres), Sonoran mid-elevation desert scrub (10 acres), and Sonoran paloverde-mixed cacti desert scrub associations (665 acres). The 2012 *Fuels Management Plan* shows three fire-behavior fuel models that represent the majority of predicted fire behavior within the Pascua Yaqui Tribe. These include Northern Forest Fire Lab Fuel Model 1 (GR1), which is composed of grass and grass forb fuels; Fuel Model 2 (GS1), which is composed of a mix of grass and shrubs; and Fuel Model 4 (SH5), which consists of dead and down woody fuels under a tree canopy within the riparian corridors. All wildland fires on the Pascua Yaqui Tribe are subject to initial-attack response with the desired tactics and strategies employed to meet land-management direction. The Pima County CWPP analyzed 1,392 acres of WUI lands within and adjacent to the Pascua Yaqui Tribe for the potential for wildland fire. The Pima County CWPP found that portions of the WUI do include areas of high risk in lower elevations during extreme rainfall years from increased light fuels produced from winter annual and perennial invasive grasses such as Mediterranean grass, red brome, and buffelgrass. Wildfire ignitions within the Pascua Yaqui Tribe WUI are low. Public use within the WUI is considered low to moderate in undeveloped areas. The combination of low to higher housing density on large land parcels, intermixed with invaded vegetative associations, and proximity to expanding private land developments creates areas of high risk to community values. The Pascua Yaqui Tribe WUI analyses found 33 percent of the WUI to be at moderate risk for wildland fire. Due to a moderate wildfire risk, a low ignition history, and a relatively moderate density of community values, the overall wildland fire risk rating of the sub-WUI is moderate to low.

Picture Rocks Community WUI

The Picture Rocks Community WUI is composed of lands within the Picture Rocks Fire District boundary and public and private lands immediately adjacent to the fire district boundary, next to the west and north boundaries of Saguaro National Park.

The primary transportation corridor in the Picture Rocks Community WUI is Belmont and Twin Peaks roads west of Silverbell Road. Sandario, Anway, Trico, and Sanders roads provide north-south access to the WUI, while Orange Grove and Twin Peaks roads provide east-west access. These roadways include the major business corridors in the WUI. Fire protection services in the Picture Rocks Community WUI are provided by the Picture Rocks Fire District. The 2010 estimated population of the Picture Rocks census-designated place is 9,563 residents. However, the district currently provides emergency and community services to these residents over a 33-square-mile area (http://picturerocksfire.org) including providing fire protection services to Saguaro National Park via an IGA. In 2001 the Picture Rocks Fire Department began staffing five personnel per shift. The Picture Rocks Fire District serves a population estimated to be over 9,000 residents and has an ISO rating of 5 in proximity of Station 120 and an ISO rating of 8 in outlying areas of the district.

Major vegetation associations include desert wash/xeroriparian corridors and creosote bush-bursage desert scrub types, with paloverde-mixed cacti desert scrub and mid-elevation desert shrub associations occurring in higher elevations of the Tucson, Waterman, and Roskruge mountains. The areas of highest wildfire risk are located along the foothills of the Tucson and Waterman mountains and along the Brawley Wash xeroriparian corridor. This portion of the WUI does include areas of high risk in lower elevations during extreme rainfall years from increased light fuels produced from winter annual and perennial invasive grasses such as Mediterranean grass, red brome, and buffelgrass. Wildfire ignitions within the Picture

Rocks Community WUI are low. Public use within the WUI is considered moderate in undeveloped areas and high within the Saguaro National Monument. The WUI is mostly composed of large developed private land parcels. The combination of low housing density on large private land parcels, intermixed with invaded vegetative associations, and areas with a high ISO rating creates areas of high risk to community values. The Pima County CWPP analyses determined that 10 percent of the Picture Rocks Community WUI is at high risk and 53 percent is at moderate risk for wildland fire. Due to areas of moderate to high wildfire risk, a low ignition history, and a relatively high density of community values, the overall wildland fire risk rating of the Picture Rocks Community WUI is high.

Rincon Valley Community WUI

The Rincon Valley Community WUI is composed of lands within the Rincon Valley Fire District boundary and public and private lands immediately adjacent the fire district boundary. The Rincon Valley Community WUI lies mostly north of I-10, to the south and west of the Rincon Mountain Wilderness within the CNF and adjacent to the south boundary of Saguaro National Park. The Rincon Valley Community WUI includes the communities of Vail and Mountain View. The Rincon Valley Community WUI also includes the 2,000-acre Colossal Cave Mountain Park, which is administered for Pima County by the Pima County Parklands Foundation and receives substantial public visitation. The primary transportation corridors in the Rincon Valley Community WUI are I-10, which provides east-west access to the WUI, and Wentworth/Colossal Cave Road leading north from I-10. The major retail businesses within the WUI are located in or near the community of Vail. Fire protection services in the Rincon Valley Community WUI are provided by the Rincon Valley Fire District. The Rincon Valley Fire District Wildland Fire Program is designed to promote wildland fire safety within the district, while equipping and preparing fire crews for responding to wildland fires. Every Rincon Valley Fire District firefighter has basic wildland firefighter training, as established by the National Wildfire Coordinating Group. Rincon Valley Fire District maintains a cooperative agreement with the ASFD. This agreement allows Rincon Valley Fire District to call upon additional local, state, and federal firefighting resources, including aircraft and firefighting hand crews, should a large wildfire threaten the district. This agreement also obligates Rincon Valley Fire District to respond when requested to wildland fires across Arizona and the United States, provided the district has adequate staffing. Rincon Valley maintains a team of specialized firefighters who respond to these incidents on fire engines, water tenders, and ambulances. Rincon Valley Fire District was formed in 1985 by residents of the southeast metropolitan Tucson area to ensure that the community received consistent, high-quality emergency services at a reasonable cost. The Rincon Valley Fire District currently provides emergency and community services to 20,000 residents over a 50-square-mile area. The two stations are staffed 24 hours a day and 365 days a year with 37 full-time state-certified firefighters who are paramedics or EMTs. The 2010 estimated population of the Rincon Valley Community WUI is 21,753 residents occupying 8,308 housing units, with 10,208 of these residents and 3,754 of these housing units located within the community of Vail (http://factfinder2.census.gov/, accessed March 2013). The Rincon Valley Fire District has an ISO rating of 5. The Pima County CWPP analyzed 150 square miles as the Rincon Valley Community WUI.

Major vegetation associations include desert wash/xeroriparian corridors, Sonora-Mohave creosote bush-white bursage desert scrub, semi-desert grassland, mesquite uplands, paloverde-mixed cacti desert scrub and mid-elevation desert shrub associations occurring in the foothills of the Rincon Mountains. The areas

of highest wildfire risk are located along the foothills of the Rincon Mountains and within the numerous xeroriparian areas flowing to the northwest and terminating in the Santa Cruz River, including Rincon Creek, Aqua Verde Creek, and Cienega Creek. Many of the major xeroriparian corridors in the Rincon Valley Community WUI have at least locally become infested with saltcedar. The addition of saltcedar to wildland fuels greatly increase fire intensity and behavior, increasing risk to public and fire fighters, and may result impacts to native vegetation associations. Additionally portions of the WUI include areas of high risk in lower elevations during extreme rainfall years from increased light fuels produced from winter annual and perennial invasive grasses such as Mediterranean grass, red brome, and buffelgrass. Areas of high and moderate wildfire ignitions are found adjacent to I-10 at the Wentworth/ Colossal Cave Road intersection and I-10 at SR 83 in the vicinity of Mountain View. Public use within the WUI is considered high in the vicinity of Colossal Cave Mountain Park and in undeveloped areas of SNP and CNF. The WUI is mostly composed of a mix of large developed private land parcels and traditional home lots present in the community of Vail and Mountain View. The combination of mixed housing density, intermixed with invaded vegetative associations, and areas of high ignition history with some areas of high ISO rating creates areas of moderate risk to community values. The Pima County CWPP analyses determined that 17 percent of the Rincon Valley Community WUI is at high risk and 66 percent is at moderate risk for wildland fire. Due to areas of high and moderate wildfire risk, areas of high ignition history, and a relatively high density of community values, the overall wildland fire risk rating of the Rincon Valley Community WUI is high.

Sonoita-Elgin Community WUI

The Sonoita-Elgin Community WUI is composed of lands within and immediately adjacent to the Sonoita Fire District boundary; the communities of Sonoita, Elgin, and Canelo; and lands immediately adjacent to SR 83, SR 82, and the Elgin-Canelo Road. In 2007 the Sonoita-Elgin Firewise Team produced the *Sonoita-Elgin Community Wildfire Protection Plan*, which the Pima County Board of Supervisors signed on July 5, 2007. The Pima County CWPP incorporates the 2007 Sonoita-Elgin CWPP by reference. The Sonoita-Elgin CWPP was a collaborative effort of the communities of Sonoita, Elgin, Canelo, Santa Cruz, and PCOEM, Sonoita-Elgin Fire District, BLM Gila District, CNF, ASFD, National Audubon Society Appleton-Whittell Research Ranch, Las Cienegas National Conservation Area, and local interested citizens. The 2007 CWPP analyzed 118,711 acres for potential risk to wildland fire and found that 57 percent of WUI lands are at high risk of wildland fire. The 2007 CWPP identified 25,596 acres in Pima County, of which 93 percent is at high or moderate risk for wildland fire. The 2007 CWPP cooperators are not recommending amendments to goals, objectives, analyses or the WUI boundary of the Sonoita-Elgin CWPP. Therefore, the Pima County CWPP adopts the 2007 CWPP by reference without amendments. The Sonoita-Elgin Fire District provides structural and wildland fire protection to the communities. The Sonoita-Elgin Fire District is a combination department comprising about 54 volunteer, career, and auxiliary personnel serving a 350-square-mile district. The Sonoita-Elgin Fire District holds a Certificate of Necessity to provide ambulance service that covers a 725 square miles of east Santa Cruz County. The Sonoita-Elgin Fire District provides wildland firefighters, structural firefighters, rescue, prevention, emergency medical services, and hazardous material first responders to the residents within the CWPP analysis area.

The 2010 estimated population of the Sonoita area is 1,268 residents occupying 719 housing units. The 2010 population estimate for the community of Elgin is 965 residents occupying 503 housing units. The

2010 population estimate of residents within the census tract which includes these communities is 5,304 residents occupying 2,107 housing units. (http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml/Census_tract_46.09). The Sonoita-Elgin Fire District has an ISO rating of 8 for residents within 5 miles of the fire station, an ISO rating of 9 for residents within 10 miles of the station, and an ISO rating of 10 for those greater than 10 miles from the fire station. The Pima County CWPP estimates that 18 percent of the Pima County WUI acres are at high risk and 75 percent at moderate risk of wildland fire. An area with a history of moderate wildfire ignitions is located along SR 83 north of the community of Sonoita within Pima County. This Sonoita-Elgin Community WUI does include areas of high risk in lower elevations and in grassland and mesquite vegetation associations during extreme rainfall years. Public use within the WUI is considered high due to access roads leading to popular outdoor recreation sites (Box Canyon, Gardner Canyon) on the CNF and visitors to the Sonoita Creek Preserve and the Las Cienegas National Conservation Area. The WUI is mostly composed of large developed private land parcels and residential lots within the communities. The combination of low housing density on large private land parcels, intermixed with high risk vegetative associations, and areas with a high ISO rating creates areas of high risk to community values. Due to areas of high wildfire risk, areas of moderate ignition history, and a relatively high density of community values, the overall wildland fire risk rating of the Sonoita-Elgin WUI is high.

Three Points–Drexel Heights Community WUI

The Three Points–Drexel Heights Community WUI is composed of private and public lands that are mostly south and east of the city of Tucson, including the communities of Drexel Heights, Valencia West, Robles Junction, and Three Points. The BANWR borders the WUI to the south. The Pima County CWPP analyzed 335,259 acres within the Three Points–Drexel Heights Community WUI for the potential risk for wildland fire. The Three Points and Drexel Heights fire departments provide fire protection services to the communities of the Three Points–Drexel Heights Community WUI. The primary transportation corridors in the WUI communities are SR 86 and SR 286, which provide north, south and west access. The SR 86 and SR 286 corridors are the major business corridors in the WUI. The 2010 estimated population of the Drexel Heights census-designated place is 27,749 residents occupying 9,684 housing units. The 2010 estimated population of the Three Points-Robles Junction area is 5,581 residents occupying 2,487 housing units (http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml/). The Drexel Heights Fire Department's present boundary includes 90 square miles of Tucson's southwest side; the department provides fire protection services to approximately 50,000 residents from five stations, responding to more than 6,000 incidents a year. Drexel Heights maintains an ISO rating of 5. The department also participates in automatic regional response agreements with other local fire departments. The Three Points Fire Department provides fire protection services from three stations to approximately 10,000 people living in an area of 209 square miles. The Three Points Fire Department maintains an ISO rating of 5 in areas adjacent to the fires stations and an ISO rating of 8 in outlying areas.

Major vegetation associations include desert grasslands, desert wash/xeroriparian corridors, and creosote bush-bursage desert scrub types, with paloverde-mixed cacti desert scrub and upland mesquite associations occurring in higher elevations toward the foothills of the Sierrita Mountains. The areas of highest wildfire risk are located along the numerous desert washes originating from the Sierrita Mountains

in the east and the Coyote mountains in the west that drain to the Altar Valley Wash. Altar Valley Wash bisects the WUI, draining to the north and terminating at the Santa Cruz River. The southeast portion of the WUI does include areas of high risk in the foothills of the Sierrita Mountains during extreme rainfall years. Wildfire ignitions within the Three Points–Drexel Heights Community WUI are low. Public use within the WUI is considered moderate due to the adjacent BANWR. The WUI is mostly composed of large developed private land parcels with traditional home lots found in the community center. The combination of low housing density on large private land parcels, intermixed with invaded vegetative associations, and outlying areas with a high ISO rating creates areas of high risk to community values. The Pima County CWPP analyses determined that 5 percent of the Three Points–Drexel Heights Community WUI is at high risk and 64 percent is at moderate risk for wildland fire. Due to areas of moderate to high wildfire risk, a low ignition history, and a moderate density of community values, the overall wildland fire risk rating of the Three Points–Drexel Heights Community WUI Community WUI is moderate.

Tohono O'odham Nation (Sells and San Xavier District Communities WUIs)

The Tohono O'odham Nation is located in western Pima County with the community of Sells serving as the Nation's capital. The San Xavier District is located just south of Tucson. Fire protection services are provided to these communities by the Tohono O'odham Fire Department. The Tohono O'odham Nation has a fully staffed and operational wildland fire management program which meets national interagency standards in all aspects of operations, training, qualifications, and safety. The Tohono O'odham Nation is a participating agency in the Southeast Arizona Management Zone under a joint-powers agreement with the BLM, CNF, NPS, and USFWS. The 2010 population estimate for the Tohono O'odham Nation within Pima County is 10,201 residents occupying 3,677 housing units (Tohono O'odham Nation. No Date). The 2010 population estimate for the community of Sells is 2,495 residents occupying 760 housing units (http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml/). The *Tohono O'odham Nation Fire Management Plan* (Tohono O'odham Nation 2004) defines the WUI zone as:

> . . . a one-mile zone surrounding all major communities and on either side of State Highways 86 or 15. Kitt Peak Observatories, support structures and facilities are also designated as being within the Wildland Urban Interface FMU. The WUI FMU delineation on the Tohono O'odham Nation is based upon several factors. One of the most important factors is the concentration of structures in a single area (community) such that a single fire could damage or destroy multiple structures. The second factor is that areas around communities and along highways are areas where a large percentage of human caused fires occur. Although fire occurrence statistics are incomplete, Tohono O'odham Nation Fire Management Staff indicate that more than 60% of all fires occurring on the Nation are located within the WUI. The third factor is the prolific amount of invasive grass species that create hazardous fuel conditions around structures, communities and along highways.

The Tohono O'odham Nation Fire Management Plan lists 66 community WUIs, which include the community of Sells and the entire San Xavier District. The major transportation corridors for the Tohono O'odham Nation include SR 86 from Tucson, and Indian Reservation Route 15 south from I-8. Major retail businesses are located within the San Xavier District and the community of Sells. Major vegetation associations within the Tohono O'odham Nation include desert wash/xeroriparian corridors and creosote bush-bursage desert scrub types, with paloverde-mixed cacti desert scrub associations occurring in

foothills and bajadas. The Tohono O'odham Nation WUIs do include areas of high risk in lower elevations within and adjacent to communities during extreme rainfall years from increased light fuels produced from winter annual and perennial invasive grasses such as Mediterranean grass, red brome, and mustards. In some instances the presence of invasive winter annuals and perennial grasses is heavier in the communities than in adjacent lands, creating greater potential risk for wildland fire occurring in the WUIs. Areas of high wildland fire ignition history are found in the vicinity of Sells, and moderate ignition history occurs within the communities of Artesa, Ali Molina, and Haivana Nakya. Public use within the WUIs is considered moderate due to the vastness of the Nation's land and the number of connecting Indian reservation routes that provide access to the Tohono O'odham Nation's communities. The Pima County CWPP analyzed 7,820 acres for the potential risk of wildland fire within and adjacent to the community of Sells and found that 6 percent of the WUI is at high risk and 34 percent of the WUI at moderate risk for wildland fire. The Pima County CWPP analyses determined that the Sells Community WUI includes areas of high community values, has a history of high wildland fire ignitions, areas of high wildfire risk, and areas of limited fire response access. The overall wildland fire risk rating of the Sells community WUI is high. The Pima County CWPP analyzed 69,965 acres within the San Xavier Community WUI for potential risk to wildfire. The Pima County CWPP analyses determined that the San Xavier Community WUI contains areas of high community values due to the number of visitors to the San Xavier del Bac Mission. The San Xavier Community WUI has a low history of wildfire ignitions and includes areas of high wildfire risk. The Pima County CWPP analyses determined that 3 percent of the WUI is at high risk and 75 percent is at moderate risk for wildland fire. Due to the high community values and areas of high wildland fire risk, the overall wildland fire risk rating of the San Xavier Community WUI is moderate.

Tucson–South Tucson Community WUI

The Tucson–South Tucson Community WUI is composed of private and public lands within the Tucson and South Tucson Fire Department boundaries and includes the cities of Tucson and South Tucson and some unincorporated lands. Tucson is the 32nd largest city in the United States, covering an area of 227 square miles. Tucson sits at an elevation of 2,389 feet and is surrounded by five mountain ranges: the Tucson, Santa Catalina, Rincon, Santa Rita, and Tortolita mountains. Fire protection is provided by the Tucson and South Tucson fire departments. The Tucson Fire Department started in 1881 as an all volunteer force and today is Arizona's second largest Fire Department. The Tucson Fire Department is organized into five divisions: Headquarters, Operations, Code Administration, Support Services, and Training. The Tucson Fire Department maintains an ISO rating of 2. The 2010 census estimated population for the city of Tucson is 520,116 residents occupying 231,883 residential units (http://factfinder2.census.gov/ accessed, March 2013). The city of South Tucson covers an area of about 1.2 square miles and is completely surrounded by the city of Tucson. It is located at the junction of I-19 and I-10 about 1 mile south of downtown Tucson and is bounded by I-10, I-19, and the Union Pacific railroad tracks. The city of South Tucson incorporated in 1940; it is referred to as the "Pueblo within a City." The city of South Tucson is located within zones designated by the U.S. Department of Housing and Urban Development—the Empowerment Zone and Tucson Pima Enterprise Zone, both of which are dedicated to revitalizing dilapidated areas in the greater Tucson metropolitan area. The city of South Tucson has also been designated a rural 'Colonia' by the United States Department of Agriculture. A fire protection service is provided to residents by the City of South Tucson Fire Department. The 2010 census estimated population for the City of South Tucson is

5,652 residents residing in 2,191 residential units (http://factfinder2.census.gov/, accessed March 2013). The Pima County CWPP included the cities of Tucson and South Tucson because they border open lands and are near mountain ranges that are composed of areas of high risk for wildland fire. Additionally, wildfire threats within the municipalities include large riparian corridors such as the Santa Cruz River, Rillito, and Tanque Verde creeks; Pantano Wash; and the Canada del Oro confluence at Rillito Creek. These riparian corridors are heavily vegetated and include areas of infestations of nonnative heavy vegetation fuels such as saltcedar and invasive perennial grasses such as buffelgrass. The potential spread of vegetative-driven fires within the city of Tucson escalates with increasing spread of invasive woody and grass species, particularly within the riparian corridors and neighboring open lands.

Although the major landcover within the cities of Tucson and South Tucson is classified as “impervious,” areas of moderate and high wildland fire risk are found in the vicinity of open lands adjacent to the Tucson International Airport, to I-10 in the area of the Houghton Road intersection, and to areas of high risk in and near the Pima County Fairgrounds. The major vegetation associations in these open areas include desert wash/xeroriparian corridors, creosotebush-white bursage desert scrub, and paloverde-mixed cacti desert scrub associations. The cities of Tucson and South Tucson are composed of a complex of interspersed wildland interfaces at their borders; heavily vegetated municipal riparian corridors provide cover and shelter for homeless persons and continued colonization of invasive woody and grass species. The complex of vegetative fuels has created conditions that require Tucson Fire Department to response to an average over 1,200 brush fires annually since 2000. Brush fires that are driven by invasive species such as buffelgrass can spread, under some conditions, at a speed of 770 feet per minute, which equates to over 8 miles per hour (Grissom 2010). Vegetative-driven fires under these conditions have severe risk to public and firefighter safety, property and loss of natural habitats prior to the arrival of firefighters. Although areas of significant threat to public and firefighter safety exist within the cities of Tucson and South Tucson, the overall wildland fire risk rating is low.

Why Community WUI

The Why Community WUI is composed of private and public lands within 1 mile of developed areas of the community of Why. It lies near the western border of the Tohono O'Odham Nation and is due north of Organ Pipe Cactus National Monument in southern Arizona. It is approximately 30 miles north of the Mexican border near Lukeville, Arizona, and Sonoita, Sonora, Mexico, and 10 miles south of Ajo, Arizona. The major transportation corridors in the Why Community WUI are SR 85 south from the community of Ajo and SR 86 from the east from the Tohono O'Odham Nation and the Tucson Basin. The community of Why provides retail services to individuals traveling to Sonora, Mexico—especially to the resort town of Puerto Peñasco—and to the Organ Pipe Cactus National Monument. The Pima County CWPP analyzed 4,619 acres within the Why Community WUI for the potential risk of wildland fire. The Why Fire District provides fire protection services to the community of Why. The Why Community WUI is assigned an ISO rating of 10. The SR 85/SR 86 intersection is the major business corridor in the WUI. The 2010 estimated population of the Why census-designated place is 167 residents occupying 102 housing units (http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml/Census tract 46.09.

Major vegetation associations include desert wash/xeroriparian corridors and creosote bush-bursage desert scrub types, with paloverde-mixed cacti desert scrub occurring in higher elevations of the Pozo

Redondo and Gunsight hills. The areas of highest wildfire risk are located along the foothills of the Pozo Redondo and Gunsight hills to the east of the community of Why. This portion of the WUI does include areas of high risk in lower elevations to the north and east of the community during extreme rainfall years from increased light fuels produced from winter annual and perennial invasive grasses such as Mediterranean grass, red brome, and buffelgrass. Wildfire ignitions within the Why Community WUI are low. Public use within the WUI is considered moderate due to the adjacent Organ Pipe Cactus National Monument and holiday traffic to the resort community of Puerto Peñasco. The WUI is mostly composed of mobile home and traditional home lots found in the community center. The combination of high housing density on small private land parcels, intermixed with invaded vegetative associations, and areas with a high ISO rating creates areas of high risk to community values. The Pima County CWPP analyses determined that 91 percent of the Why Community WUI is at moderate risk for wildland fire. Due to areas of moderate wildfire risk, a low ignition history, and a moderate density of community values, the overall wildland fire risk rating of the Why Community WUI is moderate.

F. Cumulative Risk Analysis

The cumulative risk analysis synthesizes the risk associated with fuel hazards, wildfire ignition points, wildfire occurrence, and community values. These different components were analyzed spatially, and an overall cumulative risk for the analysis area was calculated. Table 2.7 displays the results of the cumulative risk analyses, identifying the areas and relative percentages of analysis area areas of high, moderate, and low risk. Visual representations of cumulative wildfire hazard are mapped in Figures 2.9a–2.9c.

Table 2.7. Cumulative Risk Levels, by Percentage of the WUI Area

Pima County CWPP Community Sub-Analysis Area	High Risk (%)	Acres	Moderate Risk (%)	Acres	Low Risk (%)	Acres	Total Acres
Ajo	2	561	55	13,096	43	10,300	23,957
Arivaca-Sasabe	14	7,901	71	38,916	15	8,001	54,818
Avra Valley	4	5,926	74	103,228	22	30,476	139,630
Three Points–Drexel Heights	5	18,421	64	216,106	30	100,728	335,255
Golder Ranch	8	2,561	49	15,355	42	13,171	31,095
Catalina Foothills	22	15,970	47	33,979	31	22,580	72,529
Corona de Tucson	3	2,204	87	69,642	10	8,034	79,880
Mt. Lemmon	99	7,408	1	51	0	0	7,459
Cascabel	2	340	51	6,961	46	6,295	13,599
Lukeville	3	200	11	1,516	0	3	1,741
Green Valley-Elephant Head-Helmet Peak	3	6,525	66	137,134	31	64,765	208,440
Kitt Peak	0	0	63	1,262	37	748	2,009
Mescal-J6	23	6,860	71	21,638	6	1,842	30,378
Pascua Yaqui	0	3	33	463	66	926	1,392
San Xavier	3	1,841	75	52,590	22	15,534	69,965
Picture Rocks	10	3,114	53	15,982	36	10,926	30,022
Rincon Valley	17	16,186	66	63,649	17	16,217	96,052
Tohono O'odham	0	0	10	1,052	90	9,049	10,101
Northwest	10	14,613	44	65,693	46	70,871	151,188
Sells	66	5,178	34	2,643	0	0	7,820
Tucson–South Tucson	1	1,078	23	42,753	76	138,191	182,022
Why	0	0	91	4,209	9	410	4,619
Sonoita-Elgin	18	4,623	75	19,105	7	1,856	25,596
Total WUI Acres	8	121,511	59	926,760	34	531,189	1,579,572

Source: Logan Simpson Design Inc.

*Treatment areas not equal to area risk assessment due to data-rounding errors.

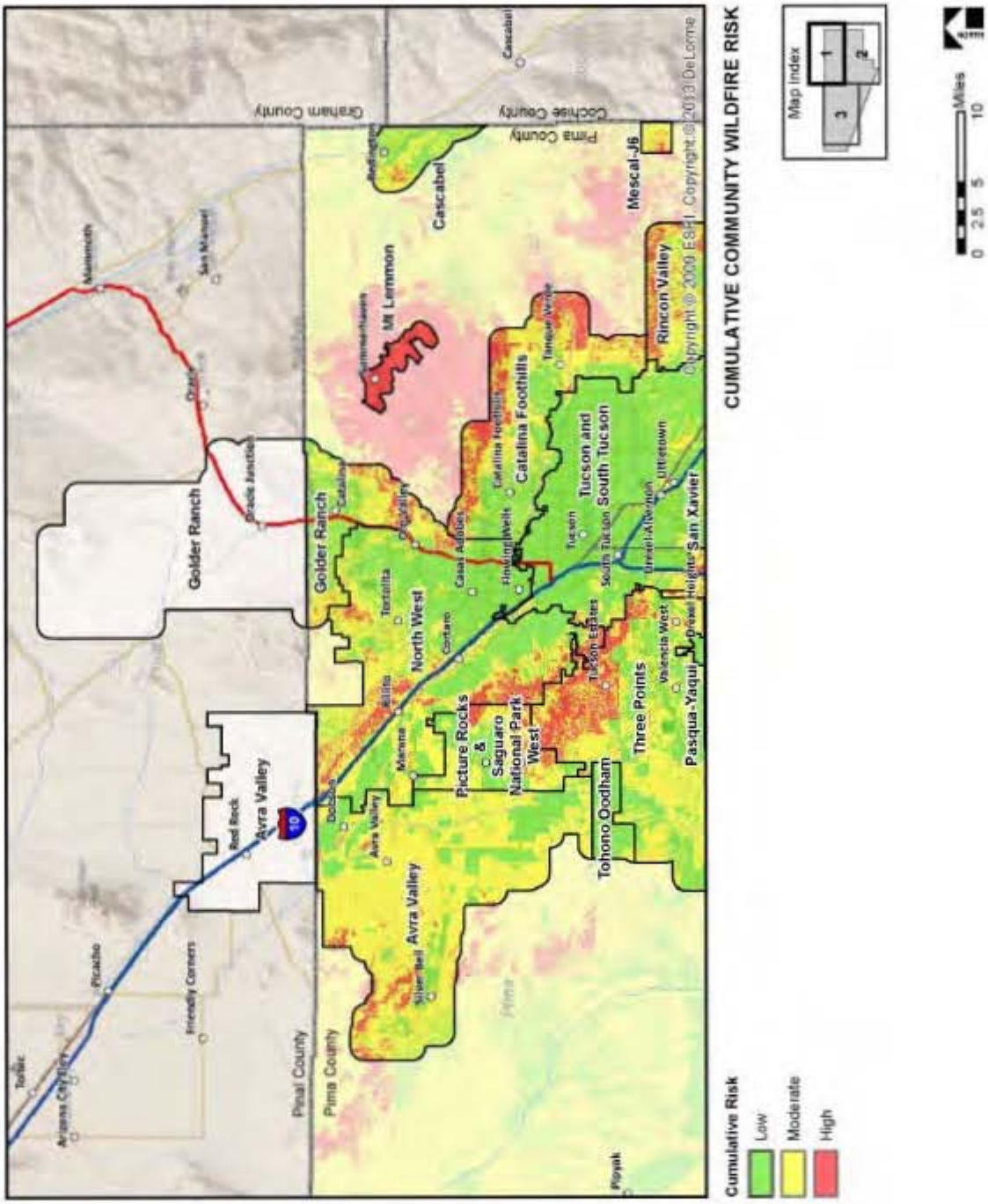


Figure2.9a. Cumulative Community Wildfire Risk, North

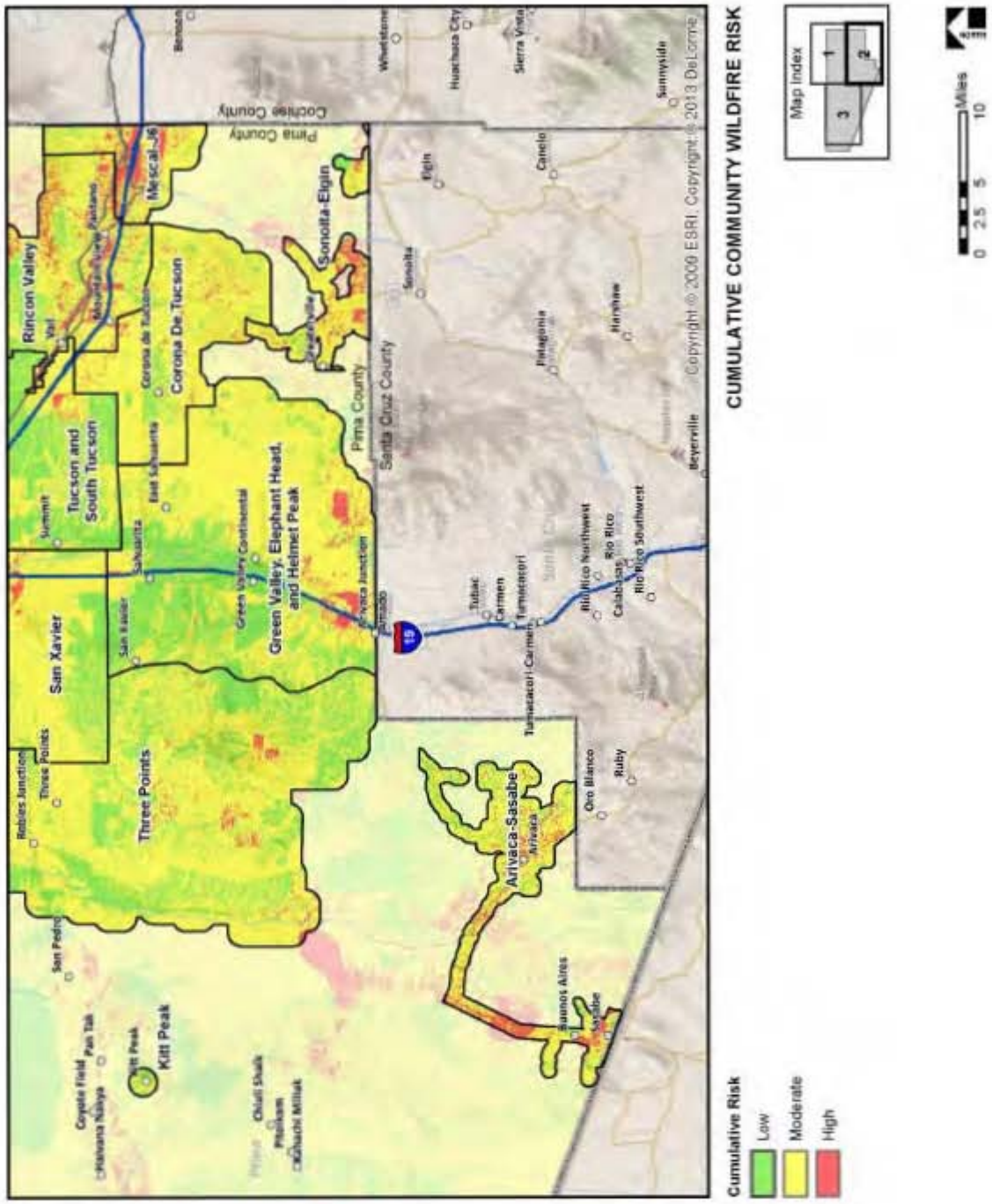
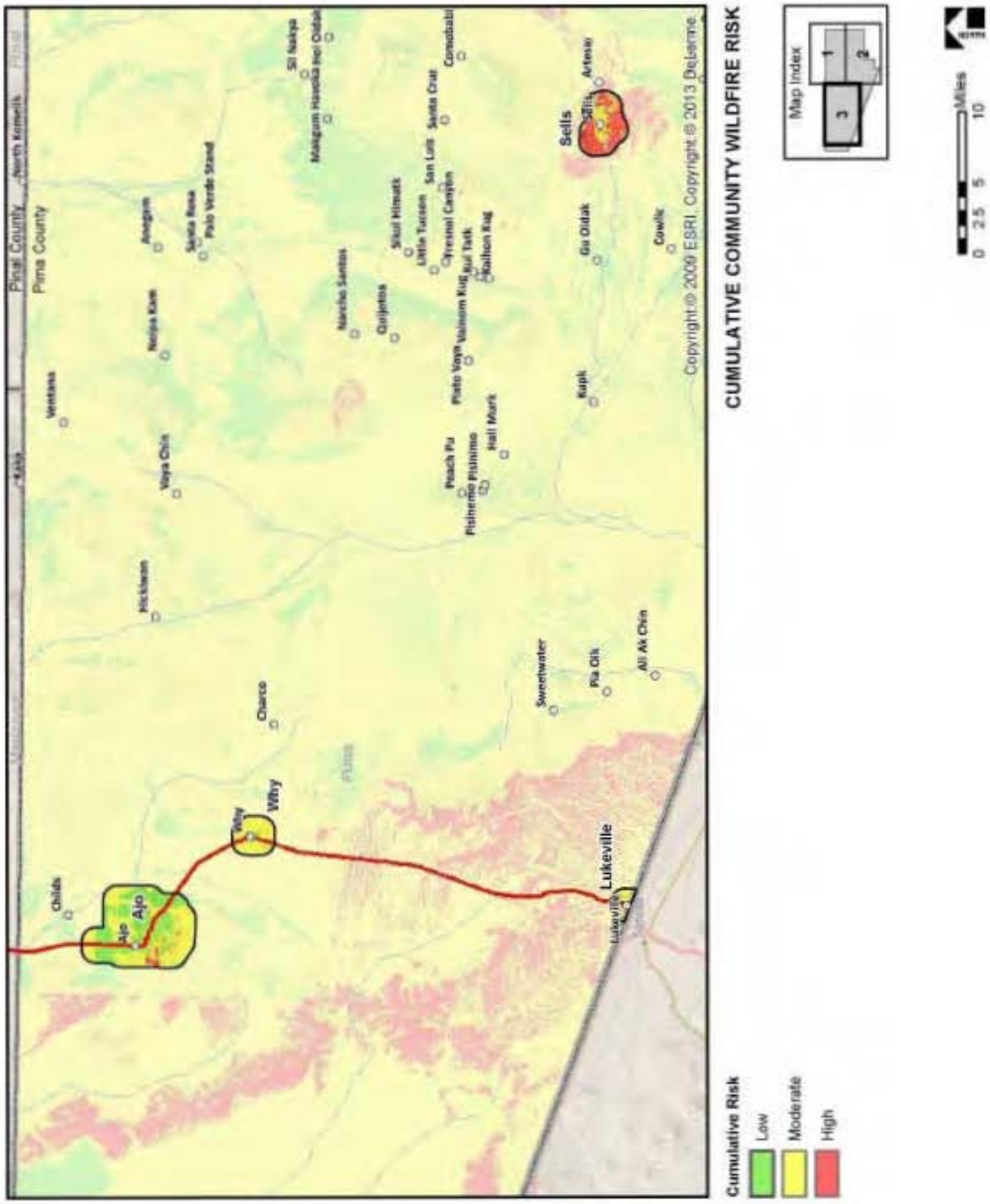


Figure2.9b. Cumulative Community Wildfire Risk, South



[

Figure2.9c. Cumulative Community Wildfire Risk, West

III. Community Mitigation Plan

This section outlines Pima County CWPP priorities for wildland fuels treatments, as well as the recommended methods of treatment and management strategies for mitigating the potential spread of catastrophic wildland fire throughout the community WUIs. This section also presents recommendations for enhanced wildland fire protection capabilities and public education, information, and outreach.

A. Fuel Reduction Priorities

After determining the areas at greatest risk for wildland fire (see Section II of this CWPP), the Core Teams developed a series of proposed actions, including residential treatments; a series of firebreaks appropriate for the wildland fuel types; and fuel mitigation treatments for undeveloped landscape areas (Table 3.1). The Core Teams have proposed wildland fire mitigation projects for at-risk public, tribal trust, and private lands. These proposed actions are recommended to prevent wildfire spread from public lands onto private land and, conversely, to reduce the risk of fires spreading from private land onto public lands by reducing wildland fuels and creating a survivable space around your home to reduce the risk from wildfire (http://www.firewise.org; http://www.fireadapted.org). A primary goal of the Pima County CWPP is for proposed treatments to be continuous across property boundaries, allowing for the most effective protection from wildfires.

Hazardous fuels reduction recommendations on public lands vary by constituting either a single firebreak in appropriate width and length within the WUI or broader land treatment applications of wildland fuel reduction and habitat restorations within or adjacent to the WUI. Additional firebreaks or hazardous fuels reduction projects may be developed over time and will conform to the types of treatment recommendations developed by the Core Teams. The PCOEM, ASFD, CNF, NPS, USFWS, BLM, tribal and local fire departments and districts, and the Core Teams' participating resource specialists developed firebreak recommendations by vegetative fuel types. These recommendations are based on firebrand movement during the peak fire season under normal seasonal weather conditions in relation to slope, aspect, and fuel type. The recommended land treatments and fuelbreaks will enhance public and firefighter safety, provide for community value protection, enhance restoration of native vegetation, and provide for wildlife habitat needs. Designated wilderness areas and special-status lands within or adjacent to the Pima County CWPP WUI include the Rincon Mountain, Pusch Ridge, the Saguaro Wilderness areas, and the Ironwood Forest National Monument. Wildland fuel mitigation treatments within special-status lands will be conducted by BLM, NPS, and CNF under appropriate wilderness regulations. The Core Teams may recommend fuelbreaks along specific identified private in-holdings adjacent to wilderness boundaries to allow BLM, NPS, and CNF to use appropriate response to wildland fire.

The wildland vegetative fuel and firebreak recommended treatments meet the Pima County CWPP goals of enhancing firefighter and public safety, reducing hazardous wildland fuels on public and private lands, improving fire prevention and suppression, restoring riparian, forest and rangeland health, involving the community, and expediting project implementation. To prioritize wildland fuel mitigation projects, the Core Teams analyzed wildland fuel hazards, fire history, and community values. This combined risk assessment was compiled in a single community base map depicting areas of low-, moderate-, and high-risk evaluations (see Figures 2.8.a.–2.8.c). These risk areas were further identified and categorized into a total

of 95 wildland treatment management units (TMUs) within 23 sub-WUI designations of the WUI. These treatment units were analyzed and categorized according to potential risk for wildfire with an overall risk value determined for each management unit (Figures 3.1a–3.1c).

The Core Teams described the location of each treatment management unit in the WUI and then assigned recommended treatments for each unit (Table 3.2).The management units listed in Table 3.2 do not always coincide with fire department or fire district boundaries or lie within established fire departments and districts. For example, the Avra Valley community sub-WUI is much larger than the fire district boundary, and some treatment management units are not in any fire department or district or under federal jurisdiction for fire protection; therefore, no fire departments or districts are responsible for those treatment management units.

Private land treatments in the WUI typically occur on small land parcels near power lines, structures, and other obstacles. In many cases, cut trees and slash cannot be piled and burned on small private land parcels, or it is not the preferred slash treatment by the owner of a small residential lot or by the local fire departments. Therefore, the Core Teams recommend that slash from wildland fuel reduction treatments on small residential parcels be removed, whole or chipped, and transported to a disposal site. The Core Teams do not oppose alternative vegetative treatments to achieve wildland vegetative fuel mitigation objectives, such as an experimental grazing program using primary grazers within the WUI, adjacent to state or federal lands. The Core Teams also recommend that fallow agricultural lands be restored through the planting of native vegetation species in accordance with the *National Conservation Practice Standards, Range Planting*, Code 550 (NRCS 2002). The Core Teams also recommend that firebreaks constructed on public and private lands to restrict wildland fire movement be maintained in accordance with the above-mentioned mitigation measures and stipulations on a rotating 2- or 3-year interval, or as deemed necessary to ensure the integrity of the firebreak through removal of fine and light vegetative fuels.

Treatment of wildland fuels within the WUI is expected to generate considerable slash and vegetative waste material. Private individual use of wood products from fuel reduction treatments within the WUI is primarily for fuelwood. Commercial use of the woody material from fuel reduction treatments is also primarily limited to fuelwood, and any commercial value of treatment by-products will not significantly affect land treatment costs. Recent costs of fuels mitigation treatment on BLM lands within the WUI include mesquite grubbing at $525.00 per acre for stewardship contracting; $400.00 per acre for service contracting; and $250.00 to 350.00 per acre in-house. If wildland fuel modification prescriptions require follow-up pile burning or herbicide application after vegetation treatment, the total cost per acre could include $21.00 for burning and $370.00 for foliar herbicide application (BLM, pers. comm. 2013).

Costs for herbicide applications to buffelgrass-invaded sites varies widely based on distance from roads and trails, amount of buffelgrass and size of patches, method used, and other variables. In 2010–2012, costs for FS, BLM, and NPS have ranged from $30 to $370 per acre, averaging $200–$250 per acre. Small areas treated by private contractors may have a similar range of costs per acre.

Table 3.1. Fuel Modification and Treatment Plans

Treatment No.	1 Developed Private Parcels <2 Acres				2 Undeveloped Private Parcels Or Single-Structure Parcels >2 Acres		3 Grassland Firebreaks		4 Oak/Pinyon/Juniper and Shrublands within the WUI	
Treatment Category	**Zone 1 (0–10 feet from structures)**	**Zone 2 (10–30 feet from structures)**	**Zone 3 (30–100 feet from structures)**	**Zone 4 (100–600 feet around home)**	**Slopes <20%**	**Streambeds, Channels, and Slopes ≥20%**	**Slopes <20%**	**Slopes ≥20%**	**Landscape Treatment Outside Firebreaks**	**Firebreaks**
Vegetation	Remove ladder fuels by pruning the lower third of trees or shrubs up to a maximum of 10 feet to reduce flammable vegetation. Remove and destroy insect-infested, diseased, and dead trees and shrubs. Grasses and forbs may be cut with a mower to a 4-inch stubble Remove dead plant material from ground; prune tree limbs overhanging roof; remove branches within 10 feet of chimney; remove flammable debris from gutters and roof surfaces. Remove non-irrigated nonnative grasses (especially buffelgrass).	Remove ladder fuels by pruning the lower third of trees or shrubs up to a maximum of 10 feet; remove and destroy insect-infested, diseased, and dead trees. Create separation between trees, tree crowns, and other plants based on fuel type, density, slope, and other topographical features. Reduce continuity of fuels by creating a clear space around brush or planting groups. Grasses and forbs may be cut with a mower to a 4-inch stubble. Remove non-irrigated nonnative grasses (especially buffelgrass). All snags and vegetation that may grow into overhead electrical lines, other ground fuels, ladder fuels, dead trees, and thinning from live trees must be removed.	Remove ladder fuels by pruning the lower third of trees or shrubs up to a maximum of 10 feet; remove and destroy insect-infested, diseased, and dead trees. Maximum density of trees (whichever is greater: 60 square feet of basal area at 80–100 trees/acre *or* average density of 100 trees/acre). Grasses and forbs may be cut with a mower to a 4-inch stubble. Remove non-irrigated nonnative grasses (especially buffelgrass).	For natural areas, thin selectively and remove highly flammable vegetation. See fuel modification plan (this section) developed to promote forest health, to prevent spread of fire to adjacent property, and to create defensible space with considerations for wildlife and groundwater protection Carefully space trees; choose Firewise plants.[a] Remove non-irrigated nonnative grasses (especially buffelgrass).	Remove ladder fuels by pruning the lower third of trees or shrubs up to a maximum of 8 feet; remove and destroy insect-infested, diseased, and dead trees. Maximum density of trees (whichever is greater: 60 square feet of basal area at 80–100 trees/acre *or* average density of 100 trees/acre) See fuel modification plan (this section) developed to promote riparian health, to prevent spread of fire to adjacent property, and to create defensible space with considerations for wildlife and groundwater protection. Single structure or structures on parcels exceeding 2 acres should include Treatment 1 in proximity to structures and Treatment 2 for remaining acres. See the fuel modification plan (this section) developed to prevent spread of fire to adjacent property and to create defensible space with considerations for wildlife and groundwater protection.	Remove dead, diseased, and dying trees. Fell dead trees away from stream channels with defined bed and banks. Areas should be hand-thinned and hand-piled; inaccessible areas may be treated with periodic Rx. Develop fuel modification plan (this section) for treatments. Remove nonnative grasses (especially buffelgrass and fountaingrass).	Grassland types may be mechanically treated, including mowing, chopping, or mastication, to reduce or remove vegetation or may be grazed to a stubble height. Ensure that removal of vegetation within a designed firebreak of >1 chain (66 feet) in width and length is sufficient to protect federal, state, or private land values. Fuel reduction treatments within grassland vegetation types may include multiple-entry burns to maintain stand structure and reduce fine fuels. Trees and shrubs >8 inch drc should be thinned to a variable distance of 15–35 feet between trees. Trees and shrubs <8 inches drc should be removed. Mechanical/chemical or grazing treatment may be used to maintain firebreaks on private lands. Remove nonnative grasses (especially buffelgrass, fountaingrass and Lehmann's lovegrass), including winter annual grasses (especially red broom, cheatgrass, and Mediterranean grass).	Same as for slopes <20%. Fuel treatments may require hand-thinning and hand-piling or grazing in steep slopes. Rx may be used to reduce high fire potential (see Treatment 5). Designated firebreaks may be increased to no more than 2 chains in steep slopes where herbaceous (fine fuels) and subshrub species fuel loads increase to pretreatment levels within 3 years. Remove nonnative grasses (especially buffelgrass, fountaingrass and Lehmann's lovegrass), including winter annual grasses (especially red broom, cheatgrass, and Mediterranean grass).	Spacing may be variable with a 20- to 35-foot minimum to promote (1) wildlife habitat while breaking horizontal fuel loading, which allows for patches of closely spaced trees for adequate cover, and (2) other habitat components while incorporating openings to increase herbaceous forage production, to maximize edge effect, and to promote fire-resilient stands. Mechanical thinning and Rx (see Treatment 5) can be used to reduce vegetative fuels and move stands toward potential natural vegetation groups as described in the *FRCC Interagency Handbook* (FRCC Interagency Working Group 2005a) or grazed to like conditions. All trees >10 inches drc will be targeted as "leave trees" unless removal is necessary to achieve the desired spacing.	Woodland and shrub trees <8 inches drc will be thinned to a spacing of 15 feet between trees, or Rx will be applied to achieve like conditions. Shrub and tree trunks will be severed <4 inches from the ground. Mechanical treatments, such as crushing, chipping, mastication, and Rx, may be used to create open stands that produce flame lengths of ≤4 feet to minimize crown-fire potential and to produce vegetative fuel conditions conducive to suppression action. Herbaceous and subshrub understory may be mechanically treated, including mowing, chopping, and masticating, or grazed to limit fine-fuel loading while protecting soil integrity from rainfall runoff.
Slash/litter	Remove or reduce natural flammable material 2–4 feet above the ground around improvements. Remove vegetation that may grow into overhead electrical lines, ladder fuels, and dead trees. Thinning from live trees must be removed (chipped, etc.). Remove all leaf litter to a depth of 1 inch.	Control soil erosion from small waterflow channels by using rock or noncombustible velocity-reducing structures. Remove all leaf litter to a depth of 1 inch.	Same as Zones 1 and 2.	Slash may be burned, piled and burned, or chipped and removed. Slash from grassland treatments may be burned, removed, masticated, turned, or grazed for like treatment.	All slash, snags, and vegetation that may grow into overhead electrical lines; other ground fuels; ladder fuels; dead trees; and thinning from live trees must be removed, mechanically treated (chipped, etc.), or piled and burned along with existing fuels.	Clean dead and down debris in channels where debris may be mobilized in floods and thus create downstream jams. Some slash and debris can be scattered and retained in small, ephemeral streambeds in which slash can help retain runoff and sediment and provide headcut stabilization.	Slash from grassland treatments may be burned, removed, masticated, or turned (disked).	Same as for slopes <20%; however, slash may be hand-piled and ignited with Rx as the primary slash reduction treatment.	Slash may be burned, piled and burned, or chipped and removed. Slash from grassland treatments may be burned, removed, masticated, or turned.	Slash may be burned, piled and burned, or chipped and removed. Slash from grassland treatments may be burned, removed, masticated, or turned.

Continued

Table 3.1. Fuel Modification and Treatment Plans

Treatment No.	5 Forest Types within or adjacent to the WUI		6 Prescribed Fire	7 Escape and Resource Transportation Corridors (federal and nonfederal lands)	8 Riparian Areas (federal, nonfederal, and private lands)		9 Conditional Suppression Areas (federal and nonfederal lands)	10 Saltcedar Removal (federal and nonfederal lands)
Treatment Category	**Thinning**	**Shaded Fuelbreaks**	**Federal, State, or Private Lands**	**Federal, State, or Local Government Where Designated as Escape Route**	**Federal or State Lands**	**Firebreaks on Private Lands**	**Federal, State, or Private Lands**	**Federal, State, or Private Lands**
Vegetation	Lands may be thinned to create vegetation structure, composition, and fuel loadings that support low-intensity surface fire to reduce the impacts of wildfire on communities. Residual stocking levels for private land would be reduced to 20–80 trees per acre (≤60 square feet of basal area/acre). Thinning treatments on Forest Service land will enhance private land treatments, but must comply with the Forest Land Management Plan and other associated rules and regulations. In general, treatments will favor leaving larger trees and removing ladder fuels. Tree spacing should be random with some degree of "clumpiness."Refer to Treatment 1 for additional guidelines in areas close to structures.	A fuel break is a natural or manmade change to native vegetation which affects fire behavior so that fires burning into them can be more readily controlled. The size and type of fuel break will depend on the vegetation and topography. Fuel break construction on Forest Service land will enhance private land treatments, but must comply with the Forest Land Management Plan and other associated rules and regulations.	Rx will be used as a tool to accomplish specific resource management objectives in accordance with ASLD, ASFD, CNF, and/or BLM standards and guides. Rx on federal land is authorized if part of an approved Rx burn plan. As additional areas within the WUI are identified, Rx may be used as a treatment tool provided that a wildland fire implementation plan is in effect and that all conditions set forth have been met. Rx can occur at low, moderate, and high intensity. High-intensity fire will be used to create openings by removing above ground vegetation.	Reduce fuel loading by thinning trees <10 inches drc. Reduce trees to 15-foot spacing. Shrub and tree trunks will be cut no less than 4 inches from the ground. Stands will be variable across the landscape, such as retention of bands of higher-density vegetation with sufficient understory to maintain functionality of important wildlife movement corridors in areas of low structure density. Mechanical treatments may include chipping, piling and burning, or removal and Rx in the project area. Trees may be left in clumps with fuel ladders removed from below. Dead, diseased, and dying trees of all sizes will be emphasized for removal. Some trees >8 inches drc may be cut to reduce safety hazards or when needed to reach desired 15-foot spacing. Escape and resource transportation corridors may serve as firebreaks in all vegetative types. Firebreaks for each vegetative type, as described in this table, would be implemented at appropriate distance from the centerline of the escape and resource transportation corridors to produce fire-resilient stands and to enhance evacuation and response access. Emphasis will be placed on removing nonnative and flammable species. Grasses and forbs may be cut with a mower to 4-inch stubble.	Riparian treatments will be limited in scope. The majority of riparian areas that fall within the WUI boundary will be avoided unless deemed a fuel hazard. Clearing or cutting of any material by mechanized equipment within 10 feet of any stream on federal land may be prohibited to prevent the risk of accelerating erosion. Treatments may include some overstory removal of deciduous riparian trees and shrubs in areas where encroachment has increased heavy woody fuels (emphasizing removal and control of saltcedar and other invasive trees). Treatments will emphasize nonnative species. Snags >8 inches may be retained. All presettlement trees, including snags, will be targeted for retention. Restricting the removal of the vegetative overstory in the riparian areas to the period of October 15–March 31 will prevent the disturbance of any nesting by neotropical migrant bird species, including the southwestern willow flycatcher. Fuels reduction should occur October 15–March 31 in riparian areas, as long as fire danger is not extreme. Herbicides can be used against nonnative grasses, but it takes about 3 years to break fuel continuity. This is not the best method for zones 1 and 2 unless coupled with mowing or as a follow-up to pulling. Emphasis will be placed on removing species listed in Appendix A.	Private land treatment should use hand tools, chain saws, or mowers. Dead vegetation and slash should be removed. Ladder fuels, including limbs and branches, should be removed up to a maximum of 8 feet aboveground. All mechanized equipment must meet state and local fire-department/district standards. Perform treatments October–March annually. Treatment of annuals may be best when annuals are green. Herbicides can be used against nonnative grasses, but it takes about 3 years to break fuel continuity. This is not the best method for Zones 1 and 2 unless coupled with mowing or as a follow-up to pulling.	This prescription includes lands with desert shrub/scrub vegetative types in which no fuel modification treatments have been identified as necessary to provide protection from wildland fire. The threat from catastrophic wildland fire is low or nonexistent. This includes areas in which fire never played a historical role in developing and maintaining ecosystems. Historically, in these areas, fire return intervals were very long. These are areas in the WUI in which fire could have negative effects unless fuel modifications take place. These include areas in which the use of fire may have ecological, social, or political constraints and areas in which mitigation and suppression are required to prevent direct threats to life or property. Wildland fire growth within these areas will be monitored for private-property, ecological, and cultural threats before initiating suppression. Agency and fire-department/district policy provisions will determine suppression response. Response will be full suppression when firefighter and public safety, property, improvements, or natural resources are threatened	Areas of monotypic saltcedar or in mix with mesquite or other riparian tree species may be treated mechanically or chemically or by controlled burning and reburning to reduce stem density, canopy, and excessive fuel loading. Mechanical removal for saltcedar by cutting below the root collar during November–January is preferred. Mechanical whole-tree extraction has achieved as high as 90% mortality on initial treatments and may be considered a preferred treatment. Low-volume oil-based herbicide applications in late spring through early fall would be considered for controlling small plants (<2 inches drc). Low-volume cut-stump herbicide applications will be considered in combination with mechanical treatment. Preferred phenological stage for burning is peak summer months and postavian breeding months. Black lines and appropriate headfires should be initiated depending on site-specific vegetative and burning conditions. Maintenance, revegetation, restoration, and monitoring should follow as needed for each treatment area. Seedlings can effectively be pulled by hand.
Slash/litter	Refer to Treatment 1 for areas close to structures. In areas away from structures, slash may be piled and burned, chipped and removed or lopped and scattered to a noncompacted thickness of no more than 2 feet deep and be treated later as part of a broadcast burn. Fuelwood and timber harvest are also viable means of removal in all areas.	Slash would be piled and burned or chipped and removed. Fuelwood and timber harvest are also viable means of removal.	Slash, jack piles, and down logs may be burned as appropriate in consideration of local conditions and distance from private property. Pile or Rx can be used to remove fuel from private land as designated. Snags and down woody material may be retained in areas where fire resilience is not compromised.	Snags, slash, and down logs will be removed in proximity to private land. Pile burning or broadcast burning can be used to remove fuel. Snags and down woody material may be retained in areas where fire resilience is not compromised. Vehicle pullouts should be planned in appropriate numbers and locations where vegetation, slope, and terrain permit.	After removal of heavy woody fuels, fine fuels may be maintained by cool-season low-intensity Rx that moves slowly downslope or into prevailing winds to midslope. Large down woody material and snags (≥12 inches) may be retained in riparian areas.	Fuel treatments and woody material removal will occur on existing roads. Cool-season low-intensity Rx may be used for maintenance of fine fuels. Pile or jackpot burning will not occur in ephemeral, intermittent, or perennial stream channels.	Fuel treatments and woody material removal could occur on existing roads. Cool-season low-intensity Rx may be used for maintenance of fine fuels. Pile or jackpot burning will not occur in ephemeral, intermittent, or perennial stream channels.	Created slash will be made available for woody biomass use. If not used for wood-related products, slash will be piled with preexisting fuels and burned, or otherwise used for soil stabilization. Disturbed areas should be immediately revegetated with a native plant community that contains no invasive species and meets other land use objectives, such as wildlife habitat enhancements or recreational-use benefits.

Note: R_x = prescribed fire, drc = diameter at root collar.

[a]List of Firewise plants can be found in the Firewise literature listed in Appendix C, Educational Resources.

Table 3.2. Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment[a]	Total Acres	Federal Acres	State Trust Acres	Nonfederal Acres	Tribal Acres
Ajo	AJ1	M	Lands on SR 85 north of Ajo at Ajo airport	1,2,3,7,9	1,233	1,233	NA	1	NA
	AJ2	L	Lands on SR85 north of Ajo south of Ajo airport	1,2,3,7,9	2,560	2,145	NA	415	NA
	AJ3	L	Lands within the town of Ajo	1,2,3,7,9	14,396	7,035	32	7,329	NA
	AJ4	H	Lands on SR 85 immediately south of Ajo	1,2,3,7,9	5,771	3,984	NA	1,787	NA
Arivaca-Sasabe	See the Arivaca-Sasabe CWPP for description of the 29 Arivaca and 9 Sasabe treatment management units								
Avra Valley	AV1	L	Lands immediately west of I-10 west of Santa Cruz River	1,2,3,8,9	4,151	NA	NA	4,151	NA
	AV2	M	Central WUI Pinal County south to AV4 and AV3	1,2,3,8,9	16,232	1,894	5,050	9,288	NA
	AV3	M	Central WUI south of AV2 north of AV9	1,2,3,8,9	13,585	45	1,862	11,677	NA
	AV4	M	Central WUI south of AV2 north of AV8	1,2,3,8,9	10,756	1,888	1,821	7,047	NA
	AV5	M	Central WUI Pinal County south to Tohono O'odham boundary	1,2,3,8,9	16,886	11,161	4,476	1,249	NA
	AV6	H	Northeast WUI bordering Tohono O'odham and Pinal County	1,2,3,8,9	28,854	16,287	4,819	7,748	NA
	AV7	L	Eastern WUI bordering Tohono O'odham	1,2,3,8,9	12,896	3,587	310	5,951	3,048
	AV8	L	Southeast WUI bordering Tohono O'odham	1,2,3,8,9	12,520	4,481	1,718	6,321	NA
	AV9	M	Lands immediately north of Tohono O'odham including Brawley Wash	1,2,3,8,9,10	23,762	4,296	2,001	17,463	2
Cascabel	CB1	M	San Pedro River corridor community of Redington	1,2,3,5,7,8,9,10	13,601	NA	9,759	3,842	NA
Catalina Foothills	CF1	H	Northwest WUI in CNF buffer west of Sabino Canyon	1,2,3,4,5,7,8,10	3,004	2,354	NA	650	NA
	CF2	H	North-central WUI in CNF buffer east of Sabino Canyon	1,2,3,4,5,7,8,10	5,400	4,310	NA	1,090	NA
	CF3	H	Northeast WUI in CNF buffer	1,2,3,4,5,7,8,10	6,065	4,334	NA	1,731	NA
	CF4	L	South of CF1 adjacent to the Rillito River corridor	1,2,7,8,10	12,452	1	3	12,448	NA
	CF5	M	South of CF2 adjacent to Tanque Verde and Pantano creek corridors	1,2,7,8,10	11,521	58	NA	11,463	NA

Table 3.2. Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment[a]	Total Acres	Federal Acres	State Trust Acres	Nonfederal Acres	Tribal Acres
	CF6	M	South of CF3 adjacent to Tanque Verde and Pantano creek corridors	1,2,7,8,10	12,865	NA	4	12,862	NA
	CF7	H	Northeast WUI at Redington Pass adjacent to Saguaro National Park	1,2,3,5,7,8,9,10	11,804	6,076	NA	5,729	NA
	CF8	H	Southeast WUI adjacent to Saguaro National Park	1,2,3,5,7,8,9,10	4,994	4,050	NA	944	NA
	CF9	L	Southwest WUI west of CF8	1,2,7,8,10	4,434	90	NA	4,344	NA
Corona de Tucson	CDT1	M	Northwest WUI south of Sahuarita Road	1,2,3,5,7,8,9	8,795	1,197	2,673	4,925	NA
	CDT2	M	North-central WUI immediately south of I-10	1,2,3,5,7,8,9	12,050	NA	11,251	799	NA
	CDT3	L	Central WUI south of CDT2	1,2,3,5,7,8,9	6,797	NA	3,310	3,487	NA
	CDT4	H	Northeast WUI south of I-10	1,2,3,5,7,8,9	3,116	NA	716	2,400	NA
	CDT5	M	Southern WUI north of Santa Rita Experiment Range	1,2,3,5,7,8,9	19,423	5,674	7,935	5,814	NA
	CDT6	M	Eastern WUI adjacent to CNF Santa Rita Mountains	1,2,3,5,7,8,9	29,708	2,971	18,026	8,712	NA
Golder Ranch	See the Catalina CWPP for description and risk ratings of G1 through G32								
	G33	H	Southeast WUI in the CNF buffer	1,2,3,4,7,8,9,10	2,993	2,993	NA	NA	NA
	G34	M	Northeast WUI in the CNF buffer	1,2,3,4,7,8,9,10	2,467	2,465	1	1	NA
	G35	M	Northwest WUI at Pinal County boundary	1,2,3,4,7,8,9,10	3,232	203	1,250	1,779	NA
Green Valley	GV1	H	South central WUI on I-19 corridor north of Santa Cruz County south of Green Valley	1,2,3,7,9	11,167	NA	1,006	10,161	NA
	GV2	L	Central WUI on I-19 corridor including Green Valley	1,2,3,7,9	11,036	NA	86	10,950	NA
	GV3	H	Southeast WUI north of Santa Cruz County on Santa Rita Mountains foothills	1,2,3,4,5,7,9	16,008	4,900	6,316	4,792	NA
	GV4	L	Eastern WUI on Santa Rita Mountains foothills and Santa Rita Experimental Range	1,2,3,4,5,7,9	31,794	8,818	19,285	2,691	NA
	GV5	L	Central WUI grasslands east of I-19 corridor east of Green Valley	1,2,3,5,7,9	39,614	51	34,574	5,009	NA
	GV6	M	Northeast WUI on City of Tucson border	1,2,3,5,7,9	16,176	NA	14,341	1,835	NA
	GV7	L	North central WUI I-19 corridor at Sahuarita	1,2,3,5,7,9	17,698	NA	3,370	14,328	NA

Table 3.2. Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment[a]	Total Acres	Federal Acres	State Trust Acres	Nonfederal Acres	Tribal Acres
	GV8	M	North WUI immediately south of San Xavier District	1,2,3,5,7,9	3,835	NA	589	3,835	10
	GV9	L	Northwest WUI immediately south of San Xavier District east of ridge line of the Sierrita Mountains	1,2,3,5,7,9	38,295	2,498	4,115	31,619	64
	GV10	L	Southwest WUI east from ridge line of the Sierrita Mountains	1,2,3,5,7,9	22,237	122	14,112	8,003	NA
Kitt Peak	KT1	H	WUI surrounding Kitt Peak Observatory	1,2,3,4,5,7,	2,010	NA	NA	NA	2,010
Lukeville	LV1	M	WUI surrounding the community and Lukeville Port of Entry	1,2,3,9	1,742	1,389	NA	353	NA
Mescal-J6	M1	H	Isolated northern treatment management unit on Cochise County border, in Happy Valley south of Rincon Mountain Wilderness	1,2,3,4,5,7,9	3,017	2,395	NA	622	NA
	M2	M	Northeast WUI on Cochise County border north of I-10	1,2,3,4,5,7,9	5,512	1,324	1,748	2,439	NA
	M3	H	I-10 and Union Pacific Railroad corridor immediately east of Cochise County border	1,2,3,7,8,9	8,223	NA	6,258	1,965	NA
	M4	M	South of I-10 from Cochise County to Cienega Creek Natural Preserve	1,2,3,5,7,8,9	6,853	NA	6,258	1,965	NA
	M5	L	Southeast WUI west of Cochise County boundary north of Las Cienegas National Conservation Area	1,2,3,5,7,8,9	6,777	564	4,407	1,806	NA
Mount Lemmon	MT1	H	Community of Summerhaven and adjacent private and CNF lands	1,2,4,5,6,7	7,459	7,150	NA	309	NA
Northwest	NW1	H	Southeast WUI CNF buffer south of Golder Ranch WUI	1,2,3,4,7,8,9,10	5,524	3,797	1,727	NA	NA
	NW2	L	Central portion of WUI from southeastern fire department boundary including Casa Adobes, Canada del Oro, and portions of the city of Oro Valley	1,2,3,4,7,8,9,10	46,188	27	47	46,115	NA
	NW3	M	North-central WUI east of I-10 to northern fire department boundary	1,2,3,4,7,8,9,10	20,694	NA	3	14,586	NA

Table 3.2. Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment[a]	Total Acres	Federal Acres	State Trust Acres	Nonfederal Acres	Tribal Acres
	NW4	M	I-10 corridor from southern fire department boundary to immediately south of Avra Valley Road, including Santa Cruz River	1,2,3,7,8,10	5,133	NA	196	4,938	NA
	NW5	L	Immediately south of Santa Cruz River from southern fire department boundary to Avra Valley Road	1,2,3,7,9	14,608	19	3	14,586	NA
	NW6	H	Southern WUI boundary in Tucson Mountains at Starr Pass north to immediately north of Gates Pass	1,2,3,7,9	2,654	NA	NA	2,654	NA
	NW7	H	Southwest WUI boundary from Gates Pass to immediately north of Sweetwater Drive foothills of Tucson Mountains	1,2,3,7,9	5,380	240	158	4,981	NA
	NW8	H	Western WUI Tucson Mountains from Wasson Peak north to northern boundary of Saguaro National Park	1,2,3,5,7,9	8,412	4,985	948	2,479	NA
	NW9	M	Central WUI from northern boundary of Saguaro National Park north to immediately above Avra Valley Road	1,2,3,7,9	3,251	42	6	3,203	NA
	NW10	H	I-10 corridor north from Avra Valley Road east to foothills of the Tortolita Mountains	1,2,3,7,9	22,448	882	12,187	9,379	NA
	NW11	L	Northwest WUI Twin Peaks Road north to north of Marana Road, including Marana Regional Airport and portions of the Santa Cruz River corridor	1,2,3,7,8,9,10	16,918	743	8,870	7,304	NA
Pascua Yaqui	PY1	NA	Pascua Yaqui tribal land	See Pascua Yaqui *Fire Management Plan* and *Fuels Management Plan*					
Picture Rocks	PR1	L	Northwest WUI boundary south to Saguaro National Park northern boundary	1,2,3,5,7,8	17,427	3,032	4,691	9,704	NA
	PR2	H	Northeast WUI in northern Saguaro National Park	1,2,3,5,7,8	5,968	3,551	686	1,732	NA
	PR3	H	Southwest WUI west of Saguaro National Park, including portions of Brawley Wash	1,2,3,5,7,8,9,10	6,631	3,788	900	1,943	NA
Rincon Valley	RV1	H	Northwest WUI immediately south of I-10 Davidson Canyon west to Wentworth Road	1,2,3,7,8,9	4,729	NA	3,282	1,447	NA

Table 3.2. Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment[a]	Total Acres	Federal Acres	State Trust Acres	Nonfederal Acres	Tribal Acres
	RV2	L	South of RV1 east to Davidson Canyon	1,2,3,7,8,9	4,031	NA	3,716	316	NA
	RV3	M	Immediately south of I-10 at Davidson Canyon east to Las Cienegas Conservation Area	1,2,3,7,8,9	4,231	NA	4,209	22	NA
	RV4	H	North WUI I-10 Union Pacific corridor from fire department boundary east to eats of Las Cienegas Conservation Area, including the community of Vail	1,2,3,7,8,9	14,007	NA	6,621	7,386	NA
	RV5	H	North of RV5 foothills of the Rincon Mountains	1,2,3,7,8,9	6,653	NA	3,737	2,916	NA
	RV6	M	East-central WUI foothills of Rincon Mountains portion of Agua Verde Creek	1,2,3,7,8,9	5,048	205	2,680	2,164	NA
	RV7	H	Northeast WUI, including southern portion of Rincon Mountain Wilderness	1,2,3,7,8,9	4,963	3,925	62	976	NA
	RV8	L	Central WUI south of Rincon Mountain Wilderness, including portions of Agua Verde Creek	1,2,3,7,8,9	5,465	14	3,403	2,049	NA
	RV9	H	North-central WUI west from city of Tucson boundary east to CNF boundary, including portions of Cienega Creek Natural Preserve	1,2,3,7,8,9	6,384	1,211	281	4,891	NA
	RV10	L	North-central WUI at city of Tucson boundary east along Old Spanish Trail to Colossal Cave Park	1,2,3,7,8,9,10	21,488	11	7,766	13,712	NA
	RV11	H	Northwest WUI at city of Tucson boundary east at south boundary of Saguaro National Park	1,2,3,7,8,9,10	19,072	8,975	1,392	8,705	NA
San Xavier	SX1	M	San Xavier District		69,971	See *Tohono O'odham Nation Fire Management Plan*			69,971
Sells	Sells1	H	Northwest of community		2,180	See *Tohono O'odham Nation Fire Management Plan*			2,180
	Sells2	M	Community center		1,152	See *Tohono O'odham Nation Fire Management Plan*			1,152
	Sells4	H	South and northeast of community		4,489	See *Tohono O'odham Nation Fire Management Plan*			4,489
Sonoita Elgin	See the Sonoita Elgin CWPP for description and risk ratings of the 79 treatment management units								
Three Points	TP1	H	Northeast WUI, including Tucson Mountain Park	1,2,3,7,9	25,706	5,750	929	19,027	NA

Table 3.2. Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment[a]	Total Acres	Federal Acres	State Trust Acres	Nonfederal Acres	Tribal Acres
	TP2	H	Northeast WUI Tucson Mountain Park along SR 86 south to San Xavier District on city of Tucson boundary	1,2,3,7,9	7,955	62	58	7,829	6
	TP3	L	Central WUI north of Pascua Yaqui tribal land north to Tucson Mountain Park	1,2,3,7,9	19,412	1,927	2,391	15,087	7
	TP4	M	Central WUI, including Ryan Airfield	1,2,3,7,9	17,632	931	4,027	12,657	17
	TP5	M	West-central WUI Avra Valley south of Tohono O'odham Nation, including portions of Brawley Wash	1,2,3,7,8,9,10	28,821	1,273	13,166	14,372	10
	TP6	M	West-central WUI east of Tohono O'odham Nation, including portions of Brawley Wash, Altar Valley, and the community of Three Points	1,2,3,7,8,9,10	49,690	1,248	28,994	17522	1925
	TP7	M	East-central WUI south of community of Three Points east to Sierrita Mountains and south to McGees Settlement	1,2,3,7,8,9,10	39,625	2,424	23,757	13,411	33
	TP8	M	West central WUI including Brawley Wash, SR286, and Altar Wash	1,2,3,7,8,9,10	47,430	2,650	33,382	11,398	NA
	TP9	M	Southwest WUI south of TP8 on SR286 along Altar Wash to Buenos Aires National Wildlife Refuge	1,2,3,7,8,9,10	46,450	4,750	32,773	8,928	NA
Tohono O'odham	TO1	L	Tohono O'odham Nation in Avra Valley	See *Tohono O'odham Nation Fire Management Plan*	10,108	5	NA	14	10,089
Tucson and South Tucson	TUC1	L	Municipal boundaries of cities of Tucson and South Tucson	1,2,7,8,9,10	172,482	10,769	37,441	124,257	15
	TUC2	M	I-10 corridor from approximately Rita Road interchange to Vail interchange	1,2,3,7,9	6,525	NA	6,160	365	NA
	TUC3	H	Pima County Fairgrounds and Southeast Regional Park	1,2,3,7,9	3,034	NA	19	3,015	NA
Why	W	M	Community of Why	1,2,3,7	4,619	2,402	643	495	1,081

Note: L = low, M = moderate, H = high.

[a]See Table 3.1 for recommended treatments.

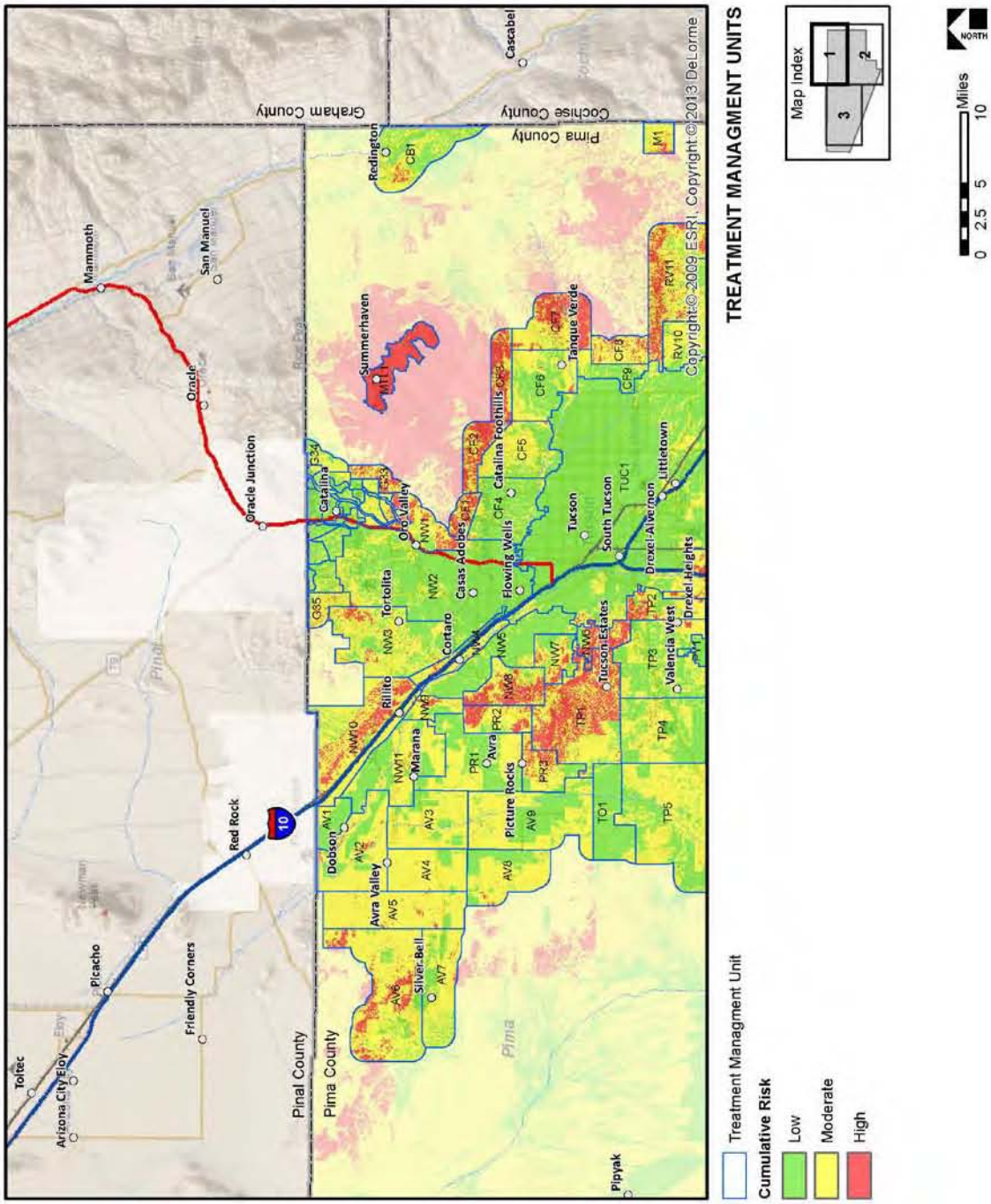


Figure 3.1a. Pima County CWPP Treatment Management Units, North

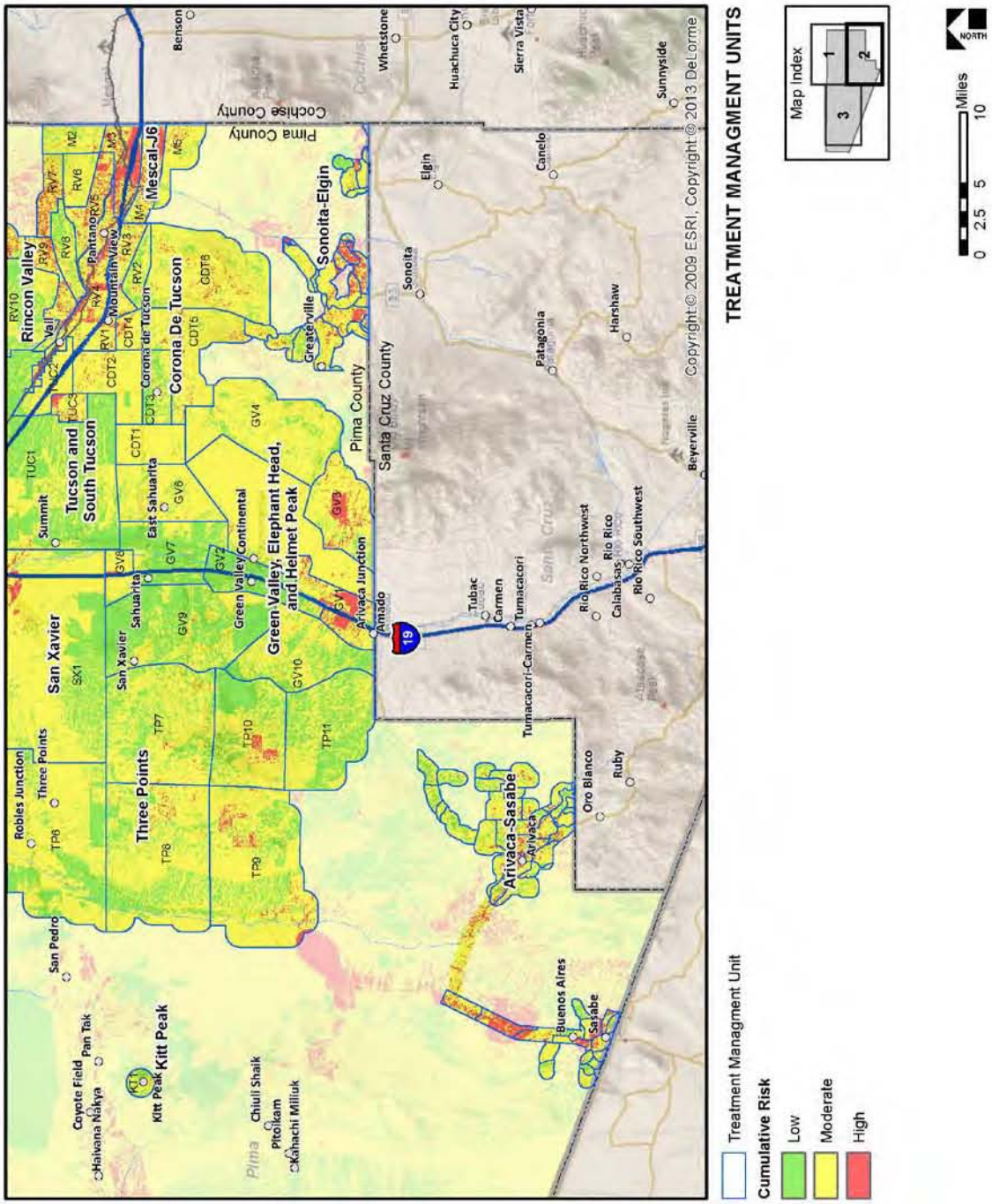


Figure 3.1b. Pima County CWPP Treatment Management Units, South

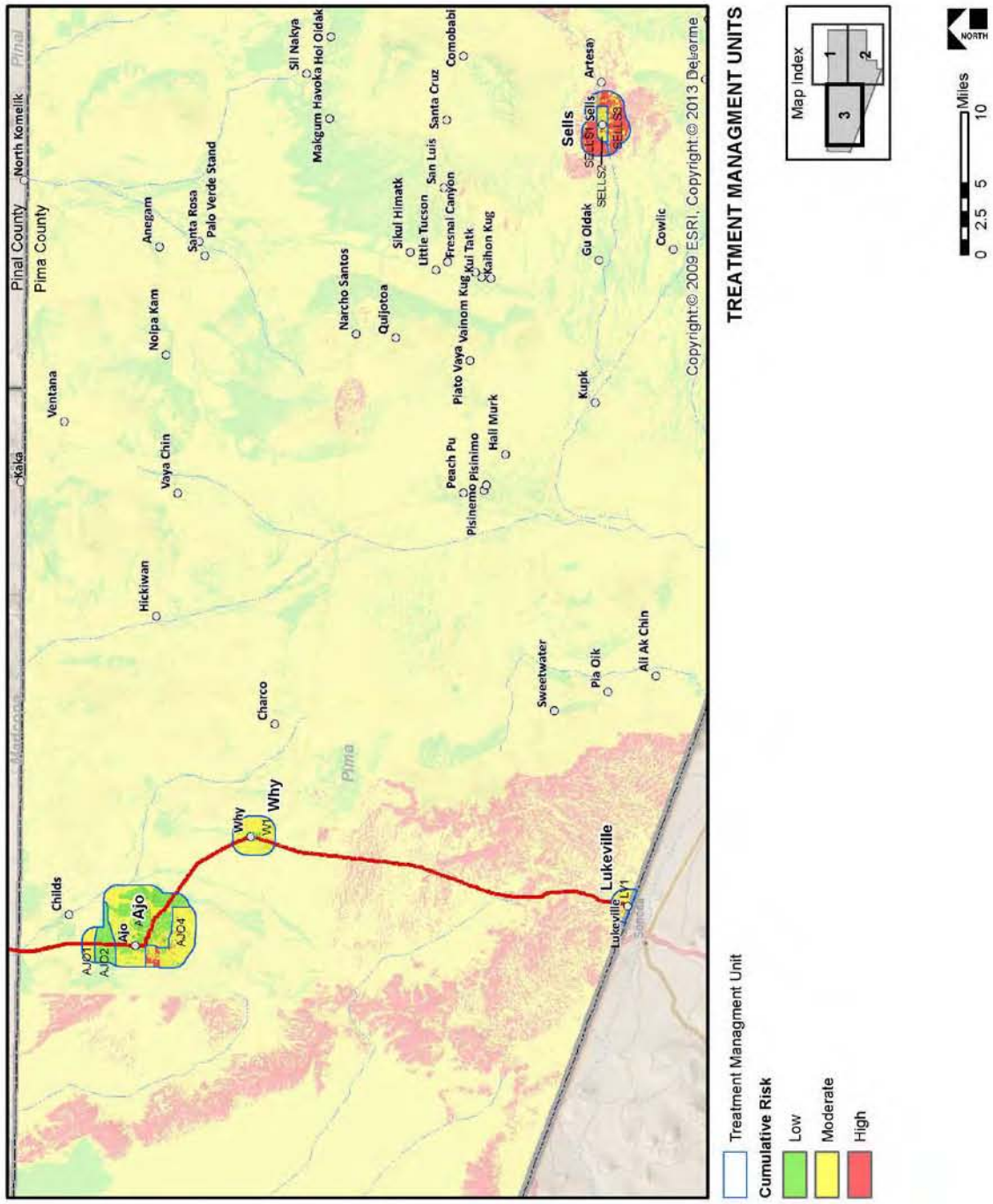


Figure 3.1c. Pima County CWPP Treatment Management Units, West

The Core Teams recommend that when available, wildland fuel modification projects be contracted to ASFD to ensure that treatments are conducted in a timely fashion and at a reasonable cost. The estimates of daily costs, which include a 20-person inmate labor crew and a chipper for a 100-mile roundtrip to the project site by an ASFD crew carrier, are as follows:

- 10-hour day—$1,400.00
- 12-hour day—$1,580.00

Cost estimates for treatments in the WUI are based on the estimates provided by the ASFD for the Fire and Fuels Crew costs for both federal and nonfederal land treatments (see Table 3.3). The ASFD Inmate Fire and Fuels Crews do not remove hazard trees or provide "climbers" for pruning or segmented tree removal that is sometimes required on private lands. The Core Teams do support and encourage local business development that will complement wildland fuel mitigation needs within federal and nonfederal lands of the WUI. Vegetative fuel mitigation costs for this CWPP are estimated to be $350.00 per acre, which is comparable to the estimated cost of the ASFD Inmate Fire and Fuels Crews and to estimated fuel mitigation costs on adjacent federal lands. However, the availability of federal, state, and local funding for mitigation of wildland fire risk, enhanced response, and public education will drive the ability of the Core Teams to meet the goals of the Pima County CWPP.

Table 3.3. Acres of Wildland Fuels Mitigation Treatment Conducted by ASFD Fire and Fuels Crew during a 10-Hour On-Site Workday

Vegetation Association	Average Acres per Day Treated
Ponderosa pine/mixed conifer	0.5 to 1 acre per day
Pinyon/juniper	1 to 2 acres per day
Mesquite woodland	3 to 4 acres per day
Oak woodland	3 to 4 acres per day
Riparian	1 to 2 acres per day (depending on fuel loading)
Grassland	2 to 4 acres per day (depending on grass type and fuel loading)

The Core Teams recommend that private landowners who wish to adopt fuel modification plans other than those described in Table 3.1 have the plan prepared or certified by a professional forester, by a certified arborist, by other qualified individuals, or in conjunction with local fire department or fire districts recommendations that reference Firewise or firesafe guidelines. Fuel modification plans for federal and state lands within 0.5 mile of private land may be prepared for wildlife and watershed benefits—including the retention of large snags or vegetative patches of high wildlife value in areas more than 600 feet from private lands in which desired vegetative objectives are not impaired and will not compromise public or firefighter safety from unwanted wildland fire. A fuel modification plan should identify the actions necessary to promote rangeland, wildlife, or watershed health and to help prevent the spread of fire to adjacent properties by establishing and maintaining survivable space. The action identified by the fuel modification

plan should be completed before development of the property or identified during project initiation on federal and state lands.

Alternate Federal, State, or Private Land Wildland Fuel Modification Plan

A fuel modification plan for federal and state lands will follow agency procedures, standards, and guidelines. Fuel modification treatment plans for private land parcels should at least include the following information:

- A copy of the site plan
- Methods and timetables for controlling, changing, or modifying fuels on the properties in a timely and effective manner
- Elements for removal of slash, snags, and vegetation that may grow into overhead electrical lines; removal of other ground fuels, ladder fuels, and diseased, dying, and dead trees; and thinning of live trees
- Methods and timetables for controlling and eliminating diseased or insect-infested vegetation
- A plan for the ongoing maintenance of the proposed fuel reduction and control measures for disease and insect infestations
- A proposed vegetation management plan for groupings of parcels under multiple ownership that has been accepted by all individual owners (subject to compliance with this section)

The recommended treatments within the Pima County CWPP have been developed to be consistent with federal land-management action alternatives and are intended to be compliant with and facilitate efficient planning and decision making concerning fuels mitigation treatments or habitat rehabilitation of areas so as to reduce risks to communities caused by severe fires and to restore fire-adapted ecosystems (USDA FS 2000).

B. Prevention and Loss Mitigation

The Pima County CWPP will be used as a resource to help coordinate long-term interagency mitigation of catastrophic wildfire events in at-risk communities within Pima County. The Pima County CWPP Core Teams established specific goals for wildland fire prevention and loss mitigation as follows:

- Improve fire prevention and suppression for firefighter and public safety and to protect private property
- Promote community collaboration, involvement, and education
- Work with organizations such as SABCC who promote public awareness and activism for management of high risk vegetation such as buffelgrass
- Recommend measures to reduce structural ignitability in the Pima County CWPP WUI
- Preserve the aesthetics and wildlife values within native habitats
- Identify funding needs and opportunities
- Expedite project planning through partnerships with ASFD, BLM, CNF, NPS, and private and public entities in managing wildland fire risk within the WUI

The Pima County CWPP will be reviewed and updated as needed. Successful implementation of this plan will require a collaborative process among multiple layers of government entities and a broad range of community interests. The PCOEM and Core Teams have also discussed the advantage of working cooperatively with Tucson Electric Power (TEP), and Salt River Project (SRP) utility companies to maintain acceptable wildland fuel conditions within TEP and SRP existing utility corridors, rights-of-way, easements and other utility owned lands within high risk areas of the WUI. The Core Teams, TEP, and SRP also recognize the benefits of working cooperatively to achieve acceptable wildland fuel conditions adjacent to the utility companies' easements, rights-of-way and other utility owned lands. The Core Teams recognize existing agreements between TEP, SRP, land-management agencies, and private landowners for vegetative treatments within rights-of-way and easements, and agree that the Pima County CWPP does not bind or obligate TEP or SRP in the maintenance of vegetative fuels outside their rights-of-way or easements. The Core Teams believe that these agreements and resultant vegetative treatments are complementary to the objectives of the Pima County CWPP.

The Core Teams and collaborators have made the following action recommendations to meet the goals of the Pima County CWPP:

1. *Establish Pima County CWPP Administration and Implementation*

- Establish a countywide community CWPP Working Group—composed of Pima County fire chiefs, PCOEM, ASFD, BLM, CNF, NPS, USFWS, SABCC, TEP, and SRP concurring agencies, and members of the Core Teams to coordinate individual agency implementation of the recommendations for fuel modification, public outreach, protection capability, and structural ignitability within the Pima County CWPP WUI, including fuel hazards removal on private lands within the WUI.

2. Improve Protection Capability and Reduce Structural Ignitability

The Pima County CWPP considers the risks of wildland fire igniting and spreading throughout the WUI a serious threat. The Core Teams and collaborators believe that actions to reduce fire risks and promote effective responses to wildland fires must be undertaken. The following are recommendations to enhance protection capabilities for at-risk communities within Pima County:

- Obtain fully functional Type 6 engines and fully functional Type 3 engines for wildland fire response by local fire departments and districts.
- Obtain a medium-size water tender for local use by fire departments and districts.
- Strategically locate additional water-storage tanks, wells, or other water sources for tender filling throughout the fire departments and districts.
- Maintain helicopter landing sites.
- Update mapping capabilities of local fire departments and districts.
- Encourage fire departments and districts to participate in annual multi-agency wildland fire safety training conducted prior to the fire season.

- Encourage fire departments and districts to report responses to brushfires and fuel type to SABCC for incorporation into the SABCC data base.
- Obtain a chipper/shredder, tub grinder, air curtain destructor, and other equipment necessary for treatment and processing of vegetative slash for use by local fire departments and districts for wildland fuel mitigation projects.
- Obtain multi-purpose utility vehicle with attachments for chipping, brush cutting, and mini water tending, such as the Bobcat Toolcat.
- Implement GIS and GPS (Global Positioning System) software and laptops to update mapping capabilities of local fire departments and districts.
- Arrange for the acquisition, operation, and maintenance of a green-waste disposal site within reasonable proximity to the citizens and encourage the use of the disposal site for all vegetative material removed during wildland fuel treatments on private lands within the WUI.
- Provide enhanced and coordinated firefighting training and equipment, such as personal protective equipment and second-generation fire shelters, for newly certified wildland firefighters and volunteer firefighters.
- Develop and maintain mutual-aid agreements with neighboring fire departments or districts for wildland and structural fire response support and other emergency response.
- Meet annually with representatives from SRP and TEP to mutually identify locations of needed vegetative treatments within rights-of-way in high-risk areas of the WUI and support the Core Team in obtaining grants and agreements necessary to implement vegetative fuel reduction projects adjacent to rights-of-way.
- Develop a pre-suppression plan with BLM, NPS, ASFD, CNF, USFWS, PCOEM and local fire departments along the boundary of the WUI.
- Develop additional wildland fire preplans for all high-hazard locations across Pima County where they have not been adopted.
- Develop IGAs with Pima County on nuisance-abatement projects located in high-hazard communities.
- Meet annually before the fire season, to coordinate early suppression deployment and to determine training and equipment needs.

3. Promote Community Involvement and Improve Public Education, Information, and Outreach

Pima County, BLM, CNF, NPS, USFWS, ASFD, SABCC, local fire departments and districts, and the Core Teams will continue developing and implementing public outreach programs to help create an informed citizenry. The Core Team recognizes the significance of partnering with organizations such as SABCC in public involvement, volunteer management and wildland fuel treatment data keeping. The goal is to have residents support concepts of Firewise and fire-safe landscaping and naturally functioning wildland systems through restoration management, invasive species management, and rapid response to wildland fire. There are groups such as SABCC, who are currently promoting wildfire and vegetation management awareness through their programs. Developing working relationships and sharing information would

strengthen the message and benefit all parties involved. The Pima County CWPP is intended to be a long-term strategic plan containing prescriptive recommendations to address hazardous fuels. A grassroots collaborative structure of individual citizens, supported by local governments as full partners, will provide the most effective long-term means to achieve these goals and to maintain community momentum. The components of such a structure include the following recommendations:

- Assist in implementing a Firewise Communities/USA Recognition program in communities where the program is supported by the local fire departments and districts. The Firewise Communities approach emphasizes community and individual responsibility for safer home construction and design, landscaping, and maintenance. The Core Teams will also help identify high-priority communities that would most benefit from a Firewise Communities program.
- Expand the use of current public information tools for fire-safe residential treatments as an immediate action step. This will be accomplished through information mailers to homeowners, presentations by local fire departments and districts, and the development of specific promotional materials by Pima County.
- Coordinate with SABCC in encouraging public reporting of buffelgrass distribution, abundance, and fire response information.
- Collaborate with SABCC to develop duel use outreach/education materials which promote wildfire awareness and the benefits of vegetation management specifically high fire risk buffelgrass.
- Assist with SABCC in developing the Integrated Brushfire Database that will be used to map current and historic brushfires within the WUI to promote awareness of the dangers of brushfires and buffelgrass and for identifying high risk areas.
- Place fire-danger information signs on major access roads throughout the WUI. Community bulletins and other public service announcements concerning wildfire threat and preparedness should be developed with assistance from ASFD, BLM, NPS, CNF, USFWS, and Pima County.
- Place and maintain bilingual wildfire caution signs within camping areas and access routes in some areas of the WUI.
- Complete wildfire home assessments through the use of Redzone software, or an equivalent software system, and submit wildfire hazard mitigation strategies to landowners for each private property assessed within highest risk communities.
- Replace and maintain fencing adjacent to high-use and illegal off-road-vehicle use areas within or adjacent to the WUI.

4. Encourage Use of Woody Material from WUI Fuel Mitigation Programs

The Core Teams and their collaborators will continue to support and promote private contractors who perform Firewise mitigation work. The County will continue to support and promote new businesses involved in the wildland fuel reduction market. Pima County, CNF, NPS, BLM, USFWS, and local fire departments and districts are committed to encouraging, as appropriate, the use of vegetative by-products from the WUI fuel management program for commercial or community-service organization use. Possible

by-product uses encouraged by the Core Teams include the following:

- Bagged mesquite wood for sale to visitors and larger-community markets as “campfire cooking” for commercial or personal culinary uses
- Firewood marketed to local residents, visitors, and adjacent communities
- Mesquite, pinyon pine, and juniper wood marketed for artwork, furniture, and other specialty wood products

IV. PIMA COUNTY CWPP PRIORITIES: ACTION RECOMMENDATIONS AND IMPLEMENTATION

The Core Teams have developed action recommendations (see Section III of this CWPP) necessary to meet the plan's objectives. A series of recommendations for reducing wildland fuels and structural ignitability, improving fire prevention and suppression, and enhancing public outreach have been developed by the Core Teams. A unified effort to implement this collaborative plan requires timely decision making at all levels of government. However, the Core Teams recognize that countywide recommendations do not impinge on or interfere with the fire departments' and districts' rights to independently seek funding for projects within their jurisdictions without CWPP Working Group support.

To meet Pima County CWPP objectives, the Core Teams have developed the following action recommendations. At the end of each year, projects implemented from these action recommendations will be monitored for effectiveness in meeting Pima County CWPP objectives. For the life of the Pima County CWPP, recommendations for additional projects will be made for each future year on the basis of project performance from the previous implemented projects.

A. Administrative Oversight

Generally, the most efficient way to manage the mitigation of wildland fire threat in the WUI is through identifying, delegating, implementing, and monitoring the action recommendations of the Pima County CWPP. Establishing a unified effort to collaboratively implement the Pima County CWPP embraces adaptive management principles that enhance decision making and reduce inconsistency at all levels of government.

The Core Teams recommend the establishment of a countywide community CWPP Working Group (CWPP Working Group)—composed of the fire chiefs from Pima County or their representatives, PCOEM, SABCC, ASFD, CNF, NPS, Pascua Yaqui Tribe, and BLM—to work with the Core Teams and concurring agencies to accomplish the recommendations for outreach and structural ignitability within the Pima County CWPP WUI area, which include fuel hazards removal on private lands within the WUI. The CWPP Working Group should consist of interested community members; local fire departments and districts; and, as needed, additional representatives from the PCOEM, SABCC, ASFD, ASLD, CNF, NPS, BLM, and other concurring agencies. PCOEM will be the lead agency responsible for coordinating the CWPP Working Group and producing the monitoring reports and future updating of the CWPP.

The CWPP Working Group will prioritize wildland fuel modification, structural ignitability, protection capability, and public outreach projects listed in the approved Pima County CWPP on a countywide basis, and will review these priority recommendations for possible reprioritization subsequent to approval of the Pima County CWPP by ASFD. Fuel modification and community planning, outreach, and wildfire threat warning programs will be prioritized by the CWPP Working Group as a whole; other projects involving firefighter training, equipment, communications, facilities, and apparatus will be recommended by the fire chiefs from Pima County or their representatives in the CWPP Working Group.

The CWPP Working Group is expected to be an advocate for and provide support to fire departments and districts or other agencies in the submittal of grant applications and the solicitation of other funding

opportunities to implement wildland fuel modification, structural ignitability, protection capability, and public outreach projects established as priorities by the CWPP Working Group. Additionally, individual agencies will be able to seek letters of support from the CWPP Working Group or partner agencies in applying for funding for projects identified as priorities by the Working Group.

The CWPP Working Group will also compile monitoring and report data from cooperating agencies to provide information on additional measures necessary to meet Pima County CWPP goals, including additional future recommendations from fire departments and districts and other agencies for inclusion in the priority recommendations. The CWPP Working Group may also act as an advisory group to Pima County Planning and Zoning and to developers in outlying areas to ensure adequate fire response access and to provide vegetation mitigation and landscaping recommendations, water supplies for emergency services, and recommendations for establishing and funding fire services and equipment in residential and commercial developments.

The following general criteria will be used for prioritizing proposed projects and action items:

1. Geographic/fuel-load/residential density:
    a. The Mt. Lemmon Community WUI will remain a high priority for wildland fuel modifications, public education and outreach and enhanced wildland fire response due heavy fuel type such as ponderosa pine, mixed conifer, and Madrean pine-oak forest vegetation associations which as evidenced by previous wildfires, can support extreme fire behavior. Wildfire ignitions within the Mt. Lemmon Community WUI and public use within the WUI is considered high.
    b. The Catalina Foothill Community WUI will remain a high priority area for wildland fuel modifications, public education and outreach and enhanced wildland fire response. Specific high risk areas include desert washes originating from the foothills of the Santa Catalina and terminating at Tanque Verde and Rillito creeks, heavy fuel loads associated with the foothills of the Santa Catalina Mountains. High public use within the WUI in Sabino Canyon and other community and CNF trails in the WUI. The WUI is mostly composed of large developed private land parcels of high assessed value and some areas with a high ISO rating.
    c. The San Pedro, Santa Cruz River, and urban riparian corridor including Canada del Oro, Rillito, and Pantano will receive long-term priority due to high vegetative fuel risk, infestations of saltcedar, high ignition history, and threatened structures and infrastructures.
    d. Areas with high infestation of invasive species, especially buffelgrass in proximity to high community values.
    e. Fuel breaks to be established and maintained in the front range of the Catalina and Rincon Mountains bordering the CNF and Saguaro National Park East will receive long-term priority due to high wildland fire threat potential, invasive species, and high community values at risk.
    f. In any given year, the CWPP Working Group will evaluate countywide weather, vegetation, and fuel-load conditions and projections, as well as current residential and commercial densities, to determine short-term priority adjustments for projects in all WUI areas of the county for that year.
    g. In any given year, the CWPP Working Group will evaluate the progress of new developments and increasing residential and commercial densities to determine potential needs and priorities within the WUI for 3 years following that given year.

2. Categorical/functional criteria—priorities will generally be established in the order listed below; these priorities are subject to review and change by the CWPP Working Group on an ongoing basis:
   a. Prioritize fuel modification projects that are within fire-department and fire-district, CNF, NPS, BLM, or ASFD jurisdictions within the Avra Valley and Rincon Valley sub-WUIs
   b. Enhance wildland firefighter training and acquire personal protection equipment
   c. Acquire wildland-fire suppression equipment and tools, including brush engines and water tenders
   d. Develop water-storage sites and supply facilities
   e. Develop community planning and outreach activities, including warning signs/systems and identification and improvement of evacuation routes
   f. Designate and develop helicopter pads for firefighter deployment or evacuation
   g. Construct fire stations in areas with sufficiently high threat and population densities as determined annually by the CWPP Working Group

The agencies involved in the formation of this plan support local community efforts and will work with the communities as needed to accomplish action items. BLM, CNF, NPS, ASFD, Pascua Yaqui Tribe, PCOEM, and fire departments and districts will coordinate fuel mitigation projects on state, public, and National Park and Forest Systems lands, and also within TEP, and SRP utility corridors, within the WUI in coordination with the CWPP Working Group when established. The Core Teams and the proposed CWPP Working Group will be responsible for submitting grants and soliciting other opportunities to implement wildland fuel mitigation projects on private lands and to support public information, education, and outreach within the WUI. Successful award of grant funds will be used to implement the action recommendations for private land treatments, mitigation features for reduced structural ignitability, firefighting response, and public outreach. BLM, CNF, NPS, Pascua Yaqui Tribe, ASFD, PCOEM, fire departments and districts, and the Core Teams will pursue funding to construct and maintain firebreaks as well as broader applications of wildland fuel mitigation projects within the WUI. Monitoring and reporting compiled by the CWPP Working Group will provide information on additional measures necessary to meet Pima County CWPP goals. Some projects may require Endangered Species Act or State Historic Preservation Officer consultations.

B. Priorities for Mitigation of Hazardous Wildland Fuels

Table 4.1 displays the priority for constructing firebreaks and landscape wildland fuel treatments within the WUI as recommended by the Core Teams. These action recommendations will reduce wildfire potential to the community and have high valuations for reducing wildland fire risk. The Core Teams recognize that not all acres within a high-risk landscape can be treated. Site-specific analysis will determine treatment acres and methods that produce a fire-resilient vegetative stand appropriate for the habitat.

C. Identified Action Items for Protection Capability and Reduced Structural Ignitability

The Core Teams and collaborators will evaluate; maintain; and, where necessary, upgrade community wildfire preparation and response facilities, capabilities, and equipment. Table 4.2 lists the identified action items proposed by the Core Teams for consideration by individual fire departments and districts for structural ignitability and public outreach within their respective jurisdictions.

The CWPP Working Group will meet subsequent to the ASFD's final approval of the Pima County CWPP to prioritize projects on a countywide basis for the upcoming year and, thereafter, at least annually to reevaluate projects and reallocate priorities as needed. Such countywide prioritization will not impinge on or interfere with the fire departments' and districts' rights to independently seek funding for projects within their jurisdictions without CWPP Working Group support.

Table 4.1. Action Recommendations for Wildland Fuel Modification

Management Area[a]	Location and Description	Project Partner	Estimated Treatment Cost[b]
NW1	Southeast WUI CNF buffer South of Golder Ranch WUI	PCOEM, ASFD, and Northwest Fire Department	5,524 high-risk acres, 30% of lands to be treated over 3 years estimated to be 550 acres/year in FY 2014–16 = $221,000.00/year; cost estimated to average $400.00/acre on federal, ASLD, and private lands
G33	Southeast WUI in the CNF buffer	PCOEM, CNF, ASFD, and Golder Ranch Fire Department	2.993 high-risk acres, 30% of lands to be treated over 3 years estimated to be 300 acres/year in FY 2014–16 = $120,000.00/year; cost estimated to average $400.00/acre on federal, ASLD, and private lands
CF2	North-central WUI in CNF buffer east of Sabino Canyon	PCOEM, CNF, Rural Metro Fire Department, Hidden Valley, and Tanque Verde Fire Department	5,400 high-risk acres, 30% of lands to be treated over 3 years estimated to be 540 acres/year in FY 2014–16 = $216,000.00/year; cost estimated to average $400.00/acre on federal, ASLD, and private lands
RV11	Northwest area of the WUI adjacent to the City of Tucson boundary along the western and southern boundary of Saguaro National Park	PCOEM, ASFD, CNF, NPS, BLM, and Rincon Valley	19,072 high-risk acres, 30% of lands to be treated over 5 years estimated to be 1,150 acres/year in FY 2013–16 = $458,000.00/year; cost estimated to average $400.00/acre on federal, ASLD, and private lands
TP1	Northeast WUI including Tucson Mountain Park	PCOEM, NPS, BLM, ASFD, and Three Points Fire Department	25,706 high-risk acres, 30% of lands to be treated over 10 years estimated to be 775 acres/year in FY 2013–16 = $310,000.00/year; cost estimated to average $400.00/acre on federal, ASLD, and private lands
M3	I-10 and Union Pacific Railroad corridor immediately east of Cochise County border	PCOEM, BLM, ASFD, and Mescal-J6 Fire Department	8,223 high-risk acres, 30% of lands to be treated over 5 years estimated to be 595 acres/year in FY 2013–16 = $198,000.00/year; cost estimated to average $400.00/acre on federal, ASLD, and private lands
GV1	South central WUI on I-19 corridor north of Santa Cruz County south of Green Valley	PCOEM, ASFD, and Green Valley Fire Department	11,167 high-risk acres, 30% of lands to be treated over 5 years estimated to be 670 acres/year in FY 2014–16 = $268,000.00/year; cost estimated to average $400.00/acre on federal, ASLD, and private lands

Table 4.1. Action Recommendations for Wildland Fuel Modification

Management Area[a]	Location and Description	Project Partner	Estimated Treatment Cost[b]
MT1	Mount Lemmon WUI – Areas within and surrounding the Mount Lemmon WUI Boundary which includes the community of Summerhaven to include:	CNF, MLFD, ASFD, Mount Lemmon Water District (MLWD), University of Arizona (UA), organization camps, communications site permit holders, privates land owners, recreational residence permit holders	7,459 high-risk acres, 30% of lands to be treated over 5 years estimated to be 445 acres/year in FY 2014–16 = $178,000.00/year; cost estimated to average $400.00/acre on federal, ASLD, and private lands
	1. Spencer Bigelow Project - Mt. Bigelow to Spencer Peak including Palisades, Lower Soldier's Camp	1. CNF, ASFD, (RRM), communications site permit holders, UA, recreational residence permit holders	1. 843 acres
	2. Loma II -USFS land south of Summerhaven	2. CNF, MLFD, ASFD, private landowners, recreational residence permit holders	2. 135 acres
	3. Turkey Run - Drainage that supports the Mount Lemmon Water District (MLWD) water supply	3. CNF, MLFD, ASFD, MLWD, UA, Ski Valley, private landowners	3. This area has been identified as a priority using fire modeling and local knowledge. Acreage is unknown at this time. Priorities are subject to change as conditions change and site specific information grows through field verification and analysis.
	4. Firebreak - Southwest of Summerhaven	4. CNF, MLFD, ASFD, UA, private landowners, recreational residence permit holders	4. 1 chain fuelbreak
	5, Organization Ridge - Permitted areas for organizations along Organization Ridge Road	5. CNF, MLFD, ASFD, Boy Scouts of America Camp Lawton, Girl Scouts of America Whispering Pines Camp, First Southern Baptist Church, Sycamore Canyon Academy-Rite of Passage, Camp Zion, Amphi Camp, St. Marks Presbyterian Church, Pima County Sheriff's Department, RRM	5. This area has been identified as a priority using fire modeling and local knowledge. Acreage is unknown at this time. Priorities are subject to change as conditions change and site specific information grows through field verification and analysis.
	6. Bear Wallow – Area along Bear Wallow Road west of Mt. Bigelow (Rd 2 and Rd 34)	6. CNF, MLFD, ASFD, UA, recreational residence permit holders	6. This area has been identified as a priority using fire modeling and local knowledge. Acreage is unknown at this time. Priorities are subject to change as conditions change and site specific information grows through field verification and analysis.

Table 4.1. Action Recommendations for Wildland Fuel Modification

Management Area[a]	Location and Description	Project Partner	Estimated Treatment Cost[b]
	7. Southwest of Development – Areas southwest of development includes, but is not limited to Summerhaven, Greater Soldier's Camp, Organization Ridge, and Willow Canyon	7. CNF, MLFD, ASFD, private landowners, recreational residence permit holders	7. This area has been identified as a priority using fire modeling and local knowledge. Acreage is unknown at this time. Priorities are subject to change as conditions change and site specific information grows through field verification and analysis.
	8. Rose Canyon – Near Rose Canyon Campground, adjacent to Catalina Highway	8. CNF, MLFD, ASFD, RRM, recreational residence permit holders	8. This area has been identified as a priority using fire modeling and local knowledge. Acreage is unknown at this time. Priorities are subject to change as conditions change and site specific information grows through field verification and analysis.
Firebreak maintenance	1- to 3-year rotating maintenance of fine and light fuels in firebreaks	ASLD, ASFD, NPS, CNF, PCOEM, and participating fire departments and districts	1,200 acres/year of light understory fuel treatments in excess of 4 acres treated/10-hour day at $1,400.00/day costs = $420,000.00/year

[a] NW = Northwest ; MT = Mount Lemmon; GV = Green Valley; RV = Rincon Valley; M = Mescal-J6; TP = Three Points; CF = Catalina Foothills; G = Golder Ranch.

[b] Total acres to be treated during the life of the plan; one-third of acres estimated to be treated based on site-specific analysis, which will determine actual acres available for treatment in each area.

Table 4.2. Action Recommendations for Structural Ignitability and Public Outreach

Project Partner	Project	Specific Recommendation	Estimated Cost	Timeline
PCOEM and Northwest Fire Department	**E1**—Wildland Fire Protection and Reduced Ignitability	Purchase one Type 3 fire engine for use by Northwest Fire Department	New acquisition with standard equipment $320,000.00	Begin grant applications in 2014; purchase in 2015
PCOEM and Green Valley Fire District	**E1**—Wildland Fire Protection and Reduced Ignitability	Purchase one Type 6 fire engine for use by Green Valley Fire District	New acquisition with standard equipment $131,000.00	Begin grant applications in 2013/2014; purchase in 2014/2015
PCOEM, CNF, NPS, ASFD, ASLD, and associated fire departments and districts	**A1**—Wildland Fire Protection and Reduced Ignitability	Construct a series of 5,000-gallon water-storage facilities located strategically throughout residential areas	Install water-storage facilities/year: $5,000.00/facility	Locate and install one water-storage facility in 2013
PCOEM and Corona de Tucson Fire Department	**A2**—Enhanced Public Education, Information, and Outreach	Develop wildfire public education brochures	Produce and publish community-specific wildfire informational brochures	Begin grant applications in 2013; continue on an ongoing basis in 2014
PCOEM and Rural/Metro and Tucson Fire Departments	**E2**—Wildland Fire Protection and Reduced Ignitability	Obtain one Type 6 brush truck for wildland fire response within the Catalina Foothills community WUI	New acquisition with standard equipment $131,000.00	Begin grant applications in 2014; purchase in 2015

Table 4.2. Action Recommendations for Structural Ignitability and Public Outreach

Project Partner	Project	Specific Recommendation	Estimated Cost	Timeline
PCOEM, CNF, NPS, ASFD, ASLD, and associated fire departments and districts	**A2**—Enhanced Public Education, Information, and Outreach	Work with land agencies for the acquisition, operation, and maintenance of a green-waste disposal site within reasonable proximity to community	Locate and coordinate with land management agency; excavate pit and fence: $20,000.00	Begin planning with agencies in FY 2013/14; implement in FY 2014/15
PCOEM, CNF, NPS, ASFD, ASLD, and associated fire departments and districts	**A3**—Enhanced Public Education, Information, and Outreach	Develop a fire-safety awareness program for community groups	Promote and conduct a community fire-awareness day at local fire departments and districts: $2,000.00	Solicit funds for promotion, brochures, and event materials in 2013; conduct in 2013
PCOEM, CNF, NPS, ASFD, ASLD, and associated fire departments and districts		Create fire-safety and fire-awareness posters for public places	Development, printing, and distribution costs: $5,000.00	Solicit funds for production and printing in 2013; publish and post in 2013
PCOEM and Rincon Valley Fire District	**E4**—Wildland Fire Protection and Reduced Ignitability	Obtain one Type 3 Interface Engine and a tactical water tender for wildland fire response within the Rincon Valley Community WUI	New acquisition with standard equipment $350,000.00; 1,500-gallon tactical water tender, 4-wheel drive: $186,000	Begin grant applications in 2013; purchase in 2014

[a] Projects are designated by project type (E = equipment; A = administrative) but not ranked in order of importance.

D. Priorities for Promoting Community Involvement through Education, Information, and Outreach

The PCOEM and the Core Teams will implement public outreach and education programs for residents to heighten awareness and understanding of the threat that wildland fire poses to the communities.

Table 4.3 displays the Pima County CWPP priority recommendations to promote community involvement. Additional programs that could be used or developed to enhance community outreach and education may be proposed and implemented in the future. The Core Teams will use the resources of the local fire departments, SABCC, ASFD, NPS, CNF, and BLM for additional public education programs and community outreach. Community bulletins and other public service announcements concerning wildfire threat and preparedness should be developed with assistance from local fire departments, SABCC, ASFD, NPS, CNF, and BLM.

Table 4.3. Action Recommendations for Enhanced Public Education, and Information

Project Partner	Project[a]	Equipment/Expense	Timeline
PCOEM, CNF, NPS, BLM, ASFD, SABCC, and associated fire departments and districts	**A7**—Establish and maintain roadside fire-danger warning signs and other informational and directional road signs along major roads as determined by the Pima County Fire Chiefs Association	Construction and placement: $5,000.00	Construct and implement in FY 2013/14
	A8—Create and distribute community bulletins on annual fire season preparedness	Development, printing, and distribution costs: $5,000.00	Develop in FY 2013; distribute continually
	A9— Collaborate in developing Public Education and Outreach materials by providing data, graphics or text that will help promote coinciding goals	Development of data reporting process by SABCC for Integrated bushfire database and public information material	Develop in FY 2013
	I2—Acquire Redzone, or equivalent software, and field data recorders or PDAs (personal digital assistants) to complete home fire assessments and implement fire-safe recommendations	Software and data recorder: $1,300.00 Assessment completion: $2,000.00	Acquire software and complete assessments in FY 2013/14; implement recommendations in FY 2015
	I3—Encourage private businesses that perform Firewise land treatments; encourage market development of WUI by-products from vegetative fuel mitigation programs	Marketing plan to be developed	Initiate community marketing planning meetings in FY 2014
	I4—Replace and maintain fencing adjacent to high OHV (off-highway vehicle) use areas	Assess in 2013, initial plan for 1 mile of new or repaired fencing	Estimate $6,000.00m per mile of standard 4-wire fencing

[a] Projects are designated by project type (A = administrative; I = infrastructure) but not ranked in order of importance.

V. MONITORING PLAN

Monitoring is essential to ensure that Pima County CWPP goals are met. The Pima County CWPP administrators, the local fire departments and districts, PCOEM, ASFD, CNF, NPS, BANWR, Pascua Yaqui Tribe, and BLM will actively monitor the progress of the Pima County CWPP action recommendations to determine the effectiveness of ongoing and completed projects in meeting Pima County CWPP objectives, as well as to recommend future projects necessary to meet Pima County CWPP goals.

In accordance with Section 102.g.5 of HFRA, Pima County CWPP communities will participate in any multiparty monitoring program established by state and federal agencies, or other interested parties, to assess progress toward meeting Pima County CWPP objectives. This authority to participate in multiparty monitoring will be vested in the CWPP Working Group. The Core Teams believe that participation in multiparty monitoring will provide effective and meaningful ecological and socioeconomic feedback on landscape and site-specific fuel reduction projects and watershed enhancements and will also help BLM, NPS, BANWR, CNF, Pascua Yaqui Tribe, ASFD, ASLD, PCOEM, local municipalities, and fire departments and districts with land-management planning.

The CWPP Working Group will request participation in any post-wildfire analysis and burned area emergency response (BAER) planning with lead state or federal agencies. Immediate post-wildfire analysis and planning is essential to Pima County to enhance public safety from possible flood and debris flows, municipal watershed pollution, and other post-wildfire habitat and community impacts.

This section details the performance measures that will be used to assess the effectiveness of implementing the Pima County CWPP action recommendations. Monitoring will include assessing and evaluating the success of individual Pima County CWPP project implementation and a given project's effectiveness in furthering Pima County CWPP objectives.

A. Administrative Oversight, Monitoring, and Pima County CWPP Reporting

The CWPP Working Group, composed of Pima County fire chiefs, PCOEM, SABCC, NPS, CNF, BANWR, Pascua Yaqui Tribe, ASFD, and BLM, will be mutually responsible for implementing and monitoring Pima County CWPP action recommendations in coordination with a future established CWPP Working Group. The CWPP Working Group should identify appropriate grant and other funding mechanisms necessary to implement the action recommendations of the Pima County CWPP. Grant information should be routinely searched to identify updated grant application cycles. Potential grant and funding resources are listed in Appendix C of this CWPP.

As needed, the PCOEM, in coordination with the future-established countywide community CWPP Working Group will produce a report detailing the success of Pima County CWPP project implementation and overall progress toward meeting Pima County CWPP goals. The CWPP Working Group should report successful grant awards received for implementing the Pima County CWPP action recommendations to the Pima County CWPP signatories. The CWPP Working Group's report will also include recommendations to the signatories for updating the Community Mitigation Plan and the Prevention and Loss Mitigation Plan portions of the Pima County CWPP, through the use of the principles of adaptive management. This information will ensure timely decision making for all levels of government and will provide input necessary

for developing future work plans and for prioritizing project recommendations over the life of the Pima County CWPP. Appendix D provides information on the data used in the analysis of the Pima County CWPP and the appropriate contacts for updating the Pima County CWPP. Once the Pima County CWPP is updated, it will be submitted to the PCOEM, the Arizona State Forester, all cooperating fire departments and districts, municipal governments, NPS, CNF, BANWR, and BLM for their concurrence. Once concurrence is achieved, the action recommendations of the updated Pima County CWPP are to be forwarded for funding through HFRA and other appropriate funding sources.

B. Effectiveness Monitoring

Table 5.1 outlines the performance measures that the CWPP Working Group will use to assess status in meeting Pima County CWPP performance goals. In addition to monitoring the listed performance measures, Pima County CWPP administrators should assess the current status of wildland fuel hazards and look for any new or developing issues not covered by the Pima County CWPP. As new issues arise, such as new invasive species infestations, further risks and recommendations for treatment should be identified, and the Pima County CWPP should be updated or amended as necessary to meet the Pima County CWPP goals. To help track fuel treatments being planned and completed through local, state, and federal programs, the Pima County CWPP administrators will cooperate by providing requested detailed mapping information to the Arizona State Forester's office.

Table 5.1. Performance Measures to Assess Pima County CWPP Progress

Goal	Performance Measure
Improve fire prevention and suppression	Reduction of wildland fire occurrence and acres burned (unplanned) in the WUI: • Green-waste disposal sites available in high-risk communities. • Type 3 fire engine acquired by Northwest Fire Department. • Type 6 brush truck acquired for use in Green Valley community WUI. • Type 6 brush truck acquired for use in Catalina Foothills community WUI. • Effectiveness monitoring of fire prevention and suppression will include the following: — Acres burned and degree of severity of wildland fire — Percentage of wildland fire controlled on initial attack — Number of homes and structures lost to wildland fire • Integrated brushfire data base implemented and managed by SABCC • New water sources developed in key areas. • Consistent fire training in use. • Wildland firefighter personal protection equipment acquired as needed.
Reduce hazardous vegetative fuels	Effective treatment of high-risk areas by acre: • Number of treated acres of nonfederal WUI lands that are in Condition Class 2 or 3 are identified as high priorities by the Pima County CWPP and should be moved to Condition Class 1 or another acceptable level of wildland fuel loading and continuity. • Acres treated to acceptable fuel levels within priority treatment management areas. • Total acres treated through any fuel-reduction measures, including prescribed fire, that are conducted in, or adjacent to, the WUI. The change of condition class should be determined for small projects or treatment areas through the use of the LANDFIRE database. • Acres of buffelgrass invaded areas treated by agencies and volunteers.
Restore watershed health	Acres of fuel reduction or watershed enhancement treatments that meet restoration treatment guidelines for riparian habitats: • Coordination with and support of PCOEM, ASFD, ASLD, NPS, CNF, and BLM in implementing and determining social, economic, and environmental effects of riparian restoration treatments (Treatments 7 and 9, see Table 3.1 in mitigation plan). • Acres of saltcedar-invaded riparian areas identified and undergoing restoration treatments.
Promote community involvement and fire prevention	Initiation of public outreach programs: • Countywide community CWPP Working Group initiated. • Public outreach programs and promotions implemented to enhance volunteer efforts to reduce hazardous fuels. • Number and areas (community or dispersed residents) of private landowners supporting and implementing fuel reduction projects. • PCOEM and local fire departments and districts developed and implemented evacuation plans for identified high-risk areas. • Roadside fire-danger warning signs in English and Spanish installed at strategic points within the WUI. • Green-waste disposal and processing site secured and operational. • Fire-awareness articles printed in local newspapers. • Fire-safety awareness program, posters, and information available in public places.
Encourage economic development	Wood-products industry growth and diversification to use all sizes of material removed by fuel-reduction treatments: • Number of value-added wood products developed by the community. • Number of new markets (local firewood sales) for local products created.

VI. Declaration of Agreement and Concurrence

The following partners in the development of the Pima County Community Wildfire Protection Plan have reviewed and do mutually agree or concur with its contents:

Agreement

Pima County Board of Supervisors	Date
City of Oro Valley	Date
City of Sahuarita	Date
Town of Marana	Date
City of South Tucson	Date
City of Tucson	Date
President, Altar Valley Conservation Alliance	Date
Executive Director, Southern Arizona Buffelgrass Coordination Center	Date
Salt River Project	Date
Chief, Avra Valley Fire Department	Date

Chief, Picture Rocks Fire Department	Date
Chief, Northwest Fire Department	Date
Chief, Mountain Vista Fire Department	Date
Chief, Golder Ranch Fire District	Date
Chief, Hidden Valley Fire Department	Date
Chief, Tanque Verde Valley Fire Department	Date
Chief, Sabino Vista Volunteer Fire Department	Date
Chief, Tucson Fire Department	Date
Chief, South Tucson Fire Department	Date
Chief, Rincon Valley Fire Department	Date
Chief, Mescal-J6 Fire Department	Date

Chief, Corona De Tucson Fire Department	Date
Chief, Sonoita-Elgin Fire Department	Date
Chief, Green Valley Fire Department	Date
Chief, Elephant Head Volunteer Fire Department	Date
Chief, Helmet Peak Fire Department	Date
Chief, Three Points Fire Department	Date
Chief, Arivaca Fire Department	Date
Chief, Drexel Heights Fire Department	Date
Chief, Why Fire Department	Date
Chief, Mount Lemmon Fire District	Date
Chief, Pascua Yaqui Fire Department	Date

Concurrence

Arizona State Forester Arizona State Forestry Division	Date
Gila District Manager Bureau of Land Management	Date
Forest Supervisor Coronado National Forest	Date
Chairman Pascua Yaqui Tribe	Date
Superintendent Saguaro National Park	Date
Refuge Manager Buenos Aires National Wildlife Refuge	Date

VII. REFERENCES.

References:

Anderson, H. E. 1982. *Aids to Determining Fuel Models for Estimating Fire Behavior.* INT-122. National Wildlife Coordinating Group, Washington, DC.

Arivaca Fire Department. 2007. *Arivaca Sasabe Community Wildfire Protection Plan*

Arizona Wildlands Invasive Plant Working Group (AZ-WIPWG). 2005. *Invasive Non-Native Plants that Threaten Wildlands In Arizona: A Categorized List Developed by the Arizona Wildland Invasive Plant Working Group*. August.

Arizona State Forester. 2004. *Arizona Wildland Urban Interface Assessment*. http://www.azstatefire.org.

Arizona State Forester. 2007. *Identifying Arizona's Wildland/Urban Interface Communities at Risk: A Guide for State and Federal Land Managers*.

Arizona State Forester. 2009. *AZ Fires 1990 – 2008*. Spreadsheet. 2009

Arizona State Forester. 2009. *Arizona-Identified Communities at Risk.* http://www.azstatefire.org.

Arizona State Forestry Division. 2010a. *Arizona Forest Resource Assessment*. June 18, 2010

Arizona State Forestry Division. 2010b. *Arizona Forest Resource Strategy*. June 18, 2010

Arizona Wildlands Invasive Plant Working Group (AZ-WIPWG). 2005. *Invasive Non-Native Plants that Threaten Wildlands In Arizona: A Categorized List Developed by the Arizona Wildland Invasive Plant Working Group*. August.

Blonski, K.S., M.E. Morales and T.J. Morales. 2002. *Community-Scale Fire Spread*. Proceedings of the California's 2001 Wildfire Conference: Ten years after the 1991 East bay Hills Fire, 10-12 October, Oakland California Technical Report 35.01.462. Richmond CA; University of California Forest Products laboratory pp 126-139.

Burgan, Robert E. 1988. *1988 Revisions to the 1978 National Fire Danger Rating System*. Research Paper SE-273. USDA Forest Service Southeastern Forest Experiment Station, Asheville, NC.

Bureau of Indian Affairs (BIA) Salt River Agency. 2012a. *Wildland Fire Management Plan Bureau of Indian Affairs, Salt River Agency Salt River Pima-Maricopa Indian Community Fort McDowell Yavapai Nation Pascua Yaqui Tribe*. September 2012.

Brooks, M.L. 2008. Plant invasions and fire regimes. Pages 33-46 in Zouhar, K. J.K. Smith, S. Sutherland, and M.L. Brooks (editors). *Wildland fire in ecosystems: fire and nonnative invasive plants*. General Technical Report RMRS-GTR-42-vol. 6. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Ogden, UT 355 p.

Brooks, M. and M. Lusk. 2008. *Fire Management and Invasive Plans: a Handbook*. United States Fish and Wildlife Service, Arlington Virginia, 27 pp.

Brooks, M.L. and J.R. Matchett. 2006. Spatial and Temporal Patterns of Wildfires in the Mojave Desert. 1980-2004. Journal of Arid Environments 67:148-164.

Brown, David E.; Minnich, Richard A. 1986. Fire and changes in creosote bush scrub of the western Sonoran Desert, California. American Midland Naturalist. 116(2): 411-422. [537]

Buffelgrass Working Group. 2008. *Southern Arizona Buffelgrass Strategic Plan*. Southern Arizona Buffelgrass Coordination Center. Tucson, AZ 15 February 2008.

Cascabel Fire Department. 2006. *Cascabel Community Wildfire Protection Plan*

Cohen, J. 2008. *The Wildland Urban Interface Fire Problem A Consequence of the Fire Exclusion Paradigm.* Forest History Today. Forest History Society. http://www.ForestHistory.org.

Communities Committee of the Seventh American Forest Congress, Society of American Foresters, the National Association of State Foresters (NASF), the National Association of Counties, and the Western Governors Association (WGA). 2004. *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities*.

Communities Committee of the Seventh American Forest Congress, Society of American Foresters, the National Association of State Foresters (NASF), the National Association of Counties, and the Western Governors Association (WGA). 2008. *Community Guide to Preparing and Implementing a Community Wildfire Protection Plan. A supplemental guide to Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities.*

Federal Register. 2001a. Vol. 66, no. 3 pp 751-777. January 4.

Federal Register. 2001b. Vol. 66 no. 160, pp 43383-43435. August 17.

Fire Regime Condition Class (FRCC) Interagency Working Group. 2005a. *Fire Regime Condition Class (FRCC) Interagency Handbook Reference Conditions. Fire Regime Condition Class (FRCC) Potential Natural Vegetation Group (BpS) Descriptions*. http://www.frcc.gov/pnvgSummaries.html.

FRCC. 2005b. *Interagency Fire Regime Condition Class Guidebook. Fire Regime Condition Class Version 1.2*. http://www.frcc.gov/docs/1.2.2.2/Complete_Guidebook_V1.2.pdf.

FRCC 2010. Interagency Working Group. FRCC Guidebook Version 3.0, Sept. 2010. http://www.fire.org/niftt/released/FRCC_Guidebook_2010_final.pdf. p 15.

Golder Ranch Fire Department. 2007. *Catalina Community Wildfire Protection Plan*

Gori, D. F., and C. A. F. Enquist. 2003. *An Assessment of the Spatial Extent and Condition of Grasslands in Central and Southern Arizona, Southwestern New Mexico and Northern Mexico*. The Nature Conservancy, Arizona Chapter.

Governor's Forest Health Councils, State of Arizona. 2007. *The Statewide Strategy for Restoring Arizona's Forests*, edited by E. Aumack, T Sisk, and J. Palumbo. Arizona Public Service, Phoenix. June 2007.

Grissom, Perry. 2010. *Memorandum Fuel Models and buffelgrass spread modeling*. Saguaro National Park, Fire Ecologist. May 17, 2010.

Hauser, A. S. 2008. *Pennisetum ciliare.* In *Fire Effects Information System*. US Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/.

Hendricks, D. M. 1985. *Arizona Soils*. College of Agriculture, University of Arizona. Tucson.

Karl, Thomas R., Jerry M. Melillo and Thomas C. Peterson. eds. 2009. *Global Climate Change Impacts in the United States*. Cambridge University Press.

McDonald, C. 2009. *Management of non-native perennial grass in southern Arizona: effects of prescribed fire and livestock grazing*. PhD Dissertation, University of Arizona.

Mount Lemmon Fire District. 2004. *Mt. Lemmon Wildland-Urban Interface Plan for Forest Health Wildland Fire Management*. July 2004.

National Resources Conservation Service (NRCS). 2002. National Conservation Practice Standards, Range Planting. Code 550. http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/

National Association of State Foresters. 2003. *Field Guidance: Identifying and Prioritizing Communities at Risk.* http://www.stateforesters.org/field-guidance-identifying-and-prioritizing-communities-risk-june-2003

National Wildfire Coordinating Group. 2012. *Glossary of Wildland Fire Terminology*. National Wildfire Coordinating Group, Program Management Unit. http://www.nwcg.gov/pms/pubs/pubs.htm.

NRCS. 2008. *Altar Valley Fire Management Plan*. USDA NRSC Phoenix AZ. September 18, 2008.

NRSC. 2011. *MLRA Explorer Custom Report. D-Western Range and Irrigated Region 41-Southeastern Arizona Basin and Range 40-Sonoran Basin and Range 38-Mogollon Transition.* USDA Agriculture Handbook 296 http://soils.usda.giv/MLRAExplorer (accessed June 2011).

NatureServe. 2004. *Southwest ReGAP Analysis Project- Land Cover Data Legend Descriptions*. http://earth.gis.usu.edu/swregap/legend_desc.html.

Olsson, A.D., J. Betancourt, M.P. McClaran, and S.E. Marsh. 2012. *Sonoran Desert ecosystem transformation by a C4 grass without the grass/fire cycle*. Diversity and Distributions 18:10-21.

Presidential Policy. 2002. *Healthy Forests: An Initiative for Wildfire Prevention and Stronger Communities.* Presidential Policy. August 22, 2002

Pima County Ordinance No 2012-34. Adopting the 2012 International Wildland-Urban Interface Code applicable to areas designated Rural Forest Village under the Pima County Comprehensive Plan

Pima County Office of Emergency Management. 2012. *Pima County Multi-Jurisdictional Hazard Mitigation Plan*.

Rehm, R.G., A. Hamins, H.R. Baum, K.B. McGrattan, D.D. Evans, 2002. Community-Scale Fire Spread. NIST Report NISTIR 6891, National Institute of Standards and Technology.

Rogstad, Alix. Ed. 2008. *Southern Arizona Bufflegrass Strategic Plan. A Regional Guide for Control, Mitigation and Restoration*. Arizona-Sonora Desert Museum, Tucson.

Schmid, M.K. and G.F. Rogers. 1988. *Trends in fire occurrence in the Arizona Upland subdivision of the Sonoran Desert,* 1955 to 1983. Southwestern Naturalist 33:437-444.

Schmidt, K. M., J. P. Menakis, C. C. Hardy, W. J. Hann, and D. L. Bunnell. 2002. *Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management*. RMRS-87. USDA Forest Service, Washington, DC

Scott, Joe H., and Robert E. Burgan. 2005. *Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model*. Gen. Tech. Rep. RMRS-GTR-153. US Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, CO.

Sonoita Fire Department. 2007.*Sonoita Elgin Community Wildfire Protection Plan*

Southern Arizona Buffelgrass Coordination Center (SABCC). 2010. *Tucson Basin Buffelgrass Assessment.* http://www.buffelgrass.org/content/risk-assessment

SABCC. 2008. *Losing Ground: The War on Buffelgrass in the Sonoran Desert*. Buffelgrass Fire Behavior Video.

Southwest Strategy. 2004. *Southwest Community Wildfire Protection Plan Guide*. http://fire.az.gov/UserFiles/PDF/wildfire_plan_guide.pdf

Stevens, J. and D. Falk. 2009. *Can buffelgrass invasions be controlled in the American Southwest? Using invasion ecology theory to understand buffelgrass success and develop comprehensive restoration and management*. Ecological Restoration 27:417-427.

Tohono O'odham Nation. 2004. *Tohono O'odham Nation Fire Management Plan*. September 2004.

Tohono O'odham Nation. No Date. *Demographic Analysis of the Tohono O'odham Nation Using 2010 Census and 2010 American Community Survey Estimates*. Department of Planning & Economic Development Tohono O'odham Nation Tribe P.O. Box 837 Sells, AZ 85634

USDA Forest Service. 1983. *The 1978 National Fire-Danger Rating System: Technical Documentation*. Intermountain Forest and Range Experiment Station. Ogden, Utah 84401. General Technical Report INT-169. July 1983

USDA Forest Service. 2000. *USDA Forest Service Handbook 1909*. Washington, DC.

USDA Forest Service and USDI. 2001. A collaborative approach for reducing wildland fire risks to communities and the environment – 10 year comprehensive strategy. Western Governors' Association. August, 2002.

USDA Forest Service. 1988 as amended. Coronado National Forest Land and Resource Management Plan*. Coronado National Forest, Tucson, AZ.*

USDA Forest Service. 2010. *Coronado National Forest Fire Management Plan*. Coronado National Forest. May 18, 2010.

USDA Forest Service. 2011. *Landscape Conservation and Restoration Strategic Action Plan.* Southwest Region January 31, 2011

USDI and USDA 2005. *Wildland Fire Use Implementation Procedures Reference Guide*. May 2005.

USDA and USDI. 2009. *Guidance for Implementation of Federal Wildland Fire Management Policy* (February 13, 2009) http://www.nifc.gov/policies/policies_documents/GIFWFMP.pdf

US Geological Survey (USGS) National GAP Analysis Program. 2005. Southwest Regional GAP Analysis Project—Land Cover Data Legend Descriptions. RS/GIS Laboratory, College of Natural Resources, Utah State University. http://ftp.nr.usu.edu/swgap/legend_desc.html.

USDA. 2012. *Climate Change and Agriculture in the US: An Assessment of Effects and Potential for Adaption*. Technical Submission to the National Climate Assessment 2012.

USDI BLM. 2004a. *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record*.

USDI BLM. 2004b. *Wildland Fire Suppression (Including Wildland Fire Use) and Rehabilitation in Riparian and Aquatic Habitats* (RA).

USDI. BLM. 2013*. Arizona BLM Gila District Fire Management Plan.*

Westerling, A.L., H. G. Hidalgo, D. R. Cayan, and T. W. Swetnam. 2006. *Warming and Earlier Spring Increase Western U.S. Forest Wildfire Activity.* Science 313, 940. DOI: 10.1126/science. 1128834

Western Governors' Association. Forest health Advisory Committee. 2010. *Forest Health Landscape-scale Restoration Recommendations* December 2010. http://www.westgov.org/initiatives/foresthealth.

Wildland Fire Leadership Council (WFLC). 2002. "Resources: Polices and Guidelines." National Fire Plan. http://www.fireplan.gov/resources/policies. accessed 2013

WFLC. 2012. *A National Cohesive Wildland Fire Management Strategy-Phase II National Report*. Washington, DC.

Zouhar, Kris. 2003. Tamarix spp. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: http://www.fs.fed.us/database/feis/ [2013, May 6].

VIII. GLOSSARY OF FIRE MANAGEMENT TERMS

A

Aerial Fuels: All live and dead vegetation in the forest canopy or above surface fuels, including tree branches, twigs and cones, snags, moss, and high brush.

Aerial Ignition: Ignition of fuels by dropping incendiary devices or materials from aircraft.

Air Tanker: A fixed-wing aircraft equipped to drop fire retardants or suppressants.

Agency: Any federal, state, county, or city government organization participating with jurisdictional responsibilities.

Anchor Point: An advantageous location, usually a barrier to fire spread, from which to start building a fire line. An anchor point is used to reduce the chance of firefighters being flanked by fire.

Appropriate Tools: Methods for reducing hazardous fuels including prescribed fire, wildland fire use, and various mechanical methods such as crushing, tractor and hand piling, thinning (to produce commercial or pre-commercial products), and pruning. They are selected on a site-specific case and are ecologically appropriate and cost effective.

Aramid: The generic name for a high-strength, flame-resistant synthetic fabric used in the shirts and jeans of firefighters. Nomex, a brand name for aramid fabric, is the term commonly used by firefighters.

Aspect: Direction toward which a slope faces.

B

Backfire: A fire set along the inner edge of a fireline to consume the fuel in the path of a wildfire and/or change the direction of force of the fire's convection column.

Backpack Pump: A portable sprayer with hand-pump, fed from a liquid-filled container fitted with straps, used mainly in fire and pest control. (see Bladder Bag)

Bambi Bucket: A collapsible bucket slung below a helicopter. Used to dip water from a variety of sources for fire suppression.

Basal area: The cross-sectional area of all stems of a species or all stems in a stand measured at breast height and expressed per unit of land area. (http://dictionaryofforestry.org/dict/term/basal_area)

Behave: A system of interactive computer programs for modeling fuel and fire behavior that consists of two systems: BURN and FUEL.

Bladder Bag: A collapsible backpack portable sprayer made of neoprene or high-strength nylon fabric fitted with a pump. (see Backpack Pump)

Glossary of Wildland Fire Terminology, at http://www.nwcg.gov/pms/pubs/pubs.htm (National Wildfire Coordinating Group Program Management Unit, 2012).

Blow-up: A sudden increase in fire intensity or rate of spread strong enough to prevent direct control or to upset control plans. Blow-ups are often accompanied by violent convection and may have other characteristics of a fire storm. (see Flare-up)

Brush: A collective term that refers to stands of vegetation dominated by shrubby, woody plants, or low growing trees, usually of a type undesirable for livestock or timber management.

Brush Fire: A fire burning in vegetation that is predominantly shrubs, brush and scrub growth.

Bucket Drops: The dropping of fire retardants or suppressants from specially designed buckets slung below a helicopter.

Buffer Zones: An area of reduced vegetation that separates wildlands from vulnerable residential or business developments. This barrier is similar to a greenbelt in that it is usually used for another purpose such as agriculture, recreation areas, parks, or golf courses.

Bump-up Method: A progressive method of building a fire line on a wildfire without changing relative positions in the line. Work is begun with a suitable space between workers. Whenever one worker overtakes another, all workers ahead move one space forward and resume work on the uncompleted part of the line. The last worker does not move ahead until completing his or her space.

Burnable Acres: Any vegetative material/type that is susceptible to burning.

Burned Area Rehabilitation: The treatment of an ecosystem following fire disturbance to minimize subsequent effects. (1995 Federal Wildland Fire Policy.)

Burn Out: Setting fire inside a control line to widen it or consume fuel between the edge of the fire and the control line.

Burning Ban: A declared ban on open air burning within a specified area, usually due to sustained high fire danger.

Burning Conditions: The state of the combined factors of the environment that affect fire behavior in a specified fuel type.

Burning Index: An estimate of the potential difficulty of fire containment as it relates to the flame length at the most rapidly spreading portion of a fire's perimeter.

Burning Period: That part of each 24-hour period when fires spread most rapidly, typically from 10:00 a.m. to sundown.

Burn Intensity: The amount and rate of surface fuel consumption. It is not a good indicator of the degree of chemical, physical and biological changes to the soil or other resources. (see Fire Severity)

C

Campfire: As used to classify the cause of a wildland fire, a fire that was started for cooking or warming that spreads sufficiently from its source to require action by a fire control agency.

Candle or Candling: A single tree or a very small clump of trees that is burning from the bottom up.

Catastrophic: Fire that burns more intensely than the natural or historical range or variability, thereby fundamentally changing the ecosystem, destroying communities and/or rare or threatened species/habitats, or causing unacceptable erosion [definition added from the *Proposed Statewide Land Use Plan for Fire, Fuels and Air Quality Management* (USDI Bureau of Land Management 2004)]. (see Severe Wildland Fire)

Chain: A unit of linear measurement equal to 66 horizontal feet.

Closure: Legal restriction, but not necessarily elimination of specified activities such as smoking, camping, or entry that might cause fires in a given area.

Cold Front: The leading edge of a relatively cold air mass that displaces warmer air. The heavier cold air may cause some of the warm air to be lifted. If the lifted air contains enough moisture, the result may be cloudiness, precipitation, and thunderstorms. If both air masses are dry, no clouds may form. Following the passage of a cold front in the Northern Hemisphere, westerly or northwesterly winds of 15 to 30 or more miles per hour often continue for 12 to 24 hours.

Cold Trailing: A method of controlling a partly dead fire edge by carefully inspecting and feeling with the hand for heat to detect any fire, digging out every live spot, and trenching any live edge.

Command Staff: The command staff consists of the information officer, safety officer and liaison officer. They report directly to the incident commander and may have assistants.

Community Impact Zone (CIZ): The zone around a community that may be impacted by wildfire. Similar to Defensible Space, but on a community level.

Complex: Two or more individual incidents located in the same general area, which are assigned to a single incident commander or unified command.

Condition Class: Based on coarse scale national data, Fire Condition Classes measure general wildfire risk as follows:

> *Condition Class 1*. For the most part, fire regimes in this Fire Condition Class are within historical ranges. Vegetation composition and structure are intact. Thus, the risk of losing key ecosystem components from the occurrence of fire remains relatively low.
>
> *Condition Class 2*. Fire regimes on these lands have been moderately altered from their historical range by either increased or decreased fire frequency. A moderate risk of losing key ecosystem components has been identified on these lands.
>
> *Condition Class 3*. Fire regimes on these lands have been significantly altered from their historical return interval. The risk of losing key ecosystem components from fire is high. Fire frequencies have departed from historical ranges by multiple return intervals. Vegetation composition, structure and diversity have been significantly altered. Consequently, these lands verge on the greatest risk of ecological collapse. (Cohesive Strategy 2002, in draft)

Contain a Fire: A fuel break around the fire has been completed. This break may include natural barriers or manually and/or mechanically constructed line.

Control a Fire: The complete extinguishment of a fire, including spot fires. Fireline has been strengthened so that flare-ups from within the perimeter of the fire will not break through this line.

Control Line: All built or natural fire barriers and treated fire edge used to control a fire.

Cooperating Agency: An agency supplying assistance other than direct suppression, rescue, support, or service functions to the incident control effort; e.g., Red Cross, law enforcement agency, telephone company, etc.

Coyote Tactics: A progressive line construction duty involving self-sufficient crews that build fire line until the end of the operational period, remain at or near the point while off duty, and begin building fire line again the next operational period where they left off.

Creeping Fire: Fire burning with a low flame length and spreading slowly.

Crew Boss: A person in supervisory charge of usually 16 to 21 firefighters and responsible for their performance, safety, and welfare.

Critical Ignition Zones: Those areas that are likely to be key in the formation of large wildfires if ignition occurs at that location. These include locations such as at the bottom of a hill, or in fuels that will ignite easily and sustain growth of fire with increasing flame lengths and fire intensity.

Crown Fire (Crowning): The movement of fire through the crowns of trees or shrubs more or less independently of the surface fire.

Curing: Drying and browning of herbaceous vegetation or slash.

D

Dead Fuels: Fuels with no living tissue in which moisture content is governed almost entirely by atmospheric moisture (relative humidity and precipitation), dry-bulb temperature, and solar radiation.

Debris Burning: A fire spreading from any fire originally set for the purpose of clearing land or for rubbish, garbage, range, stubble, or meadow burning.

Defensible Space: An area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and the loss to life, property, or resources. In practice, “defensible space” is defined as an area a minimum of 30 feet around a structure that is cleared of flammable brush or vegetation. (see Survivable Space)

Deployment: See Fire Shelter Deployment.

Detection: The act or system of discovering and locating fires.

Diameter root collar: The diameter at the location on a plant where the primary vascular anatomy changes from that of a stem to that of a root. (http://dictionaryofforestry.org/dict/term/root_collar)

Diameter breast height: a standard height from ground level, generally 4.5 ft (1.37 m), for recording diameter, circumference (girth), or basal area of a tree. (http://dictionaryofforestry.org/dict/term/breast_height)

Direct Attack: Any treatment of burning fuel, such as by wetting, smothering, or chemically quenching the fire or by physically separating burning from unburned fuel.

Dispatch: The implementation of a command decision to move a resource or resources from one place to another.

Dispatcher: A person employed who receives reports of discovery and status of fires, confirms their locations, takes action promptly to provide people and equipment likely to be needed for control in first attack, and sends them to the proper place.

Dispatch Center: A facility from which resources are directly assigned to an incident.

Division: Divisions are used to divide an incident into geographical areas of operation. Divisions are established when the number of resources exceeds the span-of-control of the operations chief. A division is located with the Incident Command System organization between the branch and the task force/strike team.

Dozer: Any tracked vehicle with a front-mounted blade used for exposing mineral soil.

Dozer Line: Fire line constructed by the front blade of a dozer.

Drip Torch: Hand-held device for igniting fires by dripping flaming liquid fuel on the materials to be burned; consists of a fuel fount, burner arm, and igniter. Fuel used is generally a mixture of diesel and gasoline.

Drop Zone: Target area for air tankers, helitankers, and cargo dropping.

Drought Index: A number representing net effect of evaporation, transpiration, and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.

Dry Lightning Storm: Thunderstorm in which negligible precipitation reaches the ground. Also called a dry storm.

Duff: The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, and leaves and immediately above the mineral soil.

E

Ecosystem: A spatially explicit, relative homogeneous unit of the Earth that includes all interacting organisms and components of any part of the natural environment within its boundaries. An ecosystem can be of any size, e.g., a log, pond, field, forest, or the Earth's biosphere (Society of American Foresters, 1998).

Ecosystem Integrity: The completeness of an ecosystem that at geographic and temporal scales maintains its characteristics diversity of biological and physical components, composition, structure, and function (Cohesive Strategy, 2000).

Energy Release Component (ERC): The computed total heat released per unit area (British thermal units per square foot) within the fire front at the head of a moving fire.

Engine: Any ground vehicle providing specified levels of pumping, water and hose capacity.

Engine Crew: Firefighters assigned to an engine. The *Fireline Handbook* defines the minimum crew makeup by engine type.

Entrapment: A situation where personnel are unexpectedly caught in a fire behavior-related, life-threatening position where planned escape routes or safety zones are absent, inadequate, or compromised. An entrapment may or may not include deployment of a fire shelter for its intended purpose. These situations may or may not result in injury. They include "near misses."

Environmental Assessment (EA): EAs were authorized by the National Environmental Policy Act (NEPA) of 1969. They are concise, analytical documents prepared with public participation that determine if an

Environmental Impact Statement (EIS) is needed for a particular project or action. If an EA determines an EIS is not needed, the EA becomes the document allowing agency compliance with NEPA requirements.

Environmental Impact Statement (EIS): EISs were authorized by the National Environmental Policy Act (NEPA) of 1969. Prepared with public participation, they assist decision makers by providing information, analysis and an array of action alternatives, allowing managers to see the probable effects of decisions on the environment. Generally, EISs are written for large-scale actions or geographical areas.

Equilibrium Moisture Content: Moisture content that a fuel particle will attain if exposed for an infinite period in an environment of specified constant temperature and humidity. When a fuel particle reaches equilibrium moisture content, net exchange of moisture between it and the environment is zero.

Escape Route: A preplanned and understood route firefighters take to move to a safety zone or other low-risk area, such as an already burned area, previously constructed safety area, a meadow that won't burn, natural rocky area that is large enough to take refuge without being burned. When escape routes deviate from a defined physical path, they should be clearly marked (flagged).

Escaped Fire: A fire that has exceeded or is expected to exceed initial attack capabilities or prescription.

Extended Attack Incident: A wildland fire that has not been contained or controlled by initial attack forces and for which more firefighting resources are arriving, en route, or being ordered by the initial attack incident commander.

Extreme Fire Behavior: "Extreme" implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One of more of the following is usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, strong convection column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behave erratically, sometimes dangerously.

F

Faller: A person who fells trees. Also called a sawyer or cutter.

Field Observer: Person responsible to the Situation Unit Leader for collecting and reporting information about an incident obtained from personal observations and interviews.

Fine (Light) Fuels: Fast-drying fuels, generally with a comparatively high surface area-to-volume ratio, which are less than 1/4-inch in diameter and have a timelag of one hour or less. These fuels readily ignite and are rapidly consumed by fire when dry.

Fingers of a Fire: The long narrow extensions of a fire projecting from the main body.

Fire Behavior: The manner in which a fire reacts to the influences of fuel, weather and topography.

Fire Behavior Forecast: Prediction of probable fire behavior, usually prepared by a Fire Behavior Officer, in support of fire suppression or prescribed burning operations.

Fire Behavior Specialist: A person responsible to the Planning Section Chief for establishing a weather data collection system and for developing fire behavior predictions based on fire history, fuel, weather and topography.

Firebreak: A natural or constructed barrier used to stop or check fires that may occur or to provide a control line from which to work.

Fire Cache: A supply of fire tools and equipment assembled in planned quantities or standard units at a strategic point for exclusive use in fire suppression.

Fire Crew: An organized group of firefighters under the leadership of a crew leader or other designated official.

Fire Defense System: The cumulative effect of the fire suppression system of a community, including fuels reduction programs, fire breaks, defensible space, and the response capabilities of emergency personnel.

Fire District: A special taxing district organized for community fire protection under Arizona Revised Statutes Chapter 5 Fire Districts, Article 1 General Provisions, 48-805.

Fire Frequency: The natural return interval for a particular ecosystem.

Fire Front: The part of a fire within which continuous flaming combustion is taking place. Unless otherwise specified the fire front is assumed to be the leading edge of the fire perimeter. In ground fires, the fire front may be mainly smoldering combustion.

Fire Hazard Reduction Zone: Home ignition zone area, where fuel reduction and home fire resistant projects should take place to reduce the risk of a wildfire damaging a structure.

Fire Intensity: A general term relating to the heat energy released by a fire.

Fire Line: A linear fire barrier that is scraped or dug to mineral soil.

Fire Load: The number and size of fires historically experienced on a specified unit over a specified period (usually one day) at a specified index of fire danger.

Fire Management Plan (FMP): A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

Fire Management Planning: A generic term referring to all levels and categories of fire management planning, including: preparedness, prevention, hazardous risk assessment, and mitigation planning.

Fire Management Unit (FMU): A land management area definable by objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, major fire regime groups, etc. that set it apart from the characteristics of an adjacent FMU. The FMU may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives.

Fire Perimeter: The entire outer edge or boundary of a fire.

Fire-prone ecosystem: Ecosystems that historically burned intensely at low frequencies (stand replacing fires), those that burned with low intensity at a high frequency (understory fires), and those that burned very infrequently historically, but are not subject to much more frequent fires because of changed conditions. These include fire-influenced and fire-adapted ecosystems (Cohesive Strategy, 2000).

Fire Regime: A generalized description of the role fire plays in an ecosystem. It is characterized by fire frequency, predictability, seasonality, intensity, duration, scale (patch size), as well as regularity or variability. Five combinations of fire frequency, expressed as fire return interval in fire severity, are defined:

> *Groups I and II* include fire return intervals in the 0–35 year range. Group I includes Ponderosa pine, other long needle pine species, and dry site Douglas fir. Group II includes the drier grassland types, tall grass prairie, and some Pacific chaparral ecosystems.
>
> *Groups III and IV* include fire return internals in the 35–100+ year range. Group III includes interior dry site shrub communities such as sagebrush and chaparral ecosystems. Group IV includes lodgepole pine and jack pine.
>
> *Group V* is the long interval (infrequent), stand replacement fire regime and includes temperate rain forest, boreal forest, and high elevation conifer species.

Fire-Return Interval: The number of years between successive fire events at a specific site or an area of a specified size.

Fire Risk Reduction Zone: A zone targeted for risk reduction, including measures such as fuels reduction, access protection, and construction of structures to minimize the risk of ignition from wildfire.

Fire Season: (1) Period(s) of the year during which wildland fires are likely to occur, spread, and affect resource values sufficient to warrant organized fire management activities. (2) A legally enacted time during which burning activities are regulated by state or local authority.

Fire Severity: The amount of heat that is released by a fire and how it affects other resources. It is dependent on the type of fuels and the behavior of the fuels when they are burned. (see Burn Intensity)

Fire Shelter: An aluminized tent offering protection by means of reflecting radiant heat and providing a volume of breathable air in a fire entrapment situation. Fire shelters should only be used in life-threatening situations, as a last resort.

Fire Shelter Deployment: The removing of a fire shelter from its case and using it as protection against fire.

Firestorm: A fire of great size and intensity that generates and is fed by strong inrushing winds from all sides; the winds add fresh oxygen to the fire, increasing the intensity.

Fire Triangle: Instructional aid in which the sides of a triangle are used to represent the three factors (oxygen, heat, fuel) necessary for combustion and flame production; removal of any of the three factors causes flame production to cease.

Fire Use Module (Prescribed Fire Module): A team of skilled and mobile personnel dedicated primarily to prescribed fire management. These are national and interagency resources, available throughout the prescribed fire season, that can ignite, hold and monitor prescribed fires.

Fire Use: The combination of wildland fire use and prescribed fire application to meet resource objectives.

Fire Weather: Weather conditions that influence fire ignition, behavior and suppression.

Fire Weather Watch: A term used by fire weather forecasters to notify using agencies, usually 24 to 72 hours ahead of the event, that current and developing meteorological conditions may evolve into dangerous fire weather.

Fire Whirl: Spinning vortex column of ascending hot air and gases rising from a fire and carrying aloft smoke, debris, and flame. Fire whirls range in size from less than one foot to more than 500 feet in diameter. Large fire whirls have the intensity of a small tornado.

Firewise: A public education program developed by the National Wildland Fire Coordinating Group that assists communities located in proximity to fire-prone lands. (For additional information, see http://www.firewise.org)

Firefighting Resources: All people and major items of equipment that can or potentially could be assigned to fires.

Flame Height: The average maximum vertical extension of flames at the leading edge of the fire front. Occasional flashes that rise above the general level of flames are not considered. This distance is less than the flame length if flames are tilted due to wind or slope.

Flame Length: The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

Flaming Front: The zone of a moving fire where the combustion is primarily flaming. Behind this flaming zone, combustion is primarily glowing. Light fuels typically have a shallow flaming front, whereas heavy fuels have a deeper front. Also called fire front.

Flanks of a Fire: The parts of a fire's perimeter that are roughly parallel to the main direction of spread.

Flare-up: Any sudden acceleration of fire spread or intensification of a fire. Unlike a blow-up, a flare-up lasts a relatively short time and does not radically change control plans.

Flash Fuels: Fuels such as grass, leaves, draped pine needles, fern, tree moss and some kinds of slash, that ignite readily and are consumed rapidly when dry. Also called fine fuels.

Forb: A plant with a soft, rather than permanent woody stem, that is not a grass or grass-like plant.

Fuel: Combustible material. Includes, vegetation, such as grass, leaves, ground litter, plants, shrubs and trees, that feed a fire. (see Surface Fuels)

Fuel Bed: An array of fuels usually constructed with specific loading, depth and particle size to meet experimental requirements; also, commonly used to describe the fuel composition in natural settings.

Fuel Loading: The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area.

Fuel Model: Simulated fuel complex (or combination of vegetation types) for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

Fuel Moisture (Fuel Moisture Content): The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212 degrees Fahrenheit.

Fuel Reduction: Manipulation, including combustion, or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control. Incorporated within this are treatments to protect, maintain, and restore land health and desired fire cycles.

Fuel Type: An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

Fusee: A colored flare designed as a railway-warning device and widely used to ignite suppression and prescription fires.

G

General Staff: The group of incident management personnel reporting to the incident commander. They may each have a deputy, as needed. Staff consists of operations section chief, planning section chief, logistics section chief, and finance/administration section chief.

Geographic Area: A political boundary designated by the wildland fire protection agencies, where these agencies work together in the coordination and effective utilization of firefighting resources.

Ground Fuel: All combustible materials below the surface litter, including duff, tree or shrub roots, dried out dead wood, peat, and sawdust that normally support a glowing combustion without flame.

H

Haines Index: An atmospheric index used to indicate the potential for wildfire growth by measuring the stability and dryness of the air over a fire.

Hand Line: A fire line built with hand tools.

Hazard Reduction: Any treatment of a hazard that reduces the threat of ignition and fire intensity or rate of spread.

Hazardous Fuels Reduction: “Fuel Reduction” is defined as the manipulation or removal of fuels, including combustion, to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control. Incorporated within this are treatments to protect, maintain, and restore land health and desired fire cycles. “Hazard Reduction” is defined as any treatment of a hazard that reduces the threat of ignition and fire intensity or rate of spread.

Head of a Fire: The side of the fire having the fastest rate of spread.

Heavy Fuels: Fuels of large diameter such as snags, logs, large limb wood, that ignite and are consumed more slowly than flash fuels.

Helibase: The main location within the general incident area for parking, fueling, maintaining, and loading helicopters. The helibase is usually located at or near the incident base.

Helispot: A temporary landing spot for helicopters.

Helitack: The use of helicopters to transport crews, equipment, and fire retardants or suppressants to the fire line during the initial stages of a fire.

Helitack Crew: A group of firefighters trained in the technical and logistical use of helicopters for fire suppression.

Holding Actions: Planned actions required to achieve wildland prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions.

Holding Resources: Firefighting personnel and equipment assigned to do all required fire suppression work following fireline construction but generally not including extensive mop-up.

Home Ignitability: The ignition potential within the Home Ignition Zone.

Home Ignition Zone: The home and its immediate surroundings. The home ignition zone extends to a few tens of meters around a home not hundreds of meters or beyond. Home ignitions and, thus, the WUI fire loss problem principally depend on home ignitability.

Hose Lay: Arrangement of connected lengths of fire hose and accessories on the ground, beginning at the first pumping unit and ending at the point of water delivery.

Hotshot Crew: A highly trained fire crew used mainly to build fireline by hand.

Hotspot: A particular active part of a fire.

Hotspotting: Reducing or stopping the spread of fire at points of particularly rapid rate of spread or special threat, generally the first step in prompt control, with emphasis on first priorities.

I

Incendiary: Causing or capable of causing fire.

Incident: A human-caused or natural occurrence, such as wildland fire, that requires emergency service action to prevent or reduce the loss of life or damage to property or natural resources.

Incident Action Plan (IAP): Contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The plan may be oral or written. When written, the plan may have a number of attachments, including: incident objectives, organization assignment list, division assignment, incident radio communication plan, medical plan, traffic plan, safety plan, and incident map.

Incident Command Post (ICP): Location at which primary command functions are executed. The ICP may be co-located with the incident base or other incident facilities.

Incident Command System (ICS): The combination of facilities, equipment, personnel, procedure and communications operating within a common organizational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to an incident.

Incident Commander: Individual responsible for the management of all incident operations at the incident site.

Incident Management Team: The incident commander and appropriate general or command staff personnel assigned to manage an incident.

Incident Objectives: Statements of guidance and direction necessary for selection of appropriate strategy(ies), and the tactical direction of resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed.

Indigenous Knowledge: Knowledge of a particular region or environment from an individual or group that lives in that particular region or environment, e.g., traditional ecological knowledge of American Indians (FS National Resource Book on American Indian and Alaskan Native Relations, 1997).

Infrared Detection: The use of heat sensing equipment, known as Infrared Scanners, for detection of heat sources that are not visually detectable by the normal surveillance methods of either ground or air patrols.

Initial Attack: The actions taken by the first resources to arrive at a wildfire to protect lives and property, and prevent further extension of the fire.

J

Job Hazard Analysis: This analysis of a project is completed by staff to identify hazards to employees and the public. It identifies hazards, corrective actions and the required safety equipment to ensure public and employee safety.

Jump Spot: Selected landing area for smokejumpers.

Jump Suit: Approved protection suite work by smokejumpers.

K

Keech Byram Drought Index (KBDI): Commonly used drought index adapted for fire management applications, with a numerical range from 0 (no moisture deficiency) to 800 (maximum drought).

Knock Down: To reduce the flame or heat on the more vigorously burning parts of a fire edge.

L

Ladder Fuels: Fuels that provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

Large Fire: (1) For statistical purposes, a fire burning more than a specified area of land, for example, 300 acres. (2) A fire burning with a size and intensity such that its behavior is determined by interaction between its own convection column and weather conditions above the surface.

Lead Plane: Aircraft with pilot used to make dry runs over the target area to check wing and smoke conditions and topography and to lead air tankers to targets and supervise their drops.

Light (Fine) Fuels: Fast-drying fuels, generally with a comparatively high surface area-to-volume ratio, which are less than 1/4-inch in diameter and have a timelag of one hour or less. These fuels readily ignite and are rapidly consumed by fire when dry.

Lightning Activity Level (LAL): A number on a scale of 1 to 6 that reflects frequency and character of cloud-to ground lightning. The scale is exponential, based on powers of 2 (i.e., LAL 3 indicates twice the lightning of LAL 2).

Line Scout: A firefighter who determines the location of a fire line.

Litter: Top layer of the forest, scrubland, or grassland floor, directly above the fermentation layer, composed of loose debris of dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition.

Live Fuels: Living plants, such as trees, grasses, and shrubs, in which the seasonal moisture content cycle is controlled largely by internal physiological mechanisms, rather than by external weather influences.

M

Micro-Remote Environmental Monitoring System (Micro-REMS): Mobile weather monitoring station. A Micro-REMS usually accompanies an incident meteorologist and ATMU to an incident.

Mineral Soil: Soil layers below the predominantly organic horizons; soil with little combustible material.

Mobilization: The process and procedures used by all organizations, federal, state and local for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

Modular Airborne Firefighting System (MAFFS): A manufactured unit consisting of five interconnecting tanks, a control pallet, and a nozzle pallet, with a capacity of 3,000 gallons, designed to be rapidly mounted inside an unmodified C-130 (Hercules) cargo aircraft for use in dropping retardant on wildland fires.

Mop-up: To make a fire safe or reduce residual smoke after the fire has been controlled by extinguishing or removing burning material along or near the control line, felling snags, or moving logs so they won't roll downhill.

Multiagency Coordination (MAC): A generalized term that describes the functions and activities of representatives of involved agencies and/or jurisdictions who come together to make decisions regarding the prioritizing of incidents and the sharing and use of critical resources. The MAC organization is not a part of the on-scene ICS and is not involved in developing incident strategy or tactics.

Mutual Aid Agreement: Written agreement between agencies and/or jurisdictions in which they agree to assist one another upon request, by furnishing personnel and equipment.

N

National Environmental Policy Act (NEPA): NEPA is the basic national law for protection of the environment, passed by Congress in 1969. It sets policy and procedures for environmental protection, and authorizes Environmental Impact Statements and Environmental Assessments to be used as analytical tools to help federal managers make decisions.

National Fire Danger Rating System (NFDRS): A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

National Wildfire Coordinating Group (NWCG): A group formed under the direction of the Secretaries of Agriculture and the Interior and comprised of representatives of the US Forest Service, Bureau of Land Management, Bureau of Indian Affairs, National Park Service, US Fish and Wildlife Service, and Association of State Foresters. The group's purpose is to facilitate coordination and effectiveness of wildland fire activities and provide a forum to discuss, recommend action, or resolve issues and problems of substantive nature. NWCG is the certifying body for all courses in the National Fire Curriculum.

Nomex: Trade name for a fire-resistant synthetic material used in the manufacturing of flight suits and pants and shirts used by firefighters. (see Aramid)

Normal Fire Season: (1) A season when weather, fire danger, and number and distribution of fires are about average. (2) Period of the year that normally comprises the fire season.

O

Operations Branch Director: Person under the direction of the operations section chief who is responsible for implementing that portion of the incident action plan appropriate to the branch.

Operational Period: The period of time scheduled for execution of a given set of tactical actions as specified in the Incident Action Plan. Operational periods can be of various lengths, although usually not more than 24 hours.

Overhead: People assigned to supervisory positions, including incident commanders, command staff, general staff, directors, supervisors, and unit leaders.

P

Pack Test: Used to determine the aerobic capacity of fire suppression and support personnel and assign physical fitness scores. The test consists of walking a specified distance, with or without a weighted pack, in a predetermined period of time, with altitude corrections.

Paracargo: Anything dropped, or intended for dropping, from an aircraft by parachute, by other retarding devices, or by free fall.

Participating Agency: 1) an agency that has an interest in, is consulted about, and has the opportunity to become involved in a project or program; or 2) an agency invited to be included in the production, review, development of plans or process for a project without authority to act or does not intent to act with respect to the project

Peak Fire Season: That period of the fire season during which fires are expected to ignite most readily, to burn with greater than average intensity, and to create damages at an unacceptable level.

Performance Measures: A quantitative or qualitative characterization of performance (Government Performance and Results Act of 1993).

Personal Protective Equipment (PPE): All firefighting personnel must be equipped with proper equipment and clothing in order to mitigate the risk of injury from, or exposure to, hazardous conditions encountered while working. PPE includes, but is not limited to, 8-inch-high laced leather boots with lug soles, fire shelter, hard hat with chin strap, goggles, ear plugs, aramid shirts and trousers, leather gloves, and individual first aid kits.

Preparedness: Condition or degree of being ready to cope with a potential fire situation.

Prescribed Fire: Any fire ignited by management actions under certain, predetermined conditions to meet specific objectives related to hazardous fuels or habitat improvement. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition.

Prescribed Fire Plan (Burn Plan): This document provides the prescribed fire burn boss information needed to implement an individual prescribed fire project.

Prescription: Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

Prevention: Activities directed at reducing the incidence of fires, including public education, law enforcement, personal contact, and reduction of fuel hazards.

Project Fire: A fire of such size or complexity that a large organization and prolonged activity is required to suppress it.

Pulaski: A combination chopping and trenching tool, which combines a single-bitted axe-blade with a narrow adze-like trenching blade fitted to a straight handle. Useful for grubbing or trenching in duff and matted roots. Well-balanced for chopping.

R

Radiant Burn: A burn received from a radiant heat source.

Radiant Heat Flux: The amount of heat flowing through a given area in a given time, usually expressed as calories/square centimeter/second.

Rappelling: Technique of landing specifically trained firefighters from hovering helicopters; involves sliding down ropes with the aid of friction-producing devices.

Rate of Spread: The relative activity of a fire in extending its horizontal dimensions. It is expressed as a rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Usually it is expressed in chains or acres per hour for a specific period in the fire's history.

Reburn: The burning of an area that has been previously burned but that contains flammable fuel that ignites when burning conditions are more favorable; an area that has reburned.

Red Card: Fire qualification card issued to fire rated persons showing their training needs and their qualifications to fill specified fire suppression and support positions in a large fire suppression or incident organization.

Red Flag Warning: Term used by fire weather forecasters to alert forecast users to an ongoing or imminent critical fire weather pattern.

Rehabilitation: The activities necessary to repair damage or disturbance caused by wildland fires or the fire suppression activity.

Relative Humidity (Rh): The ratio of the amount of moisture in the air, to the maximum amount of moisture that air would contain if it were saturated. The ratio of the actual vapor pressure to the saturated vapor pressure.

Remote Automatic Weather Station (RAWS): An apparatus that automatically acquires, processes, and stores local weather data for later transmission to the GOES Satellite, from which the data is re-transmitted to an earth-receiving station for use in the National Fire Danger Rating System.

Resiliency: The capacity of an ecosystem to maintain or regain normal function and development following disturbance (Society of American Foresters, 1998).

Resources: (1) Personnel, equipment, services and supplies available, or potentially available, for assignment to incidents. (2) The natural resources of an area, such as timber, grass, watershed values, recreation values, and wildlife habitat.

Resource Management Plan (RMP): A document prepared by field office staff with public participation and approved by field office managers that provides general guidance and direction for land management activities at a field office. The RMP identifies the need for fire in a particular area and for a specific benefit.

Resource Order: An order placed for firefighting or support resources.

Response Time: The amount of time it takes from when a request for help is received by the emergency dispatch system until emergency personnel arrive at the scene.

Retardant: A substance or chemical agent that reduces the flammability of combustibles.

Restoration: The active or passive management of an ecosystem or habitat toward its original structure, natural compliment of species, and natural functions or ecological processes (Cohesive Strategy, 2000).

Run (of a fire): The rapid advance of the head of a fire with a marked change in fire line intensity and rate of spread from that noted before and after the advance.

Running: A rapidly spreading surface fire with a well-defined head.

Rural Fire Assistance: The Department of the Interior Rural Fire Assistance program is a multi-million dollar program to enhance the fire protection capabilities of rural fire districts. The program will assist with training, equipment purchase, and prevention activities, on a cost-share basis.

S

Safety Zone: An area cleared of flammable materials used for escape in the event the line is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks; they are greatly enlarged areas, which can be used with relative safety by firefighters and their equipment in the event of a blow-up in the vicinity.

Scratch Line: An unfinished preliminary fire line hastily established or built as an emergency measure to check the spread of fire.

Severe Wildland Fire (catastrophic wildfire): Fire that burns more intensely than the natural or historical range of variability, thereby fundamentally changing the ecosystem, destroying communities and / or rate or threatened species /habitat, or causing unacceptable erosion (GAO / T-RCED-99-79) (Society of American Foresters, 1998).

Severity Funding: Funds provided to increase wildland fire suppression response capability necessitated by abnormal weather patterns, extended drought, or other events causing abnormal increase in the fire potential and/or danger.

Single Resource: An individual, a piece of equipment and its personnel complement, or a crew or team of individuals with an identified work supervisor that can be used on an incident.

Size-up: To evaluate a fire to determine a course of action for fire suppression.

Slash: Debris left after logging, pruning, thinning or brush cutting; includes logs, chips, bark, branches, stumps and broken understory trees or brush.

Sling Load: Any cargo carried beneath a helicopter and attached by a lead line and swivel.

Slop-over: A fire edge that crosses a control line or natural barrier intended to contain the fire.

Slurry: A mixture typically of water, red clay, and fertilizer dropped from air tankers for fire suppression.

Smokejumper: A firefighter who travels to fires by aircraft and parachute.

Smoke Management: Application of fire intensities and meteorological processes to minimize degradation of air quality during prescribed fires.

Smoldering Fire: A fire burning without flame and barely spreading.

Snag: A standing dead tree or part of a dead tree from which at least the smaller branches have fallen.

Spark Arrester: A device installed in a chimney, flue, or exhaust pipe to stop the emission of sparks and burning fragments.

Spot Fire: A fire ignited outside the perimeter of the main fire by flying sparks or embers.

Spot Weather Forecast: A special forecast issued to fit the time, topography, and weather of each specific fire. These forecasts are issued upon request of the user agency and are more detailed, timely, and specific than zone forecasts.

Spotter: In smokejumping, the person responsible for selecting drop targets and supervising all aspects of dropping smokejumpers.

Spotting: Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire.

Staging Area: Locations set up at an incident where resources can be placed while awaiting a tactical assignment on a three-minute available basis. Staging areas are managed by the operations section.

Strategy: The science and art of command as applied to the overall planning and conduct of an incident.

Strike Team: Specified combinations of the same kind and type of resources, with common communications, and a leader.

Strike Team Leader: Person responsible to a division/group supervisor for performing tactical assignments given to the strike team.

Structure Fire: Fire originating in and burning any part or all of any building, shelter, or other structure.

Suppressant: An agent, such as water or foam, used to extinguish the flaming and glowing phases of combustion when direction applied to burning fuels.

Suppression: All the work of extinguishing or containing a fire, beginning with its discovery.

Surface Fuels: Loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed enough to lose their identity; also grasses, forbs, low and medium shrubs, tree seedlings, heavier branchwood, downed logs, and stumps interspersed with or partially replacing the litter.

Survivable Space: The distance between vegetational fuels and a structure necessary to protect the building from radiant heat and its ignition mechanics. The separation distance was formerly called “defensible space” due to the implication that the fire department could intervene. The term “survivable space” eliminates the dependence on manual suppression and implies that the distance alone provides the protection. (see Defensible Space)

Swamper: (1) A worker who assists fallers and/or sawyers by clearing away brush, limbs and small trees. Carries fuel, oil and tools and watches for dangerous situations. (2) A worker on a dozer crew who pulls winch line, helps maintain equipment, etc., to speed suppression work on a fire.

T

Tactics: Deploying and directing resources on an incident to accomplish the objectives designated by strategy.

Tanker: Either a tank truck used to deliver water from a water source to the scene of a fire, or a fixed wing aircraft used for fire suppression by dropping slurry on the flank or head of a fire.

Temporary Flight Restrictions (TFR): A restriction requested by an agency and put into effect by the Federal Aviation Administration in the vicinity of an incident that restricts the operation of nonessential aircraft in the airspace around that incident.

Terra Torch: Device for throwing a stream of flaming liquid, used to facilitate rapid ignition during burn out operations on a wildland fire or during a prescribed fire operation.

Test Fire: A small fire ignited within the planned burn unit to determine the characteristic of the prescribed fire, such as fire behavior, detection performance and control measures.

Timelag: Time needed under specified conditions for a fuel particle to lose about 63 percent of the difference between its initial moisture content and its equilibrium moisture content. If conditions remain unchanged, a fuel will reach 95 percent of its equilibrium moisture content after four timelag periods.

Torching: The ignition and flare-up of a tree or small group of trees, usually from bottom to top.

Two-way Radio: Radio equipment with transmitters in mobile units on the same frequency as the base station, permitting conversation in two directions using the same frequency in turn.

Type: The capability of a firefighting resource in comparison to another type. Type 1 usually means a greater capability due to power, size, or capacity.

U

Uncontrolled Fire: Any fire that threatens to destroy life, property, or natural resources and (a) is not burning within the confines of firebreaks or (b) is burning with such intensity that it could not be readily extinguished with ordinary tools commonly available [Parts a and b of definition added from the National Wildfire Coordinating Group’s *Glossary of Wildland Fire Terminology*, http://www.nwcg.gov/pms/pubs/glossary]. (see Wildfire)

Underburn: A fire that consumes surface fuels but not trees or shrubs. (see Surface Fuels)

Unplanned and Unwanted Wildland Fires: An unplanned and unwanted fire is one burning outside the parameters as defined in land use plans and fire management plans for that location (including areas where the fire can be expected to spread) under current and expected conditions. Unplanned and unwanted fires include fires burning in areas where fire is specifically excluded; fires that exhibit burning characteristics (intensity, frequency, and seasonality) that are outside prescribed ranges, specifically including fires expected to produce severe fire effects; unauthorized human caused fires (arson, escaped camp fires, equipment fires, etc.); and fires that occur during high fire dangers, or resource shortage, where the resources needed to manage the fire are needed for more critical fire management needs. Unplanned is not the same as unscheduled. The time of a lightning fire ignition is not known; however, a lightning-caused fire could still be used to meet fuels and ecosystem management objectives if that type of fire is expected to burn within the parameters of an approved plan; the fire is burning within the parameters for the area; is not causing, or has the potential to cause, unacceptable effects; and funding and resources to manage the fire are available.

V

Vectors: Directions of fire spread as related to rate of spread calculations (in degrees from upslope).

Volunteer Fire Department (VFD): A fire department of which some or all members are unpaid.

W

Water Tender: A ground vehicle capable of transporting specified quantities of water.

Weather Information and Management System (WIMS): An interactive computer system designed to accommodate the weather information needs of all federal and state natural resource management agencies. Provides timely access to weather forecasts, current and historical weather data, the National Fire Danger Rating System (NFDRS), and the National Interagency Fire Management Integrated Database (NIFMID).

Wet Line: A line of water, or water and chemical retardant, sprayed along the ground, that serves as a temporary control line from which to ignite or stop a low-intensity fire.

Wildfire: An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fire where the objective is to put the fire out [definition added from the National Wildfire Coordinating Group's *Glossary of Wildland Fire Terminology*, http://www.nwcg.gov/pms/pubs/glossary]. (see Uncontrolled Fire; Wildland Fire)

Wildland: Wildland is an area of land where plants and animals exist free of human interference. Ecologists assert that wildlands promote biodiversity, that they preserve historic genetic traits and that they provide habitat for wild flora and fauna [definition added from Wikipedia, http://en.wikipedia.org/wiki/Wildland].

Wildland Fire: Any nonstructure fire, other than prescribed fire, that occurs in the wildland.

Wildland Fire Implementation Plan (WFIP): A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits.

Wildland Fire Situation Analysis (WFSA): A decision-making process that evaluates alternative suppression strategies against selected environmental, social, political, and economic criteria. Provides a record of decisions.

Wildland Fire Use: The management of naturally ignited wildland fires to accomplish specific, planned resource management objectives in predefined geographic areas outlined in Fire Management Plans. Wildland fire use is not to be confused with “fire use,” which includes prescribed fire.

Wildland Urban Interface (WUI): The line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (Glossary of Wildland Fire Terminology, 1996).

Wind Vectors: Wind directions used to calculate fire behavior.

APPENDIX A. DESCRIPTIONS OF VEGETATION ASSOCIATIONS

The following vegetation information was adapted from the *Southwest Regional GAP Analysis Project—Land Cover Data Legend Descriptions* (USGS 2005) and was used to analyze vegetation associations composing the WUI of the Pima County CWPP. The following descriptions are for a broad-scale mapping effort, and refer to areas within the WUI as well as areas outside of Pima County. For additional information, see the Southwest Regional Landcover Data Web site (http://ftp.nr.usu.edu/swgap/landcover.html).

DESERT SHRUB-SCRUB ASSOCIATIONS

S070 Sonora-Mohave Mixed Salt Desert Scrub

Concept Summary: This system includes extensive open-canopied shrublands of typically saline basins in the Mojave and Sonoran deserts. Stands often occur around playas. Substrates are generally fine-textured saline soils. Vegetation is typically composed of one or more *Atriplex* species such as *Atriplex canescens* or *Atriplex polycarpa* along with other species of *Atriplex*. Species of *Allenrolfea, Salicornia, Suaeda*, or other halophytic plants are often present to codominant. Graminoid species may include *Sporobolus airoides* or *Distichlis spicata* at varying densities.

S129 Sonoran Mid-Elevation Desert Scrub

Concept Summary: This transitional desert scrub system occurs along the northern edge of the Sonoran Desert in an elevational band along the lower slopes of the Mogollon Rim/Central Highlands region between 750–1,300 m. Stands occur in the Bradshaw, Hualapai, and Superstition mountains among other desert ranges and are found above Sonoran Paloverde-Mixed Cacti Desert Scrub (CES302.761) and below Mogollon Chaparral (CES302.741). Sites range from a narrow strip on steep slopes to very broad areas such as the Verde Valley. Climate is too dry for chaparral species to be abundant, and freezing temperatures during winter are too frequent and prolonged for many of the frost-sensitive species that are characteristic of the Paloverde Mixed-Cacti Desert Scrub such as *Carnegiea gigantea, Parkinsonia microphylla, Prosopis* spp., *Olneya tesota*, *Ferocactus* sp., and *Opuntia bigelovii*. Substrates are generally rocky soils derived from parent materials such as limestone, granitic rocks, or rhyolite. The vegetation is typically composed of an open shrub layer of *Larrea tridentata, Ericameria linearifolia*, or *Eriogonum fasciculatum* with taller shrubs such as *Fourqueria splendens*, *Canotia holacantha* (limestone or granite), or *Simmondsia chinensis* (rhyolite). The herbaceous layer is generally sparse.

S063 Sonoran Paloverde-Mixed Cacti Desert Scrub

Concept Summary: This ecological system occurs on hillsides, mesas, and upper bajadas in southern Arizona and extreme southeastern California. The vegetation is characterized by a diagnostic sparse, emergent tree layer of *Carnegiea gigantea* (3–16 m tall) and/or a sparse to moderately dense canopy codominated by xeromorphic deciduous and evergreen tall shrubs *Parkinsonia microphylla* and *Larrea tridentata* with *Prosopis* sp., *Olneya tesota*, and *Fouquieria splendens* less prominent. Other common shrubs and dwarf-shrubs include *Acacia greggii*, *Ambrosia deltoidea*, *Ambrosia dumosa* (in drier sites), *Calliandra eriophylla, Jatropha cardiophylla, Krameria erecta, Lycium* spp., *Menodora scabra,* and *Simmondsia chinensis* and many cacti including *Ferocactus* spp., *Echinocereus* spp., and *Opuntia* spp. (both cholla and prickly pear). The sparse herbaceous layer is composed of perennial grasses and forbs

with annuals seasonally present and occasionally abundant. On slopes, plants are often distributed in patches around rock outcrops where suitable habitat is present.

S062 Chihuahuan Creosotebush, Mixed Desert, and Thorn Scrub

Concept Summary: This widespread Chihuahuan Desert land cover type is composed of two ecological systems the Chihuahuan Creosotebush Xeric Basin Desert Scrub (CES302.731) and the Chihuahuan Mixed Desert and Thorn Scrub (CES302.734). This cover type includes xeric creosotebush basins and plains and the mixed desert scrub in the foothill transition zone above, sometimes extending up to the lower montane woodlands. Vegetation is characterized by *Larrea tridentata* alone or mixed with thorn scrub and other desert scrub such as *Agave lechuguilla, Aloysia wrightii, Fouquieria splendens, Dasylirion leiophyllum, Flourensia cernua, Leucophyllum minus, Mimosa aculeaticarpa* var. *biuncifera, Mortonia scabrella (= Mortonia sempervirens* ssp. *scabrella), Opuntia engelmannii, Parthenium incanum, Prosopis glandulosa*, and *Tiquilia greggii*. Stands of thornscrub dominated by *Acacia constricta, Acacia neovernicosa,* or *Acacia greggii* are included in this system, and limestone substrates appear important for at least these species. Grasses such as *Dasyochloa pulchella, Bouteloua curtipendula, Bouteloua eriopoda, Bouteloua ramosa*, *Muhlenbergia porter,* and *Pleuraphis mutica* may be common but generally have lower cover than shrubs.

S069 Sonoran Mohave Creosotebush-White Bursage Desert Scrub

Concept Summary: This ecological system forms the vegetation matrix in broad valleys, lower bajadas, plains, and low hills in the Mojave and lower Sonoran deserts. This desert scrub is characterized by a sparse to moderately dense layer (2%–50% cover) of xeromorphic microphyllous and broad-leaved shrubs. *Larrea tridentata* and *Ambrosia dumosa* are typically dominants, but many different shrubs, dwarf-shrubs, and cacti may codominate or form typically sparse understories. Associated species may include *Atriplex canescens, Atriplex hymenelytra, Encelia farinosa, Ephedra nevadensis, Fouquieria splendens, Lycium andersonii*, and *Opuntia basilaris*. The herbaceous layer is typically sparse but may be seasonally abundant with ephemerals. Herbaceous species such as *Chamaesyce* spp., *Eriogonum inflatum, Dasyochloa pulchella, Aristida* spp., *Cryptantha* spp., *Nama* spp., and *Phacelia* spp. are common.

SHRUBLANDS ASSOCIATIONS

S058 Apacherian-Chihuahuan Mesquite Upland Scrub

Concept Summary: This ecological system occurs as upland shrublands that are concentrated in the extensive grassland-shrubland transition in foothills and piedmont in the Chihuahuan Desert. It extends into the Sky Island region to the west and the Edwards Plateau to the east. Substrates are typically derived from alluvium, often gravelly without a well-developed argillic or calcic soil horizon that would limit infiltration and storage of winter precipitation in deeper soil layers. *Prosopis* spp. and other deep-rooted shrubs exploit this deep soil moisture that is unavailable to grasses and cacti. Vegetation is typically dominated by *Prosopis glandulosa* or *Prosopis velutina* and succulents. Other desert scrub that may codominate or dominate includes *Acacia neovernicosa, Acacia constricta, Juniperus monosperma*, or *Juniperus coahuilensis*. Grass cover is typically low. During the last century, the area occupied by this system has increased through conversion of desert grasslands as a result of drought, overgrazing by livestock, and/or decreases in fire frequency. It is similar to Chihuahuan Mixed Desert and Thorn Scrub (CES302.734) but is generally found at higher elevations where *Larrea tridentata* and other desert scrub

are not codominant. It is also similar to Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub (CES302.737) but does not occur on eolian-deposited substrates.

GRASSLANDS ASSOCIATIONS

S077 Apacherian-Chihuahuan Piedmont Semi-Desert Grassland and Steppe

Concept Summary: This ecological system is a broadly defined desert grassland, mixed shrub-succulent, or xeromorphic tree savanna that is typical of the borderlands of Arizona, New Mexico, and northern Mexico [Apacherian region] but that extends west to the Sonoran Desert, north into the Mogollon Rim, and throughout much of the Chihuahuan Desert. It is found on gently sloping bajadas that supported frequent fire throughout the Sky Islands and on mesas and steeper piedmont and foothill slopes in the Chihuahuan Desert. It is characterized by typically diverse perennial grasses. Common grass species include *Bouteloua eriopoda, B. hirsuta,B. rothrockii, B. curtipendula, B. gracilis, Eragrostis intermedia, Muhlenbergia porteri, Muhlenbergia setifolia, Pleuraphis jamesii, Pleuraphis mutica*, and *Sporobolus airoides*; succulent species of *Agave, Dasylirion*, and *Yucca*; and tall shrub/short tree species of *Prosopis* and various oaks (e.g., *Quercus grisea, Quercus emoryi, Quercus arizonica*). Many of the historical desert grassland and savanna areas have been converted, some to Chihuahuan Mesquite Woodlands Vegetation Associations.

WOODLANDS ASSOCIATIONS

S057 Mogollon Chaparral

Concept Summary: This ecological system occurs across central Arizona (Mogollon Rim), western New Mexico, southwestern Utah, and southeast Nevada. It often dominates along the mid-elevation transition from the Mojave, Sonoran, and northern Chihuahuan deserts into mountains (1,000–2,200 m). It occurs on foothills, mountain slopes, and canyons in drier habitats below the encinal and *Pinus ponderosa* woodlands. Stands are often associated with more xeric and coarse-textured substrates such as limestone, basalt, or alluvium, especially in transition areas with more mesic woodlands. The moderate to dense shrub canopy includes species such as *Quercus turbinella, Quercus toumeyi, Cercocarpus montanus, Canotia holacantha, Ceanothus greggii, Forestiera pubescens (= Forestiera neomexicana), Garrya wrightii, Juniperus deppeana, Purshia stansburiana, Rhus ovata, Rhus trilobata*, and *Arctostaphylos pungens,* and *Arctostaphylos pringlei* at higher elevations. Most chaparral species are fire adapted, resprouting vigorously after burning or producing fire-resistant seeds. Stands occurring within montane woodlands are seral and a result of recent fires.

S051 Madrean Encinal

Concept Summary: Madrean Encinal occurs on foothills, canyons, bajadas, and plateaus in the Sierra Madre Occidentale and Sierra Madre Orientale in Mexico, extending north into Trans-Pecos Texas, southern New Mexico, and sub-Mogollon Arizona. These woodlands are dominated by Madrean evergreen oaks along a low-slope transition below Madrean Pine-Oak Forest and Woodland (CES305.796) and Madrean Pinyon-Juniper Woodland (CES305.797). Lower elevation stands are typically open woodlands or savannas where they transition into desert grasslands, chaparral, or, sometimes, desert scrub. Common evergreen oak species include *Quercus arizonica, Quercus emoryi, Quercus intricata, Quercus grisea, Quercus oblongifolia*, *Quercus toumeyi,* and, in Mexico, *Quercus chihuahuaensis* and *Quercus albocincta*. Madrean pine, Arizona cypress, pinyon, and juniper trees may be present but do not codominate.

Chaparral species such as *Arctostaphylos pungens, Cercocarpus montanus, Purshia* spp.*, Garrya wrightii, Quercus turbinella, Frangula betulifolia (= Syn Rhamnus betulifolia),* or *Rhus* spp. may be present but do not dominate. The graminoid layer usually prominent between trees is grassland or steppe that is dominated by warm-season grasses such as *Aristida* spp., *Bouteloua gracilis, Bouteloua curtipendula, Bouteloua rothrockii, Digitaria californica, Eragrostis intermedia, Hilaria belangeri, Leptochloa dubia, Muhlenbergia* spp., *Pleuraphis jamesii*, or *Schizachyrium cirratum;* these species are typical of Chihuahuan Piedmont Semi-Desert Grassland (CES302.735). This system includes seral stands dominated by shrubby Madrean oaks typically with strong graminoid layer. In transition areas with drier chaparral systems, stands of chaparral are not dominated by Madrean oaks; however, Madrean encinal may extend down along drainages.

S112 Madrean Pinyon-Juniper Woodland

Concept Summary: This system occurs on foothills, mountains, and plateaus in the Sierra Madre Occidentale and Sierra Madre Orientale in Mexico, in Trans-Pecos Texas, in southern New Mexico, and in southern and central Arizona from the Mogollon Rim south to the Sky Islands. Substrates are variable, but soils are generally dry and rocky. The presence of *Pinus cembroides, Pinus discolor*, or other Madrean trees and shrubs is diagnostic of this woodland system. *Juniperus coahuilensis, Juniperus deppeana, Juniperus pinchotii, Juniperus monosperma*, and/or *Pinus edulis* may be present to dominant. Madrean oaks such as *Quercus arizonica, Quercus emoryi*, *Quercus grisea,* or Quercus mohriana may be codominant. *Pinus ponderosa* is absent or sparse. If present, understory layers are variable and may be dominated by shrubs or graminoids

S115 Madrean Juniper Savanna

Concept Summary: This Madrean ecological system occurs in lower foothills and plains of southeastern Arizona, southern New Mexico, and extending into west Texas and Mexico. These savannas have widely spaced mature juniper trees and moderate to high cover of graminoids (>25% cover). The presence of *Madrean Juniperus* spp. such as *Juniperus coahuilensis, Juniperus pinchotii*, and/or *Juniperus deppeana* is diagnostic. *Juniperus monosperma* may be present in some stands, and *Juniperus deppeana* has a range that extends beyond this Madrean system into southern stands of the Southern Rocky Mountain Juniper Woodland and Savanna (CES306.834). Stands of *Juniperus pinchotii* may be short and resemble a shrubland. Graminoid species are a mix of those found in the Western Great Plains Shortgrass Prairie (CES303.672) and the Apachierian-Chihuahuan Piedmont Semi-Desert Grassland and Steppe (CES302.735), with *Bouteloua gracilis* and *Pleuraphis jamesii* being most common. In addition, these areas include succulents such as species of *Yucca, Opuntia*, and *Agave*. Juniper savanna expansion into grasslands has been documented in the last century.

EVERGREEN FOREST TYPES

S036 Rocky Mountain Ponderosa Pine Woodland

Concept Summary: This very widespread ecological system is most common throughout the cordillera of the Rocky Mountains. It is also found in the Colorado Plateau region, west into scattered locations in the Great Basin, and north into southern British Columbia. These woodlands occur at the lower treeline/ecotone between grassland or shrubland and more mesic coniferous forests typically in warm, dry, exposed sites. Elevations range from less than 500 m in British Columbia to 2,800 m in the New Mexico

Mountains. Occurrences are found on all slopes and aspects, however, moderately steep to very steep slopes or ridgetops are most common. This ecological system generally occurs on igneous, metamorphic, and sedimentary material derived soils, with characteristic features of good aeration and drainage, coarse textures, circumneutral to slightly acid pH, an abundance of mineral material, rockiness, and periods of drought during the growing season. *Pinus ponderosa* is the predominant conifer; *Pseudotsuga menziesii, Pinus edulis*, and *Juniperus* spp. may be present in the tree canopy. The understory is usually shrubby, with *Artemisia nova, Artemisia tridentata, Arctostaphylos patula, Arctostaphylos uva-ursi, Cercocarpus montanus, Cercocarpus ledifolius, Purshia stansburiana, Purshia tridentata, Quercus gambelii, Symphoricarpos oreophilus, Prunus virginiana, Amelanchier alnifolia*, and *Rosa* spp. common species. *Pseudoroegneria spicata* and species of *Hesperostipa, Achnatherum, Festuca, Muhlenbergia*, and *Bouteloua* are some of the common grasses. Mixed fire regimes and ground fires of variable return interval maintain these woodlands, depending on climate, degree of soil development, and understory density.

S032 Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland

Concept Summary: This is a highly variable ecological system of the montane zone of the Rocky Mountains. It occurs throughout the southern Rockies, north and west into Utah, Nevada, western Wyoming and Idaho. These are mixed-conifer forests occurring on all aspects at elevations ranging from 1,200 to 3,300 m. Rainfall averages less than 75 cm per year (40–60 cm) with summer “monsoons” during the growing season contributing substantial moisture. The composition and structure of overstory is dependent upon the temperature and moisture relationships of the site, and the successional status of the occurrence. *Pseudotsuga menziesii* and *Abies concolor* are most frequent, but *Pinus ponderosa* may be present to codominant. *Pinus flexilis* is common in Nevada. *Pseudotsuga menziesii* forests occupy drier sites, and *Pinus ponderosa* is a common codominant. Forests dominated *by Abies concolor* occupy cooler sites, such as upper slopes at higher elevations, canyon sideslopes, ridgetops, and north- and east-facing slopes which burn somewhat infrequently. *Picea pungens* is most often found in cool, moist locations, often occurring as smaller patches within a matrix of other associations. As many as seven conifers can be found growing in the same occurrence, and there are a number of cold-deciduous shrub and graminoid species common, including *Arctostaphylos uva-ursi, Mahonia repens, Paxistima myrsinites, Symphoricarpos oreophilus, Jamesia americana, Quercus gambelii*, and *Festuca arizonica*. This system was undoubtedly characterized by a mixed severity fire regime in its “natural condition,” characterized by a high degree of variability in lethality and return interval.

S038 Southern Rocky Mountain Pinyon-Juniper Woodland

Concept Summary: This southern Rocky Mountain ecological system occurs on dry mountains and foothills in southern Colorado east of the Continental Divide, in mountains and plateaus of northern New Mexico, and extends out onto limestone breaks in the Great Plains. These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. Severe climatic events occurring during the growing season, such as frosts and drought, are thought to limit the distribution of pinyon-juniper woodlands to relatively narrow altitudinal belts on mountainsides. Soils supporting this system vary in texture ranging from stony, cobbly, gravelly sandy loams to clay loam or clay. *Pinus edulis* and/or *Juniperus monosperma* dominate the tree canopy. *Juniperus scopulorum* may codominate or replace *Juniperus monosperma* at higher elevations. In transitional areas along the Mogollon Rim and in northern New Mexico, *Juniperus deppeana* becomes common. Understory layers are variable and may be dominated by shrubs, graminoids, or be absent. Associated species include *Artemisia tridentata,*

Cercocarpus montanus, Quercus gambelii, Achnatherum scribneri, Bouteloua gracilis, Festuca arizonica, or *Pleuraphis jamesii.*

S035 Madrean Pine-Oak Forest and Woodland

Concept Summary: This system occurs on mountains and plateaus in the Sierra Madre Occidentale and Sierra Madre Orientale in Mexico, in Trans-Pecos Texas, in southern New Mexico, and in southern and central Arizona from the Mogollon Rim southeastward to the Sky Islands. These forests and woodlands are composed of Madrean pines (*Pinus arizonica, Pinus engelmannii, Pinus leiophylla* or *Pinus strobiformis*) and evergreen oaks (*Quercus arizonica, Quercus emoryi,* or *Quercus grisea*) intermingled with patchy shrublands on most mid-elevation slopes (1,500–2,300 m elevation). Other tree species include *Cupressus arizonica, Juniperus deppeana, Pinus cembriodes, Pinus discolor, Pinus ponderosa* (with Madrean pines or oaks), and *Pseudotsuga menziesii*. Subcanopy and shrub layers may include typical encinal and chaparral species such as *Agave* spp., *Arbutus arizonica, Arctostaphylos pringlei, Arctostaphylos pungens, Garrya wrightii, Nolina* spp., *Quercus hypoleucoides, Quercus rugosa*, and *Quercus turbinella*. Some stands have moderate cover of perennial graminoids such as *Muhlenbergia emersleyi, Muhlenbergia longiligula, Muhlenbergia virescens*, and *Schizachyrium cirratum*. Fires are frequent, with perhaps more crown fires than ponderosa pine woodlands, which tend to have more frequent ground fires on gentle slopes.

DECIDUOUS SOUTHWEST RIPARIAN ASSOCIATIONS

S098 North American Warm Desert Riparian Mesquite Bosque

Concept Summary: This ecological system consists of low-elevation (<1,100 m) riparian corridors along intermittent streams in the valleys of southern Arizona and New Mexico and adjacent Mexico. Dominant trees include *Prosopis glandulosa* and *Prosopis velutina*. Shrub dominants include *Baccharis salicifolia, Pluchea sericea*, and *Salix exigua*. Vegetation, especially the mesquites, tap groundwater below the streambed when surface flows stop. Vegetation depends on annual rise in the water table for growth and reproduction.

S097 North American Warm Desert Riparian Woodland and Shrubland

Concept Summary: This ecological system consists of low-elevation (<1,200 m) riparian corridors along medium to large perennial streams throughout canyons and the desert valleys of the southwestern United States and adjacent Mexico. The vegetation is a mix of riparian woodlands and shrublands. Dominant trees include *Acer negundo, Fraxinus velutina, Populus fremontii, Salix gooddingii, Salix lasiolepis, Celtis laevigata* var. *reticulata*, and *Juglans major*. Shrub dominants include *Salix geyeriana, Shepherdia argentea*, and *Salix exigua*. Vegetation depends on annual or periodic flooding and associated sediment scour and/or annual rise in the water table for growth and reproduction.

D04 Invasive Southwest Riparian Woodland and Shrubland

Description: *Tamarix* spp. Semi-Natural Temporarily Flooded Shrubland Alliance (A842), or *Elaegnus angustifolus* Semi-Natural Woodland Alliance (A3566).

***Tamarix* spp. Semi-Natural Temporarily Flooded Shrubland Alliance**
Translated Name: Saltcedar species, Semi-natural Temporarily Flooded Shrubland Alliance
Unique Identifier: A.842

Classification Approach: International Vegetation Classification
Concept Summary: This alliance is composed of shrublands that form moderately dense to dense thickets on banks of larger streams, rivers, and playas across the western Great Plains, interior and southwestern United States, and northern Mexico. Stands are dominated by introduced species of *Tamarix*, including *Tamarix ramosissima, Tamarix chinensis, Tamarix gallica*, and *Tamarix parviflora*. Introduced from the Mediterranean, *Tamarix* spp. have become naturalized in various sites, including salt flats, springs, and especially along streams and regulated rivers, often replacing *Salix* or *Prosopis* spp. shrublands or other native vegetation. A remnant herbaceous layer may be present, depending on the age and density of the shrub layer. These species have become a critical nuisance along most large rivers in the semi-arid western United States. Because of the difficulty to remove, *Tamarix* spp. may have irreversibly changed the vegetation along many rivers.

Classification Comments: This broadly defined alliance is composed of vegetation communities from a wide variety of environments that are dominated by diverse *Tamarix* spp. Common species of *Tamarix* include *Tamarix ramosissima, Tamarix chinensis*, and *Tamarix parviflora*, but other species are reported from the western United States, such as *Tamarix africana, Tamarix aphylla, Tamarix aralensis, Tamarix canariensis, Tamarix gallica*, and *Tamarix tetragyna*.

OTHER COVER TYPES AND NONVEGETATED ASSOCIATIONS: ALTERED, DISTURBED, AND DEVELOPED

N21 Developed, Open Space–Low Intensity

Concept Summary: *Developed Open Space* includes areas with a mixture of some construction materials but mostly includes vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes. *Developed, Low Intensity* includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20–49 percent of total cover. These areas most commonly include single-family housing units.

N22 Developed, Medium–High Intensity

Concept Summary: *Developed, Medium Intensity* includes ncludes areas with a mixture of constructed materials and vegetation. Impervious surface accounts for 50–79 percent of the total cover. These areas most commonly include single-family housing units. *Developed, High Intensity* includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses, and commercial/industrial. Impervious surfaces account for 80–100 percent of the total cover (National Land Cover Data, draft legend, July 25, 2003).

N31 Barren Land Types, Non-Specific

Concept Summary: (Rock/Sand/Clay) Barren areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, sand dunes, strip mines, gravel pits, and other accumulation of earthen material. Generally, vegetation accounts for less than 15 percent of total cover.

N80 Agriculture

Concept Summary: Agriculture—unable to make distinction between N81 and N82.

S013 Inter-Mountain Basins Volcanic Rock and Cinderland

Concept Summary: This ecological system occurs in the Intermountain western United States and is limited to barren and sparsely vegetated volcanic substrates (generally <10% plant cover) such as basalt lava (malpais), basalt dikes with associated colluvium, basalt cliff faces and uplifted "backbones," tuff, cinder cones, or cinder fields. It may occur as large-patch, small-patch, and linear (dikes) spatial patterns. Vegetation is variable and includes a variety of species depending on local environmental conditions, for example, elevation, age, and type of substrate. At montane and foothill elevations scattered *Pinus ponderosa, Pinus flexilis*, or *Juniperus* spp. trees may be present. Shrubs such as *Ephedra* spp., *Atriplex canescens, Eriogonum corymbosum, Eriogonum ovalifolium*, and *Fallugia paradoxa* are often present on some lava flows and cinder fields. Species typical of sand dunes such as *Andropogon hallii* and *Artemisia filifolia* may be present on cinder substrates.

D03 Recently Mined or Quarried

Concept Summary: 2 hectare or greater; open-pit mining or quarries visible on imagery.

APPENDIX B. NATIONAL FIRE DANGER RATING SYSTEM FUEL MODEL SELECTION KEY

I. Mosses, lichens, and low shrubs predominate ground fuels

A. Overstory of conifers occupies more than one-third of the site

Model Q

B. No overstory, or it occupies less than one-third of the site

Model S

II. Marsh grasses and/or reeds predominate

Model N

III. Grasses and/or forbs predominate

A. Open overstory of conifer and/or hardwoods

Model C

B. No overstory

1. Woody shrubs occupy more than one-third but less than two-thirds of the site

Model T

2. Woody shrubs occupy less than two-thirds of the site

a. Grasses and forbs are primarily annuals

Model A

b. Grasses and forbs are primarily perennials

Model L

IV. Brush, shrubs, tree reproduction, or dwarf tree species predominate

A. Average height of woody plants is 6 feet or greater

1. Woody plants occupy two-thirds or more of the site

a. One-fourth or more of the woody foliage is dead

(1) Mixed California chaparral

Model B

(2) Other types of brush

Model F

b. Up to one-fourth of the woody foliage is dead

Model Q

c. Little dead foliage

Model O

2. Woody plants occupy less than two-thirds of the site

Model F

B. Average height of woody plants is less than 6 feet
   1. Woody plants occupy two-thirds or more of the site
      a. Western United States

         Model F

      b. Eastern United States

         Model O

   2. Woody plants occupy less than two-thirds but greater than one-third of the site
      a. Western United States

         Model T

      b. Eastern United States

         Model D

   3. Woody plants occupy less than one-third of the site
      a. Grasses and forbs are primarily annuals

         Model A

      b. Grasses and forbs are primarily perennials

         Model L

V. Trees predominate

A. Deciduous broadleaf species predominate
   1. Area has been thinned or partially cut, leaving slash as the major fuel component

      Model K

   2. Area has not been thinned or partially cut
      a. Overstory is dormant; leaves have fallen

         Model E

      b. Overstory is in full leaf

         Model R

B. Conifer species predominate
   1. Lichens, mosses, and low shrubs dominate as understory fuels

      Model Q

   2. Grasses and forbs are the primary ground fuel

      Model C

   3. Woody shrubs and/or reproduction dominate as understory fuels
      a. Understory burns readily
         (1) Western United States

            Model T

         (2) Eastern United States

(a) Understory is more than 6 feet tall

Model O

(b) Understory is less than 6 feet tall

Model D

b. Understory seldom burns

Model H

4. Duff and litter, branch wood, and tree boles are the primary ground fuel

a. Overstory is over mature and decadent; heavy accumulation of dead debris

Model G

b. Overstory is not decadent; only a nominal accumulation of debris

(1) Needles are 2 or more inches long (most pines)

(a) Eastern United States

Model P

(b) Western United States

Model U

(2) Needles are less than 2 inches long

Model H

VI. Slash predominates

A. Foliage is still attached; little settling

1. Loading is 25 tons/acre or greater

Model I

2. Loading is less than 25 tons/acre but greater than 15 tons/acre

Model J

3. Loading is less than 15 tons/acre

Model K

B. Settling is evident; foliage is falling off; grasses, forbs and shrubs are invading

1. Loading is 25 tons/acre or greater

Model J

2. Loading is less than 25 tons/acre

Model K

APPENDIX C. EDUCATIONAL RESOURCES

Firewise Information and Web Sites

Firewise Communities/USA National Recognition Program. http://www/Firewise.org/USA.

University of Arizona Cooperative Extension Arizona Firewise Resources http://cals.arizona.edu/firewise/

Arizona State Forestry Division Firewise Information
http://www.azsf.az.gov/fire_managment/firewise_communities/

MyFireCommunity Arizona Firewise Resources
http://www.myfirecommunity.net/Neighborhood.aspx?ID=367

Arizona Interagency Fire Prevention and Information Resources http://wildlandfire.az.gov/ &
http://wildlandfire.az.gov/links.asp#Firewise

Ready-Set-Go Personal wildfire Action Plan. Describes defensible space, pre-fire preparation planning, approaching fire and evacuation planning.
http://www.iafc.org/associations/4685/files/wild_readySetGoWildfireActionPlan.pdf

Best-Management Practices and Tools for Collaboration

The Collaboration Handbook, Red Lodge Clearinghouse. http://www.rlch.org/content/view/261/49.

Ecosystem management Initiative at the University of Michigan.
http://wwwsnre.umich.edu/ecomgt.collaboration.htm.

Western Collaborative Assistance Network. http://www.westcanhelp.org.

BLM Partnership. http://www.blm.gov/partnerships/tools.htm.

Forest Service Partnership Resource Center. http://www.partnershipresourcescenter, org/index.shtml.

International Association of Fire Chief's Leader's guide for Developing a Community Wildfire Protection Plan. http://wwwcsfs.colostate.edu/librar/.pdfs/cwpp/CWPP_LG.pdf.

Joint Fire Sciences Collaboration and CWPP Presentation. http://www.jfsp.fortlewis.edu/KTWorkshops.asp.

Fire Adapted Communities. http://www.fireadapted.org/

Grant Web Sites

Southwest Area Forest, Fire, and Community Assistance Grants. This Web site lists grants that are available to communities to reduce the risk of wildfires in the urban interface. http://www.SouthwestAreaGrants.org.

Department of Homeland Security. This Web site lists granting opportunities for Staffing for Adequate Fire and Emergency Services (SAFER) grants and provides other useful information. http://www.firegrantsupport.com.

ESRI Grant Assistance program for GIS users. http://www.esri.com/grants.

US Fire Administration—Assistance to Firefighters Grant Program.
http://www.usfa.fema.gove/dhtml/inside-usfa/grants.cfm.

National Association of State Foresters Listing of Grant Sources and Appropriations.
http://www/stateforesters.org/S&PF/FY_2002.html.

Stewardship and Landowner Assistance—Financial Assistance Programs.
http://www.na.fs.fed.us/spfo/stewardship/financial.htm.

The Fire Safe Council. http://www.FireSafeCouncil.org.

Pre-disaster Mitigation Program. http://www/cfda/gov/public/viewprog.asp?progid=1606.

Firewise. http://www.firewise.org/usa/funding.htm.

Environmental Protection Agency. http://cfpub.epa.gov/fedfund.

Rural Fire Assistance and other State Forestry Grants. http://www.azsf.az.gov/grant_information.

Grant opportunities. http://www.grants.gov.

Arizona Wildfire and the Environment Series

Firewise publications from the University of Arizona: *Forest Home Fire Safety*; *Fire-Resistant Landscaping*; *Creating Wildfire-Defensible Spaces for Your Home and Property*; *Homeowners' "Inside and Out" Wildfire Checklist*; *Firewise Plant Materials for 3000 Feet and Higher Elevations*; *Soil Erosion Control After a Wildfire*; *Recovering from Wildfire*; *A Guide for Arizona's Forest Owners*; *Wildfire Hazard Severity Rating Checklist for Arizona Homes and Communities*. http://cals.arizona.edu; http://cals.arizona.edu/pubs.

Southern Arizona Buffelgrass Coordination Center. http://www.buffelgrass.org/ The Center's mission is to provide a regional information center that emphasizes an integrated management approach to control buffelgrass *(Pennisetum ciliare)* in Southern Arizona.

Monitoring and Evaluation Resources

US Forest Service Collaborative Restoration Program—Multiparty Monitoring Guidelines.
http://www.fs.fed.us/r3/spf/cfrp/monitoring/index.shtml.

Rural Voices for Conservation Coalition – Multiparty Monitoring Issue Paper.
http://www.ri.uoregon.edu/programs/CCE/communityfireplanning.html.

Other

Federal Emergency Management Agency (FEMA) State Hazard Mitigation Offices.
http://www.floods.org/shmos.htm.

National Fire Protection Association (NFPA) standards: NFPA 299 (*Standard for Protection of Life and Property from Wildfire*); NFPA 295 (*Standard for Wildfire Control*); NFPA 291 (*Recommended Practice for Fire Flow Testing and Marking of Hydrants*); NFPA 703 (*Standard for Fire Retardant Impregnated Coatings for Building Materials*); NFPA 909 (*Protection of Cultural Resources*); NFPA 1051 (*Standard for Wildland Fire Fighter Professional Qualifications*); NFPA 1144 (*Standard for Protection of Life and Property from*

Wildfire); NFPA 1977 (*Standard on Protective Clothing and Equipment for Wildland Fire Fighting*). http://www.nfpa.org; http://www.nfpa.org/Catalog.

National Fire Lab. http://www.firelab.org/fbp/fbresearch/WUI/home.htm.

Protect Your Home from Wildfire, Colorado State Forest Service. Publications to help assist you with wildfire prevention. http://www.colostate.edu/Depts/CSFS/homefire.html.

US Fire Administration, FEMA, US Department of Homeland Security. http://www.usfa.fema.gov; http://www.fema.gov/regions/viii/fires/shtm; http://www.fema.gov/kidswldfire.

Fire Education Materials. http://www.symbols.gov.

National Interagency Fire Center, National Park Service fire Web site. http://www.nifc.nps.gov/fire.

"Fire Wars," PBS NOVA. http://www.pbs.org/wgbh/nova/fire.

D'Goat Ranch, LLC. Jason Garn. (801) 440-2149. Leasing and goat herding for vegetative mitigation projects.

Woody Biomass Utilization Desk Guide.
http://www.forestsandrangelands.gov/woody_biomass/documents/biomass_deskguide.pdf.

Pamphlets

Saving Homes from Wildfires: Regulating the Home Ignition Zone, American Planning Association, May 2001. This issue of the American Planning Association's Zoning News examines the wildfire threat to the wildland-urban interface zone and shows how development codes can be used to save residential areas.

Books

Everyone's Responsibility: Fire Protection in the Wildland Urban Interface, NFPA, 1994. This National Fire Protection Association book shows how three communities dealt with interface problems.

Firewise Construction Design and Materials Publication, sponsored by the Colorado State Forest Service and FEMA. This 38-page booklet details home construction ideas to make a home Firewise. Various other publications are available from the Colorado State Forest Service on wildland-urban interface issues.

Is Your Home Protected from Wildfire Disaster? A Homeowner's Guide to Wildfire Retrofit, Institute for Business and Home Safety, 2001. This book provides homeowners with guidance on ways to retrofit and build homes to reduce losses from wildfire damage.

Stephen Bridge, *Road Fire Case Study*, NFPA, 1991. Provides information to assist planners, local officials, fire service personnel, and homeowners.

Wildland Fire—Communicator's Guide. This is a guide for fire personnel, teachers, community leaders, and media representatives.

CD ROMs

Arizona Firewise Communities Educator's Workshop, Payson, AZ, February 18–19, 2003.

Burning Issues, Florida State University and the US Bureau of Land Management. 2000. Interactive multimedia program for middle and high school students to learn about the role of fire in the ecosystems and the use of fire managing rural areas.

Wildland Fire Communicator's Guide. This interactive CD-ROM compliments the book. . http://www.nifc.gov/prevEdu/prevEdu_communicatorGuide.html

Other Publications

It Can't Happen to My Home! Are You Sure? A publication by the US Forest Service, Southwestern Region, 12 page document.

Wildfire Strikes Home! (Publication no. NFES 92075); *It Could Happen to You, How to Protect Your Home!* (Publication no. NFES 92074). Homeowners' handbooks from the US Bureau of Land Management, the US Forest Service, and state foresters.

APPENDIX D. INFORMATION DATA SHEET AND CONTACTS

D.1. CWPP Base Information Data Source

Name	Type	Source	Contact / Web address
Wildland Fuel Hazards	Shapefile	Logan Simpson Design Inc.	Roy Baker (480) 967-1343; rbaker@logansimpson.com
Wildland-Urban Interface (WUI)	Shapefile	Logan Simpson Design Inc.	Roy Baker (480) 967-1343; rbaker@ logansimpson.com
Vegetation Zones	Raster	Southwest Regional Gap Analysis Project (USGS 2005)	http://earth.gis.usu.edu/swgap/
Land Ownership	Shapefile	Arizona State Land Department	Land Resources Information System Published October 29, 2007 Gary Irish, (602) 542-2605
Land Parcel Data	Shapefile	Pima County Assessor's	(602) 506-3406 http://www.pimacounty.gov/Assessor
Ignition History	Shapefile	Bureau of Land Management	http://wildfire.cr.usgs.gov/firehistory/

All final-analysis GIS data—including flammability analysis, fuel hazards analysis, ignition history and density, community values analysis, cumulative risk analysis, and treatment management units—are located at the Pima County Department of Emergency Management and at Logan Simpson Design Inc.

D.2. Pima County CWPP Contacts

Jeff Guthrie, CEM, MEP
Deputy Director
Pima County Office of Emergency Management
3434 E. 22nd St. Suite A
Tucson, Arizona
Office (520) 351-3200
On-call (520) 351-3211
Jeff.Guthrie@pima.gov

Richard Remington
Senior Project Manager
Logan Simpson Design Inc.
33 N. Stone Ave., Suite 1460
Tucson, Arizona 85701
(520) 884-5500
rremington@logansimpson.com

Roy Baker
GIS Analyst
Logan Simpson Design Inc.
51 W. Third Street, Suite 450
Tempe, Arizona 85281
(480) 967-1343
rbaker@logansimpson.com

APPENDIX E. INVASIVE SPECIES

The following information is presented by the Core Teams to assist municipal, state, and federal land managers with basic recommendations for the management of invading saltcedar, red brome, cheatgrass, buffelgrass, and Mediterranean grass within Pima County. Information about invading saltcedar tree species is excerpted from the USDA's online Fire Effects Information System (Zouhar 2003 and Hauser 2008), the *Strategy for Long-Term Management of Exotic Trees in Riparian Areas for New Mexico's Five River Systems, 2005–2014* (USDA FS and New Mexico Energy, Minerals and Natural Resources Department, Forestry Division 2005), and the *San Juan Basin Watershed Management Plan* (San Juan County Watershed Group 2005). Information for red brome, cheatgrass, and buffelgrass is excerpted from the USDA's online Fire Effects Information System (Hauser 2008). Additional information is available from *Invasive Non-Native Plants that Threaten Wildlands in Arizona: A Categorized List Developed by the Arizona Wildlands Invasive Plant Working Group* (AZ-WIPWG 2005) and from the *Southern Arizona Buffelgrass Strategic Plan* (Buffelgrass Working Group 2008).

Saltcedar

The continued degradation of native riparian plant communities from invading tree species is a significant concern to the citizens of Pima County.

Saltcedar is one of the most widely distributed and troublesome nonnative invasive plants along watercourses in the southwestern United Sates. Saltcedar reduces recreational usage of parks and riparian areas for camping, hunting, fishing, and agriculture. Since its escape from cultivation, saltcedar has spread primarily in the southwestern United States and northern Mexico, although its distribution extends into many parts of North America. It is especially pervasive in, and has dominated, many low areas bordering the channel of the Southwest river systems since the 1940s. More than 50 percent of the area covered by floodplain plant communities was dominated by saltcedar by 1970 (www.fs.fed.us/database/feis/plants). Saltcedar-dominated communities are often monotypic, though cottonwood and willow are common associates. Several studies in Arizona and New Mexico suggest that saltcedar communities do not support as high a density of native bird species as do native plant communities; however, saltcedar provides habitat for a number of bird species including white-winged and mourning doves, summer tanager, yellow-billed cuckoo, and the endangered southwestern willow flycatcher. Saltcedar communities can trap and stabilize alluvial sediments, reducing the width, depth, and water-holding capacity of river channels. This can subsequently increase the frequency and severity of overbank flooding. These stands can have extremely high evapotranspiration rates when water tables are high but not necessarily when water tables are low or under drought conditions. Because saltcedar stands tend to extend beyond the boundaries of native phreatophytes and to develop higher leaf area index, water use by saltcedar on a regional scale might be substantially higher than for other riparian species. While the natural flood disturbance regime seems to promote native species and discourage saltcedar, consistent natural river-flow conditions through riparian areas is rarely sustained in the Pima County CWPP.

There is little quantitative information on prehistoric frequency, seasonality, severity, and spatial extent of fire in North American riparian ecosystems. Fires in low- to mid-elevation southwestern riparian plant communities dominated by cottonwood, willow, and/or mesquite are thought to have been infrequent.

Increases in fire size or frequency have been reported for river systems in recent decades. Fire appears to be less common in riparian ecosystems where saltcedar has not invaded. Increases in fire size and frequency are attributed to a number of factors including an increase in ignition sources, increased fire frequency in surrounding uplands, and increased abundance of fuels. The structure of saltcedar stands may be more conducive to repeated fire than that of native vegetation. Saltcedar can contribute to increased vertical canopy density that creates volatile fuel ladders, thereby increasing the likelihood of negative impacts of wildfire. Saltcedar plants can have many stems and high rates of stem mortality, resulting in a dense accumulation of dead, dry branches vertically within the canopy as well as within the fuel bed. Large quantities of dead branches and leaf litter are caught in saltcedar branches above the ground surface, enhancing the crowns' flammability. In summary, the likelihood of fire in southwestern riparian ecosystems is greatest with the combination of flood suppression, water stress, and saltcedar presence. The presence of saltcedar in southwestern riparian ecosystems may favor its own propagation by further altering the natural disturbance regime, thereby further decreasing the already limited extent of native cottonwood and willow communities. Additionally, in the absence of flooding, regeneration of native trees is impeded and organic matter accumulates, thus increasing chances for future fires that may further alter the species composition and structure of southwestern riparian systems and promote the spread of saltcedar and other fire-tolerant species (www.fs.fed.us/database/fesi/plants/tree/tamspp/fire_ecology).

Once established in large stands, saltcedar can rarely be controlled or eradicated with a single method, and many researchers and managers recommend combining physical, biological, chemical, and cultural control methods. Removing saltcedar must also be accompanied by an ecologically healthy plant community that is weed resistant and that meets other land use objectives such as wildlife habitat or recreational use benefits. The best phenological stage to burn and reburn saltcedar to reduce density, canopy, and hazardous fuel loads is during the peak of summer, presumably due to ensuing water stress. Use of fire alone to control saltcedar, however, is generally ineffective, only killing aboveground portions of the plant and leaving the root crown intact and able to produce vigorous sprouts. Saltcedar stands can burn hot with erratic fire behavior with numerous firebrands transported downwind from the headfire. Prescribe fire setup requires poorly receptive fuels downwind from the headfire. Saltcedar in dense stands that have not burned in 25–30 years exhibit extreme fire behavior and crowning due to closed canopy at any time of the year. They can have flame lengths exceeding 140 feet, resulting in near-complete fuel consumption. Stands reburned after 5 to 6 years show vastly different fire behavior, carrying fire only if there is adequate fine-fuel load and continuity. Due to the ability to transport fire brands at least 500 feet downwind, blacklines should be at least 700 feet wide, and headfires should be installed with temperatures of 65°F–95°F, relative humidity of 25–40 percent, and wind speeds less than 15 miles per hour.

Managers must be prepared for extreme fire behavior in old decadent stands. Where high-intensity fire is not preferred due to the presence of less fire-resistant vegetative species, fuel reductions through mechanical and chemical controls are recommended. Ignited prescribed fire can be used to thin dense saltcedar stands to follow-up applications of mechanical and chemical controls (www.fs.fed.us/database/feis/plants/tree/tamspp/fire_effects). Mechanical and chemical methods are commonly employed for saltcedar control (*Low-Impact, Selective Herbicide Application for Control of Exotic Trees: Saltcedar, Russian Olive and Siberian Elm A preliminary Field Guide by Doug Parker and Max Williamson*, USDA May 2003). November through January is the most effective time to achieve first time

kills of saltcedar by cutting below the root collar, probably because the plants are entering dormancy at that time and translocating resources into their roots. Whole tree extraction through use of equipment such as the patented Boss Tree Extractor (www.bossreclamation.com) has achieved 90 percent mortality subsequent to initial treatment. In areas where native riparian vegetation species or other habitat issues create a need for agile specific treatment designs, whole tree removal may be considered as the preferred treatment. Herbicide application is most effective when applied immediately after cutting. Full-strength application of Garlon painted on cut stumps within 15 minutes of cutting or applied with a backpack sprayer using 20–30 percent mix of Garlon with Ag. Oil has been successful with the exception of spring months when sap is moving up from the root mass (Parker and Williamson 2003). Extraction and mulching of saltcedar will require treatments of resprouts by mechanical or chemical control methods. Changes in nature of disturbance from fire (frequency, intensity, and severity) have been affected by both saltcedar invasion and by other changes in the invaded communities. Fire frequency and fire behavior in saltcedar-invaded communities are thought to be different than in native plant communities. In the absence of flooding to remove debris, accumulation of woody material can increase to levels that may have a profound effect on the ecology of the system.

Red Brome

In general, red brome initiation and establishment is a direct response to fall rains. Initial growth is relatively slow, followed by a rapid increase in vegetative growth coinciding with warming spring temperatures. Flowering and fruiting generally occur in April and May. Seeds are disseminated in summer.

Red brome is commonly an early to mid-seral species in California chaparral. It is usually sparse in early succession chaparral systems of northern California but may increase rapidly in areas of low soil fertility and moisture. Peak population numbers require several years for seed dispersal into burns or buildup from on-site producers. Continued disturbance such as grazing and repeated low-severity fires favor red brome over native early-seral chaparral species.

Red brome generally shortens fire return intervals. The increased presence of red brome has promoted fires in areas where fire was previously infrequent due to insufficient fuels. Once established, red brome may increase fire frequency by enhancing potential for start and spread. In general, red brome produces an abundant and continuous cover of persistent fine fuels, promoting fast and “hot” fires. Desert scrub-shrub and grasslands dominated by red brome are more susceptible to fire than areas dominated by native forbs. Dead red brome culms and blades are persistent (commonly 2 years); herbage of most desert annual species usually lasts 1 year or less. Red brome produces high amounts of persistent flammable fuels in perennial plant interspaces, promoting ignition and spread.

Heat generated by burning red brome is sufficient to ignite and consume dead stems of native desert forbs. Flames may also consume small shrubs such as white bursage (*Ambrosia dumosa*), winterfat (*Krascheninnikovia lanata*), white burrobush, and Anderson wolfberry (*Lycium andersonii*). However, flames fueled by red brome are generally insufficient to ignite large shrubs such as creosotebush. See Cheatgrass section below for additional information.

Within the Sonoran Desert, dead and dry red brome is easily ignited, supporting fast-moving surface fires. Fire return intervals are also shortened, changing the vegetal composition through increase of nonnative

components and loss of native plant species. Arizona interior chaparral communities are composed of varying plant species compositions, enhanced by the predominant bimodal rainfall patterns of Pima County. Soils in this type are mostly shallow decomposed granite complexes that may hinder establishment of annual grasses. Red Brome can become a wildlife fire enhancing component in down slope desert scrub/shrub types in years of extraordinary rainfall.

Cheatgrass

Cheatgrass is most widespread in sagebrush-steppe communities of the Intermountain West. Many of the ecosystems that cheatgrass has invaded are seriously altered, and no longer support the vegetation of the potential natural community. Cheatgrass can maintain dominance for many years on sites where native vegetation has been eliminated or severely reduced by grazing, cultivation, or fire. The concept of potential natural communities based only on native species is seriously challenged by cheatgrass. Where cheatgrass is highly adapted, it might have to be recognized as a component of the potential plant community. In these situations, cheatgrass may remain the de facto climax dominant, regardless of site potential. The following discussion focuses primarily on component species of potential natural communities that cheatgrass has invaded, from low-elevation salt-desert shrub communities in the southern Great Basin into higher-elevation juniper (*Juniperus* spp.), pinyon-juniper (*Pinus-Juniperus* spp.), pine woodlands, and the coniferous forest zone of the Rocky Mountains.

According to Stewart and Hull in 1949 and Beatley in 1966, (Hauser 2008) only a few cheatgrass plants were found in black greasewood-shadscale (*Sarcobatus vermiculatus-Atriplex confertifolia*) and salt-desert shrub associations. Today, cheatgrass is common in these communities, especially in wet years. Associated species may include budsage (*Artemisia spinescens*), bottlebrush squirreltail (*Elymus elymoides*), Sandberg bluegrass (*Poa secunda*), and Indian ricegrass (*Achnatherum hymenoides*). Cheatgrass also occurs with blackbrush (*Coleogyne ramosissima*), galleta (*Pleuraphis jamesii*), and many other salt-desert species.

In the Intermountain West, and most specifically the sagebrush-steppe and bunchgrass zones, cheatgrass occurs in and often dominates large acreages of rangeland where native dominants include big sagebrush (*Artemisia tridentata*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber needlegrass (*Achnatherum thurberianum*), needle-and-thread grass (*Hesperostipa comata*), western wheatgrass (*Pascopyrum smithii*), basin wildrye (*Elymus cinereus*, Idaho fescue (*Festuca idahoensis*), rough fescue (*F. altaica*), bottlebrush squirreltail, low sagebrush (*Artemisia arbuscula*), spiny hopsage (*Grayia spinosa*), and rabbitbrush (*Chrysothamnus* spp.). Cheatgrass often co-occurs with Sandberg bluegrass and/or bottlebrush squirreltail and, on some Nevada sites, has replaced Indian ricegrass or blue grama (*Bouteloua gracilis*). By 1932 cheatgrass had replaced big sagebrush on burned-over areas in the Great Salt Lake region of Utah, and occupied these sites in dense stands associated with cutleaf filaree (*Erodium cicutarium*), rabbitbrush, broom snakeweed (*Gutierrezia sarothrae*), and several other relatively unpalatable species and annual weeds. Cheatgrass invades sites dominated by silver sagebrush (*A. cana*) and blue grama in Wyoming.

In pinyon-juniper and mountain brush lands, cheatgrass can be found growing among Rocky Mountain juniper (*J. scopulorum*), western juniper (*J. occidentalis*), singleleaf pinyon (*Pinus monophylla*), Utah juniper (*J. osteosperma*), Colorado pinyon (*P. edulis*), Gambel oak (*Quercus gambelii*), Emory oak (*Q.*

emoryi), antelope bitterbrush (*Purshia tridentata*), curlleaf mountain-mahogany (*Cercocarpus ledifolius*), skunkbush sumac (*Rhus trilobata*), snowberry (*Symphoricarpos* spp.), serviceberry (*Amelanchier pallida*), and mountain big sagebrush.

Disturbance

Often the critical factor opening niches for cheatgrass invasion is a heightened disturbance regime. Cultivation and subsequent land abandonment, excessive livestock grazing, overstory removal, and repeated fires can interact, or act singly, to proliferate cheatgrass. Excessive grazing and frequent fires can damage biological soil crusts and many perennial plants, thus encouraging cheatgrass establishment, survival, persistence, and dominance. Where fires have occurred at higher elevations, bunchgrasses have recovered vigorously with little cheatgrass invasion. Cheatgrass is less invasive in mesic environments, where it does not compete as effectively with established perennial grasses.

Fire Adaptations

Cheatgrass establishes from soil-stored and transported seed after fire. It has long been known that cheatgrass is highly adapted to a regime of frequent fires. Cheatgrass has a very fine structure, tends to accumulate litter, and dries completely in early summer, thus becoming a highly flammable and often continuous fuel. By the time of burning most cheatgrass seeds are already on the ground, and those not near the heat of burning shrubs can survive and allow cheatgrass to pioneer in the newly burned area. Even if fire comes when cheatgrass plants are still green and kills them before they can set seed, there may be enough viable cheatgrass seed in litter and upper layers of soil for plants to reestablish.

Cheatgrass is a strong competitor in the postfire environment, where it takes advantage of increased resource availability and produces an abundant seed crop. A cheatgrass population may average around 1,000 plants per square foot (10,750 per m^2) prior to burning. During a wildfire, most of the cheatgrass seeds beneath a shrub canopy may be killed by the heat associated with the burning of the shrub. Some cheatgrass seeds located in the interspaces among shrubs are also consumed, while those that are buried or lying in cracks in the soil will likely survive. The next season, surviving seeds germinate and establish at a density of about 1 plant per square foot ($11/m^2$). These plants are released from competition, and have more water and nutrients available to them. The cheatgrass plants in this sparse population can produce abundant tillers, each supporting many flowers, thus producing a large seed crop.

Fire facilitates cheatgrass dominance on some sites by interrupting successional trajectories of postfire plant communities, and cheatgrass facilitates fire and can thus shorten the interval between fires. This grass/fire cycle is a serious ecological threat on sites where most native plant species are poorly adapted to fire and is recognized in many ecosystems worldwide. This cycle has been documented in the Great Basin since the 1930s, and has been reported in the Mojave and Sonoran deserts beginning in the early 1980s. The result is a type conversion from native shrub and perennial grasslands to annual grasslands adapted to frequent fires.

Fire Regimes

Cheatgrass expansion has dramatically changed fire regimes and plant communities over vast areas of western rangelands by creating an environment where fires are easily ignited, spread rapidly, cover large

areas, and occur frequently. Cheatgrass promotes more frequent fires by increasing the biomass and horizontal continuity of fine fuels that persist during the summer lightning season and by allowing fire to spread across landscapes where fire was previously restricted to isolated patches. Fire in these habitats can have severe effects on native species of plants and animals, although the impact of fire regime changes may differ by region and ecosystem type due to differences in the composition and structure of the invaded plant communities and to climatic differences such as occurrence of summer thunderstorms.

Postfire desert scrub-shrub plant communities are typically dominated by nonnative annual grasses, so burned areas are likely to be more susceptible to fire than unburned areas. Repeated fires stress and kill native perennials. Eventually wind and water erosion may occur, removing and diluting soil organic matter and attendant nutrient concentrations and safe sites around shrubs. After fire has eliminated native perennials, essential mycorrhizae may also be eliminated. Biological soil crusts are also killed by severe fire, and the unusually large, frequent fires associated with cheatgrass dominance can preclude crust species recolonization and succession.

Cheatgrass Fire Regime

Cheatgrass often dominates postfire plant communities, and once established, cheatgrass-dominated grasslands greatly increase the potential and recurrence of wildfires. Cheatgrass fires tend to burn fast and cover large areas, with a fire season from 1 to 3 months longer than that of native rangeland. The average fire-return interval for cheatgrass-dominated stands is less than 10 years. This adaptation to and promotion of frequent fires is what gives cheatgrass its greatest competitive advantage in ecosystems that evolved with less frequent fires. The cheatgrass-fire cycle is self-promoting, as it reduces the ability of many perennial grasses and shrubs to reestablish and furthers the dominance of cheatgrass. Moisture availability can affect cheatgrass productivity and thus affect fuel loads on a site. Drought years may reduce the dominance of cheatgrass in both recently burned and unburned areas, thus decreasing fuel loads and the chance of fire.

Immediate Fire Effect on Cheatgrass

Live cheatgrass plants are susceptible to heat kill, as with a flame thrower or handheld propane torch, though they are difficult to burn when green. When cheatgrass plants are dry enough to burn, they are already dead and have already set seed. Fire will then reduce cheatgrass plants to ash.

Cheatgrass seeds are also susceptible to heat kill, but can survive fires of low severity if the entire litter layer is not consumed or if seeds are buried deeply enough to be insulated from the heat. The amount of litter or ash left on a site is a good indicator of the amount of cheatgrass seed surviving on that site. Low density of cheatgrass immediately following fire indicates either low numbers of cheatgrass seed in the seed bank, or poor survival of seeds during fire.

Discussion and Qualification of Fire Effect

The effects of fire on cheatgrass plants and seeds vary with timing and severity of fire and the composition and density of the prefire plant community. If fire occurs when seed remains in panicles aboveground, most seeds will be killed and cheatgrass density will decline immediately following fire. The chances of seed surviving fire are enhanced once they have dispersed onto or beneath the soil surface. The woody biomass

of some desert shrub, plus litter accumulations, provide sufficient fuel to elevate temperatures high enough for a long enough period to consume cheatgrass seeds on these microsites. Some cheatgrass seeds in the interspace zones are also consumed by fire, but many survive even though the cheatgrass herbage is completely consumed. Fire from herbaceous fuel alone is not usually hot enough to consume cheatgrass seeds. Although fires in pure cheatgrass stands, without woody fuel, are less severe, cheatgrass seed banks can be substantially reduced after fire.

Discussion and Qualification of Plant Response

Cheatgrass response to fire depends on plant community and seed bank composition, density, and spatial distribution; season of burning; fire severity, frequency and patchiness; scale of consideration; postfire management; and climatic conditions. Generalizations are difficult because each combination of climate, vegetation, and soil must be considered separately, as well as considerations of environmental differences both at the time of burning and during subsequent plant reestablishment.

Timing of Fire

If burned during a crucial time during seed ripening, fire can greatly reduce the density of the succeeding cheatgrass stand; however, postfire seed production may equal or exceed that of the prefire population, resulting in increased density the following year. Timing of fire is important also because of variable damage to potential competitors in the native community. For example, cool-season perennial grasses such as bluebunch wheatgrass and western wheatgrass may be less damaged by late-summer wildfires than by fires earlier in the growing season.

Fire Size and Frequency

Nonnative invasive grasses generally benefit from fire and promote recurrent fire. Fire kills biologic soil crusts, thereby allowing more germination sites for cheatgrass for several years or even decades, as crusts are slow to recover. Recurrent fires also tend to enhance cheatgrass dominance because native species cannot usually persist under a regime of frequent fires. Native plant assemblages are thus converted to nonnative annual grasslands. Frequency and size of fires is then further increased.

Fire-Management Considerations

As a management tool, fire can be used to either kill unwanted species or to simulate historical fire regimes and promote desired species. Historical fire regimes did not occur in the presence of many invasive plants that are currently widespread, and the use of fire may not be a feasible or appropriate management action if fire-tolerant invasive plants are present. For example, while fire may be an important natural component of the Great Basin ecosystem, its reintroduction by land mangers is complicated by the presence of invasive plants such as cheatgrass. Fire management should be conducted in ways that prevent establishment of invasive species, and the management of fire and invasive plants must be closely integrated for each to be managed effectively.

Rasmussen presents considerations (e.g., species composition, fuel load, fuel continuity, and weather) to be addressed when using prescribed fire in sagebrush steppes, and general prescriptions that could be used. When precipitation is below 12 inches (300 mm), caution should be used to ensure desired plant

response. If the objective is to maintain the perennial herbaceous vegetation, prescribed burning is most effective when used before sagebrush dominates the site and effectively excludes perennial herbaceous plants. Such timing reduces the need for seeding following a burn. If the objective is to maintain the sagebrush, prescribed burning has very limited applicability.

Cheatgrass Fuels

In the absence of grazing, grass biomass during the fire season may represent 2 years of fuel accumulation, which appears to be optimal for grassland fires. Abundant, continuous cover of cheatgrass can lead to rapid spread of wildfires so that under conditions of high temperatures, low humidity, and wind, the fires are very difficult to suppress.

Brooks compared the roles of nonnative annual grasses and other annual plants in facilitating the spread of fires in the Mojave Desert. Landscapes dominated by nonnative annual grasses, especially annual bromes (*Bromus* spp.), are more flammable than those dominated by native forbs. Possible explanations for this include higher surface-to-volume ratio of grasses compared to forbs; more continuous vegetative cover; and the ability of alien annual grasses to remain rooted and upright longer than native forbs, allowing them to persist as flammable fuels into the summer when the threat of fire is highest. Thick layers of annual plant litter accumulate, and litter decomposes especially slowly in desert regions. Accumulations of litter led to particularly hot temperatures, long flame-residence times, and continuous burn patterns in experimental fires in the Mojave Desert.

Cheatgrass provides a flammable link between open grasslands and forests. It cures early in the fire season and ignites readily during dry periods because of its finely divided stems and pedicels, and it responds readily to changes in atmospheric moisture because of its fine structure. Moisture content is the single most important factor influencing cheatgrass flammability, and it varies with plant phenology and color change as follows:

Plant color	Moisture content (%)
Green	>100
Purple	30–100
Straw	<30

Since there is considerable variation in plant coloration in a stand, close inspection is necessary to determine the predominant coloration. Cheatgrass is not readily ignitable until it reaches the straw-colored stage. The time required for the moisture content to drop from 100 to 30 percent ranged from 8 days on a northern exposure in western Montana to 23 days on a southern exposure in different years, with an average of 14 days. The onset of purple coloring forewarns of hazardous fire conditions within about 2 weeks.

Cheatgrass ignites and burns easily when dry, regardless of quantity, and can support rapid rate of fire spread. Flammability of cheatgrass fuels depends primarily on moisture content, weight, and porosity.

Fuel Management/Fire Prevention

On areas where cheatgrass is abundant, special measures may be necessary to prevent recurrent fires, and thus prevent the elimination of fire-sensitive perennial grasses and forbs and other potential adverse impacts. Fire suppression can discourage invasion and spread of cheatgrass. Grazing management to reduce fuel loads and greenstripping are 2 methods employed to prevent large recurrent fires in areas dominated by cheatgrass. Additionally, herbicides are being tested for effectiveness in creating fuelbreaks in cheatgrass-dominated range.

Cattle grazing can reduce the accumulation of cheatgrass litter and thus lessen the fire hazard on a site. Grazing cheatgrass in winter can reduce cheatgrass herbage and seeds while protecting the dormant perennial grasses.

Greenstripping is a method of establishing fuel breaks to impede the flow of wildfires and thereby increase the fire-free interval on a site dominated by cheatgrass. These fuel breaks are 30 to 400 feet (10–120 m) wide and are seeded with fire-resistant vegetation. As of 1994, 451 miles (16,280 acres) of experimental and operational greenstrips had been established in Idaho. The effectiveness of greenstrips, or any fuels modification project, in reducing wildfire spread is enhanced by 3 factors: (1) disrupting fuel continuity (e.g., by replacing cheatgrass with caespitose grasses such as crested wheatgrass, which have large spaces between individual shrubs); (2) reducing fuel accumulations and volatility (e.g., shrub stands are thinned to maintain a minimum distance of 10 feet [3 m] between plants); and (3) increasing the density of plants with high moisture and low volatile oil content, thus reducing both the potential for ignition and rate of fire spread. Plants used in greenstrips remain green and moist into late summer, making the greenstrip area less flammable for a longer time. Wildfire speed may slow when entering a greenstrip, thus allowing fire-suppression crews to extinguish the fire. Some wildfires burn into greenstrips and extinguish. Native plants in the Great Basin generally do not meet firebreak criteria. Crested wheatgrass and forage kochia are effective in retarding wildfire spread, compete well in a weedy environment, and have been the most successful species in greenstrips. Both plants can, however, be invasive and spread into areas where cheatgrass is being managed with prescribed fire.

Revegetation after Cheatgrass Fires

After wildfires or when planning prescribed burning in areas where cheatgrass is present, managers must decide whether the burned area should be seeded or whether sufficient perennial grasses are present to revegetate a site and successfully compete with cheatgrass. Seeding may not be necessary or desirable if native plant species are able to recover after fire. Cheatgrass-dominated communities tend to have extremely sparse perennial seed banks, however, and the cheatgrass seed bank generally recovers by the second post-fire year. In Utah, natural revegetation (no seeding) is most effective at higher elevations where sufficient moisture and a diverse population of perennial vegetation exist, especially on north- and east-facing slopes. Below 6,000 feet (1,820 m) and in much of Utah's arid environment, cheatgrass and other weedy species readily invade and dominate burned areas. Seeding following fire may be needed to prevent cheatgrass dominance in Wyoming big sagebrush and pinyon-juniper communities but not in mountain big sagebrush communities.

Revegetation of burned areas is desirable to ensure forage for livestock and wildlife and to minimize the potential for erosion and/or invasion by nonnative species. Ideally, wildfire rehabilitation should enhance the recovery of native vegetation through the seeding of native plants adapted to local environmental conditions. Early seral species may provide managers with native plant materials that can successfully germinate and establish in the presence of invasive annuals and do well after subsequent fire. Bottlebrush squirreltail deserves consideration as a post-wildfire revegetation species because in greenhouse experiments, it has substantially greater growth in post-wildfire soil compared with unburned soil, and exhibits relatively higher growth rates in post-wildfire soil compared to cheatgrass. Restoration projects using native species mixes to provide a variety of above- and belowground growth forms, and sowing at high densities, may increase establishment of desirable plants while providing adequate competition against invasive plants. Federal policy currently encourages the use of native plant materials on public lands; but because the primary objective of wildfire rehabilitation on public lands is not ecological restoration but rather prevention of erosion and invasion by undesirable nonnative species, and because of the limited availability of native seeds, the use of native species is not mandatory for revegetation. Because of difficulties related to cost, handling, and reliability of native seed supplies in wildfire rehabilitation situations, many managers prefer nonnative plant materials and traditional seeding methods.

Many large areas have been seeded with nonnative, herbaceous forage species including crested wheatgrass, intermediate wheatgrass, tall wheatgrass (*Thinopyrum ponticum*), Russian wildrye (*Psathyrostachys juncea*), smooth brome, alfalfa, and yellow sweetclover (*Melilotus officinalis*). Seeds for these species are readily available and responsive to standard seeding methods; plants establish and grow rapidly, and have wide environmental tolerances. Many cultivars are also drought tolerant, grazing tolerant, and competitive against other, less desirable nonnative species. The most reliable and persistent grass for low-elevation, drought-prone areas of the Intermountain West is crested wheatgrass. It establishes rapidly even under relatively dry conditions and tends to persist for many years, although some sites seeded to crested wheatgrass return to cheatgrass dominance over time. Grasses that are most competitive against cheatgrass include ‘Hycrest’ crested wheatgrass, ‘Luna’ intermediate wheatgrass, ‘Bozoisky’ Russian wildrye, and smooth brome. The competitive advantage for establishment of crested wheatgrass seedlings is lost if burned areas are not seeded the year of the fire. Forbs such as alfalfa tend to have low persistence in rehabilitation seedings. Current goals of making wildfire rehabilitation objectives compatible with other management objectives on public lands may require careful planning of treatments and some modifications of standard practices, such as greater use of native plants. The identification and use of competitive native perennial plants for arid-land rehabilitation has become a priority for managers and researchers. In big fire years—such as 1996, when millions of acres burned—the scale of the demand for seed greatly exceeds the supply of native plant seed, especially of local genotypes. The competitive ability of nonnative species and the relatively low cost and high availability of their seed will continue to appeal to those faced with large-scale burns in cheatgrass-prone areas. If managers are able to predict large fires in advance, perhaps more efforts could be made to have more native seed available for specific sites.

Buffelgrass

Buffelgrass is native to Africa, India, and western Asia. It was introduced into Texas in the 1940s to stabilize overgrazed rangelands and provide livestock forage. It was introduced into Arizona in the 1930s

and 1940s to control erosion. Buffelgrass also established in Arizona from seed dispersed from Sonora, Mexico, where over 1,000,000 acres (400,000 hectares) of native desert and thornscrub vegetation was converted to buffelgrass pasture. Buffelgrass was first collected on the island of Hawaii in 1932. It was intentionally planted on Kaho'olawe Island, Hawaii in 1988 and 1990. The literature does not describe how buffelgrass arrived in other areas of the United States. Buffelgrass has also been introduced into Australia, where it is considered highly invasive.

Buffelgrass occurs in the southern United States from California to Florida (with the exception of Alabama, Georgia, and the panhandle of Florida), with outlying populations in Oklahoma, Missouri, and New York. It also occurs in Puerto Rico and Hawaii. In North America, buffelgrass is most prominent in the Sonoran Desert of southern Arizona and northern Mexico and in the Chihuahuan Desert of southwestern Texas. Buffelgrass occurs in desert and thornscrub communities in southern Arizona and northern Mexico. It occurs in communities dominated by brittlebush (*Encelia farinosa*), acacia (*Acacia* spp.), Arizona mimosa (*Mimosa distachya* var. *laxiflora*), honey mesquite (*Prosopis glandulosa* var. *glandulosa*) creosotebush (*Larrea tridentata*), saltbush (*Atriplex* spp.), bursage (*Ambrosia* spp.), desert ironwood (*Olneya tesota*), yellow paloverde (*Parkinsonia microphylla*), and/or saguaro (*Carnegiea gigantea*).

The two greatest impacts of buffelgrass in the United States are the alteration of plant communities and fire regimes in the Sonoran Desert. In a news article, United States Geological Survey researcher Julio Betancourt describes the establishment and spread of buffelgrass in the Sonoran Desert of Arizona as "one of the most impressive ecosystem conversions happening in North America." Williams and Baruch describe buffelgrass as "one of the world's most notorious invaders." Buffelgrass was introduced into Arizona by the Natural Resources Conservation Service in the late 1930s and early 1940s. On the plains of Sonora, buffelgrass distribution has expanded from 19,000 acres (7,700 ha) in 1973 to over 350,000 acres (140,000 ha) in 2000. As of 2006, as much as 4 million acres (1.6 million ha) has been seeded to buffelgrass in Sonora. Between 1990 and 1998, the Mexican government subsidized cattle ranchers to convert native desert and thornscrub to buffelgrass pastures. The vast conversion of native communities to buffelgrass pasture may facilitate the spread of buffelgrass not just into native communities in the Sonoran Desert of Mexico and Arizona, but also into the Mojave and Sonoran Desert of California and Baja California. Buffelgrass persistence and spread can lead to reduced richness and diversity in invaded communities in the Sonoran Desert. When native trees are replaced by buffelgrass, a large guild of associated plants and animals also disappears from the area. Unpublished data cited by Burquez and others indicate severe reductions of native plant richness and diversity and less vertical complexity in buffelgrass grasslands compared to native desert scrub. Large reductions in standing crop biomass were also calculated: from 5 to 20 Mg/ha in native vegetation, to 1 to 4 Mg/ha in buffelgrass. Most native vegetation that is removed for the establishment of buffelgrass pastures is burned, resulting in substantial losses of carbon from these ecosystems as carbon dioxide. Thus, the widespread conversion (both active and passive) of native desert scrub to buffelgrass grasslands may have implications for climate change.

Buffelgrass establishment and spread are associated with a reduction or loss of native plant species in the Sonoran Desert, the Lower Rio Grande Valley, Hawaii, and Australia. In areas where buffelgrass occurs, it often outcompetes native species for limited water and nutrient resources by germinating earlier, growing faster, and creating denser stands than native plants. Buffelgrass can negatively affect native plant species richness in areas where it is dominant.

According to the Buffelgrass Working Group (2008), buffelgrass impacts on native plant communities are greatest in the Sonoran Desert. In the Sonoran Desert of northwest Mexico, buffelgrass invasions in columnar cactus (*Pachycereus pecten-aboriginum*) stands severely affect cactus reproduction. While buffelgrass does not affect cactus seed production, seedlings fail to establish in buffelgrass stands. Buffelgrass established in the Organ Pipe Cactus National Monument, Arizona, during the 1970s and 1980s. By 1994, it occupied 20 to 25 square miles (50–65 km²) of the monument and was spreading rapidly. At Organ Pipe Cactus National Monument, buffelgrass reduces abundance of native shrubs such as creosotebush, saltbush, and bursage, as well as abundance of associated native grasses and forbs.

Buffelgrass is described as a fire-adapted species. Fire adaptations vary with reproductive morphology, which varies among forms. Buffelgrass may establish, persist, and spread following fire. Buffelgrass may establish from on-site seed sources after fire. However, in Botswana, no buffelgrass seeds survived prescribed burning when harvested from a savanna and sown on the soil surface in a curlyleaf (*Eragrostis rigidior*) plant community before burning. It is possible that buried or protected buffelgrass seed may survive and germinate following fire. Buffelgrass seed is dispersed by multiple sources, so it may establish on burned sites via offsite seed sources. More information is needed on seed banking and heat tolerance of buffelgrass seeds.

Buffelgrass can persist after fire by sprouting from rhizomes, tillers, or buds that survive fire. Sources describe buffelgrass as simply “sprouting” or “rapidly resprouting” after fire, without indicating the source of sprouts. Esque and others state that buffelgrass resprouts rapidly from the root crown after fire. New buffelgrass growth can appear as soon as 5–10 days following complete top-kill by summer fires; however, postfire response of buffelgrass may depend on season of burning and postfire weather conditions. Buffelgrass fine fuel loads are generally much higher than fine fuel loads from native plants in desert environments. Thus, fires in buffelgrass stands may have longer flame lengths, greater rates of spread, and higher temperatures than fires in native desert vegetation, and cause high mortality in native flora and fauna. Buffelgrass stands burn “very hot” and can burn when green. In the Sonoran Desert, buffelgrass-fueled fires can reach temperatures so hot that the soil is scorched and the bedrock cracked. Headfires in buffelgrass stands can reach temperatures of 1,090 to 1,300°F (585°C–700°C). Esque and others state that buffelgrass grows into an “almost-woody subshrub,” accumulating flammable material over several years, “in effect unlinking fire frequency from annual climatic variability and increasing the fire intensity.”

Buffelgrass fuel loads in Saguaro National Park are large enough to carry fire and were found to be high in comparison to fine fuels from annuals in warm desert biomes of North America. Fine fuels from annuals (natives and nonnatives combined) typically range from 0 to greater than 625 lb/acre in warm deserts. In June 2003, buffelgrass fuel loads on 14 plots in 2 areas of Saguaro National Park (4 at Javelina Picnic Area and 10 at Panther Peak) were measured. During the year of the study, sites received less than 10.5 inches (267 mm) of rain and buffelgrass moisture content was very low (3.6%). Nevertheless, buffelgrass dry, aboveground biomass averaged 2,523 lb/acre and 2,213 lb/acre on the 2 sites.

Buffelgrass growth and spread are greatest in wet years. In northwestern Sonora, Mexico, buffelgrass production was measured in summers of below- and above-average precipitation. On northwestern Mexican rangelands, peak growth is in August. Production ranges from 1,000 lbs/acre in dry years to 6,000 lbs/acre in wet years. Average summer (July-September) precipitation in Sonora is 7.56 inches (192 mm).

During the summer of 1987, precipitation was 5.75 inches (146 mm) below average and buffelgrass biomass production was 465 kg/ha. During the summer of 1986, precipitation was above average by 14.1 inches (358 mm), and buffelgrass biomass production was 3,025 kg/ha. On the Desert Laboratory grounds of Tucson, Arizona, buffelgrass "greatly" expanded its range following 2 unusually wet summers. Buffelgrass had been on the site since 1968.

Although buffelgrass has been in North America for many decades, in the last couple of decades it has spread to the point of altering fuel characteristics and impacting fire regimes of native desert communities. Research regarding its impacts on native fire regimes is limited at the time of this writing (2008), although abundant anecdotal evidence is available. A 2001 review article by Brooks and Pyke describes how buffelgrass and other nonnative plants are beginning to alter fire regimes in the Sonoran Desert. Brooks and Esque warn that shortened fire-return intervals caused by invasive grasses, including buffelgrass, pose a serious threat to plants and animals in the Sonoran Desert.

While buffelgrass occurs in many of the southern States, the majority of buffelgrass fire ecology information comes from areas in the Sonoran Desert, including central and northern Sonora, Mexico, and southern Arizona. In these areas, buffelgrass invasion can increase the biomass and continuity of fine fuels, resulting in large and frequent fires. Buffelgrass also fuels frequent fires in Hawaii and Australia. In central Australia, buffelgrass produces 2 to 3 times as much flammable material as native grasses on some sites. Historically, watercourses were natural firebreaks, but the expansion of buffelgrass in watercourses from water-dispersed seed have turned these areas into "wicks" for fire.

Historically, fires were rare in the Sonoran Desert because fine fuels were sparse and discontinuous and rarely carried fire. The primary carriers of contemporary fires in the Sonoran Desert are introduced perennial plants. In contrast to native species, buffelgrass produces a large amount of continuous, fine fuel, thereby increasing the potential for frequent, intense, and large fires. The buffelgrass fire season in the Sonoran Desert begins at the end of the summer rainy season in late September and continues until the following July when the summer rains return. During winter rains and the cool-season growth period, however, buffelgrass-fueled fires are fewer than in the warm, dry months.

The fire hazard caused by buffelgrass in the Sonoran Desert of Arizona and northern Mexico is increasing. In a news article, a fire inspector in Tucson, Arizona, said, "buffelgrass is like taking a kiddie pool, filling it with gas, and putting it in your front yard." He claimed that buffelgrass fires can go from 4-foot (1 m) flames to 30-foot (10 m) flames in 20 seconds. He described the desert surrounding Tucson as formerly "fire resistant", but 15 to 20 buffelgrass-fueled fires occurred within a 6-week period during the summer of 2007. Similarly, in Hermosillo, Sonora, Mexico, fires were virtually unknown prior to the establishment of buffelgrass in the 1940s. By the 1960s, sporadic buffelgrass-fueled fires were reported. By the late 1990s, buffelgrass-fueled fires had increased to 1 fire every 2 days during the dry summer months.

If buffelgrass continues to spread in the Sonoran Desert, it is likely to lead to a grass/fire cycle, negatively impacting the persistence of native vegetation. While some Sonoran Desert plants can establish or sprout following fire, many cannot. Native plant establishment via seed may take 20 or more years after fire to return to prefire vegetative cover. Buffelgrass can sprout quickly after fire and "outcompete" or even replace native plants. Cacti in the Sonoran Desert may be able to survive a single fire; however, a second fire within 10 years may be "catastrophic" to cacti. Buffelgrass-fueled fires may lead to decline of saguaro,

yellow paloverde, and other native Sonoran Desert plants. In a review, West and Nabhan reported that buffelgrass burns so hot in the Sonoran Desert Biological Reserve that desert ironwood (*Olneya tesota)* trees are completely consumed, and the native desert vegetation is replaced by a dry grassland with no recruitment of native perennials. Esque and others also describe buffelgrass-fueled fires near El Batamote, Mexico completely incinerating desert ironwood and fragrant bursera (*Bursera fagaroides*) trees.

Fire in the Sonoran Desert negatively affects bird habitat quality. Buffelgrass fuels frequent and intense fires that remove native vegetation crucial for some bird species. Buffelgrass fires in national parks and national wildlife refuges in Texas and Arizona threaten desert tortoises, jaguarondis, and ocelots, and other animals that depend upon woody plants or dense litter. Clearing native vegetation and replacing it with buffelgrass in southern Sonora, Mexico, has caused a decline in the Tarahumara frog. The conversion of desert scrub and foothill thornscrub to buffelgrass pastures in the Sonoran Desert is “devastating” to the Sonoran Desert tortoise. Fires that generally follow the transformation of native vegetation to buffelgrass are converting vast areas of tortoise habitat into tracts of nonnative grasslands. In Australia, the expansion of buffelgrass is associated with a decrease in vertebrate and invertebrate diversity.

Control

Given that buffelgrass has only become a problematic species in the United States within the last 10 to 20 years, research on its control is limited. At the time of this writing (2008), physical removal of buffelgrass seems to be the best control method available. Some research suggests that buffelgrass can be controlled by herbicide applications. Physical removal may be the best method of controlling buffelgrass. Based on research by Ward and others, manual removal of buffelgrass should take place at least 4 days after periods of precipitation that exceed roughly 0.67 inch (17 mm).

Physical removal of buffelgrass can be successful if sites are treated for at least 2 years. In year 2, seedlings need to be removed prior to maturity. In 1994, physical removal (hand pulling and digging with a shovel) of buffelgrass at Organ Pipe Cactus National Monument was initiated in a test plot. The following winter, many buffelgrass seedlings were removed from the site. By 1996, seedlings were not found at the site. At west Quitobaquito Springs, physical removal of buffelgrass resulted in almost no reestablishment. Large-scale physical removal of buffelgrass in the monument has proven successful. Sites where buffelgrass is most likely to reestablish following physical removal include burned sites, buffelgrass stands at least several years old, areas near a seed source, areas where vehicles or humans move through a site, areas with white-throated woodrat middens, or areas with topsoil loss due to erosion or bulldozing.

There is very little information on the prevention of buffelgrass establishment and spread. Further information on this topic is needed. On Tumamoc Hill, Arizona, a group known as the “Weedwackers” has initiated a program of revegetating disturbed areas with native species to prevent buffelgrass establishment. The program has been successful at eliminating buffelgrass stands in washes; leading to the reestablishment of native vegetation.

An integrated management program at two sites on the island of Hawaii successfully removed buffelgrass, allowing the establishment of native pili grass. Burns were conducted in February 1998, then reburned once or twice in the next 4 years. On some plots, burning was combined with hand pulling or glyphosate treatment. All sites were seeded with pili grass 3 weeks after the first burn, and watered to counteract

effects of drought. In 2002, 4 years after the initial treatments, pili grass cover was less than 10% on unburned and burn-only plots, but was approximately 34 percent on plots from which buffelgrass had been removed.

Beginning around 2000, the group "Weedwackers" physically removed 4,600 tons (4,200 t) of buffelgrass and other exotic species from roadsides, vehicle pullouts, and washes in Tucson Mountain Park, Arizona. Using National Park Service funding, volunteers removed over 40 tons (40 t) of buffelgrass from Organ Pipe Cactus National Monument between 1994 and 2004.

Buffelgrass has been found to range from less than one ton per acre to over 5 tons per acre in undisturbed desert that has been invaded by buffelgrass. Fire behavior in these infested areas would be similar to a tall grass prairie where flame lengths can reach over 18 feet, in buffelgrass at an experimental burn in Avra Valley in 2008, and fire rate of spread exceeded 155 feet/minute in relatively mild conditions (SABCC 2008).

Mediterranean Grass

Two similar species are known as Mediterranean grass, *Schismus barbatus* and *Schismus arabicus*. Mediterranean grass is a low growing tufted grass (under 20 cm tall) that is abundant in many areas of the desert southwest. According to *Invasive Non-Native Plants that Threaten Wildlands in Arizona* (AZ-WIPWG 2005), both species of *Schismus* are ranked as a medium threat level for Arizona's wildlands. A medium ranking means that these species have a substantial impact on Arizona's ecosystems; have invasive attributes that are conducive to moderate to high rates of dispersal, often enhanced by ground disturbance; and are found with a diversity of ecosystems and the distribution with those ecosystem can range from limited to widespread. *Schismus* has been noted, along with red brome, in the conversion of the Sonoran and Mojave Deserts to flammable grassland (Brown and Minnich 1986, Brooks and Matchett 2006).

Other Species

Additional non-native species are causing fire problems in localized areas and have the potential to spread to other areas. Some recent invaders show rapid expansion rates and can form thick growth that indicates potential fire problems in the future. They are mainly grasses and winter-annual mustard species. Bermudagrass (*Cynodon dactylon*) and Johnson grass (*Sorghum halepense*) are already present along roads and in some washes. Lehmann lovegrass (*Eragrostis lehmanniana*) is present in some pant associations and can form dense monocultures with heavy fuel loads in the desert grassland association. The new, potential problem species include tickgrass (*Eragrostis enchinochloidea*), soft-feather pappusgrass (*Enneapogon cenchroides*), Malta star-thistle (*Centaurea melitensis*), Sahara mustard (*Brassica tourniforti*), and stock (*Matthiola parviflora*). Cooperators must monitor conditions in their jurisdiction and be ready to take action on emerging fire problems.

APPENDIX F. GUIDANCE FOR IMPLEMENTATION OF FEDERAL WILDLAND FIRE MANAGEMENT POLICY

Guidance for Implementation of Federal Wildland Fire Management Policy

February 13, 2009

Foreword

The *Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001)* is the primary interagency wildland fire policy document. The *Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy (June 20, 2003)* was developed and approved under the authority of the Wildland Fire Leadership Council (WFLC) to set forth direction for consistent implementation of the federal fire policy. It has been used since that time.

On May 2, 2008, the WFLC issued a memorandum entitled *Modification of Federal Wildland Fire Policy Guidance*. This memorandum directed federal agencies to test and implement new guidelines for wildland fire management. The modifications were tested in a number of field units in the 2008 fire season.

In 2009 the National Wildfire Coordinating Group (NWCG) issued a memorandum to the NWCG executive board (NWCG#001-2009, January 7, 2009) that 1) affirms the soundness of the *Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001)*, 2) reiterates the policy changes stated in the May 2, 2008 WFLC memorandum entitled *Modification of Federal Wildland Fire Policy Guidance*, 3) states that the Wildland Fire Decision Support System (WFDSS) will replace existing analysis and decision processes, and 4) confirms that the *Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy (June 20, 2003)* will be replaced in 2009.

This document, *Guidance for Implementation of Federal Wildland Fire Management Policy (February, 2009)*, is that replacement.

The U. S. Department of Agriculture (USDA) and the U. S. Department of the Interior (USDOI) prohibit discrimination in all of their programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, and marital and family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-5964 (voice and TTY) and/or the USDOI at (202) 652-5165.

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TTY). Or write to the Director, Office for Equal Opportunity, U. S. Department of the Interior, 1849 C Street, NW, MS-5221, Washington, DC 20240.

USDA and USDOI are equal opportunity providers and employers.

Fire Executive Council

February 13, 2009

Memorandum

To: Chief, USDA Forest Service
Director, Bureau of Indian Affairs
Director, Bureau of Land Management
Director, Fish and Wildlife Service
Director, National Park Service

From: Chair, Fire Executive Council

Subject: Guidance for Implementation of Federal Wildland Fire Policy

On February 13, 2009, the Fire Executive Council (FEC) approved Guidance for the Implementation of Federal Wildland Fire Management Policy. This Guidance provides for consistent implementation of the 1995/2001 Federal Fire Policy, as directed by the Wildland Fire Leadership Council.

Successful implementation of the Guidance requires that each of the federal wildland fire agencies work together through development of unified direction and guidance for agency/bureau manuals, directives, handbooks, guidebooks, plans agreements and other pertinent documents to complete final implementation of this guidance.

In approving the Guidance the FEC:

- directs the National Wildfire Coordinating Group to adopt the guidance and review and revise, as appropriate, all interagency training courses, operational guides, standards, terminology, reporting requirements, skill/competency/qualification/certification requirements and other pertinent documents.
- directs the federal fire directors to work collaboratively with state, local and tribal fire managers and public and nongovernment organizations to communicate direction stated in the guidance with internal and external audiences to foster understanding and support for the complexity of wildland fire management.
- directs the federal fire directors to revise or develop accountability standards, performance measures and tracking systems to assess if resource and protection objectives are met during the course of management on all wildland fires.

We thank the interagency team that produced this implementation guidance and extend special appreciation to the National Association of State Forest, International Association of Fire Chiefs, National Association of Counties, The Wilderness Society, and The Nature Conservancy for the support and commitment in completing the document.

APPROVAL

The *Guidance for Implementation of the Federal Wildland Fire Policy (February, 2009)* is hereby approved by the Fire Executive Council. Implementation actions are to begin immediately.

22 FEB 09

U.S. Department of Agriculture — Date
Forest Service, Fire & Aviation Management
Tom Harbour, Director

2/18/09

Department of the Interior — Date
Office of Wildland Fire Coordination
Kirk Rowdabaugh, Director

FEB. 13, 2009

Bureau of Land Management — Date
Fire and Aviation Management Directorate
Jim Douglas, Assistant Director

2/19/09

National Park Service — Date
Visitor and Resource Protection
Karen Taylor-Goodrich, Associate Director

2/20/09

Fish and Wildlife Service — Date
National Wildlife Refuge System
Division Natural Resource and Conservation Planning
Andy Loranger, Chief

2/20/09

Bureau of Indian Affairs — Date
Trust Services
Vicki Forrest, Deputy Director

2-17-09

Department of the Interior — Date
National Business Center –
Aviation Management Directorate
Mark Bathrick, Associate Director

2/20/09

National Wildfire Coordinating Group — Date
Ex officio
Brian McManus, Chair

Table of Contents

Foreword 2
Introduction 6
Guidance for Implementation 7
Implementation 7
Federal Wildland Fire Policy - Guiding Principles and Policy Statements 8
    Guiding Principles 8
    Federal Wildland Fire Management Policy 9
Appendices 16
    Appendix A: Glossary 16
    Appendix B: Wildland Fire Flowchart 18
    Appendix C: What Changed 2004 to 2009 19

Introduction

The *Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001)* remains sound and presents a single cohesive federal fire policy for the Departments of the Interior and Agriculture. However, some issues associated with implementation of this policy need closer attention and clarification to fully achieve the intent of the policy.

One such policy area is the Wildland Urban Interface (WUI). WUI is more complex and extensive than previously considered in the 1995 and 2001 Federal Fire Policy reviews. Fire management activities affecting WUI areas require closer coordination and more engagement between with federal, state, local and tribal land and fire managers to ensure firefighter and public safety and mitigate property loss from wildland fire.

A key finding of the 2001 review of the 1995 policy was that "multiple terms for various management options to respond to wildland fire have confused agency managers and employees, operators, partners, and the public, and have perpetuated multiple fire management program elements". This important communications issue will be resolved only through federal, state, local and tribal engagement in building a foundation for common terms (see Appendix A) with understanding and support by all.

The current policy clearly states that wildland fire analysis will carefully consider the long-term benefits in relation to risks both in the short and long term:

> "Fire, as a critical natural process, will be integrated into land and resource management plans and activities on a landscape scale, and across agency boundaries. Response to wildland fire is based on ecological, social, and legal consequences of fire. The circumstances under which a fire occurs, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources, and values to be protected dictate the appropriate management response to fire."
>
> *1995/2001 Federal Wildland Fire Management Policy*

The intent of this framework is to solidify that the full range of strategic and tactical options are available and considered in the response to every wildland fire. These options are to be used to achieve objectives as described in Land and Resource Management Plans and/or Fire Management Plans, subject to clear processes defined to manage fire that crosses jurisdictional boundaries. Mutually developed objectives with adjoining jurisdictions for managing fires that crosses jurisdictional boundaries will also be recognized.

This guidance also calls for increased dialogue and collaboration between federal agencies and tribal, local, and state agencies as plans are updated and implemented to manage wildfires in order to accomplish resource and protection objectives.

This document, *Guidance for Implementation of Federal Wildland Fire Management Policy (February 2009)*, replaces the *Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy (June 20, 2003).* This updated guidance consolidates and clarifies

changes that have occurred since the 2003 strategy document was issued, and provides revised direction for consistent implementation of the *Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001)*

Guidance for Implementation

The following guidelines should be used to provide consistent implementation of federal wildland fire policy. Further guidance is provided in the Federal Wildland Fire Management Policy section Table 1.

1. Wildland fire management agencies will use common standards for all aspects of their fire management programs to facilitate effective collaboration among cooperating agencies.
2. Agencies and bureaus will review, update, and develop agreements that clarify the jurisdictional inter-relationships and define the roles and responsibilities among local, state, tribal and federal fire protection entities.
3. Responses to wildland fire will be coordinated across levels of government regardless of the jurisdiction at the ignition source.
4. Fire management planning will be intergovernmental in scope and developed on a landscape scale.
5. Wildland fire is a general term describing any non-structure fire that occurs in the wildland. Wildland fires are categorized into two distinct types:
    a. Wildfires – Unplanned ignitions or prescribed fires that are declared wildfires
    b. Prescribed Fires - Planned ignitions.
6. A wildland fire may be concurrently managed for one or more objectives and objectives can change as the fire spreads across the landscape. Objectives are affected by changes in fuels, weather, topography; varying social understanding and tolerance; and involvement of other governmental jurisdictions having different missions and objectives.
7. Management response to a wildland fire on federal land is based on objectives established in the applicable Land/ Resource Management Plan and/or the Fire Management Plan.
8. Initial action on human-caused wildfire will be to suppress the fire at the lowest cost with the fewest negative consequences with respect to firefighter and public safety.
9. Managers will use a decision support process to guide and document wildfire management decisions. The process will provide situational assessment, analyze hazards and risk, define implementation actions, and document decisions and rationale for those decisions.

Implementation

Each of the departments or agencies participating in the review will adopt the *Guidance for Implementation of Federal Wildland Fire Management Policy (February 2009)* and review and revise, as appropriate, all manuals, handbooks, guidebooks, plans, agreements and other pertinent documents.

The National Wildfire Coordinating Group (NWCG) will adopt the *Guidance for Implementation of Federal Wildland Fire Management Policy (February 2009)* and review and revise, as appropriate, all interagency training courses, operational guides, standards, terminology, reporting requirements, skill/competency/qualification/certification requirements and other pertinent documents.

The federal fire directors, in collaboration with state, local and tribal fire managers and public and nongovernment organizations, will communicate direction stated in the *Guidance for Implementation of Federal Wildland Fire Management Policy (February 2009)* with internal and external audiences to foster understanding and support for the complexity of wildland fire management.

The federal fire directors will revise or develop accountability standards, performance measures and tracking systems to assess if resource and protection objectives are met during the course of management on all wildland fires.

Federal Wildland Fire Policy - Guiding Principles and Policy Statements

The following guiding principles and policy statements are excerpted from the *Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001).* These remain the foundational principles for Federal Wildland Fire Management Policy.

Guiding Principles

1. Firefighter and public safety is the first priority in every fire management activity.

2. The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process. Federal agency land and resource management plans set the objectives for the use and desired future condition of the various public lands.

3. Fire Management Plans, programs, and activities support land and resource management plans and their implementation.

4. Sound risk management is a foundation for all fire management activities. Risks and uncertainties relating to fire management activities must be understood, analyzed, communicated, and managed as they relate to the cost of either doing or not doing an activity. Net gains to the public benefit will be an important component of decisions.

5. Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives. Federal agency administrators are adjusting and reorganizing programs to reduce costs and increase efficiencies. As part of this process, investments in fire management activities must be evaluated against other agency programs in order to effectively accomplish the overall mission, set short- and long-term priorities, and clarify management accountability.

6. Fire Management Plans and activities are based upon the best available science. Knowledge and experience are developed among all federal wildland fire management agencies. An active fire research program combined with interagency collaboration provides the means to make these tools available to all fire managers.

7. Fire Management Plans and activities incorporate public health and environmental quality considerations.

8. Federal, State, tribal, local, interagency, and international coordination and cooperation are essential. Increasing costs and smaller work forces require that public agencies pool their human resources to successfully deal with the ever-increasing and more complex fire management tasks. Full collaboration among federal wildland fire management agencies and between the federal wildland fire management agencies and international, State, tribal, and local governments and private entities result in a mobile fire management work force available for the full range of public needs.

9. Standardization of policies and procedures among federal wildland fire management agencies is an ongoing objective. Consistency of plans and operations provides the fundamental platform upon which federal wildland fire management agencies can cooperate, integrate fire activities across agency boundaries, and provide leadership for cooperation with State, tribal, and local fire management organizations.

Federal Wildland Fire Management Policy

Each of the seventeen policy areas are assessed in depth in the following table (Table 1). The policy area's guiding principle is restated first. The left column provides statements to help clarify the Management Intent of the policy statement. The right column specifies actions needed to implement the policy statement.

Table 1 – Policy Clarification of Management Intent and Implementation Actions

Policy Statement	
Management Intent	**Implementation Actions**
1. Safety Firefighter and public safety is the first priority. All Fire Management Plans and activities must reflect this commitment.	
No natural or cultural resource, home, or item of property is worth a human life. All strategies and tactics should seek to mitigate the risk to firefighters and the public.	Agency administrators will develop and establish process, procedures and objectives that ensure firefighter and public safety. Incident Commanders will develop and establish incident objectives, strategies and operational tactics that ensure firefighter and public safety.
2. Fire Management and Ecosystem Sustainability The full range of fire management activities will be used to help achieve ecosystem sustainability, including its interrelated ecological, economic, and social components.	
"Full range of fire management activities" may include any vegetative management treatment tool. Ecosystem sustainability provides a supply of goods, services, social values, and natural processes in perpetuity. Economic intent is to provide for sustainable supplies of goods, services, and social values through implementation of appropriate fire management activities.	Land/Resource Management Plan's (L/RMP) will be developed consistent with both ecological conditions, and fire regime dynamics, and consider the short and long term effects of both action and no action alternatives for planned vegetation management activities as well as responses to wildfire. Agencies will exploit the full range of fire management options to sustain healthy ecosystems within acceptable risk levels as identified in the L/RMP, or Fire Management Plan (FMP). Fire management activities will be based on planning and decision analysis processes that address current and anticipated situational conditions.
3. Response to Wildland Fire Fire, as a critical natural process, will be integrated into land and resource management plans and activities on a landscape scale, and across agency boundaries. Response to wildland fires is based on ecological, social and legal consequences of the fire. The circumstances under which a fire occurs, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources, and, values to be protected, dictate the appropriate response to the fire.	
The L/RMP will define and identify fire's role in the ecosystem. The response to an ignition is guided by the strategies and objectives outlined in the L/RMP and/or the Fire Management Plan. Values to be protected from and/or enhanced by wildland fire are defined in the L/RMP and/or the Fire Management Plan. L/RMP and fire management planning is coordinated across jurisdictional boundaries.	FMP's assist in developing the management response to meet L/RMP objectives in designated Fire Management Units (FMU). Fire management strategies will consider current landscape conditions and spatial and temporal components of the fire regime. Responses to wildland fires will be coordinated across jurisdictional boundaries.

Policy Statement	
Management Intent	**Implementation Actions**
4. Use of Wildland Fire Wildland fire will be used to protect, maintain, and enhance resources and, as nearly as possible, be allowed to function in its natural ecological role. Use of fire will be based on L/RMP and associated Fire Management Plans and will follow specific prescriptions contained in operational plans.	
Use planned and unplanned ignitions to achieve land and resource management goals. Fire management is one tool in the restoration process and should be integrated with other land management activities. Preference will be given for natural ignitions to be managed in meeting the role of fire as an ecological process. Decision support process encourages strategies to manage fire to restore and maintain the natural fire regime where safe and possible.	Incident objectives will identify resource objectives for wildfires managed to achieve resource objectives. Beneficial accomplishments will be measured through specific quantified objectives.
5. Rehabilitation and Restoration Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health and safety, and to help communities protect infrastructure.	
Conduct emergency stabilization of burned areas such that no further harm is done. Probability of success will be evaluated for rehabilitation and restoration efforts.	Burned areas will be assessed to determine suitable and effective emergency stabilization and rehabilitation needs to meet current and anticipated environmental conditions. Rehabilitation and restoration activities will be evaluated to assess effectiveness of treatments.
6. Protection Priorities The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection. Once people have been committed to an incident, these human resources become the highest value to be protected.	
Resources are allocated nationally, geographically, and locally based on protection priorities. Protection of human life overrides all other priorities should response capability limits be reached. Local protection priorities are established in the L/RMP and/or FMP.	NMAC establishes national protection priorities considering maintenance of initial attack capability; protection of communities, infrastructure, property, cultural and natural resources; costs; local agency objectives; and national response framework and tasking. Geographic and local area coordination groups will establish a process to set protection priorities. The Agency Administrator will convey protection priorities, based on the L/RMP and FMP, to the geographic and national groups through an incident status report and ensure that protection priorities are known and carried out by the incident commander(s).

Policy Statement	
Management Intent	**Implementation Actions**
7. Wildland Urban Interface The operational roles of federal agencies as partners in the Wildland Urban Interface are wildland firefighting, hazard fuels reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of tribal, state, or local governments. Federal agencies may assist with exterior structural protection activities under formal Fire Protection Agreements that specify the mutual responsibilities of the partners, including funding. (Some federal agencies have structural protection authority for their facilities on lands they administer and may also enter into formal agreements to assist state and local governments with structural protection).	
Prevent the movement of wildfires from the wildlands into the WUI area, out of the WUI area into the wildlands, and improve efficiency of wildfire suppression in WUI situations. The primary responsibility for protecting private property and rural communities lies with individual property owners and local governments. Recognize that many states have wildland fire responsibility while rural fire districts have structural responsibility.	Agreements will be developed to clarify jurisdictional inter-relationships and define roles and responsibilities among local, state, tribal, and federal fire protection entities, based on each organization's enabling protection authorities and assistance/mutual aid responsibilities. Agencies will support the development and implementation of Community Wildfire Protection Plans (CWPP). The Federal wildland agencies will collaborate with tribal, state and local fire management organizations to identify and reconcile gaps in protection responsibility.
8. Planning Every area with burnable vegetation must have an approved Fire Management Plan. Fire Management Plans are strategic plans that define a program to manage wildland fires based on the area's approved land management plan. Fire Management Plans must provide for firefighter and public safety; include fire management strategies, tactics, and alternatives; address values to be protected and public health issues; and be consistent with resource management objectives, activities of the area, and environmental laws and regulations.	
Promote interagency and inter-governmental planning. Encourage landscape scale planning across jurisdictional boundaries.	The FMP should be interagency or intergovernmental in scope and developed on a landscape scale, where practical to take advantage of efficiency, reduce conflict and provide understanding and cooperation. L/RMP and/or FMPs will address the location and conditions under which resource benefits and protection objectives can be met.

Policy Statement	
Management Intent	**Implementation Actions**
9. Science Fire Management Plans and programs will be based on a foundation of sound science. Research will support ongoing efforts to increase our scientific knowledge of biological, physical, and sociological factors. Information needed to support fire management will be developed through an integrated interagency fire science program. Scientific results must be made available to managers in a timely manner and must be used in the development of land management plans, Fire Management Plans, and implementation plans.	
Increase the body of scientific knowledge and understanding about fire management programs through the development of management tools and transfer of knowledge to practitioners and decision makers. Social sciences are a part of the research need.	Agencies will integrate science in planning and monitoring processes. Agencies will coordinate fire-related research to improve fire management program capability. Agencies will emphasize applied science including fire and fuels, physics, social science, and operations research areas. Agencies will seek to improve decision support tools through updated data sets and advances in technology.
10. Preparedness Agencies will ensure their capability to provide safe, cost-effective fire management programs in support of land and resource management plans through appropriate planning, staffing, training, equipment, and management oversight.	
Recognize that particular budget processes and external influences will affect capability and capacity. Size the organization to meet realistic and sustainable management objectives by effective preparedness planning on an interagency basis. Realize efficiencies by incorporating other federal, tribal, state, and local agencies and nongovernmental organizations to meet peak demands for resources. Preseason agreements are an integral part of preparedness.	Agencies will identify and realign organizational staffing and equipment mixes to implement a safe and cost effective fire management program that meets the fire management guidance identified in the L/RMP. Agencies will develop a common process for determining budget needs and cost sharing for all aspects of fire management operations. Implement training program to meet staffing levels (qualification requirements) with the emphasis on managing fires for both protection and resource management objectives. Agencies will develop agreements to efficiently utilize other federal, state, local, and non governmental resources.

Policy Statement	
Management Intent	**Implementation Actions**
11. Suppression Wildland fires are suppressed at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives.	
Suppression considerations will be addressed in L/RMP and FMP's. Notwithstanding protection of life, the cost of suppression, emergency stabilization and rehabilitation must be commensurate with values to be protected.	Use a decision support process to assess conditions, analyze risk and document decisions. Predictive services products will be used to support pre-positioning resources. Agencies will coordinate staffing levels through common trend analysis of environmental indicators
12. Prevention Agencies will work together and with their partners and other affected groups and individuals to prevent unauthorized ignition of wildfires.	
Prevention focuses on the activities needed to reduce human-caused ignitions. Prevention includes mitigating risks and loss to ecosystems and communities.	Agencies will work with all partners to develop and implement risk assessment, prevention, and mitigation plans to reduce the frequency of wildfires due to human–caused ignitions..
13. Standardization Agencies will use compatible planning processes, funding mechanisms, training and qualification requirements, operational procedures, values-to-be- protected methodologies, and public education programs for all fire management activities.	
All processes are compatible and transparent so that individuals from cooperating agencies (federal, tribal, state, and local) can more effectively work together. Enhance public and cooperator understanding of wildland fire management processes.	To the extent possible, agencies will use common standards in all aspects of fire management programs so that planning and budgeting methodologies applied in one situation will provide the same results in similar circumstances. Agencies will develop and implement common operational field guidance and operational procedures to deal with all aspects of fire management operations. Agencies will streamline interagency transfer of funds to reduce fiscal inconsistencies.
14. Interagency Cooperation and Coordination Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involvement of cooperators and partners.	
Involve all participating agencies, federal, tribal, state, local, and non-governmental organizations in fire management activities. Get everyone working in concert, rather than in opposition to each other.	Ensure that fire management program actions are implemented in collaboration with cooperators and affected partners with due consideration of all management objectives. Agencies will engage cooperators and affected partners at the strategic, and program planning levels, as well as the tactical, program implementation level.

Policy Statement	
Management Intent	**Implementation Actions**
15. Communication and Education Agencies will enhance knowledge and understanding of wildland fire management policies and practices through internal and external communication and education programs. These programs will be continuously improved through the timely and effective exchange of information among all affected agencies and organizations.	
Knowledge and understanding reach all personnel in the field, across agencies. Develop and provide consistent communication, education and outreach with shared messages for the public and internal staff. Have a public that understands the risk, benefits and complexity of wildland fire management.	Develop a consistent and uniform message using common terminology on importance and role of wildland fire in natural resource management. Develop understanding with the public on what we're trying accomplish with fire management. Build understanding with the public on their role when living and recreating in fire prone ecosystems.
16. Agency Administrator and Employee Roles Agency administrators will ensure that their employees are trained, certified, and made available to participate in the wildland fire program locally, regionally, and nationally as the situation demands. Employees with operational, administrative, or other skills will support the wildland fire program as necessary. Agency administrators are responsible and will be held accountable for making employees available.	
Employees participate in wildland fire operations to obtain understanding, expand capabilities, and increase organizational capacity. Assure that we maximize use of the local workforce for efficiencies of knowledge, cost and involvement. Maintain a competent and capable workforce to implement the wildland fire management program to include fuels, aviation, suppression, planning, monitoring, research, communication, finance, etc.	Agency administrators will train, qualify, and certify available personnel for local fire needs and interagency fire management priorities. Agencies will consider adjustment of annual performance expectations based on employee and program contribution to the fire effort.
17. Evaluation Agencies will develop and implement a systematic method of evaluation to determine effectiveness of projects through implementation of the 2001 Federal Fire Policy. The evaluation will assure accountability, facilitate resolution of areas of conflict, and identify resource shortages and agency priorities.	
Use adaptive management process to evaluate and improve the fire management program at all levels. Provide a formal review process to monitor and evaluate performance, suggest revisions, and make necessary adaptations to the implementation guidance at all organizational levels on a regular basis.	Conduct interagency, internal and periodic reviews of the fire management program (all agencies) to determine: 1) consistency of policy implementation; 2) effectiveness of interagency coordination; 3) progress towards ecosystem sustainability; 4) cost management; 5) safety.

Appendices

Appendix A: Glossary

The hierarchy of terminology will be those defined in law, those defined in policy, those defined in this guidance and then all other agency and interagency documentation. The NWCG Glossary of Wildland Fire Terminology will be maintained as the source of record.

Controlled burn – synonymous with Prescribed Fire.

Escaped Prescribed Fire – a prescribed fire that has exceeded or is expected to exceed prescription parameters or otherwise meets the criteria for conversion to wildfire. Criteria is specified in "Interagency Prescribed Fire – Planning and Implementation Procedures Reference Guide".

Fire Management Plan (**FMP**) – a plan that identifies and integrates all wildland fire management and related activities within the context of approved land/resource management plans. It defines a program to manage wildland fires (wildfire and prescribed fire). The plan is supplemented by operational plans, including but not limited to preparedness plans, preplanned dispatch plans, prescribed fire burn plans and prevention plans. Fire Management Plan's assure that wildland fire management goals and components are coordinated.

Initial Action – the actions taken by the first resources to arrive at a wildfire.

Land/Resource Management Plan (L/RMP) – a document prepared with public participation and approved by an agency administrator that provides general guidance and direction for land and resource management activities for an administrative area. The L/RMP identifies the need for fire's role in a particular area and for a specific benefit. The objectives in the L/RMP provide the basis for the development of fire management objectives and the fire management program in the designated area.

Planned Ignition –the intentional initiation of a wildland fire by hand-held, mechanical or aerial device where the distance and timing between ignition lines or points and the sequence of igniting them is determined by environmental conditions (weather, fuel, topography), firing technique, and other factors which influence fire behavior and fire effects (see prescribed fire).

Prescribed Fire—is a wildland fire originating from a planned ignition to meet specific objectives identified in a written, approved, prescribed fire plan for which NEPA requirements (where applicable) have been met prior to ignition (see planned ignition).

Protection - the actions taken to limit the adverse environmental, social, political, and economical effects of fire (FEC Briefing Paper, 3/14/2008).

Response to wildland fire - the mobilization of the necessary services and responders to a fire based on ecological, social, and legal consequences, the circumstances under which a fire occurs,

and the likely consequences on firefighter and public safety and welfare, natural and cultural resources, and values to be protected.

Suppression - all the work of extinguishing a fire or confining fire spread.

Unplanned Ignition – the initiation of a wildland fire by lightning, volcanoes, unauthorized and accidental human-caused fires (see wildfire).

Use of Wildland Fire - management of either wildfire or prescribed fire to meet resource objectives specified in Land/Resource Management Plans.

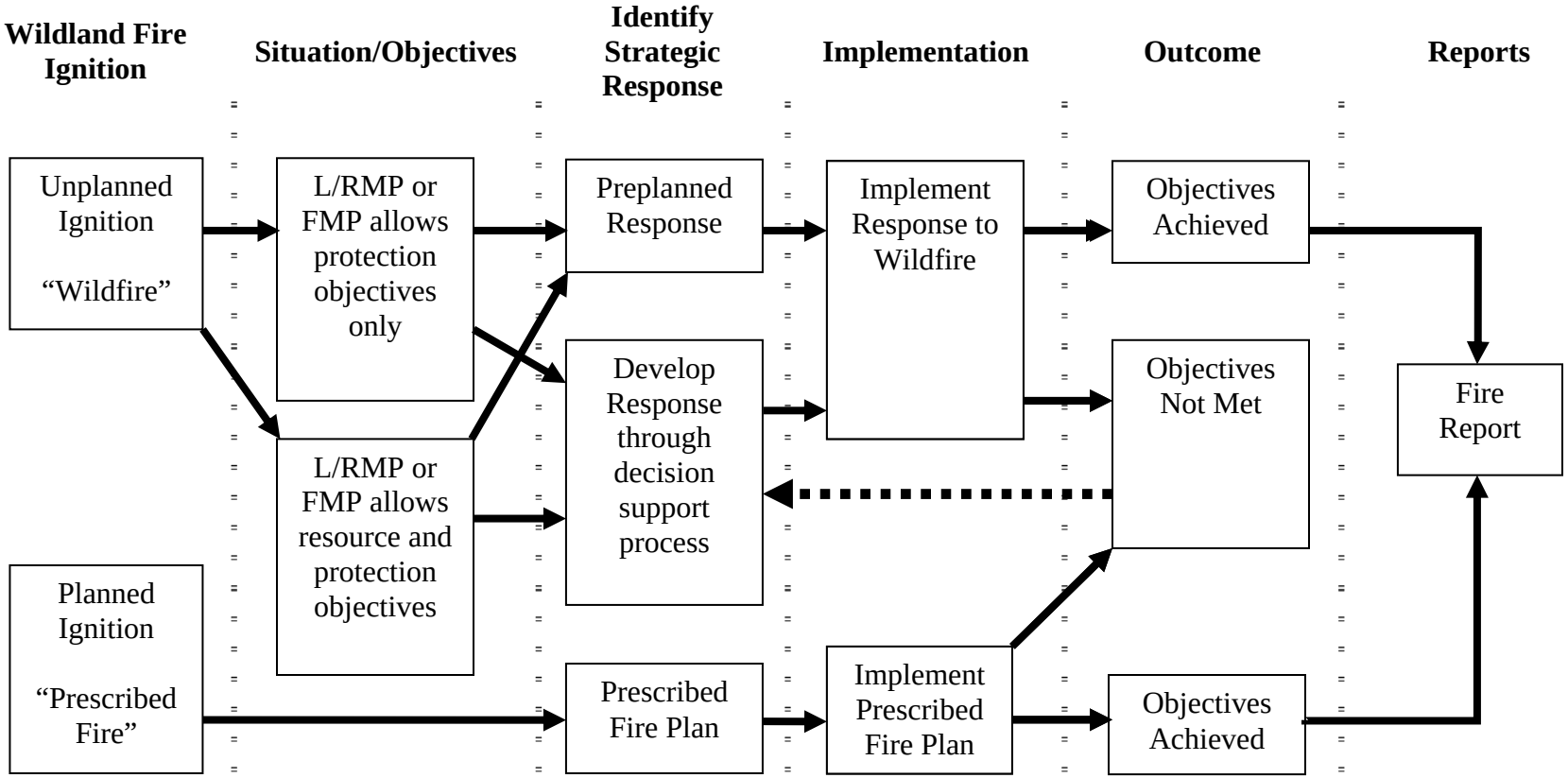
Wildfire – unplanned ignition of a wildland fire (such as a fire caused by lightning, volcanoes, unauthorized and accidental human-caused fires) and escaped prescribed fires.
(See unplanned ignition and escaped prescribed fire).

Wildland Fire – a general term describing any non-structure fire that occurs in the wildland.

Wildland Urban Interface (WUI) – The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels.

Appendix B: Wildland Fire Flowchart

This chart depicts, in general, the process to be taken given an ignition, regardless of source. Management actions depend on the provisions in the approved Land, Resource and Fire Management Plan and/or Fire Management Plan for an area. This chart is generally applicable to most agencies' fire management programs. However, specific exceptions may exist.



Appendix C: What Changed 2004 to 2009

The following provide some of the significant modifications that were made to the guidance in the "Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy (2004)" in drafting the "Guidance for Implementation of Federal Wildland Fire Management Policy (2009)." To simplify the discussion the "Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy (2004)" will be referred to as "Strategy" and the "Guidance for Implementation of Federal Wildland Fire Management Policy (2009)" will be referred to as "Guidance".

Strategy: Provided seven operational clarification statements

> Guidance: Provides nine statements of guidance for implementation.

Strategy: Operational Clarification statement 1) "Only one management objective will be applied to a wildland fire. Wildland fires will either be managed for resource benefits or suppressed. A wildland fire cannot be managed for both objectives concurrently. If two wildland fires converge, they will be managed as a single wildland fire."

> Guidance: "A wildland fire may be concurrently managed for one or more objectives and objectives can change as the fire spreads across the landscape. Objectives are affected by changes in fuels, weather, topography; varying social understanding and tolerance; and involvement of other governmental jurisdictions having different missions and objectives."

Strategy: Operational Clarification statement 2) "Human caused wildland fires will be suppressed in every instance and will not be managed for resource benefits.

> Guidance: "Initial action on human-caused wildfire will be to suppress the fire at the lowest cost with the fewest negative consequences with respect to firefighter and public safety."

Strategy: Operational Clarification statement 3) "Once a wildland fire has been managed for suppression objectives, it may never be managed for resource benefit objectives."

> Guidance: "A wildland fire may be concurrently managed for one or more objectives and objectives can change as the fire spreads across the landscape. Objectives are affected by changes in fuels, weather, topography; varying social understanding and tolerance; and involvement of other governmental jurisdictions having different missions and objectives."

Strategy: Operational Clarification statement 4) "The Appropriate Management Response (AMR) is any specific action suitable to meet Fire Management Unit (FMU) objectives. Typically, the AMR ranges across a spectrum of tactical options (from monitoring to intensive management actions). The AMR is developed by using FMU strategies and objectives identified in the Fire Management Plan."

Guidance: The term Appropriate Management Response is removed from implementation guidance with "Response to Wildland Fire" as the policy area defining the actions for managing a wildland fire.

Strategy: Operational Clarification statement 5) "The Wildland Fire Situation Analysis process is used to determine and document the suppression strategy from the full range of responses available for suppression operations. Suppression strategies are designed to meet the policy objectives of suppression."

Guidance: "Managers will use a decision support process to guide and document wildfire management decisions. The process will provide situational assessment, analyze hazards and risk, define implementation actions, and document decisions and rationale for those decisions.

Strategy: Operational Clarification statement 6) "Wildland fire use is the result of a natural event. The Land/Resource Management Plan, or the Fire Management Plan, will identify areas where the strategy of wildland fire use is suitable. The Wildland Fire Implementation Plan (WFIP) is the tool that examines the available response strategies to determine if a fire is being considered for wildland fire use."

Guidance: "Managers will use a decision support process to guide and document wildfire management decisions. The process will provide situational assessment, analyze hazards and risk, define implementation actions, and document decisions and rationale for those decisions."

Strategy: Operational Clarification statement 7) "When a prescribed fire or a fire designated for wildland fire use is no longer achieving the intended resource management objectives and contingency or mitigation actions have failed, the fire will be declared a wildfire. Once a wildfire, it cannot be returned to a prescribed fire or wildland fire use status."

Guidance: "Managers will use a decision support process to guide and document wildfire management decisions. The process will provide situational assessment, analyze hazards and risk, define implementation actions, and document decisions and rationale for those decisions."

Strategy: Policy Implementation Flowchart

Guidance: Updated Appendix F: Wildland Fire Flowchart from Review and Update of the 1995 Federal Wildland Fire Management Policy (2001) to reflect implementation terminology of planned and unplanned ignitions. (See Appendix B)

Town Council Regular Session **Item # J.**

Meeting Date: 04/16/2014

Requested by: Daniel G. Sharp **Submitted By:** Colleen Muhr, Police Department

Department: Police Department

Information

SUBJECT:

Resolution No. (R)14-23, authorizing and approving an Intergovernmental Agreement (IGA) between Pima County and the Town of Oro Valley for the Pima County Wireless Integrated Network (PCWIN) subscriber services

RECOMMENDATION:

Staff recommends approval.

EXECUTIVE SUMMARY:

On March 5, 2014, Council approved Resolution No. (R)14-11, authorizing and approving an Intergovernmental Agreement (IGA) between Pima County and the Town of Oro Valley for the Pima County Wireless Integrated Network (PCWIN) subscriber services.

At this time, PCWIN subscriber services is requesting approval of an updated version of the IGA that includes Pima County mandated requirements that were not included in the previously approved version.

Minor modifications were made to section **3.** “Payment” as highlighted below in the information copied from the attached IGA.

Minor modifications were made to section **4.** “Term and Termination” as highlighted below in the information copied from the attached IGA.

In section **5.** “Severability," the term “Contract” has been replaced with the term “Agreement” in two places.

In section **6.** “Indemnification," the phrase “Town of Oro Valley Police Department” has been replaced with the term “Agency” in the first sentence of the second paragraph.

The updated agreement has the “Entire Agreement” section moved from .15 to .16 and section .15 is now “Notice” and includes the information as highlighted below in the information copied from the attached IGA:

3. Payment

A. County shall bill Agency monthly through the Finance Department, Revenue Management Division for maintenance services. This service will be billed in arrears of the service provided. Current rates are outlined in the attached Exhibit A. Exhibits B and C require Public Agency to opt for either monthly or time and materials billing; provided, however, that Agency may opt for **both** monthly and time and materials payment. Agency shall pay County within thirty (30) days of receipt

of County's bill.

B. If, after ten (10) days additional written notice to Agency it fails to pay the full amount due, County may terminate this Agreement immediately upon written notice to Agency.

C. Upon renewal of this IGA, County reserves the right to increase the rates set forth in Exhibit A or Time and Materials charges as applicable to Agency, if County's actual costs increase.

4. Term and Termination

A. County and Agency shall within their lawful methods of financing provide for payment of the costs and expenses of their obligations arising each year under this Agreement from current annual budgeted funds for that year.

B. The term of the Agreement shall be from March 15, 2014 through March 14, 2015 and is renewable upon mutual agreement of both parties, unless terminated pursuant to Section 4 (D.) below. Any modification of this Agreement shall be by formal written amendment and executed by the parties hereto.

15. Notice

Any notice required or permitted to be given under this Agreement shall be in writing and shall be served by personal delivery or by certified mail upon the other party as follows:

COUNTY:	AGENCY:
Pima County IT Department	Town of Oro Valley
Attn: Contract Administrator	Attn: Oro Valley Police Chief
150 West Congress, 6th Floor	11000 N. La Canada Drive
Tucson, AZ 85701	Oro Valley, AZ 85737
520-724-8113	
contract.administrator@pima.gov	

BACKGROUND OR DETAILED INFORMATION:

As described when the original IGA was approved for the OVPD radios activated on the PCWIN system, two maintenance plans were made available for the 226 OVPD units during the final phases of this project:

1. A 'monthly' fee of $8 per unit ($96.00 annually), resulting in a total cost of $21,696 per year for the 226 units, or

2. A 'Time and Material Services' for an annual base fee of $20 per unit, resulting in a total cost of $4,520 per year.

OVPD elected the 'Time and Material Services' option and as a result, PCWIN calculated a 'T&M Estimated Annual Service Cost' of approximately $3,975.34 for capacity to complete repairs under this option.

FISCAL IMPACT:

There is no fiscal impact related to the updates in the IGA.

SUGGESTED MOTION:

I MOVE to (adopt or deny) Resolution No. (R)14-23, authorizing and approving an Intergovernmental Agreement (IGA) between Pima County and the Town of Oro Valley for the Pima County Wireless Integrated Network (PCWIN) subscriber services.

Attachments

R14-23 PCWIN IGA

PCWIN Mtce. Svcs. IGA

RESOLUTION NO. (R)14-23

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE TOWN OF ORO VALLEY, ARIZONA, AUTHORIZING AND APPROVING AN INTERGOVERNMENTAL AGREEMENT BETWEEN PIMA COUNTY AND THE TOWN OF ORO VALLEY FOR THE PIMA COUNTY WIRELESS INTEGRATED NETWORK (PCWIN)

WHEREAS, pursuant to A.R.S. § 11-952, the Town is authorized to enter into or renew agreements for joint and cooperative action with other public agencies; and

WHEREAS, the Town is authorized to establish and maintain the Oro Valley Police Department, pursuant to A.R.S. § 9-240 (B)(12); and

WHEREAS, the Town desires to use PCWIN communication equipment and services and does not have the ability to maintain same; and

WHEREAS, the Town desires to enter into an Intergovernmental Agreement (IGA) with Pima County to operate, maintain, sustain, improve and finance the PCWIN; and

WHEREAS, it is in the best interest of the Town to enter into the IGA, attached hereto as Exhibit "A" and incorporated herein by this reference, to provide for the health, safety and welfare of the residents in the Town of Oro Valley.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Town Council of the Town of Oro Valley, Arizona, that:

1. The Intergovernmental Agreement between the Town of Oro Valley and Pima County, attached hereto as Exhibit "A", for Pima County Wireless Integrated Network is hereby authorized and approved.

2. The Chief of Police and any other administrative officials are hereby authorized to take such steps as necessary to execute and implement the terms of the Agreement.

PASSED AND ADOPTED by the Mayor and Town Council of the Town of Oro Valley, Arizona, this 16th day of April, 2014.

TOWN OF ORO VALLEY

_____

Dr. Satish I. Hiremath, Mayor

ATTEST:

_____
Julie K. Bower, Town Clerk

Date: _____

APPROVED AS TO FORM:

_____
Tobin Sidles, Legal Services Director

Date: _____

EXHIBIT “A”

INTERGOVERNMENTAL AGREEMENT
FOR PIMA COUNTY ITD SUBSCRIBER SERVICES
BETWEEN PIMA COUNTY AND
TOWN OF ORO VALLEY POLICE DEPARTMENT

THIS INTERGOVERNMENTAL AGREEMENT (Agreement), is made and entered into by and between Pima County, a political subdivision of the State of Arizona ("*County*") and Town of Oro Valley Police Department (hereinafter referred to as "Agency") pursuant to A.R.S. §11-952 *et seq.*

WHEREAS County and Agency may contract for services and enter into agreements with one another for joint or cooperative action pursuant to A.R.S. §§11-951 through 11-954 and 41-2631 through 41-2634; and

WHEREAS County is implementing a regional public safety communications network known as the Pima County Wireless Integrated Network ("***PCWIN***"); and

WHEREAS Agency agreed to participate in the PCWIN program; and

WHEREAS Agency desires to use PCWIN communication equipment and services and does not have the ability to maintain same; and

WHEREAS County has facilities and resources to maintain and service PCWIN communication equipment; and

WHEREAS County is willing to provide communication service and equipment maintenance to Agency.

NOW, THEREFORE County and Agency agree as follows:

1. Purpose.

The purpose of this Agreement is to set forth the responsibilities of the parties and provide communication service and equipment maintenance to Agency.

2. Scope:

A. County, through its Information Technology Department, Wireless Services Division, shall provide communication equipment maintenance to Agency at 1313

South Mission Road, Tucson, Arizona, 85713. County shall only provide communication equipment maintenance to PCWIN communications equipment owned or leased by Agency, and all affected equipment shall be clearly marked or identified as such.

B. County guarantees communication equipment maintenance work for 90 days and will pass on to Agency any parts warranty provided by the manufacturer. If County communication equipment maintenance work or replacement parts fail in normal service within that period, the County shall make additional repairs at no additional charge to Agency. County provides no other express warranty on communication equipment maintenance work. Any implied warranty of merchantability or fitness is limited to the 90 day duration of this warranty.

C. Agency shall be liable for all damages to the County facility caused by Agency in the course of maintaining the Agency's communication equipment, except for damages that result from the sole negligence of County.

3. Payment

A. County shall bill Agency monthly through the Finance Department, Revenue Management Division for maintenance services. This service will be billed in arrears of the service provided. Current rates are outlined in the attached Exhibit A. Exhibits B and C require each participating Public Agency to opt for either monthly or time and materials billing; provided, however, that Agency may opt for **both** monthly and time and materials payment. Agency shall pay County within thirty (30) days of receipt of County's bill.

B. If, after ten (10) days additional written notice to Agency it fails to pay the full amount due, County may terminate this Agreement immediately upon written notice to Agency.

C. Upon renewal of this IGA, County reserves the right to increase the rates set forth in Exhibit A or Time and Materials charges as applicable to Agency, if County's actual costs increase.

4. Term and Termination

A. County and Agency shall within their lawful methods of financing provide for payment of the costs and expenses of their obligations arising each year under this Agreement from current annual budgeted funds for that year.

B. The term of the Agreement shall be from March 15, 2014 through March 14, 2015 and is renewable upon mutual agreement of both parties, unless terminated pursuant to Section 4 (D.) below. Any modification of this Agreement shall be by

formal written amendment and executed by the parties hereto.

C. Notwithstanding any other provision in this Agreement, this Agreement may be terminated if for any reason the Pima County Board of Supervisors or Agency's governing body do not appropriate sufficient monies for the purpose of maintaining this Agreement. In the event of such cancellation, County shall have no further obligation to the terminating Agency, and Agency's only obligation to County will be payment for services rendered and the satisfaction of any other obligations under this Agreement

D. Either party may terminate this Agreement only by issuing a written notice of its intention not to renew this Agreement at least 90 days prior to the end of the then existing Term.

5. Severability

Each provision of this Agreement stands alone, and any provision of this Agreement found to be prohibited by law shall be ineffective to the extent of such prohibition without invalidating the remainder of this Agreement.

6. Indemnification

Each party (as "Indemnitor") agrees to indemnify, defend, and hold harmless the other party (as "Indemnitee") from and against any and all claims, losses, liability, costs, or expenses (including reasonable attorney's fees) (hereinafter collectively referred to as "Claims") arising out of bodily injury of any person (including death) or property damage, but only to the extent that such Claims which result in vicarious/derivative liability to the Indemnitee are caused by the act, omission, negligence, misconduct, or other fault of the Indemnitor, its officers, officials, agents, employees, or volunteers.

In addition, Agency shall cause its contractor(s) and subcontractors, if any, to indemnify, defend, save and hold harmless Pima County, any jurisdiction or agency issuing any permits for any work arising out of this Agreement, and their respective directors, officers, officials, agents, and employees (hereinafter referred to as "Indemnitee") from and against any and all claims, actions, liabilities, damages, losses, or expenses (including court costs, attorneys' fees, and costs of claim processing, investigation and litigation) (hereinafter referred to as "Claims") for bodily injury or personal injury (including death), or loss or damage to tangible or intangible property caused, or alleged to be caused, in whole or in part, by the negligent or willful acts or omissions of (insert name of other governmental entity)'s contractor or any of the directors, officers, agents, or employees or subcontractors of such contractor. This indemnity includes any claim or amount arising out of or recovered under the Workers' Compensation Law or arising out of the failure of such contractor to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. It is the

specific intention of the parties that the Indemnitee shall, in all instances, except for Claims arising solely from the negligent or willful acts or omissions of the Indemnitee, be indemnified by such contractor from and against any and all claims. It is agreed that such contractor will be responsible for primary loss investigation, defense and judgment costs where this indemnification is applicable.

7. Americans With Disabilities Act

Agency shall comply with all applicable provisions of the Americans with Disabilities Act (Public Law 101-336, 42 U.S.C. 12101-12213) and all applicable federal regulations under the Act, including 28 CFR Parts 35 and 36.

8. Cancellation For Conflict Of Interest

This Agreement is subject to cancellation for conflict of interest pursuant to ARS § 38-511, the pertinent provisions of which are incorporated into this Agreement by reference.

9. No Joint Venture

It is not intended by this Agreement to, and nothing contained in this Agreement shall be construed to, create any partnership, joint venture or employment relationship between the parties or create any employer-employee relationship between County and any of Agency's employees, or between Agency and any County employees. None of the parties shall be liable for any debts, accounts, obligations or other liabilities whatsoever of the other party, including (without limitation) Agency's and County's obligation to withhold Social Security and income taxes for itself or any of its employees.

10. Insurance.

A. Coverages. Subject to section 10. E. below, the Parties to this Intergovernmental Agreement shall obtain and maintain at their own expense, during the entire term of this Agreement the following type(s) and amounts of insurance:

1) *Commercial General Liability*. Coverage shall be at least as broad as ISO form CG 00 01 in an amount not less than $2,000,000.00, endorsed to include County as an additional insured with coverage at least as broad as ISO form CG 20 10.

2) Commercial General Automobile Liability. Coverage shall be at least as broad as ISO form CA 00 01 in an amount not less than $1,000,000.00 for vehicles actually used in the operations at the Premises (as compared to

use for simple commuting).

3) *Workers' Compensation. Statutory limits, with Employers' Liability coverage in an amount not less than $1,000,000.00 per injury, illness, or disease.*

4) *Property. Property insurance covering the Party's real and personal property.*

B. Changes to Insurance Requirements. County retains the right to reasonably increase the limits or types of coverage from time to time as determined in the best interests of County by Pima County Risk Management.

C. Waiver of Subrogation. Each Party waives its claims and subrogation rights against the other for losses typically covered by liability or property insurance coverage.

D. Certificates of Insurance. The Parties shall provide each other with current certificates of insurance within thirty (30) days of the execution of this Intergovernmental Agreement. All certificates of insurance must provide for guaranteed thirty (30) days written notice to all Parties to this Intergovernmental Agreement of cancellation, non-renewal or material change.

E. Self-Insurance Pool. The requirements of this Section 10 above may be alternatively met by the Parties through self-insurance or participation in a governmental insurance risk pool, at no less than the minimal levels set forth in this article. If applicable, Parties to this Intergovernmental Agreement shall provide all other Parties with certificates of self-insurance under A.R.S. §§ 11-261 and 11-981 (or if a school district, § 15-382) or documentation of participation in an insurance risk pool pursuant to A.R.S. § 11-952.01, (if a school district, § 15-382) within thirty (30) days of the execution of this Intergovernmental Agreement. All certificates must provide for guaranteed thirty (30) days written notice to all other Parties of cancellation, non-renewal or material change.

11. Compliance With Laws

The parties shall comply with all federal, state, and local laws, rules, regulations, standards and Executive Orders, without limitation. In the event any services provided under this Agreement require a license issued by the Arizona Registrar of Contractors (ROC), County certifies that those services will be provided by a contractor licensed by ROC to perform those services in Arizona. The laws and regulations of the State of Arizona shall govern the rights, performance and disputes of and between the parties. Any action relating to this Agreement shall be brought in a court of the State of Arizona in Pima County.

Any changes in the governing laws, rules, and regulations during an agreement shall apply, but do not require an amendment/revisions.

12. Non-Discrimination

Agency agrees to comply with all provisions and requirements of Arizona Executive Order 2009-09 **including flow down of all provisions and requirements to any subcontractors.** Executive Order 2009-09 supersedes Executive order 99-4 and amends Executive order 75-5 and may be viewed and downloaded at the Governor of the State of Arizona's website http://www.azgovernor.gov/dms/upload/EO_2009_09.pdf which is hereby incorporated into this agreement as if set forth in full herein. During the performance of this agreement, Agency shall not discriminate against any employee, client or any other individual in any way because of that person's age, race, creed, color, religion, sex, disability or national origin.

13. No Third Party Beneficiaries

Nothing in the provisions of this Agreement is intended to create duties or obligations to or rights in third parties not parties to this Agreement or affect the legal liability of either party to the Agreement by imposing any standard of care with respect to the maintenance of public facilities different from the standard of care imposed by law.

14. Workers' Compensation

Agency shall comply with the notice of A.R.S. §23-1022 (E). For purposes of A.R.S. §23-1022, Agency shall be considered the primary employer of all personnel currently or hereafter employed by those parties, irrespective of the operations of protocol in place, and said party shall have the sole responsibility for the payment of Workers' Compensation benefits or other fringe benefits of said employees.

15. Notice

Any notice required or permitted to be given under this Agreement shall be in writing and shall be served by personal delivery or by certified mail upon the other party as follows:

COUNTY:
Pima County IT Department
Attn: Contract Administrator
150 West Congress, 6th Floor
Tucson, AZ 85701
520-724-8113
contract.administrator@pima.gov

AGENCY:
Town of Oro Valley
Attn: Oro Valley Police Chief
11000 N. La Canada Drive
Oro Valley, AZ 85737

16. Entire Agreement

This document constitutes the entire agreement between the parties pertaining to the subject matter hereof, and all prior or contemporaneous agreements and understandings, oral or written, are hereby superseded and merged herein. This Agreement may be modified, amended, altered or extended only by a written amendment signed by the parties.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

IN WITNESS THEREOF, the parties have affixed their signatures to this Agreement on the date written below.

PIMA COUNTY

_____
Chair, Board of Supervisors

_____
Date

TOWN OF ORO VALLEY POLICE DEPARTMENT

_____
Authorized Officer Signature

_____
Printed Name and Title

_____
Date

ATTEST

_____
Clerk of Board

_____
Date

APPROVED AS TO CONTENT:

_____
Pima County Chief Information Officer

_____
Date

INTERGOVERNMENTAL AGREEMENT DETERMINATION

The foregoing Intergovernmental Agreement between Pima County and Town of Oro Valley Police Department has been reviewed pursuant to A.R.S. § 11-952 *et seq.* by the undersigned, who have determined that it is in proper form and is within the powers and authority granted under the laws of the State of Arizona to those Parties to the Intergovernmental Agreement represented by the undersigned.

PIMA COUNTY:

_____
Deputy County Attorney, Civil Division

_____
Date

AGENCY NAME: TOWN OF ORO VALLEY POLICE DEPARTMENT

_____
Print Name, Title

_____
Signature

_____
Date

EXHIBIT A

Subscriber Services and Time & Materials Services (Aug 6, 2013)

Monthly Radio Subscriber Agencies/Departments (Pima County; or Other Agencies who subscribe for service):

A. Monthly fee of $8/Radio
B. Subscriber Services Provided:
   i. Programming
   ii. New Radio Activation
   iii. Radio Deactivation
   iv. Encryption/no Encryption
   v. Basic Troubleshooting
   vi. Radio Kill (lost or stolen)
   vii. Loaner Radio during Radio repairs
   viii. Preventative Maintenance Services at Agency Premises or in Maintenance Provider shop to tune radios and replace various parts (antennas, clips, knobs, batteries, etc.)
C. Motorola Radio Repair Costs (including shipping and applicable taxes) are charged directly to the Agency
D. Radio Reactivation fee of $50 / per occurrence

PCWIN Requires CommShop 360 to Be the Book of Record for All Radio Subscriber Services Provided To Agencies

Time & Material (Non Pima County) Radio Agency Services:

A. T&M Services Provided ($40/hour, 1 hour minimum charge):
   i. Programming
   ii. New Radio Activation
   iii. Radio Deactivation
   iv. Encryption/no Encryption
   v. Basic Troubleshooting
   vi. Radio Kill (lost or stolen)
   vii. For other costs associated with T&M Services not included in the hourly charge which are charged directly to the Agency:
      a. Minimum of $20 shipping or actual shipping costs where over $20, for Motorola Radio repairs, where applicable
      b. Actual Motorola radio repair costs and applicable taxes
      c. Spare parts and materials used in basic repairs
      d. Any T&M Services(including Annual Preventative Maintenance) provided at the Agency Location are charged a mileage expense (Trip Charge) of:
         i. $ 1.16 per mile roundtrip
B. Other Costs That Will Be Directly Charged To An Agency:
   i. Radio Reactivation fee of $50 / per occurrence
   ii. Each T&M Agency must pay for an Annual Mandatory Preventative Maintenance checkup to tune their radios @ $20/Radio (Agency pays for cost of parts, if applicable).
C. Agencies on T&M Must Maintain An Inventory of Spare Radios

PCWIN Requires CommShop 360 To Be The Book Of Record For All Radio T&M Services Provided To Agencies

EXHIBIT B

Agency Name	Oro Valley Police Dept.
County or COT Maintenance	County
Monthy / T&M / Both	T&M

	Totals
# of Mobiles	105
# of Portables	119
# of Control Stations	2
# of DVRSs	0
Totals	**226**

Monthly		$8 Monthly Fee ($96 Annual)
Mobiles	0	$ -
Portables	0	$ -
Control Stations	0	$ -
DVRs	0	$ -
Totals	**0**	**$ -**

T&M		$20 Base Annual Fee
Mobiles	105	$ 2,100.00
Portables	119	$ 2,380.00
Control Stations	2	$ 40.00
DVRs	0	$ -
Totals	**226**	**$ 4,520.00**

T&M Estimated Annual Service Cost* **$ 3,975.34**

Grand Total	**226**	**$ 8,495.34**

*10% of total radios needing 1 hour repair and an average of battery, belt clip and antenna replacement ($135.90 for parts and $40 for one hour of labor = $175.90).

EXHIBIT C

PIMA COUNTY WIRELESS INTEGRATED NETWORK

PUTTING PIMA COUNTY IN A BETTER STATE OF COMMUNICATION

PCWIN Maintenance Provider Survey

November 26, 2013

To All PCWIN Subscribers:

Completion of this survey will assist both maintenance providers with projecting the quantity and type of spare parts to stock and personnel staffing needs.

Please provide your agencies' contact for radio maintenance policies and procedures.

Agency Name: ORO VALLEY POLICE
Point of Contact: NANCY ANDERSON
Phone Number: 520-229-4911
Email Address: Nanderson@orovalleyaz.gov

Mark an "X" for your selection

	~~City of Tucson Communications Maintenance Services~~
	Pima County Wireless Services X
	1) Monthly Services OR
X	2) Time & Material Services

Agency sections will be valid for one (1) year once an agreement is in place.

DANIEL G. SHARP — Name (printed)
Signature
11/26/13 — Date

Town Council Regular Session **Item # K.**

Meeting Date: 04/16/2014

Requested by: Daniel G. Sharp **Submitted By:** Colleen Muhr, Police Department

Department: Police Department

Information

SUBJECT:

Resolution No. (R)14-24, authorizing and approving an Intergovernmental Agreement (IGA) among the parties that form the Pima County/Tucson Metropolitan Counter Narcotics Alliance (CNA) a law enforcement task force. CNA members include: Tucson Police Department, Arizona Department of Public Safety, University of Arizona Police Department, Oro Valley Police Department, Marana Police Department and Sahuarita Police Department.

RECOMMENDATION:

Staff recommends approval.

EXECUTIVE SUMMARY:

Request is being made to enter into an IGA between the Tucson Police Department and the Town of Oro Valley; as well as the Arizona Department of Public Safety, University of Arizona Police Department, Marana Police Department, Sahuarita Police Department to form a law enforcement task force known as C.N.A.

BACKGROUND OR DETAILED INFORMATION:

The purpose of establishing CNA is to ensure that drug enforcement in the Pima County and Tucson Metropolitan area will be conducted in a concerted effort among its law enforcement members in order to maximize available resources. Enforcement activities will be addressed from the street to the international levels through cooperative interrelated drug and anti-terrorism efforts by sharing resources and intelligence in the successful interdiction of illegal narcotics.

The objectives to be accomplished by CNA through the formation of this IGA in the Pima County/Tucson Metropolitan area include:

1. Reducing the rate of crime associated with drug trafficking and drug use.

2. Implementing strategies that will serve to interdict the availability, shipment and flow of illicit narcotics, and the monetary profits of those activities.

3. Employing investigative and enforcement strategies that target offenders, locations and organizations involved in illicit narcotic activities.

4. Utilizing intelligence driven law enforcement planning to coordinate and maximize the collaborative resources available through our member agency's joint participation.

5. Working towards the reduction in demand, availability, and chronic use of illicit narcotics.

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

I MOVE to (adopt or deny) Resolution No. (R)14-24, authorizing and approving an Intergovernmental Agreement among the parties that form the Pima County/Tucson Metropolitan Counter Narcotics Alliance.

Attachments

R14-24 CNA IGA

Final CNA IGA

RESOLUTION NO. (R)14-24

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE TOWN OF ORO VALLEY, ARIZONA, APPROVING AN INTERGOVERNMENTAL AGREEMENT BETWEEN THE TOWN OF ORO VALLEY AND THE MEMBER AGENCIES THAT FORM THE PIMA COUNTY/TUCSON METROPOLITAN COUNTER NARCOTICS ALLIANCE (CNA)

WHEREAS, pursuant to A.R.S. § 9-240 (B)(12), the Town of Oro Valley is authorized to establish and maintain the Oro Valley Police Department; and

WHEREAS, pursuant to A.R.S. § 11-952, the Town of Oro Valley is authorized to enter into or renew agreements for joint and cooperative action with other public agencies; and

WHEREAS, the Town wishes to enter into an agreement with Pima County and other member agencies for the participation and administration of a multi-agency drug task force in the Pima County and Tucson metropolitan areas to ensure that drug enforcement is conducted in a concerted effort among law enforcement members in order to maximize available resources; and

WHEREAS, it is in the best interest of the Town to enter into the Intergovernmental Agreement, attached hereto as Exhibit "A" and incorporated herein by the reference, in order to set forth the terms and conditions to provide for the health, safety and welfare of the residents of the Town of Oro Valley.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Town of Oro Valley, Arizona, that the Intergovernmental Agreement, attached hereto as Exhibit "A", between the Town of Oro Valley and the member agencies of the Pima County/Tucson Metropolitan Counter Narcotics Alliance (CNA) to ensure that drug enforcement be conducted in a concerted effort among law enforcement members in order to maximize available resources is hereby approved.

BE IT FURTHER RESOLVED that the Chief of Police of the Town Oro Valley is hereby authorized to take such steps as are necessary to execute and implement the terms of the Intergovernmental Agreement.

PASSED AND ADOPTED by the Mayor and Council of the Town of Oro Valley, Arizona, this 16th day of April, 2014.

TOWN OF ORO VALLEY, ARIZONA

_____

Dr. Satish I. Hiremath, Mayor

ATTEST:

_____

Julie K. Bower, Town Clerk

Date: _____

APPROVED AS TO FORM:

_____

Tobin Sidles, Legal Services Director

Date: _____

EXHIBIT “A”

INTERGOVERNMENTAL AGREEMENT
BETWEEN
TUCSON POLICE DEPARTMENT, ARIZONA DEPARTMENT OF PUBLIC SAFETY, UNIVERSITY OF ARIZONA POLICE DEPARTMENT, ORO VALLEY POLICE DEPARTMENT, MARANA POLICE DEPARTMENT, SAHUARITA POLICE DEPARTMENT
AND
PIMA COUNTY/TUCSON METROPOLITAN COUNTER NARCOTICS ALLIANCE (CNA)

This Intergovernmental Agreement (hereinafter "IGA") is entered into pursuant to A.R.S. § 11-952 by and between the parties that form the Pima County/Tucson Metropolitan Counter Narcotics Alliance (hereinafter "CNA") a law enforcement task force. CNA members include: Tucson Police Department, Arizona Department of Public Safety, University of Arizona Police Department, Oro Valley Police Department, Marana Police Department and Sahuarita Police Department.

RECITALS

Whereas, the City of Tucson, the State of Arizona, The University of Arizona, the Arizona Board of Regents, the Town of Oro Valley, the Town of Marana, and the Town of Sahuarita, pursuant to A.R.S. § 13-3872, and in accordance with the provisions of A.R.S. Title 11, Chapter 7, Articles 3, and as authorized by appropriate action of the governing body for each party, desire to enter into this mutual agreement on behalf of these law enforcement agencies.

Whereas, the City of Tucson is empowered by Tucson Charter Chapter X, Section 7, to maintain a Police Department of the purposes stated herein and is authorized to contract by Tucson Charter Chapter IV, Section and

Whereas, the Arizona Department of Public Safety is empowered by A.R.S. § 41-1712 to maintain a narcotics enforcement and criminal investigation division, and

Whereas, the Arizona Board of Regents is empowered by to A.R.S. § 15-1627 (F) to maintain the University of Arizona Police Department for the purposes stated therein and by A.R.S. § 15-1625 to enter into contracts on behalf of the University of Arizona Police Department and

Whereas, the Town of Oro Valley is empowered by A.R.S. Title 9 to contract and by A.R.S. § 9-240 (B) (12) to maintain the Oro Valley Police Department for the purposes stated therein, and

Whereas, the Town of Marana is empowered by A.R.S. Title 9 to contract by A.R.S. § 9-240 (b) (12) to maintain the Marana Police Department for the purposes stated therein, and

Whereas, the Town of Sahuarita is empowered by to A.R.S. Title 9 to contact and by A.R.S. § 9-240 (B) (12) to maintain the Sahuarita Police Department for the purposes stated therein and

Whereas, implementation of this IGA will substantially further the public safety, health, and welfare:

Now THEREFORE, the parties do hereby agree as follows:

DEFINITIONS

A. "Party" means each of the governmental entities that have executed this agreement.

B. Chief Law Enforcement Officer" means that the person who is a "department of agency head with peace officer jurisdiction, or his duly authorized representative, having the primary responsibility for law enforcement within the jurisdiction or territory," as such phrase is used in A.R.S. § 13-3871, whether designated by appointment or election.

C. "CNA" means the Pima County/Tucson Metropolitan Counter Narcotics Alliance. The governmental entities making up CNA are the City of Tucson, the State of Arizona, the Arizona Board of Regents, the University of Arizona, the Town of Oro Valley, the Town of Marana, the Town of Sahuarita, and the United States Government.

AGREEMENT

I. Purpose

The purpose of establishing CNA is to insure that drug enforcement in the Pima County and Tucson Metropolitan area will be conducted in a concerted effort among its law enforcement members, in order to maximize available resources. Enforcement activities will be addressed from the street to the international levels through cooperative interrelated drug and anti-terrorism efforts by sharing resources and intelligence in the successful interdiction of illegal narcotics.

II. Obligations of the Parties

A. The objectives to be accomplished by CNA through the formation of this IGA in the Pima County/Tucson Metropolitan area include:

1. Reducing the rate of crime associated with drug trafficking and drug use.

2. Implementing strategies that will serve to interdict the availability, shipment and flow of illicit narcotics, and the monetary profits of those activities.

3. Employing investigative and enforcement strategies that target offenders, locations and organizations involved in illicit narcotic activities.

4. Utilizing intelligence driven law enforcement planning to coordinate and maximize the collaborative resources available through our member agency's joint participation.

5. Working towards the reduction in demand, availability, and chronic use of illicit narcotics.

B. Jurisdiction

The Chief Law Enforcement Officers of each of the parties hereto individually consent to the extension of peace authority into their jurisdiction of territory by the peace officers assigned to CNA by the Chief Law Enforcement Officers of other parties, in accordance with the provisions of A.R.S. § 13-3872. Nothing in this agreement shall be construed as either limiting or extending the lawful jurisdiction of any of the parties, other than as expressly set forth herein.

C. PLANNING AND ADMINISTRATION

1. CNA will be governed by a Policy Board composed of participating law enforcement members that has a final decision making authority over CNA's policies and operations. This includes the following:

a. Establishing policies for selecting cases to be investigated. The policies formed shall be used to allocate, focus and manage CNA's resources, and to provide oversight on investigations.

b. Retaining the right to disburse forfeited funds and real property to member agencies of CNA, or to CNA's Anti-Racketeering Fund held and managed by the Pima County Attorney's Office, pursuant to the provisions of A.R.S. § 13-2314 and to 13-2315, with the exception of any forfeiture generated by participating Federal Jurisdictions.

c. Oversight of forfeiture investigation and analysis conducted by the Financial Remedies & Property Management Units assigned to CNA and administered by the Tucson Police Department.

2. Membership of the Policy Board

a. The Policy Board will consist of the Chief Law Enforcement Officer of the agency sitting on the board or, in the case of Federal agencies, the head of the Tucson office. The lead agencies will include: Tucson Police Department, Arizona Department of Public Safety, Drug Enforcement Administration, Federal Bureau of Investigation, Custom and Immigration Enforcement and Homeland Security Investigations. Additional agencies, herein also referred to as "participating jurisdiction members" will include, but not limited to, The University of Arizona, Marana Police Department, Oro Valley Police Department and the Sahuarita Police Department.

b. Additional law enforcement agencies may be considered for participation in CNA with final decision making for their acceptance on the Board retained by the current Policy Board members at the time a request is made.

c. Each member of the Policy Board has an equal vote including the lead and participating member agencies. The agency representing the participating jurisdictions will have the right to represent and vote on the behalf of all other participating jurisdiction members.

d. A single Policy Board member selected from among the ranks of the participating jurisdiction members shall represent all participating jurisdiction members on the Policy Board.

1. After the term of one year, a vote will be taken annually by the Policy Board to elect the next participating jurisdiction member representative. The Policy Board retains the right to re-elect the individual serving as the representative of the participating jurisdiction members for multiple terms.

2. The Chief Officer of each law enforcement agency, including lead and participating jurisdiction members, may appoint a designee to fill the Chief's position on the Policy Board. A designee may exercise the appointing Chiefs' voting rights.

3. Both the Policy Board Chairperson and Vice-Chairperson positions can be rotated among the lead sponsoring agencies. The terms of these positions shall not exceed one year. At the end of each year served, the Policy Board will select and vote upon the individuals from the lead sponsoring agencies to assume these positions. The Policy Board retains the right to re-elect individuals to serve in these positions for multiple terms.

4. A quorum of three-quarters of the board is sufficient to vote upon a policy and take Board action.

5. The Policy Board meets on a regular schedule that is agreed upon by the Board members. CNA's Commander is responsible for making quarterly or regularly scheduled reports to the Board on CNA's operational and budget activities.

6. Minutes are kept of all meetings, and members are notified in advance of scheduled meeting dates.

D. OPERATIONAL COMMAND

1. Operational command of the CNA is currently the responsibility of the Tucson Police Department. The Tucson Police Department assigns a Police Captain to command CNA. This individual is responsible to the Policy Board for carrying out approved policy.

2. CNA commanders serve a term of three years and may be appointed from the Tucson police Department or the Arizona Department of Public Safety.

3. With the approval of the selected agency (or agency with a Commander in place), the Policy Board will select the agency that is to provide the commander.

E. PROJECT ADMINISTRATION AND REPORTING

1. Responsibilities of CNA and City of Tucson Police Department include:

a. Grants and Reimbursements: The Tucson Police Department is responsible for contract administration, equipment purchases, grant and funding source reports. Submission of financial grant and funding reports is the responsibility of the Tucson Police Department. CNA is responsible for the annual High Intensity Drug Trafficking Area (HIDTA) and Arizona Criminal Justice Commission (ACJC) grant applications including budget requests. The monthly, quarterly and

annual performance measurement statistical reports required by the HIDTA and ACJC grant administrators is the responsibility of CNA.

b. Provision of Documentation: The Tucson Police Department establishes requirements for the provisions of documentation necessary to reimburse participating agencies for personnel, equipment and all other operating expenditures. This responsibility includes ensuring that all grant-funded expenditures comply with the Federal guidelines for the HIDTA and ACJC grants.

c. Financial Systems Management Procurement: CNA will approve and manage all of its operating expenditures directly through the City of Tucson financial system and be responsible for the following tasks.

1. CNA staff will coordinate with the City of Tucson budget, finance and purchasing departments to outline methods that are in the best interest of both parties to process and pay for CNA purchases and expenses.

2. CNA staff will enter and manage input of all operating expenses in the City of Tucson's financial systems.

3. CNA Staff will follow all guidelines set forth by the City of Tucson for the preparation and management of its finances on the software and web-based systems utilized by the city's budget and finance departments.

4. CNA staff will follow all guidelines set forth by the City of Tucson purchasing department for the preparation and processing of purchase orders, vendor contracts, P-card payments and any other purchases made on behalf of CNA by accessing City of Tucson purchasing software and associated financial systems.

5. CNA members will obtain internal approvals from CNA staff for payment of expenditures. Originals or copies of all reimbursement requests from its lead and participating jurisdiction members to agencies, including grant funded personnel expenses made to HIDTA and ACJC, that need to be sent to CNA for approval and processing.

6. The City of Tucson will issue checks for expenses incurred by CNA vendors, CNA's participating agencies, and any and all other entities requesting payment.

7. CNA will make monthly or quarterly reimbursement requests directly to the Pima County Attorney's Office (PCAO) to re-fund the City of Tucson for the expenses itemized in section 6.2.d. Reimbursement checks will be issued by PCAO, sent to CNA, and then forwarded by CNA to the City of Tucson finance department.

2. Responsibilities of the City

a. Review and provide financial guidance and assistance for CNA as provided for other participating agencies and entities with the City's financial system.

b. Process, enter or forward all invoices for payments to CNA for internal approvals.

c. Provide CNA with budget reports for its expenses and the necessary planning documents for budget preparations.

d. Provide assistance with purchase orders and purchase processes through the City as needed.

3. Responsibility of Agencies Submitting Reimbursement Requests to CNA

a. Starting July 1, 2013, 2 copies of any requests for grant and personnel (salary, overtime, overtime ERE) reimbursements are required. If only one copy is submitted, CNA will return it to the submitting party and request that 2 copies be forwarded to CNA. CNA reserves the right to revise the number of copies and paperwork required by agencies and other entities submitting reimbursement requests as CNA'S financial documentation policies change.

b. Any travel or training attended on behalf of CNA will be planned and paid for through CNA or the employee's home agency. When these expenses are incurred by a home agency, said agency must submit a reimbursement request to CNA. CNA staff will process the reimbursement to the submitting agency and request a check for payment of these expenses from PCAO.

F. STAFF

1. CNA includes staff from grant-funded and non-grant funded sources. Positions allocated to CNA from state or local member agencies shall be assigned by the Policy Board with the goal of encouraging and maintaining a multi-jurisdictional staff. Grant funded positions are not allocated to federal agencies.

2. Personnel selected to fill grant-funded positions are chosen in accordance with federal affirmative action guidelines. Agencies providing grant funded employees pay the salaries and fringe benefits for said employees and submit documentation as required by the Tucson Police Department for the BYRNE Grant and as required by the Administrators of the HIDTA Grant for reimbursement of these personnel expenses. Agencies receiving grant funds agree to preserve and make available all salary and fringe benefit records for a period of five (5) years from the date of final payment, or for a longer period of time if required by state or Federal regulation. Agencies providing grant

funded positions are not using these positions to supplant currently budgeted positions.

3. Overtime and overtime employee related expenses incurred by a staff member will be funded by CNA from its Anti-Racketeering account. Lead and participating jurisdiction member agencies must prepare and submit to CNA reimbursement requests for processing and payment of these expenses.

G. PROVISIONS OF EQUIPMENT AT TERMINATION OF IGA BY ALL PARTICIPATING MEMBERS.

Upon termination of the IGA and disbandment of CNA equipment purchases, including vehicles, made with its Anti-Racketeering funds managed by Pima County Attorney's Office, shall be disbursed in accordance with Federal and state guidelines at the time this agreement is ended. The Policy Board will retain the right to disburse existing equipment, including vehicles, to its participating agencies. The agencies requesting the equipment/vehicles must provide the Tucson Police Department and the City of Tucson with written assurance that said equipment, and vehicles, will be used in the criminal justice system. If equipment used by CNA was supplied by one of its member agencies, said equipment will be returned to that agency.

H. UNAVAILIBILITY OF FUNDING

Every payment obligation of CNA's participating agency members under this Agreement is conditioned upon the availability of funds appropriated or allocated for the payment of such obligation. If funds are not allocated and available for the continuance of the Agreement, this Agreement may be terminated by an agency member. In the event this provision is exercised, an agency member shall not be obligated or liable for any future payments or for any damages as a result of termination under this paragraph.

III. TERM

This IGA shall be for an initial term of five (5) years, effective upon the adoption of a fully executed agreement by all parties. The parties shall have the option to extend the term of this IGA for two (2) additional five (5) year periods. Any modification or time extension of this IGA shall be by formal written amendment executed by parties hereto.

IV. TERMINATION

A. Any party may terminate its participation in this Agreement by giving not less than a 60-day written notice to the other parties. In the event of such termination, each party shall retain possession of its separately owned equipment and property. Any party, whose participation in the Agreement is terminated for any reason, shall return to CNA equipment and vehicles purchased with CNA grant or Anti-Racketeering funds.

B. The CNA Policy Board reserves the right to request termination of this Agreement with a participating member if that member violates the policy guidelines set forth by the CNA Board. A vote of the other Board members will be taken to determine if a consensus exists for requesting the termination.

C. This IGA is subject to cancellation by the parties pursuant to A.R.S. § 38-511.

V. NON-ASSIGMNENT

None of the parties to this Agreement shall assign its rights under this Agreement to any other party without written permission from the Policy Board.

VI. CONSTRUCTION OF AGREEMENT

A. Entire agreement. This instrument constitutes the entire agreement between all parties herein pertaining to the subject matter hereof, and all prior or contemporaneous agreements and understandings, oral, or written, are hereby superseded and merged herein. Any exhibits to this Agreement are incorporated herein by this reference.

B. Amendment. This Agreement may be extended, modified, amended, altered, or changed only by written agreements signed by all parties.

C. Construction and interpretation. All provisions of this Agreement shall be construed to be consistent with the intention of the parties as expressed in the Recitals hereof.

D. Captions and headings. The headings used in this Agreement are for convenience only and are not intended to affect the meaning of any provision of this Agreement.

E. Severability. In the event that any provision of this Agreement or the application thereof is declared invalid or void by statute or judicial decision, such action shall have no effect on other provisions and their application, which can be given effect without the invalid or void provision or application, and to this extent the provisions of the Agreement are severable. In the event that any provision of this Agreement is declared invalid or void, the parties agree to meet promptly upon request of another party in attempt to reach an agreement on a substitute provision.

VII. LEGAL JURISDICTION

Nothing in this Agreement shall be construed as either limiting or extending the legal jurisdiction of any existing CNA member.

VIII. NO JOINT VENTURE

It is not intended by this Agreement to, and nothing contained in this Agreement shall be construed to, create any partnership, joint venture or employment relationship between the parties or create any employer-employee relationship between the members and CNA. None of the parties shall be liable for neither any debts, accounts, obligations nor other liabilities whatsoever of the other, including (without limitation) the other party's obligation to withhold Social Security income taxes for itself or any of its employees.

IX. RESERVED

X. LIMITATION OF LIABILITY AND COMPLIANCE WITH LAWS

Each party will comply with the human relations provisions of its respective agency and all parties shall comply with all applicable Federal, state and local laws, rules, regulations, standards and executive orders, without limitation to those designated within this Agreement.

A. Anti-Discrimination. The provisions of A.R.S. § 41-1463. Executive Order Number 99-4 issued by the Governor of the State of Arizona, and Tucson City Code § 28-138 are incorporated by this reference as a part of this Agreement.

B. Americans with Disabilities Act. This Agreement is subject to all applicable provisions of the Americans with Disabilities Act (Public Law 101-366. 42 U.S.C 12101-12213) and all applicable Federal regulations under the Act, including 28 CFR Parts 35 and 36.

C. For the purposes of worker's compensation, an employee of a party to this agreement, who works under the jurisdiction or control of, or who works within the jurisdictional boundaries of another party pursuant to this particular intergovernmental agreement for mutual aid law enforcement, shall be deemed to be an employee of the party who is the employee's primary employer and of the party under whose jurisdiction and control the employee is then working as provided in A.R.S. § 23-1022(D) and the primary employer party of such an employee shall be solely liable for payment of worker's compensation benefits for the purpose of this section. Each party herein shall comply with provision of A.R.S. § 23-1022(E) by posting the public notice required.

1. Except for the purposes of worker's compensation as noted in the preceding paragraph of this section, each party shall be solely responsible and liable for claims, demands, or judgments (including costs, expenses and attorney fees) resulting from personal injury to any person or damage to any property arising out of its own employee's performance under this agreement. Each party shall have the right of contribution against the other parties with respect to tort liability judgments should multiple parties under this agreement be found liable. This right of contribution shall not apply to any settlement or demand and each party shall be solely responsible for its own acts or omissions and those of its officers and employees by reason of its

operations under this agreement. This responsibility includes automobile liability. Each party represents that it shall maintain for the duration of this agreement liability insurance. The parties may fulfill their obligations by programs of self-insurance providing protection.

D. Immigration. Pursuant to the Governor's Executive Order 2005-30, the parties agree to comply with all applicable federal immigration laws and regulations.

E. Each party agrees to be solely responsible for any expense resulting from industrial insurance by its employees incurred as a result of operations under this agreement.

F. CNA will assume sole responsibility for compliance with Internal Revenue Service and outside local, state and federal regulations. Said compliance will relate to all laws and guidelines set forth by any governing entity, especially regarding CNA financials. The City of Tucson will not assume any liability for non-conformance or penalties related to governance of CNA's budgeting and financial practices.

G. Reserved.

H. Non-Discrimination Language. The Parties agree to comply with all provisions and requirements of Arizona Executive Order 2009-09 including flow down of all provisions and requirements to any subcontractors. Executive Order 2009-09 supersedes Executive Order 99-4 and amends Executive Order 75-5 and may be viewed and downloaded at the Governor of the State of Arizona's website https://www.azgovernor.gov/dms/upload/EO_2009_09.pdf which is hereby incorporated into the Agreement as if set forth in full herein. During the performance of this Agreement, the Parties shall not discriminate against any employee, client, or any other individual in any way because of that person's age, race, creed, color, religion, sex, disability and national origin.

XI. ARBITRATION

In the event of dispute under this IGA, the parties agree to use arbitration to the extent required under A.R.S. § 12-1518 and 12-133.

XII. WAIVER

Waiver by either party of any breach of any term, covenant or condition herein contained shall not be deemed a waiver of any other term, covenant or condition, or any subsequent breach of the same or any other term, covenant or condition herein contained.

XIII. FORCE MAJEURE

A party shall not be in default under this Agreement if it does not fulfill any of its obligations under this Agreement because it is prevented or delayed

in doing so by reason of uncontrollable forces. The term "uncontrollable forces" shall mean, for the purpose of this Agreement, any causes beyond the control of the party affected, including but not limited to the failure of facilities, breakage or accident to machinery or transmission facilities, weather conditions, flood, earthquake, lightening, fire, epidemic, war, riot, civil disturbance, sabotage, strike, lockout, labor dispute, boycott, material or energy shortage, casualty loss, acts of God, or action or non-action by governmental bodies in negligence or willful action of the parties, or order of any government officer or court (excluding orders promulgated by the parties themselves), and declared local, state or national emergency, which, by exercise of due diligence and foresight, such party could not reasonably have been expected to avoid. Either party rendered unable to fulfill any obligations by reason of uncontrollable forces shall exercise due diligence and foresight, such party could not reasonably have been expected to avoid. Either party rendered unable to fulfill any obligations by reason of uncontrollable forces shall exercise due diligence to remove such inability with all reasonable dispatch.

XIV. METHOD OF EXECUTION

This agreement may be executed in one or more identical counterparts each of which shall be deemed an original, but all of which taken together shall constitute one agreement.

XV. NOTIFICATION

All notices or demands upon any party to this Agreement shall be in writing, unless other forms are designated elsewhere, and shall be delivered in person or sent by mail addressed as follows:

City of Tucson
City Manager
City Hall Tower
255 West Alameda Street, 10th Floor
Tucson, AZ 85701

Tucson Chief of Police
Tucson Police Department
270 South Stone Avenue
Tucson, AZ 85701

Director
AZ Department of Public Safety
PO Box 6638
Phoenix, AZ 85005

Deputy County Attorney
Pima County Attorney's Office
32 N. Stone Avenue
Tucson, AZ 85701

University of Arizona
Sponsored Projects Services
PO Box 210158, Room 510
Tucson, AZ 85721-0158

Marana Chief of Police
Town of Marana
11555 West Civic Center Drive
Marana, AZ 85653

Oro Valley Chief of Police
Oro Valley Police Department
11000 North LaCanada Drive
Oro Valley, AZ 85737

Sahuarita Chief of Police
Sahuarita Town Police Department
315 W. Sahuarita Center Way
Sahuarita, AZ 85629

XVI. REMEDIES

Either party may to be exclusive of any other right or remedy and each shall be cumulative and in addition to any remedies provided by law for the breach of this Agreement. No right or remedy is intended other right or remedy existing at law or in equity or by virtue of this Agreement.

XVII. HOLD HARMLESS CLAUSE

Each party shall be responsible for liabilities from all claims, damages, or suits arising from the negligence or willful misconduct of its officers, agents, and employees of any kind of nature arising out of CNA or its participating member agencies. Each party, with the exception of the University of Arizona, an agency of the State (A.R.S. § Section 35-154, Arizona Attorney General Opinion 67363) agrees to indemnify, defend and hold harmless all parties, its officers, employees and participating agencies from and against any and all suits, actions, legal or administrative proceedings, claims demands or damages of any kind under nature arising out of the their negligence, except for any such liability out of the sole negligence of CNA.

Parties to This Agreement
City of Tucson
Municipal Corporation

Mayor Date

ATTEST:

City Clerk Date

Reviewed And Approved As To Form:

Pursuant to A.R.S. § 11-952, the attorneys for the Parties hereto have determined that the foregoing Agreement is in proper form, and is within the powers and authority granted under the laws of this State.

City of Tucson Attorney Date

City Manager Date

Parties to This Agreement
State of Arizona

ATTEST:

Governor Date

Assistance Secretary of State Date

Assistance Secretary of State Date

Arizona Board of Regents
On behalf of the University of Arizona

ATTEST:

University of Arizona Date
Office of Research & Contract Analysis

Reviewed And Approved As To Form:

Pursuant to A.R.S. § 11-952, the attorneys for the Parties hereto have determined that the foregoing Agreement is in proper form, and is within the powers and authority granted under the laws of this State.

Counsel, Arizona Board of Regents Date

Parties to This Agreement
Town of Oro Valley
Municipal Corporation

ATTEST:

Mayor Date

Town Clerk Date

Reviewed And Approved As To Form:

Pursuant to A.R.S. § 11-952, the attorneys for the Parties hereto have determined that the foregoing Agreement is in proper form, and is within the powers and authority granted under the laws of this State.

Town of Oro Valley Attorney Date

Parties to This Agreement
Town of Marana

ATTEST:

Mayor Date

Town Clerk Date

Reviewed And Approved As To Form:

Pursuant to A.R.S. § 11-952, the attorneys for the Parties hereto have determined that the foregoing Agreement is in proper form, and is within the powers and authority granted under the laws of this State.

Town of Marana Attorney Date

Parties to This Agreement
Town of Sahuarita

ATTEST:

Mayor Date

Town Clerk Date

Reviewed And Approved As To Form:

Pursuant to A.R.S. § 11-952, the attorneys for the Parties hereto have determined that the foregoing Agreement is in proper form, and is within the powers and authority granted under the laws of this State.

Sahuarita Town Attorney Date

Town Council Regular Session **Item # L.**

Meeting Date: 04/16/2014

Requested by: Daniel G. Sharp **Submitted By:** Colleen Muhr, Police Department

Department: Police Department

Information

SUBJECT:

Resolution No. (R)14-25, authorizing and approving a grant contract between the Oro Valley Police Department and the Governor's Office of Highway Safety (GOHS) for funding of one (1) DUI Enforcement SUV to enhance DUI enforcement in the Town of Oro Valley

RECOMMENDATION:

Staff recommends approval.

EXECUTIVE SUMMARY:

The Governor's Office of Highway Safety was awarded additional FY 2014 funding, and notified eligible agencies to submit applications. The Police Department received two (2) originals of Contract No. 2014A-164-127 on March 19, 2014, entitled 'DUI Enforcement Vehicle - One (1) DUI Enforcement Police Package SUV." This contract awarded $47,000 in funding for this vehicle.

BACKGROUND OR DETAILED INFORMATION:

N/A

FISCAL IMPACT:

The GOHS. Grant allocates $47,000 for the purchase of one (1) fully marked DUI enforcement package SUV. This vehicle is required to be ordered and placed in service prior to the end of the specified project period, September 30, 2014.

As this grant is programmed as a reimbursable grant, Town funds will be used to purchase the vehicle and associated costs will be promptly submitted to the GOHS for full reimbursement. The Town General Fund has available budget capacity in both the current fiscal year budget and in the FY 2014/15 Recommended Budget to accommodate this purchase and subsequent reimbursement. Sufficient budget capacity has also been included in the FY 2014/15 Recommended Budget to pay for all administrative, operations and maintenance costs relating to this vehicle.

SUGGESTED MOTION:

I MOVE to (adopt or deny) Resolution No. (R)14-25, authorizing and approving a grant contract between the Oro Valley Police Department and the Governor's Office of Highway Safety (GOHS) for funding equipment to enhance DUI enforcement.

Attachments

R14-25 GOHS DUI SUV

G.O.H.S. SUV Contract

RESOLUTION NO. (R) 14-25

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE TOWN OF ORO VALLEY, ARIZONA, AUTHORIZING AND APPROVING A GRANT CONTRACT BETWEEN THE ORO VALLEY POLICE DEPARTMENT TO THE GOVERNOR'S OFFICE OF HIGHWAY SAFETY (G.O.H.S.) FOR FUNDING ONE DUI ENFORCEMENT SUV TO ENHANCE DUI ENFORCEMENT

WHEREAS, Highway Safety Funds are used to support State and community programs to reduce deaths and injuries on the highways. Section 402 of the Highway Safety Act encourages States and Local Jurisdictions to enact and enforce laws against repeat intoxicated drivers; and

WHEREAS, the Town applied for and was granted a G.O.H.S. grant contract from Section 164 funds to fund the purchase of one (1) DUI Enforcement Police Package SUV; and

WHEREAS, it is in the interest of the Town of Oro Valley approve the G.O.H.S. grant contract, attached hereto as Exhibit "A" and incorporated herein by this reference, for the purposes of furthering public safety within the Town of Oro Valley.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Town of Oro Valley, Arizona, that the Town Manager is authorized to enter into and execute the attached Governor's Office of Highway Safety Highway Safety Grant Contract, attached hereto as Exhibit "A" and incorporated herein by this reference, on behalf of the Town of Oro Valley.

PASSED AND ADOPTED by the Mayor and Town Council of the Town of Oro Valley, Arizona, this 16th day of April, 2014.

TOWN OF ORO VALLEY, ARIZONA

_____

Dr. Satish I. Hiremath, Mayor

ATTEST:

_____
Julie K. Bower, Town Clerk

Date: _____

APPROVED AS TO FORM:

_____
Tobin Sidles, Legal Services Director

Date: _____

EXHIBIT “A”

GOVERNOR'S OFFICE OF HIGHWAY SAFETY (GOHS) | **164** | STATE OF ARIZONA

HIGHWAY SAFETY CONTRACT

This page, the Project Directors Manual and attached hereto and incorporated herein by reference, constitute the entire contract between the parties hereto unless the Governor's Highway Safety Representative authorizes deviation in writing.

		CFDA (see Budget Page)
1.	**APPLICANT AGENCY** Oro Valley Police Department	**GOHS CONTRACT NUMBER** **2014A-164-127**
	ADDRESS 11000 North La Cañada Drive, Oro Valley, AZ 85737	**PROGRAM AREA 164 – AL**
2.	**GOVERNMENTAL UNIT** Town of Oro Valley	**AGENCY CONTACT** Chris Olson
	ADDRESS 11000 North La Cañada Drive, Oro Valley, AZ 85737	**3. PROJECT TITLE** DUI Enforcement Vehicle- One (1) DUI Enforcement Police Package SUV
4. **5.** **6.** **7.**	**GUIDELINES** **164 – Alcohol (AL)** **405d- Impaired Driving (ID)** **402- Police Traffic Services (PT)**	

8. BRIEFLY STATE PURPOSE OF PROJECT:
Federal 164 funds will support the purchase of One (1) DUI Enforcement Police Package SUV to support and enhance DUI Enforcement throughout the Town of Oro Valley. The total amount of funding for this contract will include 164, 405d and 402 funding to support other alcohol enforcement activities.

9.	**BUDGET** **COST CATEGORY**	**Project Period** **FY 2014**
I.	**Personnel Services**	$0.00
II.	**Employee Related Expenses**	$0.00
III.	**Professional and Outside Services**	$0.00
IV.	**Travel In-State**	$0.00
V.	**Travel Out-of-State**	$0.00
VI.	**Materials and Supplies**	$0.00
VII.	**Capital Outlay**	$47,000.00
	TOTAL ESTIMATED COSTS	**$47,000.00**

PROJECT PERIOD	**FROM:** Effective Date (*Date of GOHS Director Signature*)	**TO:** 09-30-2014
CURRENT GRANT PERIOD	**FROM:** 10-01-2013	**TO:** 09-30-2014

TOTAL FEDERAL FUNDS OBLIGATED THIS FY: $47,000.00

A political subdivision or state agency that is mandated to provide a certified resolution or ordinance authorizing entry into this contract must do so prior to incurring any expenditures. Failure to do so may result in termination of the awarded contract.

PROBLEM IDENTIFICATION AND RESOLUTION:

Agency Background:

The Oro Valley Police Department is a full service police organization consisting of 100 sworn officers and 31 civilian personnel. The agency has the traditional rank and file structure. Special assignments in the organization target crimes while providing additional support to patrol. The assignments include K-9, School Resource Officer (SRO), DUI, Motor/Traffic, Community Action, and Joint Task Force operations.

The Town of Oro Valley is located in northern Pima County, approximately three miles north of Tucson city limits. The valley itself was formed by the Santa Cruz River joining Gold Creek in the Catalina Mountains. The Town sits at an elevation of 2,620 feet, covering over 34 square miles and has a current population of 41,011. Oro Valley was incorporated in April 1974. State Route 77 is a major highway (one of only 2 routes from Tucson to Phoenix) which runs directly through the Town. Approximately 50,000 vehicles travel State Route 77 every day. Tangerine Road (State Route 989) is also an ingress and egress thoroughfare to both Interstate 10 and State Route 77 and runs through the heart of Oro Valley. In all, Oro Valley has over 170 miles of paved roadways.

In recent years, there has been a rapid expansion of local commercial businesses that has marked an increase in the number of people commuting to and through Oro Valley for employment and personal agendas/recreation. The Oro Valley Police Department is responsible for collision investigation and traffic enforcement within the Town, which includes approximately seven miles of State Route 77 and 5 miles of Tangerine Road. The responsibilities are inclusive of DUI investigations, fatal collision investigations, speed violation enforcement, school bus-stop sign violations and occupant protection/seatbelt violation enforcement. Seven miles of State Route 77 runs as six lanes of through traffic.

Agency Problem:

The Oro Valley Police Department has two full time DUI Enforcement Officers and one in need of a safer and more reliable vehicle. The vehicle is a 2009 Ford Crown Victoria with over 100,000 miles and significant signs of aging both internally and externally. The Oro Valley Police Department is unable to support the cost of a new DUI vehicle without support from GOHS.

Agency Attempts to Solve Problem:

The Oro Valley Police Department expanded its Motorcycle Unit to eight motor officers and a riding sergeant. The expansion was completed to better address traffic safety concerns of the community and DUI detection and enforcement. The expansion allows the Oro Valley Police Department to deploy motor coverage seven days a week for extended hours.

The Oro Valley Police Department has and will continue to seek grant funding sources from both the state and federal levels. The Oro Valley Police Department has been successful in receiving grant funding for personnel overtime and equipment.

Agency Funding:

Federal 164 funds will support the purchase of One (1) DUI Enforcement Police Package SUV to support and enhance DUI Enforcement throughout the Town of Oro Valley. The total amount of funding for this contract will include 164, 405d and 402 funding to support other alcohol enforcement activities.

How Agency Will Solve Problem With Funding:

The Oro Valley Police Department will purchase the DUI Enforcement SUV and assign the vehicle to one of the two DUI Enforcement Officers. The DUI Enforcement Officer will continue to use the vehicle daily for targeted DUI enforcement, during DUI Task Force details and for Sobriety Checkpoints.

GOALS/OBJECTIVES:

Federal 164 funds will support the purchase of One (1) DUI Enforcement Police Package SUV to support and enhance DUI Enforcement throughout the Town of Oro Valley. The total amount of funding for this contract will include 164, 405d and 402 funding to support other alcohol enforcement activities.

Expenditures of funding pertaining to Alcohol Enforcement including Personnel Services and ERE, Materials & Supplies, Capital Equipment and/or Travel In and Out of State shall comply with the Program Goals provided by the Arizona Governor's Office of Highway Safety. The program goal is to reduce the incidence of alcohol-impaired driving, fatalities, and injuries through enforcement, education and public awareness throughout Arizona. Law Enforcement personnel participating in Alcohol Enforcement/DUI activities including DUI Task Force details under this program shall be HGN/SFST certified.

MEDIA RELEASE:

To prepare complete press release information for media (television, radio, print and on-line) during each campaign period including a main press release, schedule of events, departmental plans and relevant data. **The material will emphasize the campaign's purpose, aggressive enforcement and the high cost of DUI / Alcohol in terms of money, criminal and human consequences.**

The Oro Valley Police Department will maintain responsibility for reporting sustained enforcement activity in a timely manner. Additionally, it is the responsibility of the Oro Valley Police Department to report all holiday task force enforcement statistics to GOHS on-line at the GOHS website **no later than 10:00a.m. the morning following each day of the event.**

The holidays and special events include but not limited to: Super Bowl Sunday, Valentine's Day, President's Day, St. Patrick's Day, Spring Break, Easter, Cinco de Mayo, Prom Night, Memorial Day, Graduation Day, Independence Day, Labor Day, Columbus Day, Halloween, and the Thanksgiving through New Year's details.

PLEASE NOTE: Failure to submit Statistics, Quarterly Reports and/or RCIs on time and correctly may delay reimbursement for expenditures to your agency.

METHOD OF PROCEDURE:

The Oro Valley Police Department will make expenditures as follows to meet the outlined Program Goals/Objectives:

Capital Outlay:
One (1) DUI Enforcement Police Package SUV

PRESS RELEASE:

Agencies are required to develop and distribute a press release announcing this grant award (a copy of this press release shall be sent to the GOHS Director at the same time it is sent to the media). This press release shall include the objective and specify that the funding is from the Governor's Office of Highway Safety.

BAC TESTING AND REPORTING REQUIREMENTS:

Alcohol impairment is a major contributing factor in fatality and serious injury motor vehicle collisions. Accurate data on alcohol involvement is essential to understanding the full extent of the role of alcohol and to assess progress toward reducing impaired driving.

Arizona is presently and consistently below the documented average among the states in the Blood Alcohol (BAC) testing of drivers involved in fatality motor vehicle collisions.

Each law enforcement agency that receives an enforcement-related grant is required to ensure that this accurate data on all drivers involved are reported. Failure to comply may result in withholding funds and cancellation of the enforcement contract until this requirement is met.

PURSUIT POLICY:

All law enforcement agencies receiving federal funds are encouraged to follow the guidelines established for vehicular pursuits issued by the International Association of Chiefs of Police (IACP) that are currently in effect.

EQUIPMENT:

One (1) DUI Enforcement Police Package SUV

Agencies receiving funding for Capital Outlay (major equipment) such as DUI Processing Vans, marked DUI enforcement vehicles and marked DUI enforcement motorcycles shall schedule a press conference that includes the Director of the Governor's Office of Highway Safety. The purpose of this press conference will be to present the equipment to the community.

The Oro Valley Police Department shall immediately notify GOHS if any equipment purchased under this contract ceases to be used in the manner described in this contract. In such event, the Oro Valley Police Department further agrees to dispose of this equipment using the Oro Valley Police Department, city, town or county ordinance, code or rule regarding disposal of equipment.

In the absence of an ordinance, code or rule regarding the disposal of the property, the Oro Valley Police Department can refer to that of the state. The Oro Valley Police Department shall maintain or cause to be maintained for its useful life, any equipment purchased under this contract. The Oro Valley Police Department shall incorporate any equipment purchased under this Contract into its inventory records. The Oro Valley Police Department shall insure any equipment purchased under this Contract for the duration of its useful life. Self-insurance meets this requirement.

Administrative and Maintenance Costs:

The Oro Valley Police Department shall be responsible for all administrative, maintenance, operational costs and the costs of any damage relating to the **One (1) DUI Enforcement Police Package SUV.**

Decals:

The Governor's Office of Highway Safety shall provide the Oro Valley Police Department with decals depicting the Governor's Office of Highway Safety logo. These decals shall be affixed to the equipment before being placed in service.

Equipment Purchase:

The equipment purchased under this contract shall be ordered and received prior to the end of the project period.

If this requirement cannot be met, a typed extension request shall be signed by the Project Director on the Agency's letterhead and submitted via mail or hand delivered to the Director of the Governor's Office of Highway Safety within sixty (60) days before the end of the project period. Failure to comply may result in cancellation of the contract.

Original Purpose of Equipment:

Pursuant to 23 CFR § 1200.21, all equipment purchased under this contract is to be used for the original purpose intended under this contract. All equipment shall be used for the originally authorized grant purposes for as long as needed for those purposes, as determined by the NHTSA Regional Administrator, and neither the State nor the Agency (sub-grantees) or contractors shall encumber the title or interest while such need exists.

The NHTSA Regional Administrator may reserve the right to transfer title to equipment acquired under this the Section 164 program to the Federal Government or to a third party when such third party is otherwise eligible under existing statutes.

Furthermore, 49 CFR § 18.32.c.1 states that Equipment (acquired under this grant) shall be used by the grantee in the program or project for which it was acquired as long as needed, whether or not the project or program continues to be supported by Federal funds. When no longer needed for the original program or project, the equipment may be used in other activities currently or previously supported by a Federal agency.

Insurance:

It is agreed that the Oro Valley Police Department shall adequately insure all capital equipment purchased under this contract for repair or replacement.

SPECIFIC REQUIREMENTS:

POLICE PACKAGE VEHICLES:

Requirements for DUI Enforcement Police Package Vehicle:
Equipment included with the vehicle, at a minimum is emergency equipment (lights and siren), police radio system, may include an in-car video system, mobile data computers (MDC), equipment and associated mounting hardware. The make, model, and color of this vehicle may or may not be that which is associated with traditional enforcement vehicles.

EQUIPMENT:

Requirements for Equipment:
The Oro Valley Police Department shall include a high quality color photograph of all equipment purchased under this contract. The Oro Valley Police Department shall complete the attached **Capital Outlay Equipment** form for all individual equipment purchases of $5,000.00 or more. The form is to be attached and submitted with the next quarterly report subsequent to the delivery of the equipment.

PROFESSIONAL AND OUTSIDE SERVICES/PUBLIC INFORMATION/MEDIA:

Requirements for Professional and Outside Services:
A copy of all contracts for "Professional and Outside Services" must be submitted to the GOHS Director for written approval before execution.

Requirements for Public Information and Education Materials:
Prior to the printing and distribution of public information and education materials, a sample will be provided to the GOHS Director for review and written approval.

Requirements for Paid Media:
All paid media must be pre-approved by the GOHS Director to ensure that consistent messages are sent statewide. Requests for paid media must include, *at a minimum*, scripts, description of target audience (to include methodology for identifying target audience), type of media to be utilized (electronic, print), campaign schedule, and budget. Additional information may be requested on a case by case basis.

METHOD OF PROCUREMENT:

Procurement procedures shall be in accordance with the Project Director's Manual. Additionally, the Oro Valley Police Department shall follow State Procurement Code.

A clear audit trail must be established to determine costs charged against this contract. Substantiation of costs shall, where possible, be made utilizing the Oro Valley Police Department documentation consisting of, but not limited to, copies of time sheets, purchase orders, copies of invoices, and proof of payment.

The Project Director shall retain copies of all documentation in the project file.

State Contract:

Procurement may be made using an open state contract award. Documents submitted to substantiate purchase using an open state contract must bear the contract number.

PROJECT EVALUATION:

This project shall be administratively evaluated to ensure that the objectives have been met.

Quarterly Report

The Quarterly Report (QR) purpose is to provide information on contracted grant activities conducted at the conclusion of each respective quarter. The information provided is used to review progress of the funded project and the successfulness in meeting outlined goals and objectives. The information, photos, highlights, obstacles, and mandatory statistical data provided in this report are analyzed by the assigned project coordinator. It is critical that the on-line report contains the following information:

- **Original signatures on all Quarterly Reports and RCI's**
  - **Signatures must include Project Director unless prior authorization for another is on file with GOHS.**

Report Schedule

Reporting Period	Due Date
1ST **Quarterly Report** (October 1 to December 31)	January 15, 2014
2ND **Quarterly Report** (January 1 to March 31)	April 15, 2014
3RD **Quarterly Report** (April 1 to June 30)	July 15, 2014
4TH **Quarterly Report** (July 1 to September 30)	October 30, 2014
Final Statement of Accomplishment	October 30, 2014

The Quarterly Report **shall be completed on the available on-line form and submitted by mail** to the Governor's Office of Highway Safety. ***Note:*** The "Quarterly Summary Enforcement Report must be included with each Quarterly Report and Final Statement of Accomplishment.

Final Statement of Accomplishments

The Project Director shall submit a Final Statement of Accomplishments Report to the GOHS **no later than thirty (30) days after the conclusion of each federal fiscal year (September 30th).** All agencies receiving funding are required to submit a Final Statement of Accomplishments Report.

Note: Failure to comply with the outlined GOHS reporting requirements may result in withholding of federal funds or termination of the contract.

PROFESSIONAL AND TECHNICAL PERSONNEL:

Daniel Sharp, Chief, Oro Valley Police Department, shall serve as Project Director.

Chris Olson, Lieutenant, Oro Valley Police Department, shall serve as Project Administrator.

Bridget Reutter, Governor's Office of Highway Safety, shall serve as Project Coordinator.

REPORT OF COSTS INCURRED (RCI):

The Project Director shall submit a Report of Costs Incurred (RCI) with supporting documentation attached, to the Governor's Office of Highway Safety at a minimum on a quarterly basis in correlation required report. Agencies may submit additional RCI's forms for expenditures when funds have been expended for which reimbursement is being requested.

RCI's shall be typed and delivered via mail or hand with appropriate supporting documentation, delivered to the Governor's Office of Highway Safety. **Electronically submitted RCI's will not be accepted.** Final RCI's will not be accepted after thirty (30) days after the conclusion of each federal fiscal year (September 30th). **Expenditures submitted after the expiration date will not be reimbursed and the agency will accept fiscal responsibility**.

The RCI template and instructions are available on the Governor's Office of Highway Safety website at www.azgohs.gov. Failure to meet the reporting requirements may be cause to terminate the project.

PROJECT MONITORING:

Traffic safety grant project monitoring is used by GOHS project coordinators to track the progress of project objectives, performance measures and compliance with applicable procedures, laws, and regulations.

The process is used throughout the duration of the contracted project and serves as a continuous management tool. Project monitoring also presents an opportunity to develop partnerships, share information and provide assistance to contracted agencies.

Documentation

The Governor's Office of Highway Safety will retain all findings documented on the GOHS Monitoring Form in the grantee's respective federal file. Findings will be discussed with the grantee designated contract representative (project administrator, fiscal specialist) by phone and/or e-mail. All noted deficiencies will be provided to the grantee with guidance for improvement and solutions to problems. Grantees that exhibit significantly poor performance with be placed on a performance plan as outlined by the project coordinator. Grantee monitoring information will additionally provide documentation for potential funding in subsequent fiscal year grant proposal review.

PROJECT PERIOD:

The Project Period shall commence on the date the GOHS Director signs the Highway Safety Contract and terminate on September 30th of that or subsequent year as indicated on the Highway Safety Contract.

DURATION:

Contracts shall be effective on the date the Governor's Office of Highway Safety Director signs the contract and expire at the end of the federal fiscal year of the contract.

If the Agency is unable to expend the funds in the time specified, the Project Director will submit notification on the Agency's letterhead and hand-deliver or submit via regular mail to the Director of the Governor's Office of Highway Safety a minimum of 90 days prior to the end of the project period.

The Agency shall address all requests to modify the contract to the Director of the Governor's Office of Highway Safety on Agency letterhead and either hand deliver or submit the request via regular mail. All requests for modification must bear the signature of the Project Director.

Failure to comply may result in cancellation of the contract. Any unexpended funds remaining at the termination of the contract shall be released back to the Governor's Office of Highway Safety.

ESTIMATED COSTS:

I.	Personnel Services (Overtime)	$0.00
II.	Employee Related Expenses	$0.00
III.	Professional and Outside Services	$0.00
IV.	Travel In-State	$0.00
V.	Travel Out-of-State	$0.00
VI.	Materials and Supplies	$0.00
VII.	Capital Outlay **One (1) DUI Enforcement Police Package SUV**	$47,000.00
	TOTAL ESTIMATED COSTS	***$47,000.00**

*Includes all applicable costs for tax and freight. The GOHS reserves the right to limit reimbursement of Employee Related Expenses from zero (0) to a maximum rate of 40 percent. This is the maximum ERE amount to be reimbursed. It is agreed and understood that the Oro Valley Police Department shall absorb any and all expenditures in excess of **$47,000.00**.

TABLE REPRESENTS HOW THIS CONTRACT WILL BE FUNDED BY AGENCY/PROGRAM

AGENCY	CFDA	CONTRIBUTION % AMOUNT	TOTAL AMOUNT REQUESTED
Oro Valley PD		**Total Amount Requested**	**$47,000.00**
PROGRAM SOURCE			
GOHS Contribution (164) (veh)	**20.608**	**75%**	**$35,250.00**
GOHS Contribution (405d) (veh)	**20.616**	**15%**	**$7,050.00**
GOHS Contribution (402) (veh)	**20.600**	**10%**	**$4,700.00**
TOTAL FUNDED		**100%**	**$47,000.00**

Arizona Governor's Office of Highway Safety
Capital Outlay (Equipment) Record
Required $5,000.00+

Contract Number: 2014A-164-127
Reporting Agency: Oro Valley Police Department

Equipment Description	Make/Model	Serial Number	Date Ordered	Date Received	Cost Per Unit

Note: Photographs of all Capital Outlay (Equipment) $5,000+ must be submitted with form

CERTIFICATIONS AND AGREEMENTS

This CONTRACT, is made and entered into by and between the STATE OF ARIZONA, by and through the Governor's Office of Highway Safety (GOHS) hereinafter referred to as "STATE", and the Oro Valley Police Department in this Contract, hereinafter referred to as "AGENCY".

WHEREAS, the National Highway Safety Act of 1966, as amended (23 USC §§401-404), provides Federal funds to STATE for approved highway safety projects; and

WHEREAS, STATE may make said funds available to various state, county, tribal, or municipal agencies, governments, or political subdivisions upon application and approval by STATE and the United States Department of Transportation (USDOT); and

WHEREAS, AGENCY must comply with the requirements listed herein to be eligible for Federal funds for approved highway safety projects; and

WHEREAS, AGENCY has submitted an application for Federal funds for highway safety projects;

NOW, THEREFORE, IN CONSIDERATION OF MUTUAL PROMISES AND OTHER GOODS AND VALUABLE CONSIDERATION, it is mutually agreed that AGENCY will strictly comply with the following terms and conditions and the following Federal and State Statutes, Rules, and Regulations:

I. Project Monitoring, Reports, and Inspections

A. AGENCY agrees to fully cooperate with representatives of STATE monitoring the project, either on-site or by telephone, during the life of the Contract.

B. AGENCY will submit Quarterly Reports (one for each three-month period of the project year) to STATE in the form and manner prescribed by STATE. Notice of the specific requirements for each report will be given in this Contract or at any time thereafter by giving thirty (30) days written notice to AGENCY by ordinary mail at the address listed on the Contract. Failure to comply with Quarterly Report requirements may result in withholding of Federal funds or termination of this Contract.

C. AGENCY will submit a Final Report/Statement of Accomplishment at completion of the Contract to include all financial, performance, and other reports required as a condition of the grant to STATE within thirty (30) days of the completion of the Contract.

D. Representatives authorized by STATE and the National Highway Traffic Safety Administration (NHTSA) will have the right to visit the site and inspect the work under this Contract whenever such representatives may determine such inspection is necessary.

II. Reimbursement of Eligible Expenses

A. AGENCY'S Project Director, or Finance Personnel, will submit a Report of Costs Incurred Form (RCI) to STATE each time there have been funds expended for which reimbursement is being requested. Failure to meet this requirement may be cause to terminate the project under section XX herein, "Termination and Abandonment".

B. AGENCY will reimburse STATE for any ineligible or unauthorized expenses for which Federal funds have been claimed and reimbursement received, as may have been determined by a State or Federal audit.

C. STATE will have the right to withhold any installments equal to the reimbursement received by AGENCY for prior installments which have been subsequently determined to be ineligible or unauthorized.

III. Property Agreement

A. AGENCY will immediately notify STATE if any equipment purchased under this Contract ceases to be used in the manner as set forth by this Contract. In such event, AGENCY further agrees to either give credit to the project cost or to another active highway safety project for the residual value of such equipment in an amount to be determined by STATE or to transfer or otherwise dispose of such equipment as directed by STATE.

B. No equipment will be conveyed, sold, salvaged, transferred, etc., without the express written approval of STATE, or unless otherwise provided elsewhere in this Contract.

C. AGENCY will maintain or cause to be maintained for its useful life, any equipment purchased under this Contract.

D. AGENCY will incorporate any equipment purchased under this Contract into its inventory records.

E. AGENCY will insure any equipment purchased under this Contract for the duration of its useful life. Self-insurance meets the requirements of this section.

IV. Travel

In-State and Out-of-State Travel

In-state and out-of-state travel claims will be reimbursed at rates provided by AGENCY'S regulations, provided that such regulations are as restrictive as those of STATE. Where they are less restrictive, ARS §38-624 will apply.

All out-of-state travel must be approved in writing in advance by STATE.

V. Standard of Performance

AGENCY hereby agrees to perform all work and services herein required or set forth, and to furnish all labor, materials, and equipment, except that labor, material, and equipment as STATE agrees to furnish pursuant to this Contract.

VI. Hold Harmless Agreement

Neither party to this agreement agrees to indemnify the other party or hold harmless the other party from liability hereunder. However, if the common law or a statute provides for either a right to indemnify and/or a right to contribution to any party to this agreement then the right to pursue one or both of these remedies is preserved.

VII. Non-Assignment and Sub-Contracts

This Contract is not assignable nor may any portion of the work to be performed be sub-contracted unless specifically agreed to in writing by STATE. No equipment purchased hereunder may be assigned or operated by other than AGENCY unless agreed to in writing by STATE.

VIII. Work Products and Title to Commodities and Equipment

A. The work product and results of the project are the property of STATE, unless otherwise specified elsewhere in this Contract. All property, instruments, non-consumable materials, supplies, and the like, which are furnished or paid for by STATE under the terms of this Contract, unless otherwise provided for elsewhere in this Contract, are and remain the property of STATE and will be returned at the completion of this project upon request of STATE. The work product and results of the project will be furnished to STATE upon request, if no provision is otherwise made by this Contract.

B. The provisions of subparagraph A apply whether or not the project contracted for herein is completed.

IX. Copyrights and Patents

Any copyrightable materials, patentable discovery, or invention produced in the course of this project may be claimed by STATE and a copyright or patent obtained by it at its expense. In the event STATE does not wish to obtain such copyright or patent, AGENCY may do so, but in any event, provision will be made by AGENCY for royalty-free, nonexclusive, nontransferable, and irrevocable licenses to be given the United States Government and STATE and its political subdivisions to use such copyrightable material, patented discoveries, or inventions in any manner they see fit. The STATE reserves the right to impose such other terms and conditions upon the use of such copyrights or patents as may be deemed in the best interest of STATE in the event AGENCY is allowed to obtain a copyright or patent.

X. "Common Rule" and OMB Circular No. A-102 (Revised)

"Common Rule" (49 CFR, Part 18): *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments*

OMB Circular No. A-102 (Revised): *Grants and Cooperative Agreements with State and Local Governments*
The application of USDOT "Common Rule" and Circular A-102 requires that:

AGENCY and sub-grantees will use their own procurement procedures, which reflect applicable State and local laws and regulations, provided that the procurements conform to applicable Federal law. The most stringent purchasing requirement at each level must be met.

The Arizona Procurement Code (ARS, §41-2501, et. seq.) and promulgated rules (A.A.C. Title 2, Chapter 7) are a part of this Contract as if fully set forth herein and AGENCY agrees to fully comply with these requirements for any procurement using grant monies from this Contract.

XI. Equal Opportunity

A. Pursuant to the requirements of the Federal-Aid Highway Act of 1968 (U.S.C. §103 et. seq.), AGENCY, as a condition to receiving approval of this Contract submitted under the Highway Safety Act of 1966, as amended, hereby gives its assurance that employment in connection with the subject Highway Safety Project will be provided without regard to race, color, creed, sex, or national origin, and that any contract it enters into with any private agency pursuant hereto will include provisions in compliance with this paragraph (XI).

As a condition of receiving approval of this Contract, AGENCY will be subject to and will comply with Title VI of the Civil Rights Act of 1964 and all applicable requirements of the Department of Commerce regulations as adopted by the USDOT, providing that no person in the United States shall on the ground of race, color, creed, sex, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under the subject Highway Safety Project.

B. If AGENCY fails or refuses to comply with its undertaking as set forth in these provisions, STATE or the USDOT may take any or all of the following actions.

1. Cancel, terminate, or suspend, in whole or in part, the agreement, contract, or other arrangement with respect to which the failure or refusal occurred; and

2. Refrain from extending any further Federal financial assistance to AGENCY under the Highway Safety Program with respect to which the failure or refusal occurred until satisfactory assurance of future compliance has been received from AGENCY.

C. Pursuant to the requirement of Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. §794), AGENCY must operate this Highway Safety Project so that it is accessible and otherwise non-discriminatory to handicapped persons.

XII. Executive Order 2009-09

It is mutually agreed that AGENCY will comply with the terms and conditions of Executive Order 2009-09, *Non-Discrimination in Employment by Government Contractors and Subcontractors*. Executive Order 2009-09 is located in Part II of the Project Director's Manual.

XIII. Application of Hatch Act

AGENCY will notify all of its employees whose principal employment is in connection with any highway safety project, financed in whole or in part by loans or grants under the Highway Safety Act of 1966, as amended, of the provisions of the Hatch Act (5 U.S.C. §7321 et. seq.).

XIV. Minority Business Enterprises (MBE) Policy and Obligation

A. Policy: It is the policy of the USDOT that minority business enterprises as defined in 49 CFR, Part 23, will have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds under this Contract. Consequently, the minority business enterprises requirements of 49 CFR, Part 23 apply to this Contract.

B. Obligation: The recipient or its contractor agrees to ensure that minority business enterprises as defined in 49 CFR, Part 23 have the subcontracts financed in whole or in part with Federal funds provided under this Contract. In this regard, all recipients or contractors will take all necessary and reasonable steps in accordance with 49 CFR, Part 23 to ensure that minority business enterprises have the maximum opportunity to compete for and perform contracts. Recipients and their contractors will not discriminate on the basis of race, color, creed, sex, or national origin in the award and performance of USDOT-assigned contracts.

XV. Arbitration Clause, ARS §12-1518

Pursuant to ARS §12-1518, the parties agree to use arbitration, after exhausting applicable administrative reviews, to resolve disputes arising out of this Contract where the provisions of mandatory arbitration apply.

XVI. Inspection and Audit, ARS §35-214

Pursuant to ARS §35-214, all books, accounts, reports, files, and other records relating to this Contract will be subject at all reasonable times to inspection and audit by STATE for five (5) years after completion of this Contract. The records will be produced at the Governor's Office of Highway Safety.

XVII. Appropriation of Funds by U.S. Congress

It is agreed that in no event will this Contract be binding on any party hereto unless and until such time as funds are appropriated and authorized by the U.S. Congress and specifically allocated to the project submitted herein and then only for the fiscal year for which such allocation is made. In the event no funds are appropriated by the U.S. Congress or no funds are allocated for the project proposed herein for subsequent fiscal years, this Contract will be null and void, except as to that portion for which funds have then been appropriated or allocated to this project, and no right of action or damages will accrue to the benefit of the parties hereto as to that portion of the Contract or project that may so become null and void.

XVIII. Continuation of Highway Safety Program

It is the intention of AGENCY to continue the Highway Safety Program identified in this Contract once Federal funding is completed. This intended continuation will be based upon cost effectiveness and an evaluation by AGENCY of the program's impact on highway safety.

XIX. E-Verify

Both Parties acknowledge that immigration laws require them to register and participate with the E-Verify program (employment verification program administered by the United States Department of Homeland Security and the Social Security Administration or any successor program) as they both employ one or more employees in this state. Both Parties warrant that they have registered with and participate with E-Verify. If either Party later determines that the other non-compliant Party has not complied with E-Verify, it will notify the non-compliant Party by certified mail of the determination and of the right to appeal the determination.

XX. Termination and Abandonment

A. The STATE and AGENCY hereby agree to the full performance of the covenants contained herein, except that STATE reserves the right, at its discretion, to terminate or abandon any portion of the project for which services have not been already performed by AGENCY.

B. In the event STATE abandons the services or any part of the services as herein provided, STATE will notify AGENCY in writing and within twenty-four (24) hours after receiving such notice, AGENCY will discontinue advancing the work under this Contract and proceed to close said operations under the Contract.

C. The appraisal value of work performed by AGENCY to the date of such termination or abandonment shall be made by STATE on a basis equitable to STATE and AGENCY and a final reimbursement made to AGENCY on the basis of costs incurred. Upon termination or abandonment, AGENCY will deliver to STATE all documents, completely or partially completed, together with all unused materials supplied by STATE.

D. AGENCY may terminate or abandon this Contract upon thirty (30) days written notice to STATE, provided there is subsequent concurrence by STATE. Termination or abandonment by AGENCY will provide that costs can be incurred against the project up to and including sixty (60) days after notice is given to STATE.

E. Any equipment or commodities which have been purchased as a part of this Contract and which have not been consumed or reached the end of its useful life will be returned to STATE upon its written request.

XXI. Cancellation Statute

All parties are hereby put on notice that this Contract is subject to cancellation pursuant to ARS §38-511, the provisions of which are stated below.

In accordance with ARS §38-511, this Contract may be cancelled without penalty or further obligation if any person significantly involved in initiating, negotiating, securing, drafting, or creating the Contract on behalf of the STATE, its political subdivisions or any department or agency of either, is at any time while the Contract or any extension of the Contract is in effect, an employee of any other party to the Contract in any capacity or a consultant to any other party of the Contract with respect to the subject matter or the Contract.

The cancellation shall be effective when written notice from the Governor or chief executive officer or governing body of the political subdivision is received by all other parties to the Contract unless the notice specifies a later time.

REIMBURSEMENT INSTRUCTIONS

1. **Agency Official preparing the Reports of Costs Incurred:**

Name: Daniel G. Sharp

Title: Chief of Police

Telephone Number: 520-229-4900 Fax Number: 520-229-4979

E-mail Address: dsharp@ovpd.org

2. **Agency's Fiscal Contact:**

Name: Colleen Muhr

Title: Administrative Services Manager

Telephone Number: 520-229-4904 Fax Number: 520-229-4979

E-mail Address: cmuhr@orovalleyaz.gov

Federal Identification Number: 86-0293039

3. ***REIMBURSEMENT INFORMATION:***

Warrant/Check to be made payable to:

Town of Oro Valley

Warrant/Check to be mailed to:

Police Department
(Agency)

11000 N. LaCañada Drive
(Address)

Oro Valley, AZ 85737
(City, State, Zip Code)

AGREEMENT OF UNDERSTANDING AND CERTIFICATION OF COMPLIANCE

Acceptance of Condition

It is understood and agreed by the undersigned that a grant received as a result of this Contract is subject the Highway Safety Act of 1966, as amended (23 U.S.C.A. §§401-404), ARS §28-602, and all administrative regulations governing grants established by the USDOT and STATE. It is expressly agreed that this Highway Safety Project constitutes an official part of the STATE's Highway Safety Program and that AGENCY will meet the requirements as set forth in the accompanying Project Director's Manual, which are incorporated herein and made a part of this Contract. All State and Federal Statutes, Rules, Regulations, and Circulars referenced in this Contract are a part of this document as if fully set forth herein. It is also agreed that no work will be performed nor any obligation incurred until AGENCY is notified in writing that this project has been approved by the Governor's Highway Safety Representative.

Certificate of Compliance

This is to certify that AGENCY will comply with all of the State and Federal Statutes, Rules and Regulations identified in this Contract.

Certification of Non-Duplication of Grant Funds Expenditure

This is to certify that AGENCY has no ongoing nor completed projects under contract with other Federal fund sources which duplicate or overlap any work contemplated or described in this Contract. It is further certified that any pending or proposed request for other Federal grant funds which would duplicate or overlap work described in the Contract will be revised to exclude any such duplication of grant fund expenditures. It is understood that any such duplication of Federal funds expenditures subsequently determined by audit will be subject to recovery by STATE.

Single Audit Act

If your political subdivision has had an independent audit meeting the requirements of the Single Audit Act of 1984, (31 U.S.C.A. §7501 et. seq.), please forward a copy to GOHS, Attention: Fiscal Services Officer, within thirty (30) days of the effective date of this Contract. If such audit has not been performed, please advise when it is being scheduled.

Lobbying Restrictions

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

A. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

B. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned will complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

C. The undersigned will require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients will certify and disclose accordingly.

D. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 USC §1352. Any person who fails to file the required certification will be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature of Project Director:

Daniel Sharp, Chief
Oro Valley Police Department

_____

_____
Date Telephone

Signature of Authorized Official of Governmental Unit:

Greg Caton, City Manager
Town of Oro Valley

_____

_____
Date Telephone

AUTHORITY & FUNDS

1. This Project is authorized by 23 U.S.C. §**164** and regulations promulgated there under, more particularly Volume 102, and if State funds are involved, this project is authorized by ARS § 28-602.

   The funds authorized for this Project have been appropriated and budgeted by the U.S. Department of Transportation. The expenses are reimbursable under Arizona's Highway Safety Plan Program Area **164, 405d and 402-PT** as approved for by the National Highway Traffic Safety Administration.

2. **A. EFFECTIVE DATE:** **B. FEDERAL FUNDS:**

   Authorization to Proceed Date **$47,000.00**

3. **AGREEMENT AND AUTHORIZATION TO PROCEED**
   by State Official responsible to Governor for the
   administration of the State Highway Safety Agency

Alberto Gutier, Director
Governor's Office of Highway Safety
Governor's Highway Safety Representative

Approval Date

Town Council Regular Session **Item # M.**

Meeting Date: 04/16/2014

Requested by: Daniel G. Sharp **Submitted By:** Colleen Muhr, Police Department

Department: Police Department

Information

SUBJECT:

Resolution No. (R)14-26, authorizing and approving a grant contract between the Oro Valley Police Department and the Governor's Office of Highway Safety (GOHS) for funding to provide Northwestern University Collision Investigation Training to be hosted by the Town of Oro Valley Police Department

RECOMMENDATION:

Staff recommends approval.

EXECUTIVE SUMMARY:

The Governor's Office of Highway Safety was awarded additional FY 2014 funding, and notified eligible agencies to submit applications. The Police Department received two (2) originals of Contract No. 2014A-AI-012 on March 19, 2014, entitled "Accident Investigation Training - Two (2) Northwestern University Collision Investigation Training Classes (Traffic Crash Reconstruction I and Traffic Crash Reconstruction 2)."

Federal 402 funds will support professional and outside services for the Oro Valley Police Department to host two (2) Northwestern University Collision Investigation Training Classes to support and enhance accident investigation and subsequent prosecution in fatal and serious injury collisions.

BACKGROUND OR DETAILED INFORMATION:

Northwestern University's Collision Reconstruction program is internationally known as perhaps the preeminent training source in this field. The costs associated with sending an officer to Illinois for three weeks (airfare, hotel cost, per diem in addition to the actual class cost) are estimated to be over $6,000.

The Oro Valley Police Department has forged a relationship with the director and the lead instructor of Northwestern University's Center for Public Safety, and have had discussions in the past related to the possibility of hosting both classes of Northwestern University's basic reconstruction program, Traffic Crash Reconstruction 1 (two weeks) and Traffic Crash Reconstruction 2 (one week). The cost to attend is usually $1050 for TCR 1 and $850 for TCR 2. The same staff teaching the courses at the Northwestern campus in Illinois will teach the classes here in Oro Valley.

Also in our discussions with Northwestern University, we learned that they would charge a fixed price for both courses locally, providing space for up to 32 students from within the Southwest region to attend. The cost to host TCR 1 is $31,750 and the cost to host TCR 2 is $17,750. The total cost for both courses is $49,500.

FISCAL IMPACT:

This GOHS Grant allocates $49,500, which will allow the Oro Valley Police Department to host training as described above.

As this grant is programmed as a reimbursable grant, Town funds will be used to pay for the professional, outside service, and these costs will be promptly submitted to the GOHS for full reimbursement. The Town General Fund has available budget capacity in both the current fiscal year budget and in the FY 2014/15 Recommended Budget to accommodate this expenditure and subsequent reimbursement.

SUGGESTED MOTION:

I MOVE to (adopt or deny) Resolution No. (R)14-26, authorizing and approving a grant contract between the Oro Valley Police Department and the Governor's Office of Highway Safety (GOHS) for funding to provide Northwestern University Collision Investigation Training, to be hosted by the Town of Oro Valley Police Department.

Attachments

R14-26 GOHS Grant - Collision Investigation Training

NW Training

RESOLUTION NO. (R)14-26

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE TOWN OF ORO VALLEY, ARIZONA, AUTHORIZING AND APPROVING A GRANT CONTRACT BETWEEN THE TOWN OF ORO VALLEY POLICE DEPARTMENT AND THE GOVERNOR'S OFFICE OF HIGHWAY SAFETY (G.O.H.S.) FOR FUNDING TO PROVIDE NORTHWESTERN UNIVERSITY COLLISION INVESTIGATION TRAINING TO BE HOSTED BY THE TOWN OF ORO VALLEY POLICE DEPARTMENT

WHEREAS, Highway Safety Funds are used to support Professional and Outside services to enhance accident investigation and subsequent prosecution in fatal and serious injury collisions. Section 402 of the Highway Safety Act sets forth the minimum requirements with which each state's highway safety program must comply, and provides a minimum level of funding for local programs each fiscal year; and

WHEREAS, the Town applied for and was granted a G.O.H.S. grant contract from Section 402 funds to fund Northwestern University Collision Investigation Training to be hosted by the Town of Oro Valley Police Department; and

WHEREAS, it is in the interest of the Town of Oro Valley approve the G.O.H.S. grant contract, attached hereto as Exhibit "A" and incorporated herein by this reference, for the purposes of furthering public safety within the Town of Oro Valley.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Town of Oro Valley, Arizona that, the Highway Safety Grant Contract between the Governors's Office of Highway Safety and the Town of Oro Valley, attached hereto as Exhibit "A" and incorporated herein by this reference, is hereby authorized and approved.

PASSED AND ADOPTED by the Mayor and Town Council of the Town of Oro Valley, Arizona, this 16th day of April, 2014.

TOWN OF ORO VALLEY, ARIZONA

_____

Dr. Satish I. Hiremath, Mayor

ATTEST:

_____
Julie K. Bower, Town Clerk

Date: _____

APPROVED AS TO FORM:

_____
Tobin Sidles, Legal Services Director

Date: _____

EXHIBIT “A”

GOVERNOR'S OFFICE OF HIGHWAY SAFETY | **STATE OF ARIZONA**

HIGHWAY SAFETY CONTRACT

This page, the Project Directors Manual and attached hereto and incorporated herein by reference, constitute the entire contract between the parties hereto unless the Governor's Highway Safety Representative authorizes deviation in writing.

		CFDA: 20.600
1.	**APPLICANT AGENCY** Oro Valley Police Department	**GOHS CONTRACT NUMBER:** **2014A-AI-012**
	ADDRESS 11000 North La Cañada Drive, Oro Valley, AZ 85737	**PROGRAM AREA: 402–AI**
2.	**GOVERNMENTAL UNIT** Town of Oro Valley	**AGENCY CONTACT:** Chris Olson
	ADDRESS 11000 North La Cañada Drive, Oro Valley, AZ 85737	**3. PROJECT TITLE:**
4.	**GUIDELINES:** 402– AI (Accident Investigation)	Accident Investigation Training -Two (2) Northwestern University Collision Investigation Training Classes (Traffic Crash Reconstruction I and Traffic Crash Reconstruction 2)

5. BRIEFLY STATE PURPOSE OF PROJECT:
Federal 402 funds will support Professional and Outside Services for the Oro Valley Police Department to host Two (2) Northwestern University Collision Investigation Training Classes (Traffic Crash Reconstruction I and Traffic Crash Reconstruction 2) to support and enhance Accident Investigation and subsequent prosecution in fatal and serious injury collisions.

6.	**BUDGET** **COST CATEGORY**	**Project Period** **FFY 2014**
I.	**Personnel Services**	$0.00
II.	**Employee Related Expenses**	$0.00
III.	**Professional and Outside Services**	$49,500.00
IV.	**Travel In-State**	$0.00
V.	**Travel Out-of-State**	$0.00
VI.	**Materials and Supplies**	$0.00
VII.	**Capital Outlay**	$0.00
	TOTAL ESTIMATED COSTS	**$49,500.00**

PROJECT PERIOD	**FROM:** Effective Date (*Date of GOHS Director Signature*)	**TO:** 09-30-2014
CURRENT GRANT PERIOD	**FROM:** 10-01-2013	**TO:** 09-30-2014

TOTAL FEDERAL FUNDS OBLIGATED THIS FFY: $49,500.00

A political subdivision or state agency that is mandated to provide a certified resolution or ordinance authorizing entry into this contract must do so prior to incurring any expenditures. Failure to do so may result in termination of the awarded contract.

PROBLEM IDENTIFICATION AND RESOLUTION:

Agency Background:

The Oro Valley Police Department is a full service police organization consisting of 100 sworn officers and 31 civilian personnel. The agency has the traditional rank and file structure. Special assignments in the organization target crimes while providing additional support to patrol. The assignments include K-9, School Resource Officer (SRO), DUI, Motor/Traffic, Community Action, and Joint Task Force operations.

The Town of Oro Valley is located in northern Pima County, approximately three miles north of Tucson city limits. The valley itself was formed by the Santa Cruz River joining Gold Creek in the Catalina Mountains. The Town sits at an elevation of 2,620 feet, covering over 34 square miles and has a current population of 41,011. Oro Valley was incorporated in April 1974. State Route 77 is a major highway (one of only 2 routes from Tucson to Phoenix) which runs directly through the Town. Approximately 50,000 vehicles travel State Route 77 every day. Tangerine Road (State Route 989) is also an ingress and egress thoroughfare to both Interstate 10 and State Route 77 and runs through the heart of Oro Valley. In all, Oro Valley has over 170 miles of paved roadways.

In recent years, there has been a rapid expansion of local commercial businesses that has marked an increase in the number of people commuting to and through Oro Valley for employment and personal agendas/recreation. The Oro Valley Police Department is responsible for collision investigation and traffic enforcement within the Town, which includes approximately seven miles of State Route 77 and 5 miles of Tangerine Road. The responsibilities are inclusive of DUI investigations, fatal collision investigations, speed violation enforcement, school bus-stop sign violations and occupant protection/seatbelt violation enforcement. Seven miles of State Route 77 runs as six lanes of through traffic.

Agency Problem:

A critical component of traffic safety is the proper investigation and documentation of collisions and few training resources with nationally recognition exist. The Oro Valley Police Department is in need of collision reconstruction training; however, this training is often located out of state and not financially feasible as the cost includes not only the price of registration but also the cost of travel.

Agency Attempts to Solve Problem:

The Oro Valley Police Department forged a relationship with the director and the lead instructor of Northwestern University's Center for Public Safety. The two organizations discussed the possibility of hosting collision reconstruction courses in Arizona and the Oro Valley Police Department is seeking funding to support the training.

Agency Funding:

Federal 402 funds will support Professional and Outside Services for the Oro Valley Police Department to host Two (2) Northwestern University Collision Investigation Training Classes (Traffic Crash Reconstruction I and Traffic Crash Reconstruction 2) to support and enhance Accident Investigation and subsequent prosecution in fatal and serious injury collisions.

How Agency Will Solve Problem With Funding:

The Oro Valley Police Department will use the funding to host Two (2) Collision Investigation Training Classes (Traffic Crash Reconstruction I and Traffic Crash Reconstruction 2). The classes will be available for up to 32 participants from the various police agencies in southern Arizona.

GOALS/OBJECTIVES:

Federal 402 funds will support Professional and Outside Services for the Oro Valley Police Department to host Two (2) Northwestern University Collision Investigation Training Classes (Traffic Crash Reconstruction I and Traffic Crash Reconstruction 2) to support and enhance Accident Investigation and subsequent prosecution in fatal and serious injury collisions.

Expenditures of funding pertaining to the AI/Accident Investigation Program including Personnel Services and ERE, Materials & Supplies, Capital Equipment and/or Travel In and Out of State shall comply with the Accident Investigation Program Goals provided by the Arizona Governor's Office of Highway Safety. The Accident Investigation Program Goal is to provide training and resources for Vehicular Crimes Units to aide in the investigation and prosecution of fatal traffic crashes throughout the State of Arizona.

MEDIA RELEASE

To prepare complete press release information for media (television, radio, print and on-line) during each campaign period including a main press release, schedule of events, departmental plans and relevant data. **The material will emphasize the campaign's purpose, aggressive enforcement and the high cost of Collisions in terms of money, criminal and human consequences.**

The Oro Valley Police Department will maintain responsibility for **reporting sustained enforcement** activity in a timely manner. Additionally, it is the responsibility of the Oro Valley Police Department to report all holiday task force enforcement statistics to GOHS on-line at the GOHS website **no later than 10:00a.m. the morning following each day of the event.**

The holidays and special events include but not limited to: Super Bowl Sunday, Valentine's Day, President's Day, St. Patrick's Day, Spring Break, Easter, Cinco de Mayo, Prom Night, Memorial Day, Graduation Day, Independence Day, Labor Day, Columbus Day, Halloween, and the Thanksgiving through New Year's details.

PLEASE NOTE: Failure to submit Statistics, Quarterly Reports and/or RCIs on time and correctly may delay reimbursement for expenditures to your agency.

METHOD OF PROCEDURE:

The Oro Valley Police Department will make expenditures as follows to meet the outlined Program Goals/Objectives:

Professional and Outside Services –
Two (2) Northwestern University Collision Investigation Training Classes (Traffic Crash Reconstruction I and Traffic Crash Reconstruction 2)

PRESS RELEASE:

Agencies are required to develop and distribute a press release announcing this grant award (a copy of this press release shall be sent to the GOHS Director at the same time it is sent to the media). This press release shall include the objective and specify that the funding is from the Governor's Office of Highway Safety.

BAC TESTING AND REPORTING REQUIREMENTS:

Alcohol impairment is a major contributing factor in fatality and serious injury motor vehicle collisions. Accurate data on alcohol involvement is essential to understanding the full extent of the role of alcohol and to assess progress toward reducing impaired driving.

Arizona is presently and consistently below the documented average among the states in the Blood Alcohol (BAC) testing of drivers involved in fatal motor vehicle collisions.

Each law enforcement agency that receives an enforcement-related grant is required to ensure that this accurate data on all drivers involved are reported. Failure to comply may result in withholding funds and cancellation of the enforcement contract until this requirement is met.

PURSUIT POLICY:

All law enforcement agencies receiving federal funds are encouraged to follow the guidelines established for vehicular pursuits issued by the International Association of Chiefs of Police (IACP) that are currently in effect.

SPECIFIC REQUIREMENTS:

PROFESSIONAL AND OUTSIDE SERVICES/PUBLIC INFORMATION/MEDIA-

Requirements for Professional and Outside Services:
A copy of all contracts for "Professional and Outside Services" must be submitted to the GOHS Director for written approval before execution.

Requirements for Public Information and Education Materials:
Prior to the printing and distribution of public information and education materials, a sample will be provided to the GOHS Director for review and written approval.

Requirements for Paid Media:
All paid media must be pre-approved by the GOHS Director to ensure that consistent messages are sent statewide. Requests for paid media must include, *at a minimum*, scripts, description of target audience (to include methodology for identifying target audience), type of media to be utilized (electronic, print), campaign schedule, and budget. Additional information may be requested on a case by case basis.

METHOD OF PROCUREMENT:

The application of USDOT "Common Rule" and Circular A-102 requires that:

Grantees and sub grantees will use their own procurement procedures which reflect applicable state and local laws and regulations, provided that the procurement procedures conform to applicable federal laws and standards. The most stringent purchasing requirement at each level must be met. If the Agency does not have a procurement process, the Agency may use the State Procurement process.

A clear audit trail must be established to determine costs charged against this contract. Substantiation of costs shall, where possible, be made utilizing the Oro Valley Police Department documentation consisting of, but not limited to, copies of time sheets, purchase orders, copies of invoices, and proof of payment.

The Project Director shall retain copies of all documentation in the project file.
State Contract:

Procurement may be made using an open state contract award. Documents submitted to substantiate purchase using an open state contract must bear the contract number.

PROJECT EVALUATION:

This project shall be administratively evaluated to ensure that the objectives have been met.

Quarterly Report

The Quarterly Report (QR) purpose is to provide information on contracted grant activities conducted at the conclusion of each respective quarter. The information provided is used to review progress of the funded project and the successfulness in meeting outlined goals and objectives. The information, photos, highlights, obstacles, and mandatory statistical data provided in this report are analyzed by the assigned project coordinator. It is critical that the on-line report contains the following information:

- **Original signatures on all Quarterly Reports and RCI's**
  - **Signatures must include Project Director unless prior authorization for another is on file with GOHS.**

Report Schedule

Reporting Period	Due Date
1ST Quarterly Report (October 1 to December 31)	January 15, 2014
2ND Quarterly Report (January 1 to March 31)	April 15, 2014
3RD Quarterly Report (April 1 to June 30)	July 15, 2014
4TH Quarterly Report (July 1 to September 30)	October 30, 2014
Final Statement of Accomplishment	October 30, 2014

The Quarterly Report **shall be completed on the available on-line form and submitted by mail** to the Governor's Office of Highway Safety. ***Note:*** The "Quarterly Enforcement Report" must be included with each Quarterly Report and Final Statement of Accomplishment.

Final Statement of Accomplishments

The Project Director shall submit a Final Statement of Accomplishments Report to the GOHS **no later than thirty (30) days after the conclusion of each federal fiscal year (September 30th).** All agencies receiving funding are required to submit a Final Statement of Accomplishments Report.

Note: Failure to comply with the outlined GOHS reporting requirements may result in withholding of federal funds or termination of the contract.

PROFESSIONAL AND TECHNICAL PERSONNEL:

Daniel Sharp, Chief, Oro Valley Police Department, shall serve as Project Director.

Chris Olson, Lieutenant, Oro Valley Police Department, shall serve as Project Administrator.

Bridget Reutter, Governor's Office of Highway Safety, shall serve as Project Coordinator.

REPORT OF COSTS INCURRED (RCI):

The Project Director shall submit a Report of Costs Incurred (RCI) with supporting documentation attached, to the Governor's Office of Highway Safety at a minimum on a quarterly basis in correlation with the required report. Agencies may submit additional RCI's forms for expenditures when funds have been expended for which reimbursement is being requested.

RCI's shall be typed and delivered via mail or hand delivered with appropriate supporting documentation, to the Governor's Office of Highway Safety. **Electronically submitted RCI's will not be accepted.** Final RCI's will not be accepted after thirty (30) days after the conclusion of each federal fiscal year (September 30th). **Expenditures submitted after the expiration date will not be reimbursed and the agency will accept fiscal responsibility**.

The RCI template and instructions are available on the Governor's Office of Highway Safety website at http://www.azgohs.gov/grant-opportunities/. **Failure to meet the reporting requirements may be cause to terminate the project.**

PROJECT MONITORING:

Highway safety grant project monitoring is used by GOHS project coordinators to track the progress of project objectives, performance measures and compliance with applicable procedures, laws, and regulations.

The process is used throughout the duration of the contracted project and serves as a continuous management tool. Project monitoring also presents an opportunity to develop partnerships, share information and provide assistance to contracted agencies. Additionally, project monitoring outlines a set of procedures for project review and documentation.

Project monitoring also serves as a management tool for:

- Detecting and preventing problems
- Helping to identify needed changes
- Identifying training or assistance needed
- Obtaining data necessary for planning, and evaluation
- Identifying exemplary projects

Types of Monitoring

Monitoring is formal and informal, financial and operational. The most common types of monitoring are:

- Ongoing contact with the contracted grantee through phone calls, e-mails, correspondence, and meetings
- On-Site and/or In-House monitoring reviews of project operations, management, and financial records and systems
- Review of project Quarterly Reports
- Review and approval of Requests for Cost Incurred (RCIs)
- Desk review of other documents in the project-grant files for timely submission and completeness

Monitoring Schedule	
Total Awarded Amount:	**Type of Monitoring:**
Under $50,000.00	Desk Review/Phone Conference
$50,000.01 – $99,999.99	In-House GOHS Review
$100,000+	On-Site
Capital Outlay Greater than $25,000.00 (combined)	On-Site

Desk Review and Phone Conference	Internal Review of all written documentation related to contractual project including but not limited to contract, quarterly reports, enforcement data, financial data, e-mails, letters, notes, press releases, photographs, inventories, and other written correspondence. A phone conference call conducted during the course of the project which includes the date and time of the call, the person/s contacted and the results. Serves as an informational review to determine progress of programmatic/financial activities. Both the designated project administrator and fiscal contact should be present, if possible, during the phone conference. If identified financial or operational problems are present, GOHS reserves the right to bring the grantee in for an in-house meeting at GOHS. Monitoring form written by Project Coordinator, any findings or areas of improvement, concern or recognition will be provided to the grantee.
In-House Review	Documents performance review results including project activities, reimbursement claims review, equipment purchases, approvals, and other information. Reviews applicable information related to the project(s) including but not limited to contract, quarterly reports, enforcement data, financial data, e-mails, letters, notes, press releases, photographs, inventories, and other written correspondence. Completed at GOHS in a meeting with appropriate operational and financial personnel. Monitoring form written by Project Coordinator, any findings or areas of improvement, concern or recognition will be provided to the grantee.
On-Site Monitoring	Documents performance review results including project activities, reimbursement claims review, equipment purchases, and other information. Reviews applicable information related to the project(s) including but not limited to contract, quarterly reports, enforcement data, financial data, e-mails, letters, notes, press releases, photographs, inventories, and other written correspondence. Conducted on-site at the grantee's agency with monitoring form completed on-site by Project Coordinator. Any findings or areas of improvement, concern, or recognition, will be provided to the grantee.

On-site and/or In-house monitoring for grantees of designated projects with large capital outlay purchases, personnel services, and complex projects must be completed within the second or third quarter of the fiscal year. Contracted projects displaying any problems might need on-site monitoring more than once during the fiscal year.

On-site and/or In-house monitoring includes a review and discussion of all issues related to assure the effective and administration of the contracted project. The following are the most important items to review:

- Progress toward meeting goals/objectives and performance measures
- Adherence to the contract specifications, timely submission of complete and correct reports, including required documentation
- Quarterly reports
- Status of expenditures related to the outlined budget
- Accounting records
- Supporting documentation (training documentation, inventory sheets, photographs, press releases etc)

In addition, the designated project administrator will assure that any equipment purchased will be available for inspection and is being used for the purpose for which it was bought under the outlined contractual agreement.

Documentation

The Governor's Office of Highway Safety will retain all findings documented on the GOHS Monitoring Form in the grantee's respective federal file. Findings will be discussed with the grantee designated contract representative (project administrator, fiscal specialist) by phone and/or e-mail. All noted deficiencies will be provided to the grantee with guidance for improvement and solutions to problems. Grantees that exhibit significantly poor performance with be placed on a performance plan as outlined by the project coordinator. Grantee monitoring information will additionally provide documentation for potential funding in subsequent fiscal year grant proposal review.

PROJECT PERIOD:

The Project Period shall commence on the date the GOHS Director signs the Highway Safety Contract and terminate on September 30 of that or subsequent year as indicated on the Highway Safety Contract.

DURATION:

Contracts shall be effective on the date the Governor's Office of Highway Safety Director signs the contract and expire at the end of the project period.

If the Agency is unable to expend the funds in the time specified, the Project Director will submit notification on the Agency's letterhead and hand-deliver or submit via regular mail to the Director of the Governor's Office of Highway Safety a minimum of 90 days prior to the end of the project period.

The Agency shall address all requests to modify the contract to the Director of the Governor's Office of Highway Safety on Agency letterhead and either hand deliver or submit the request via regular mail. All requests for modification must bear the signature of the Project Director.

Failure to comply may result in cancellation of the contract. Any unexpended funds remaining at the termination of the contract shall be released back to the Governor's Office of Highway Safety.

ESTIMATED COSTS:

I.	Personnel Services (overtime)	$0.00
II.	Employee Related Expenses	$0.00
III.	Professional and Outside Services Two (2) Northwestern University Collision Investigation Training Classes (Traffic Crash Reconstruction I @ $31,750.00 and Traffic Crash Reconstruction 2 @ $17,750.00)	$49,500.00
IV.	Travel In-State	$0.00
V.	Travel Out-of-State	$0.00
VI.	Materials and Supplies	$0.00
VII.	Capital Outlay	$0.00
	TOTAL ESTIMATED COSTS	***$49,500.00**

*Includes all applicable costs for tax and freight. The GOHS reserves the right to limit reimbursement of Employee Related Expenses from zero (0) to a maximum rate of 40 percent. This is the maximum ERE amount to be reimbursed. It is agreed and understood that the Oro Valley Police Department shall absorb any and all expenditures in excess of **$49,500.00**.

CERTIFICATIONS AND AGREEMENTS

This CONTRACT, is made and entered into by and between the STATE OF ARIZONA, by and through the Governor's Office of Highway Safety (GOHS) hereinafter referred to as "STATE", and the agency named in this Contract, hereinafter referred to as "AGENCY".

WHEREAS, the National Highway Safety Act of 1966, as amended (23 USC §§401-404), provides Federal funds to STATE for approved highway safety projects; and

WHEREAS, STATE may make said funds available to various state, county, tribal, or municipal agencies, governments, or political subdivisions upon application and approval by STATE and the United States Department of Transportation (USDOT); and

WHEREAS, AGENCY must comply with the requirements listed herein to be eligible for Federal funds for approved highway safety projects; and

WHEREAS, AGENCY has submitted an application for Federal funds for highway safety projects;

NOW, THEREFORE, IN CONSIDERATION OF MUTUAL PROMISES AND OTHER GOODS AND VALUABLE CONSIDERATION, it is mutually agreed that AGENCY will strictly comply with the following terms and conditions and the following Federal and State Statutes, Rules, and Regulations:

I. Project Monitoring, Reports, and Inspections

A. AGENCY agrees to fully cooperate with representatives of STATE monitoring the project, either on-site or by telephone, during the life of the Contract.

B. AGENCY will submit Quarterly Reports (one for each three-month period of the project year) to STATE in the form and manner prescribed by STATE. Notice of the specific requirements for each report will be given in this Contract or at any time thereafter by giving thirty (30) days written notice to AGENCY by ordinary mail at the address listed on the Contract. Failure to comply with Quarterly Report requirements may result in withholding of Federal funds or termination of this Contract.

C. AGENCY will submit a Final Report/Statement of Accomplishment at completion of the Contract to include all financial, performance, and other reports required as a condition of the grant to STATE within thirty (30) days of the completion of the Contract.

D. Representatives authorized by STATE and the National Highway Traffic Safety Administration (NHTSA) will have the right to visit the site and inspect the work under this Contract whenever such representatives may determine such inspection is necessary.

II. Reimbursement of Eligible Expenses

A. AGENCY'S Project Director, or Finance Personnel, will submit a Report of Costs Incurred Form (RCI) to STATE each time there have been funds expended for which reimbursement is being requested. Failure to meet this requirement may be cause to terminate the project under section XX herein, "Termination and Abandonment".

B. AGENCY will reimburse STATE for any ineligible or unauthorized expenses for which Federal funds have been claimed and reimbursement received, as may have been determined by a State or Federal audit.

C. STATE will have the right to withhold any installments equal to the reimbursement received by AGENCY for prior installments which have been subsequently determined to be ineligible or unauthorized.

III. Property Agreement

A. AGENCY will immediately notify STATE if any equipment purchased under this Contract ceases to be used in the manner as set forth by this Contract. In such event, AGENCY further agrees to either give credit to the project cost or to another active highway safety project for the residual value of such equipment in an amount to be determined by STATE or to transfer or otherwise dispose of such equipment as directed by STATE.

B. No equipment will be conveyed, sold, salvaged, transferred, etc., without the express written approval of STATE, or unless otherwise provided elsewhere in this Contract.

C. AGENCY will maintain or cause to be maintained for its useful life, any equipment purchased under this Contract.

D. AGENCY will incorporate any equipment purchased under this Contract into its inventory records.

E. AGENCY will insure any equipment purchased under this Contract for the duration of its useful life. Self-insurance meets the requirements of this section.

IV. Travel

In-State and Out-of-State Travel

In state and out-of-state travel claims will be reimbursed at rates provided by AGENCY'S regulations, provided that such regulations are as restrictive as those of STATE. Where they are less restrictive, ARS §38-624 will apply.

The State must approve all out-of-state travel in writing and in advance.

V. Standard of Performance

AGENCY hereby agrees to perform all work and services herein required or set forth, and to furnish all labor, materials, and equipment, except that labor, material, and equipment as STATE agrees to furnish pursuant to this Contract.

VI. Hold Harmless Agreement

Neither party to this agreement agrees to indemnify the other party or hold harmless the other party from liability hereunder. However, if the common law or a statute provides for either a right to indemnify and/or a right to contribution to any party to this agreement then the right to pursue one or both of these remedies is preserved.

VII. Non-Assignment and Sub-Contracts

This Contract is not assignable nor may any portion of the work to be performed be sub-contracted unless specifically agreed to in writing by STATE. No equipment purchased hereunder may be assigned or operated by other than AGENCY unless agreed to in writing by STATE.

VIII. Work Products and Title to Commodities and Equipment

A. The work product and results of the project are the property of STATE, unless otherwise specified elsewhere in this Contract. All property, instruments, non-consumable materials, supplies, and the like, which are furnished or paid for by STATE under the terms of this Contract, unless otherwise provided for elsewhere in this Contract, are and remain the property of STATE and will be returned at the completion of this project upon request of STATE. The work product and results of the project will be furnished to STATE upon request, if no provision is otherwise made by this Contract.

B. The provisions of subparagraph A apply whether or not the project contracted for herein is completed.

IX. Copyrights and Patents

Any copyrightable materials, patentable discovery, or invention produced in the course of this project may be claimed by STATE and a copyright or patent obtained by it at its expense. In the event STATE does not wish to obtain such copyright or patent, AGENCY may do so, but in any event, provision will be made by AGENCY for royalty-free, nonexclusive, nontransferable, and irrevocable licenses to be given the United States Government and STATE and its political subdivisions to use such copyrightable material, patented discoveries, or inventions in any manner they see fit. The STATE reserves the right to impose such other terms and conditions upon the use of such copyrights or patents as may be deemed in the best interest of STATE in the event AGENCY is allowed to obtain a copyright or patent.

X. "Common Rule" and OMB Circular No. A-102 (Revised)

"Common Rule" (49 CFR, Part 18): *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments*

OMB Circular No. A-102 (Revised): *Grants and Cooperative Agreements with State and Local Governments*

The application of USDOT "Common Rule" and Circular A-102 requires that:

AGENCY and sub-grantees will use their own procurement procedures, which reflect applicable State and local laws and regulations, provided that the procurements conform to applicable Federal law. The most stringent purchasing requirement at each level must be met.

The Arizona Procurement Code (ARS, §41-2501, et. seq.) and promulgated rules (A.A.C. Title 2, Chapter 7) are a part of this Contract as if fully set forth herein and AGENCY agrees to fully comply with these requirements for any procurement using grant monies from this Contract.

XI. Equal Opportunity

A. Pursuant to the requirements of the Federal-Aid Highway Act of 1968 (U.S.C. §103 et. seq.), AGENCY, as a condition to receiving approval of this Contract submitted under the Highway Safety Act of 1966, as amended, hereby gives its assurance that employment in connection with the subject Highway Safety Project will be provided without regard to race, color, creed, sex, or national origin, and that any contract it enters into with any private agency pursuant hereto will include provisions in compliance with this paragraph (XI).

As a condition of receiving approval of this Contract, AGENCY will be subject to and will comply with Title VI of the Civil Rights Act of 1964 and all applicable requirements of the Department of Commerce regulations as adopted by the USDOT, providing that no person in the United States shall on the ground of race, color, creed, sex, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under the subject Highway Safety Project.

B. If AGENCY fails or refuses to comply with its undertaking as set forth in these provisions, STATE or the USDOT may take any or all of the following actions.

1. Cancel, terminate, or suspend, in whole or in part, the agreement, contract, or other arrangement with respect to which the failure or refusal occurred; and

2. Refrain from extending any further Federal financial assistance to AGENCY under the Highway Safety Program with respect to which the failure or refusal occurred until satisfactory assurance of future compliance has been received from AGENCY.

C. Pursuant to the requirement of Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. §794), AGENCY must operate this Highway Safety Project so that it is accessible and otherwise non-discriminatory to handicapped persons.

XII. Executive Order 2009-09

It is mutually agreed that AGENCY will comply with the terms and conditions of Executive Order 2009-09, *Non-Discrimination in Employment by Government Contractors and Subcontractors*. Executive Order 2009-09 is located in Part II of the Project Director's Manual.

XIII. Application of Hatch Act

AGENCY will notify all of its employees whose principal employment is in connection with any highway safety project, financed in whole or in part by loans or grants under the Highway Safety Act of 1966, as amended, of the provisions of the Hatch Act (5 U.S.C. §7321 et. seq.).

XIV. Minority Business Enterprises (MBE) Policy and Obligation

A. Policy: It is the policy of the USDOT that minority business enterprises as defined in 49 CFR, Part 23, will have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds under this Contract. Consequently, the minority business enterprises requirements of 49 CFR, Part 23 apply to this Contract.

B. Obligation: The recipient or its contractor agrees to ensure that minority business enterprises as defined in 49 CFR, Part 23 have the subcontracts financed in whole or in part with Federal funds provided under this Contract. In this regard, all recipients or contractors will take all necessary and reasonable steps in accordance with 49 CFR, Part 23 to ensure that minority business enterprises have the maximum opportunity to compete for and perform contracts. Recipients and their contractors will not discriminate on the basis of race, color, creed, sex, or national origin in the award and performance of USDOT-assigned contracts.

XV. Arbitration Clause, ARS §12-1518

Pursuant to ARS §12-1518, the parties agree to use arbitration, after exhausting applicable administrative reviews, to resolve disputes arising out of this Contract where the provisions of mandatory arbitration apply.

XVI. Inspection and Audit, ARS §35-214

Pursuant to ARS §35-214, all books, accounts, reports, files, and other records relating to this Contract will be subject at all reasonable times to inspection and audit by STATE for five (5) years after completion of this Contract. The records will be produced at the Governor's Office of Highway Safety.

XVII. Appropriation of Funds by U.S. Congress

It is agreed that in no event will this Contract be binding on any party hereto unless and until such time as funds are appropriated and authorized by the U.S. Congress and specifically allocated to the project submitted herein and then only for the fiscal year for which such allocation is made. In the event no funds are appropriated by the U.S. Congress or no funds are allocated for the project proposed herein for subsequent fiscal years, this Contract will be null and void, except as to that portion for which funds have then been appropriated or allocated to this project, and no right of action or damages will accrue to the benefit of the parties hereto as to that portion of the Contract or project that may so become null and void.

XVIII. Continuation of Highway Safety Program

It is the intention of AGENCY to continue the Highway Safety Program identified in this Contract once Federal funding is completed. This intended continuation will be based upon cost effectiveness and an evaluation by AGENCY of the program's impact on highway safety.

XIX. E-Verify

Both Parties acknowledge that immigration laws require them to register and participate with the E-Verify program (employment verification program administered by the United States Department of Homeland Security and the Social Security Administration or any successor program) as they both employ one or more employees in this state. Both Parties warrant that they have registered with and participate with E-Verify. If either Party later determines that the other non-compliant Party has not complied with E-Verify, it will notify the non-compliant Party by certified mail of the determination and of the right to appeal the determination.

XX. Termination and Abandonment

A. The STATE and AGENCY hereby agree to the full performance of the covenants contained herein, except that STATE reserves the right, at its discretion, to terminate or abandon any portion of the project for which services have not been already performed by AGENCY.

B. In the event STATE abandons the services or any part of the services as herein provided, STATE will notify AGENCY in writing and within twenty-four (24) hours after receiving such notice, AGENCY will discontinue advancing the work under this Contract and proceed to close said operations under the Contract.

C. The appraisal value of work performed by AGENCY to the date of such termination or abandonment shall be made by STATE on a basis equitable to STATE and AGENCY and a final reimbursement made to AGENCY on the basis of costs incurred. Upon termination or abandonment, AGENCY will deliver to STATE all documents, completely or partially completed, together with all unused materials supplied by STATE.

D. AGENCY may terminate or abandon this Contract upon thirty (30) days written notice to STATE, provided there is subsequent concurrence by STATE. Termination or abandonment by AGENCY will provide that costs can be incurred against the project up to and including sixty (60) days after notice is given to STATE.

E. Any equipment or commodities which have been purchased as a part of this Contract and which have not been consumed or reached the end of its useful life will be returned to STATE upon its written request.

XXI. Cancellation Statute

All parties are hereby put on notice that this Contract is subject to cancellation pursuant to ARS §38-511, the provisions of which are stated below.

In accordance with ARS §38-511, this Contract may be cancelled without penalty or further obligation if any person significantly involved in initiating, negotiating, securing, drafting, or creating the Contract on behalf of the STATE, its political subdivisions or any department or agency of either, is at any time while the Contract or any extension of the Contract is in effect, an employee of any other party to the Contract in any capacity or a consultant to any other party of the Contract with respect to the subject matter or the Contract.

The cancellation shall be effective when written notice from the Governor or chief executive officer or governing body of the political subdivision is received by all other parties to the Contract unless the notice specifies a later time.

AGREEMENT OF UNDERSTANDING AND CERTIFICATION OF COMPLIANCE

Acceptance of Condition

It is understood and agreed by the undersigned that a grant received as a result of this Contract is subject the Highway Safety Act of 1966, as amended (23 U.S.C.A. §§401-404), ARS §28-602, and all administrative regulations governing grants established by the USDOT and STATE. It is expressly agreed that this Highway Safety Project constitutes an official part of the STATE's Highway Safety Program and that AGENCY will meet the requirements as set forth in the accompanying Project Director's Manual, which are incorporated herein and made a part of this Contract. All State and Federal Statutes, Rules, Regulations, and Circulars referenced in this Contract are a part of this document as if fully set forth herein. It is also agreed that no work will be performed nor any obligation incurred until AGENCY is notified in writing that this project has been approved by the Governor's Highway Safety Representative.

Certificate of Compliance

This is to certify that AGENCY will comply with all of the State and Federal Statutes, Rules and Regulations identified in this Contract.

Certification of Non-Duplication of Grant Funds Expenditure

This is to certify that AGENCY has no ongoing nor completed projects under contract with other Federal fund sources which duplicate or overlap any work contemplated or described in this Contract. It is further certified that any pending or proposed request for other Federal grant funds which would duplicate or overlap work described in the Contract will be revised to exclude any such duplication of grant fund expenditures. It is understood that any such duplication of Federal funds expenditures subsequently determined by audit will be subject to recovery by STATE.

Single Audit Act

If your political subdivision has had an independent audit meeting the requirements of the Single Audit Act of 1984, (31 U.S.C.A. §7501 et. seq.), please forward a copy to GOHS, Attention: Fiscal Services Officer, within thirty (30) days of the effective date of this Contract. If such audit has not been performed, please advise when it is being scheduled.

REIMBURSEMENT INSTRUCTIONS

1. **Agency Official preparing the Reports of Costs Incurred:**

Name: Daniel G. Sharp

Title: Chief of Police

Telephone Number: 520-229-4900 Fax Number: 520-229-4979

E-mail Address: dsharp@ovpd.org

2. **Agency's Fiscal Contact:**

Name: Colleen Muhr

Title: Administrative Services Manager

Telephone Number: 520-229-4904 Fax Number: 520-229-4979

E-mail Address: cmuhr@orovalleyaz.gov

Federal Identification Number: 86-0293039

3. ***REIMBURSEMENT INFORMATION:***

Warrant/Check to be made payable to:

Town of Oro Valley

Warrant/Check to be mailed to:

Oro Valley Police Department
(Agency)

11000 N. LaCañada Drive
(Address)

Oro Valley, AZ 85737
(City, State, Zip Code)

Lobbying Restrictions

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

A. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

B. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned will complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

C. The undersigned will require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients will certify and disclose accordingly.

D. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 USC §1352. Any person who fails to file the required certification will be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature of Project Director:

Daniel Sharp, Chief
Oro Valley Police Department

_____

_____
Date Telephone

Signature of Authorized Official of Governmental Unit:

Greg Caton, City Manager
Town of Oro Valley

_____

_____
Date Telephone

AUTHORITY & FUNDS

1. This Project is authorized by 23 U.S.C. §**402** and regulations promulgated there under, more particularly Volume 102, and if State funds are involved, this project is authorized by ARS § 28-602.

   The funds authorized for this Project have been appropriated and budgeted by the U.S. Department of Transportation. The expenses are reimbursable under Arizona's Highway Safety Plan Program Area **402–AI**, as approved for by the National Highway Traffic Safety Administration.

2. **A. EFFECTIVE DATE:** **B. FEDERAL FUNDS:**

   Authorization to Proceed Date **$49,500.00**

3. **AGREEMENT AND AUTHORIZATION TO PROCEED**
   by State Official responsible to Governor for the
   administration of the State Highway Safety Agency

Alberto Gutier, Director
Governor's Office of Highway Safety
Governor's Highway Safety Representative

Approval Date

Town Council Regular Session **Item # 1.**

Meeting Date: 04/16/2014

Requested by: Julie Bower **Submitted By:** Mike Standish, Town Clerk's Office

Department: Town Clerk's Office

Information

SUBJECT:

PUBLIC HEARING: DISCUSSION AND POSSIBLE ACTION REGARDING AN APPLICATION FOR A SERIES 12 (RESTAURANT) LIQUOR LICENSE FOR CHUY'S MESQUITE BROILER LOCATED AT 8195 N. ORACLE ROAD #105

RECOMMENDATION:

Staff recommends approval of this liquor license to the Arizona Department of Liquor Licenses and Control for the following reasons:

1. No protests to this license have been received.

2. The necessary background investigation was conducted by the Police Department.

3. The Police Department has no objections to the approval of the Series 12 Liquor License.

EXECUTIVE SUMMARY:

An application for a Series 12 (Restaurant) Liquor License has been submitted by Owner/Agent Christopher Evenson for Chuy's Mesquite Broiler located at 8195 N. Oracle Road #105. This request is for a new series 12 liquor license.

Mr. Evenson has submitted all necessary paperwork to the Town of Oro Valley and the Arizona Department of Liquor Licenses and Control, and has paid all related fees associated with applying for the liquor license ($500 Application Processing Fee).

BACKGROUND OR DETAILED INFORMATION:

This non-transferable, on-site retail privileges liquor license allows the holder of a restaurant license to sell and serve spirituous liquor solely for consumption on the premises of an establishment which derives at least forty percent (40%) of its gross revenue from the sale of food. Failure to meet the 40% food requirement shall result in revocation of the license.

In accordance with Section 4-201 of the Arizona Revised Statutes, the application was posted for 20 days on the premises of the applicant's property, ending March 26, 2014. No protests were received during this time period.

Police Chief Daniel Sharp completed a standard background check on Chuy's Mesquite Broiler and Owner/Agent Christopher Evenson. Chief Sharp has no objection to the approval of the Series 12 (Restaurant) License.

FISCAL IMPACT:

Per Ordinance No. (O)11-16, the Town of Oro Valley charges a $500 liquor license application processing fee to cover the costs incurred by the Town to process the application.

Per Section 8-2-6 Schedule of the Oro Valley Town Code, persons licensed by the State of Arizona to deal in spirituous liquor within the Town shall pay an annual license fee of $80.00 to the Town.

SUGGESTED MOTION:

I MOVE to (recommend or deny) approval of the issuance of a Series 12 Liquor License to the Arizona Department of Liquor Licenses and Control for Christopher Evenson and principals for Chuy's Mesquite Broiler located at 8195 N. Oracle Road #105.

Attachments

Chuy's Mesquite Broiler Series 12 Liquor License

Oro Valley POLICE

DANIEL G. SHARP
CHIEF OF POLICE

TO: Mike Standish Deputy Town Clerk

FROM: Daniel G. Sharp D/C [signature] for Chief Sharp.

DATE: March 27, 2014

RE: Background Investigation, Application for Liquor License
Chuy's Mesquite Broiler, Owner / Agent Christopher Evenson
8195 N. Oracle #105

On March 27, 2014, the Oro Valley Police Department completed the standard background check on Chuy's Mesquite Broiler, Owner / Agent Christopher Evenson

The Oro Valley Police Department has no objections to the issuing of a liquor license to Chuy's Mesquite Broiler located at 8195 N. Oracle #105.

11000 N. La Cañada Drive • Oro Valley, AZ 85737
Phone 520-229-4900 • Fax 520-229-4979 • www.ovpd.org

FEB 28'14PM 1:31 TOV

Arizona Department of Liquor Licenses and Control
800 West Washington, 5th Floor
Phoenix, Arizona 85007
www.azliquor.gov
602-542-5141

APPLICATION FOR LIQUOR LICENSE

TYPE OR PRINT WITH BLACK INK

Notice: Effective Nov. 1, 1997, All Owners, Agents, Partners, Stockholders, Officers, or Managers actively involved in the day to day operations of the business must attend a Department approved liquor law training course or provide proof of attendance within the last five years. See page 5 of the Liquor Licensing requirements.

SECTION 1 **This application is for a:**

- ☐ MORE THAN ONE LICENSE
- ☐ INTERIM PERMIT ***Complete Section 5***
- ☒ NEW LICENSE ***Complete Sections 2, 3, 4, 13, 14, 15, 16***
- ☐ PERSON TRANSFER (Bars & Liquor Stores ONLY) ***Complete Sections 2, 3, 4, 11, 13, 15, 16***
- ☐ LOCATION TRANSFER (Bars and Liquor Stores ONLY) ***Complete Sections 2, 3, 4, 12, 13, 15, 16***
- ☐ PROBATE/WILL ASSIGNMENT/DIVORCE DECREE ***Complete Sections 2, 3, 4, 9, 13, 16*** (fee not required)
- ☐ GOVERNMENT ***Complete Sections 2, 3, 4, 10, 13, 15, 16***

SECTION 2 **Type of ownership:**

- ☐ J.T.W.R.O.S. ***Complete Section 6***
- ☐ INDIVIDUAL ***Complete Section 6***
- ☐ PARTNERSHIP ***Complete Section 6***
- ☐ CORPORATION ***Complete Section 7***
- ☒ LIMITED LIABILITY CO. ***Complete Section 7***
- ☐ CLUB ***Complete Section 8***
- ☐ GOVERNMENT ***Complete Section 10***
- ☐ TRUST ***Complete Section 6***
- ☐ OTHER (Explain) _____

SECTION 3 **Type of license and fees** **LICENSE #(s):** 12104290

1. Type of License(s): # 12 - REST.
N/A

2. Total fees attached: $ (Department Use Only)

APPLICATION FEE AND INTERIM PERMIT FEES (IF APPLICABLE) ARE NOT REFUNDABLE.

The fees allowed under A.R.S. 44-6852 will be charged for all dishonored checks.

SECTION 4 **Applicant**

1. Owner/Agent's Name: ☒ Mr. ☐ Ms. EVENSON (Last) CHRISTOPHER (First) MARK (Middle)
(Insert one name ONLY to appear on license)

2. Corp./Partnership/L.L.C.: CM SQUARED, LLC
(Exactly as it appears on Articles of Inc. or Articles of Org.)

3. Business Name: CHUY'S MESQUITE BROILER
(Exactly as it appears on the exterior of premises)

4. Principal Street Location: 8195 N. ORACLE RD. #105 (Do not use PO Box Number) ORO VALLEY (City) PIMA (County) 85704 (Zip)

5. Business Phone: PENDING Daytime Phone: (623) 385-2267 Email: EVENSONSAZ@AOL.COM

6. Is the business located within the incorporated limits of the above city or town? ☒ YES ☐ NO

7. Mailing Address: 8195 N. ORACLE RD. #105 ORO VALLEY (City) AZ (State) 85704 (Zip)

8. Price paid for license only bar, beer and wine, or liquor store: Type N/A $ N/A Type N/A $ N/A

DEPARTMENT USE ONLY

Fees: 100.00 Application | _____ Interim Permit | _____ Site Inspection | 110.00 Finger Prints | $ 210.00 **TOTAL OF ALL FEES**

Is Arizona Statement of Citizenship & Alien Status For State Benefits complete? ☒ YES ☐ NO

Accepted by: [signature] Date: 2/25/2014 Lic. # 12104290

1/7/2013 ***Disabled individuals requiring special accommodation, please call (602) 542-9027.**

License Type: Series 12 Restaurant

This non-transferable, on-sale retail privileges liquor license allows the holder of a restaurant license to sell and serve spirituous liquor solely for consumption on the premises of an establishment which derives at least forty percent (40%) of its gross revenue from the sale of food. Failure to meet the 40% food requirement shall result in revocation of the license.

Town Council Regular Session **Item # 2.**

Meeting Date: 04/16/2014
Requested by: David Williams
Submitted By: Matt Michels, Development Infrastructure Services
Department: Development Infrastructure Services

Information

SUBJECT:

REQUEST FOR APPROVAL OF CONCEPTUAL SITE PLAN FOR A 118 LOT SUBDIVISION ON 131 ACRES KNOWN AS SAGUAROS VIEJOS, LOCATED ON THE NORTHWEST CORNER OF NARANJA DRIVE AND LA CHOLLA BOULEVARD

RECOMMENDATION:

The Conceptual Design Review Board (CDRB) has recommended approval of the Conceptual Site Plan subject to the conditions in Attachment 1.

EXECUTIVE SUMMARY:

This project includes the development of a 131 acre property into a 118 lot single-family residential development. On March 11, 2014, the CDRB voted to recommend approval of the Conceptual Site Plan (Attachment 2) and Recreation Area Plan (Attachment 3), subject to the conditions in Attachment 1. CDRB discussion included pedestrian and vehicular circulation and internal traffic calming measures, as well as protection of the washes. The staff report to the CDRB is included as Attachment 4. The draft CDRB minutes are included as Attachment 5.

BACKGROUND OR DETAILED INFORMATION:

Current Site Conditions

- Site is 131 acres
- Property is Vacant
- Property is within the R1-20 Zoning District
- Property is within Riparian Habitat Overlay District (RHOD)

Proposed Conceptual Site Plan

The Conceptual Site Plan (Attachment 2) depicts 118 single-family lots, ranging in size between approximately 16,000 square feet (.37 acres) and 63,000 square feet (1.45 acres). There are four (4) points of egress/ingress; two (2) at the southern end of the property off Naranja Drive, and two (2) at the northern end of the property off Glover Road. The subdivision will be gated and homes may be one or two story, with a maximum building height of 18 feet.

All riparian areas on the site will be preserved, with several wash crossings proposed to enable access and circulation. Disturbance will require mitigation consistent with RHOD requirements.

A number of rezoning conditions must be completed prior to grading for the project, including required

improvements to Glover Road and multi-use paths along Glover Road and Naranja Drive.

Please refer to the March 11th CDRB staff report (Attachment 4) for discussion of conformance to the Design Principles and Design Standards.

Proposed Recreational Area

A 2.5-acre recreational area (Attachment 3) is proposed on the western side of the subdivision. The area provided exceeds the Zoning Code requirement of 1 acre per 85 units by 1.2 acres. The recreational area will contain the required active and passive recreational amenities, including:

- A recreational trail
- Seven (7) fitness stations located under covered shade structures
- Six (6) benches
- Two (2) picnic tables
- One (1) barbecue
- One (1) 24'x24' ramada

The recreational area will be landscaped consistent with Town requirements.

To improve recreational opportunity, connectivity and access to the recreation area from all lots, conditions have been added to Attachment 1 to include a natural surface trail along the full length of the main riparian corridor and an access easement to the recreation area between two of the lots.

Approvals to Date

- Rezoning to R1-20 (Single Family Residential) approved in 2007

Public Notification and Comment

Notice was provided to the following:

- Residents within 600 feet
- Posting at Town Hall
- All registered HOAs

A neighborhood meeting was held on February 6, 2014. Approximately 10 residents attended the meeting and had concerns related to traffic, protection of environmental resources, aesthetics of the development, and school impacts. A copy of the neighborhood meeting summary notes is attached (see Attachment 6).

One resident spoke at the March 11th CDRB meeting with concerns about the proposed density, stating that he would prefer the property remain undisturbed. The CDRB found that the Conditions of Approval, Conceptual Site Plan and the Recreation Area Plan are in substantial conformance with the Design Principles and applicable Design Standards, and has recommended approval subject to the conditions in Attachment 1.

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

I MOVE to approve the Conceptual Site Plan for the Saguaros Viejos residential subdivision subject to the conditions in Attachment 1, finding that the Conceptual Site Plan meets applicable Design Principles and Standards.

OR

I MOVE to deny the Conceptual Site Plan for the Saguaros Viejos residential subdivision, finding that the Conceptual Site Plan does not meet applicable Design Principles and Standards, specifically _____.

Attachments

Attachment 1 - Conditions of Approval
Attachment 2 - Conceptual Site Plan
Attachment 3 - Recreation Area Plan
Attachment 4 - 3/11/14 CDRB Report
Attachment 5 - Draft 3/11/14 CDRB Minutes
Attachment 6 - 2/6/14 Neighborhood Meeting Summary Notes

Attachment 1
Conditions of Approval
Saguaros Viejos Conceptual Site Plan
OV1208-23
April 16, 2014, Town Council

Planning:

The Final Site Plan shall incorporate the following conditions:

1. Provide a natural surface trail within the wash confines along the full length of Common Area “F”

2. Provide a pedestrian easement between Lots 61 and 62 and/or Lots 63 and 64 to provide pedestrian connectivity to the recreation area.

Engineering:

3. Provide a traffic calming measure approved by the Town Engineer on the northern segment of Streets “A” and “B”.

4. Provide an updated Traffic Impact Analysis that reflects current site and traffic conditions.

CONCEPTUAL SITE PLAN
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"
OV1208-23

GENERAL NOTES

1. THE GROSS AREA OF THIS DEVELOPMENT IS 5,728,225 SQ. FT. 131.50 AC.
2. THE PROPOSED NUMBER OF RESIDENTIAL UNITS IS 118 (0.90 UNITS PER ACRE)
3. TOTAL LENGTH OF NEW PUBLIC STREETS IS 0.00 MILES.
4. TOTAL LENGTH OF NEW PRIVATE STREETS IS 2.51 MILES.
5. ASSURANCES FOR SITE IMPROVEMENTS, LANDSCAPING, AND REVEGETATION BONDS MUST BE POSTED PRIOR TO THE ISSUANCE OF GRADING PERMITS.

PLANNING GENERAL NOTES

1. MAXIMUM BUILDING HEIGHT ALLOWED AND PROPOSED = 18' / 2 STORIES.
2. TOTAL AMOUNT OF OPEN SPACE REQUIRED = 0% TOTAL OPEN SPACE PROVIDED = 26%
3. TOTAL AMOUNT OF LANDSCAPED COMMON AREAS = 2% (2.67 ACRES).
4. SETBACKS REQUIRED/PROVIDED: FRONT=30 FEET, SIDE=15 FEET, REAR=30 FEET.
5. COMMON AREAS SHALL BE OWNED AND MAINTAINED BY THE H.O.A.
6. THIS PROJECT CONTAINS RIPARIAN HABITAT WITHIN THE 100-YEAR FLOODPLAIN AND THE PLAN MUST CONFORM TO ORO VALLEY ZONING CODE REVISED (OVZCR) SECTION 24.7.
7. EXISTING ZONING IS R1-20.
8. ALL SIGNAGE AND LIGHTING TO BE ADDRESSED AS PART OF SEPARATE REVIEW AND APPROVAL PROCESS.
9. MINIMUM LOT SIZE IS 16,000 S.F., AVERAGE LOT SIZE IS 30,087 SQ. FT.
10. RIPARIAN HABITAT DISTURBANCE AREA OF 59,806 SQ. FT.=1.37 ACRES=1.04% BASED ON A GROSS SITE AREA OF 131.5 ACRES.
11. THE TRAIL EASEMENT ALONG THE EAST SIDE OF THE DEVELOPMENT, ALONG THE PROPERTY BOUNDARY, AND EXISTING WASH IS A PUBLIC TRAIL AND IS A PERMANENT NON-MOTORIZED PUBLIC RECREATION EASEMENT THAT IS GRANTED TO THE TOWN. SEE RECREATION AREA PLAN

ENGINEERING GENERAL NOTES

1. THE DESIGN VEHICLE FOR THIS PROJECT IS A SU-30. THE DESIGN SPEED FOR THIS PROJECT IS 25 MPH.
2. ALL NEW ROADS WITHIN AND ADJACENT TO THIS PROJECT WILL BE CONSTRUCTED IN ACCORDANCE WITH APPROVED PLANS. SEPARATE IMPROVEMENT AND CONSTRUCTION PLANS WILL BE SUBMITTED TO THE TOWN ENGINEER'S OFFICE FOR REVIEW AND APPROVAL.
3. ANY RELOCATION OR MODIFICATION OF EXISTING UTILITIES AND/OR PUBLIC IMPROVEMENTS NECESSITATED BY THE PROPOSED DEVELOPMENT WILL BE AT NO EXPENSE TO THE PUBLIC.

DRAINAGE GENERAL NOTES

1. DEVELOPER WILL COVENANT TO HOLD THE TOWN OF ORO VALLEY, ITS SUCCESSORS AND ASSIGNS, HARMLESS IN THE EVENT OF FLOODING.
2. DRAINAGE WILL NOT BE ALTERED, DISTURBED, OR OBSTRUCTED WITHOUT THE APPROVAL OF THE ORO VALLEY TOWN COUNCIL.
3. DRAINAGE STRUCTURES MUST BE CONSTRUCTED AND INSTALLED ACCORDING TO TOWN STANDARDS AND PAID FOR BY THE DEVELOPER.
4. ALL DRAINAGE STRUCTURES MUST BE DESIGNED TO CONVEY A Q_{100} FLOW.
5. ALL DRAINAGE FACILITIES WILL BE CONSTRUCTED ACCORDING TO APPROVED PLANS PRIOR TO THE ISSUANCE OF ANY CERTIFICATES OF OCCUPANCY FROM THE BUILDING OFFICIAL FOR ALL AFFECTED BUILDINGS.
6. THE DEVELOPER WILL ACCEPT RESPONSIBILITY FOR MAINTENANCE, CONTROL, SAFETY AND LIABILITY OF PRIVATE DRAINAGEWAYS, DRAINAGE EASEMENTS, AND COMMON AREAS.

ORO VALLEY WATER GENERAL NOTES

1. THIS DEVELOPMENT MUST COMPLY WITH THE ORO VALLEY WATER UTILITY SPECIFICATIONS MANUAL DURING ALL PHASES OF CONSTRUCTION.
2. THE TOWN OF ORO VALLEY HAS BEEN§DESIGNATED BY THE ARIZONA DEPARTMENT OF WATER RESOURCES AS HAVING AN ASSURED WATER SUPPLY, PURSUANT TO A.R.S. 45-576, AND WILL SERVE THIS DEVELOPMENT.
3. A LINE EXTENSION AGREEMENT FOR THIS PROJECT MUST BE IN PLACE PRIOR TO ANY WORK ON THE WATER INFRASTRUCTURE.
4. WATER INFRASTRUCTURE IS NOT SHOWN ON THIS PLAN PER COMMENT. THE NEW WATERMAIN WILL FEATURE APPROXIMATELY 12,350 L.F. OF 8" PVC.

WASTEWATER GENERAL NOTES

1. PROJECT IS IN CONFORMANCE WITH SECTION J, WASTEWATER, OF THE PIMA COUNTY DEVELOPMENT PLAN REQUIREMENTS AS REFERENCED IN 18.71.030.A..
2. SEWER INFRASTRUCTURE IS NOT SHOWN ON THIS PLAN PER COMMENT. THE FLOW OF WASTEWATER WILL BE FROM NORTH TO SOUTH ON THE SITE, THROUGH APPROXIMATELY 11,400 L.F. OF 8" PVC.

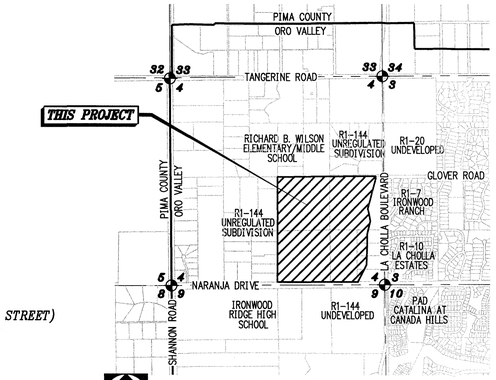
GENERAL UTILITY NOTES

1. SHOULD AN EASEMENT BE IN CONFLICT WITH ANY PROPOSED BUILDING LOCATION, VACATION OF THE EASEMENT IS TO OCCUR PRIOR TO ISSUANCE BUILDING PERMITS.

GOLDER RANCH FIRE GENERAL NOTES

1. FIRE HYDRANTS CONNECTED TO AN APPROVED WATER SUPPLY OF 1500 GPM FOR FIRE PROTECTION MUST BE INSTALLED AND IN SERVICE PRIOR TO COMBUSTIBLE MATERIAL DELIVERY TO THE SITE. TEMPORARY CONSTRUCTION OFFICE TRAILERS ARE CONSIDERED COMBUSTIBLE MATERIAL.
2. APPROVED FIRE APPARATUS ACCESS ROADS MUST BE INSTALLED AND IN SERVICE PRIOR TO COMBUSTIBLE MATERIAL DELIVERY TO THE SITE.
3. APPROVED AUTOMATIC SPRINKLER SYSTEMS IN NEW BUILDINGS AND STRUCTURES SHALL BE PROVIDED FOR ALL GROUP A, B, E, F, H, I, M, R, AND S OCCUPANCIES FOR EVERY FACILITY, BUILDING OR PORTION OF A BUILDING HEREAFTER CONSTRUCTED WITHIN OR MOVED INTO THE JURISDICTION. APPROVED AUTOMATIC SPRINKLER SYSTEMS SHALL BE PROVIDED THROUGHOUT ALL ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES USED AS MODEL HOMES WITH SALES OR CONSTRUCTION OFFICES, AND ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES WHICH EXCEED 3,600 SQUARE FEET IN FIRE FLOW CALCULATION AREA HEREAFTER CONSTRUCTED WITHIN OR MOVED INTO THE JURISDICTION.
4. TEMPORARY STREET SIGNS MUST BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE OF VEHICLES. ALL STRUCTURES UNDER CONSTRUCTION MUST BE CLEARLY IDENTIFIED WITH AN APPROVED ADDRESS.

PROJECT OVERVIEW



3" = 1 MILE

LOCATION MAP

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

LEGEND

- PROPOSED SURVEY MONUMENT
- EXISTING 5' CONTOUR (2780)
- EXISTING 1' CONTOUR (2779)
- PROJECT BOUNDARY
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- PROPOSED LOT LINE
- EXISTING LOT LINE
- SECTION LINE
- PUBLIC UTILITY EASEMENT
- FOUND MONUMENT AS NOTED
- PROPOSED VERTICAL CURB & GUTTER
- PROPOSED WEDGE CURB
- EXISTING PAVEMENT & CURB
- PROPOSED SEWER LINE & MANHOLE
- EXISTING SEWER LINE & MANHOLE
- PROPOSED WATERLINE AND VALVE
- EXISTING WATERLINE AND VALVE
- PROPOSED 4' WIDE CONCRETE SIDEWALK
- PROPOSED WHEELCHAIR RAMP W/ 6" REVEAL CURB PER PC/COT STD. DTL.207
- DETAIL NUMBER / SHEET NUMBER
- SHEET INDICATOR/SHEET MATCHLINE
- 15 — PROPOSED LOT/UNIT NUMBER
- INDICATES LOT ACCESS. DRIVEWAYS WILL NOT BE LOCATED WITHIN RETURNS.
- HP/LP — PROPOSED VERTICAL GRADE BREAK
- 40.50 — PROPOSED FINISHED GRADE
- X 79.60 — EXISTING GRADE
- DIRECTION OF FLOW
- PROPOSED RIP RAP
- 100-YR FLOOD PLAIN LIMITS
- RIPARIAN LIMITS
- EROSION HAZARD SETBACK
- PROJECT PHASING BOUNDARY
- FITNESS TRAIL (SEE LANDSCAPE PLANS)
- 19 — EXISTING CONSTRUCTION KEYNOTES

PERMITTING DIVISION-BUILDING CODES

THE FOLLOWING CODES AND STANDARDS SHALL BE APPLICABLE TO THIS DEVELOPMENT:

- 2012 INTERNATIONAL CODES WITH LOCAL AMENDMENTS
- 2005 NATIONAL ELECTRIC CODE
- 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
- 2006 GOLDER RANCH FIRE DISTRICT STANDARDS AND FORMS
- 2008 ORO VALLEY POOL CODE
- 2003 PC/COT STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC IMPROVEMENTS
- 2010 TOWN OF ORO VALLEY DRAINAGE CRITERIA MANUAL
- 2004 TOWN OF ORO VALLEY SUBDIVISION STREET STANDARDS AND POLICIES MANUAL
- TOWN OF ORO VALLEY ZONING CODE, CURRENT REVISED
- ORO VALLEY TOWN CODE, CURRENT REVISED.

REZONING CONDITIONS OF APPROVAL

1. SEE SHEET 4 FOR THE REZONING CONDITIONS OF THIS PROJECT.

OWNER/DEVELOPER

LIN TRUST & KINO INVESTMENT GROUP
6088 W. ARIZONA PAVILIONS DRIVE, SUITE 1
MARANA, AZ 85743
PHONE: (520) 744-8500
ATTN: GREG WEXLER
GREG@SWVP.COM

ENGINEER

THE WLB GROUP, INC.
4444 E. BROADWAY BLVD.
TUCSON, AZ. 85711
(520) 881-7480
ATTN: DAVID LITTLE
DLITTLE@WLBGROUP.COM

SHEET INDEX

SHEET 1..... COVER SHEET
SHEETS 2-10..... SITE PLAN
SHEET 11..... TYPICAL CROSS SECTIONS

Registered Professional Engineer (Civil) CERTIFICATE NO. 36234 DAVID W. LITTLE Date Signed 12.2.14 ARIZONA, U.S.A.

EXPIRES 6/30/2016

OV1208-23

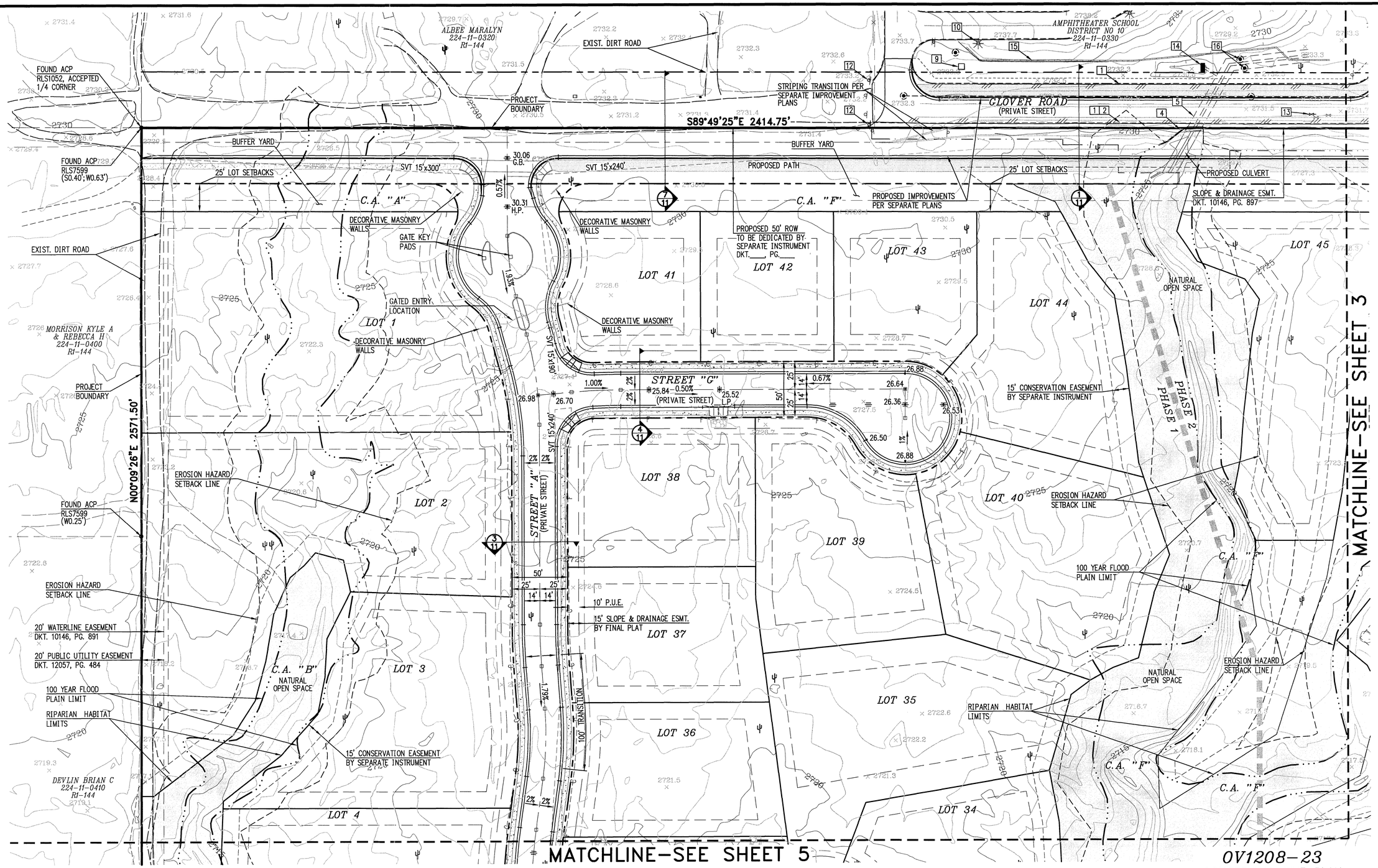
CONCEPTUAL SITE PLAN
FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

OCTOBER 2013
WLB NO. 199032-B-002/0105
CONTOUR INTERVAL: 1'
REF. CASE #OV9-05-06
SCALE: AS SHOWN

The WLB Group INC. WLB
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

N:\199032\CSP\CSP-01.dwg



EXISTING CONSTRUCTION KEY NOTES

1. EXIST. PAVED ROAD TO BE REMOVED
2. EXIST. VERTICAL CURB TO BE REMOVED
3. EXIST. HEADWALL TO REMAIN
4. EXIST. HEADWALL W/RAILING TO BE REMOVED
5. EXIST. 54" RCP'S TO BE EXTENDED
6. EXIST. 36" RCP'S TO BE EXTENDED
7. EXIST. 24" RCP TO BE EXTENDED
8. EXIST. RIP RAP TO BE REMOVED
9. EXIST. ELECTRICAL BOX TO REMAIN IN PLACE
10. EXIST. LIGHT POST TO REMAIN IN PLACE
11. EXIST. PEDESTAL TO REMAIN IN PLACE
12. EXIST. SIGN TO BE RELOCATED
13. EXIST. WATER METER TO REMAIN IN PLACE
14. EXIST. CATCH BASIN TO REMAIN IN PLACE
15. EXIST. BLOCK WALL TO REMAIN IN PLACE
16. EXIST. STORM DRAIN MANHOLES TO REMAIN IN PLACE
17. EXIST. SIGN TO REMAIN IN PLACE
18. EXIST. POST TO REMAIN IN PLACE
19. EXIST. CONCRETE HEADER TO REMAIN IN PLACE

The WLB Group INC.
WLB
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

Two working days before you dig CALL FOR THE BLUESTAKES
1-800-782-5348
Blue Stake Center

CONTOUR INTERVAL=1'
0' 40' 80' 120'

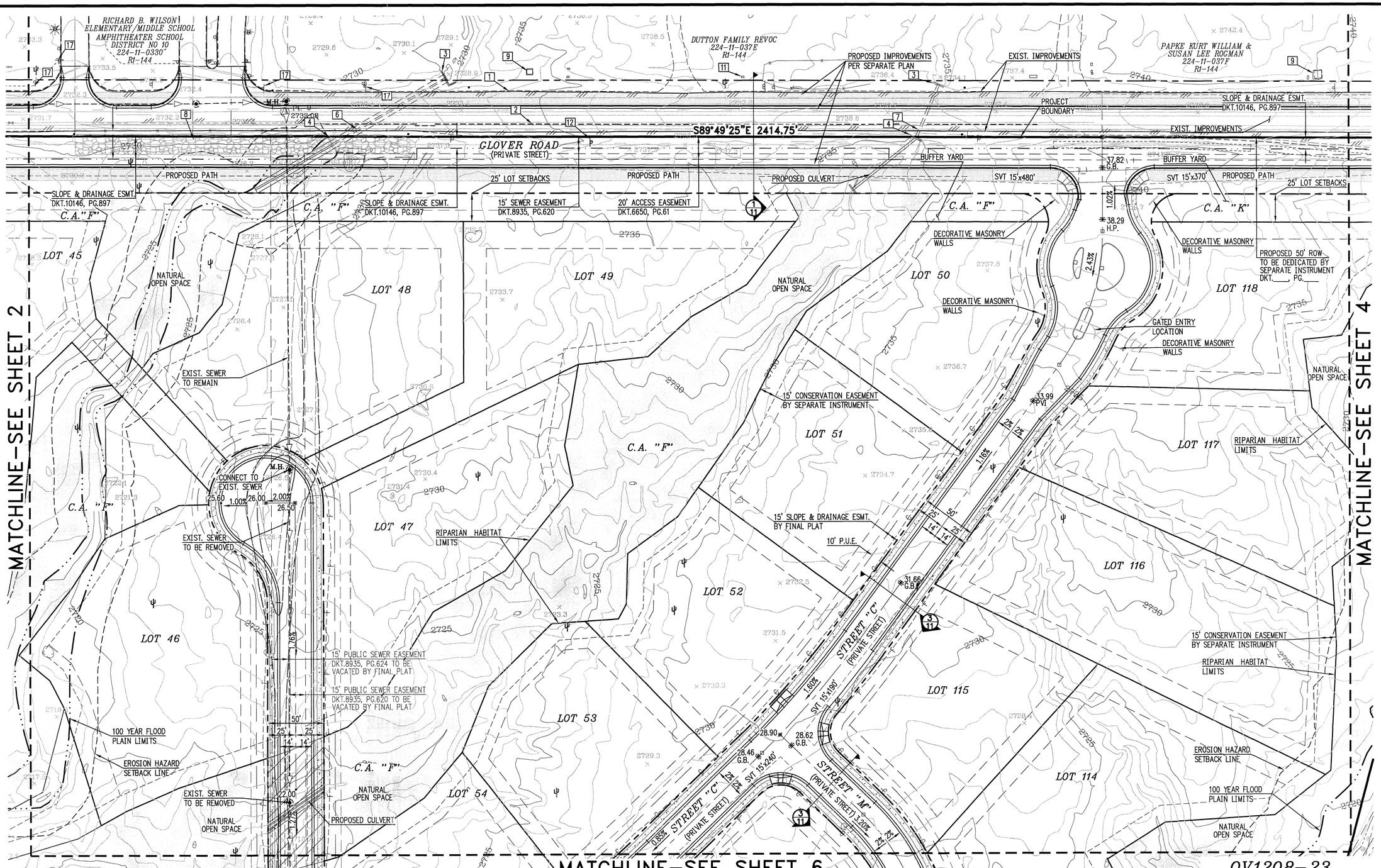
OV1208-23
CONCEPTUAL SITE PLAN FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

Registered Professional Engineer (Civil) CERTIFICATE NO. 36234 DAVID W. LITTLE Date Signed 10/22/14 ARIZONA U.S.A.
EXPIRES 6/30/2016

OCTOBER 2013
WLB NO. 199032-B-002/0105
CONTOUR INTERVAL: 1'
SCALE: 1"=40'
REF. CASE #OV9-05-06

N:\199032\CSP\CSP-02.dwg



EXISTING CONSTRUCTION KEY NOTES

1. EXIST. PAVED ROAD TO BE REMOVED
2. EXIST. VERTICAL CURB TO BE REMOVED
3. EXIST. HEADWALL TO REMAIN
4. EXIST. HEADWALL W/RAILING TO BE REMOVED
5. EXIST. 54" RCP'S TO BE EXTENDED
6. EXIST. 36" RCP'S TO BE EXTENDED
7. EXIST. 24" RCP TO BE EXTENDED
8. EXIST. RIP RAP TO BE REMOVED
9. EXIST. ELECTRICAL BOX TO REMAIN IN PLACE
10. EXIST. LIGHT POST TO REMAIN IN PLACE
11. EXIST. PEDESTAL TO REMAIN IN PLACE
12. EXIST. SIGN TO BE RELOCATED
13. EXIST. WATER METER TO REMAIN IN PLACE
14. EXIST. CATCH BASIN TO REMAIN IN PLACE
15. EXIST. BLOCK WALL TO REMAIN IN PLACE
16. EXIST. STORM DRAIN MANHOLES TO REMAIN IN PLACE
17. EXIST. SIGN TO REMAIN IN PLACE
18. EXIST. POST TO REMAIN IN PLACE
19. EXIST. CONCRETE HEADER TO REMAIN IN PLACE

The WLB Group INC.
WLB
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

Two working days before you dig CALL FOR THE BLUESTAKES
1-800-782-5348
Blue Stake Center

CONTOUR INTERVAL=1'
0' 40' 80' 120'

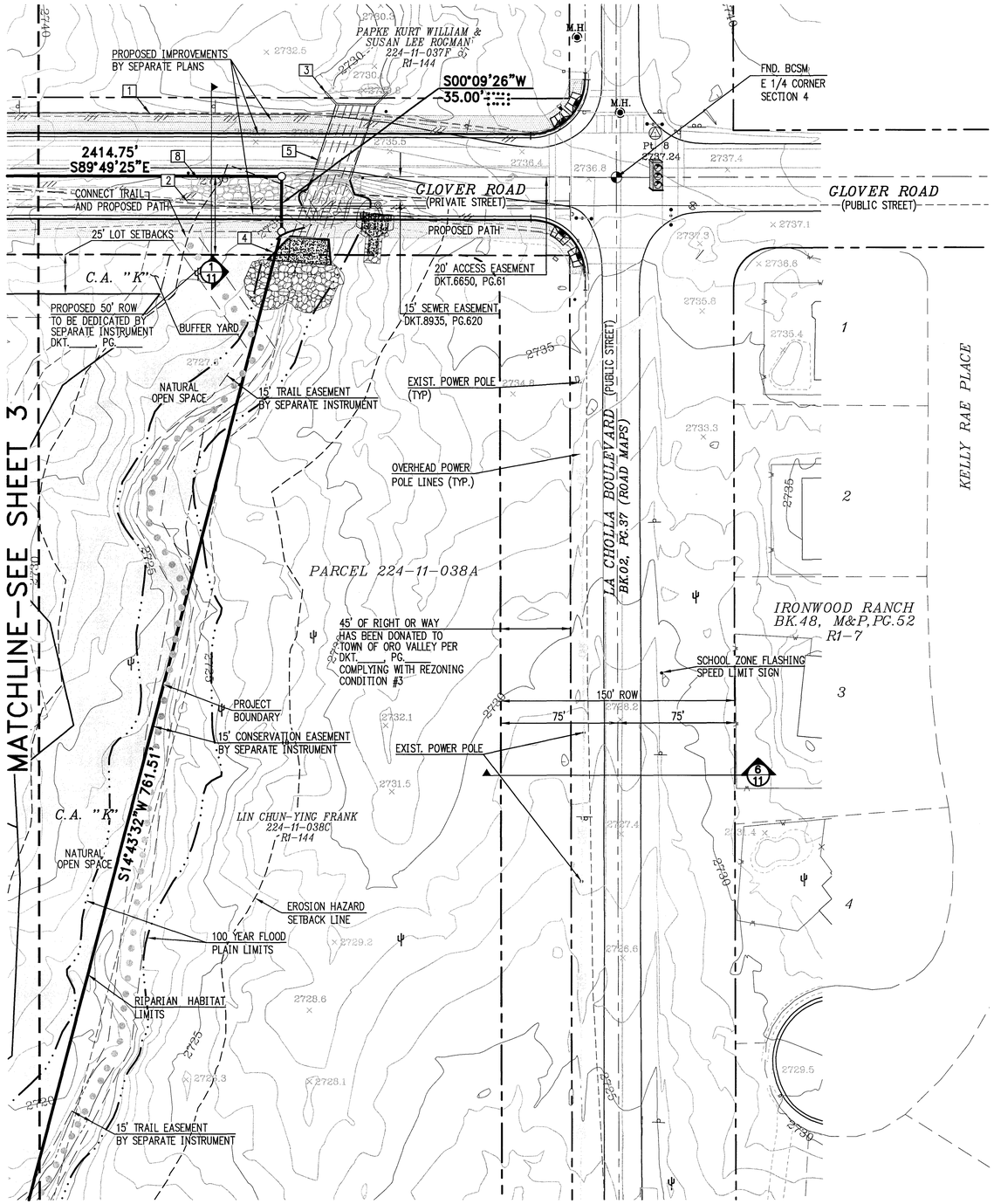
Registered Professional Engineer (Civil) CERTIFICATE NO. 36234 DAVID W. LITTLE Date Signed 10-22-14 ARIZONA U.S.A.
EXPIRES 6/30/2016

OV1208-23
CONCEPTUAL SITE PLAN FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

OCTOBER 2013
WLB NO. 199032-B-002/0105
CONTOUR INTERVAL: 1'
SCALE: 1"=40'
REF. CASE #OV9-05-06

N:\199032\CSP\CSP-03.dwg



REZONING CONDITIONS OF APPROVAL (OV9-05-06)

1. THIS DEVELOPMENT SHALL CONTRIBUTE ITS FAIR SHARE OF COSTS IN THE RECONSTRUCTION OF GLOVER ROAD, THE TOWN SHALL NOT PARTICIPATE IN THE RECONSTRUCTION COST OF GLOVER ROAD.
2. THIS PROJECT SHALL COORDINATE WITH BOTH THE TOWN OF ORO VALLEY AND AMPHITHEATER SCHOOL DISTRICT IN THE PLANNING AND DESIGN OF THE GLOVER ROAD RECONSTRUCTION. ADDITIONAL COORDINATION MEETINGS MUST BE HELD WITH THE AMPHITHEATER SCHOOL DISTRICT (E.G., AMPHITHEATER SCHOOL DISTRICT SUPERINTENDENT PATRICK NELSON AND/OR HIS DESIGNEES) TO PLAN THE DESIGN OF THE GLOVER ROAD RECONSTRUCTION AN DEDICATION OF RIGHT-OF-WAY.
3. BY SEPARATE INSTRUMENT, THIS DEVELOPMENT SHALL DEDICATE OR DONATE TO THE TOWN AN ADDITIONAL 45 FEET RIGHT-OF-WAY ON LA CHOLLA BOULEVARD.
4. THIS DEVELOPMENT SHALL DEDICATE 50 FEET OF RIGHT-OF-WAY ON GLOVER ROAD; THIS INCLUDES THE PORTION OF PARCEL 224-11-038A THAT HAS BEEN IDENTIFIED AS EXCLUDED FROM THIS REZONING. SAID DEDICATION SHALL EXTEND TO THE LA CHOLLA BOULEVARD WESTERN RIGHT-OF-WAY BOUNDARY
5. A SHARED USE PATH ON THE NORTH AND SOUTH SIDES OF GLOVER ROAD SHALL BE CONSTRUCTED AS PART OF THE STREET RECONSTRUCTION AND DEDICATION.
6. A SHARED USE PATH ON THE SOUTH SIDE OF THE PROPERTY WITHIN THE NORTH HALF OF THE NARANJA RIGHT-OF-WAY SHALL BE CONSTRUCTED AS PART OF THIS DEVELOPMENT.
7. TO MITIGATE CUT-THROUGH TRAFFIC, ALL STREETS WITHIN THIS DEVELOPMENT SHALL BE PRIVATE AND ALL INGRESS/EGRESS POINTS TO THE PUBLIC RIGHT-OF-WAYS SHALL BE GATED. THIS INCLUDES CONNECTION POINTS TO THE FUTURE GLOVER ROAD RIGHT-OF-WAY. IF DURING THE PRELIMINARY PLAT STAGE OF THE DEVELOPMENT REVIEW, THE APPLICANT REQUESTS THAT THE STREETS BECOME PUBLIC AND NOT GATED, THE SITE CIRCULATION SHALL BE REDESIGNED TO THE SATISFACTION OF THE TOWN ENGINEER.
8. A MITIGATION PLAN ADDRESSING THE SPECIFIC AREAS OF ROADWAY DISTURBANCE MUST BE SUBMITTED AS PART OF THE PRELIMINARY PLAT PROCESS.
9. AN ARCHAEOLOGICAL STUDY MUST BE COMPLETED (CONDITION ADDED BY THE TOWN COUNCIL).
10. WATER IMPROVEMENT PLANS ARE THE RESPONSIBILITY OF THE APPLICANT AND MUST BE APPROVED BY THE WATER UTILITY DIRECTOR (CONDITION ADDED BY TOWN COUNCIL).
    IN ADDITION, THE WATER UTILITY DEPARTMENT HAS REQUESTED THE FOLLOWING ITEMS BE REQUIRED:
    - EXTEND THE 12" E ZONE MAIN ACROSS LA CHOLLA ON GLOVER TO THE PROPERTY'S WESTERN BOUNDARY.
    - EXTEND THE 12" E ZONE MAIN IN THE NORTH RIGHT-OF-WAY OFF NARANJA WEST TO THE PROPERTY'S WESTERN BOUNDARY.
    - CONNECT ABOVE MENTIONED MAINS WITH 8 INCH MAINS THROUGH THE DEVELOPMENT ON BOTH SIDES OF THE MAJOR WASH WHICH BISECTS THE PARCEL.
    - IF AN EXTENSION OF THE EXISTING INFRASTRUCTURE IS REQUIRED A WATER IMPROVEMENT PLAN WILL NEED TO BE SUBMITTED TO THE UTILITY FOR REVIEW AND APPROVAL.
    - BEFORE SUBMITTING A PLAN TO THE UTILITY, THE ENGINEER MUST RECEIVE FROM THE FIRE MARSHALL SPECIFIC FIRE FLOW REQUIREMENTS, I.E.., CAPACITY, NUMBER AND LOCATION OF FIRE HYDRANTS. THIS INFORMATION MUST BE SUBMITTED ALONG WITH THE PLAN TO THE UTILITY FOR REVIEW AND APPROVAL.
    - A PCDEQ CERTIFICATION FOR THE APPROVAL TO CONSTRUCT OR WAIVER WILL BE REQUIRED AND PROVIDED TO THE UTILITY BEFORE CONSTRUCTION CAN BEGIN.
    - A LINE EXTENSION AGREEMENT MUST BE SIGNED AND RETURNED TO THE UTILITY BEFORE CONSTRUCTION CAN BEGIN.
    - A PCDEQ CERTIFICATE FOR APPROVAL OF CONSTRUCTION WILL NEED TO BE ISSUED AND APPROVED TO THE UTILITY BEFORE WATER SERVICE CAN BEGIN.
    - EASEMENTS FOR THE PLACEMENT OF PUBLIC WATER FACILITIES, I.E.., WATER LINES, FIRE HYDRANTS, ETC., ON PRIVATE PROPERTY MUST BE SUBMITTED TO THE UTILITY FOR REVIEW AND APPROVAL. THE APPROVED LEGAL DESCRIPTION AND SKETCH WILL NEED TO BE RECORDED BY THE ENGINEER AND A COPY PROVIDED TO THE UTILITY BEFORE CONSTRUCTION IS FINALED.
    - THE CONTRACTOR MUST ARRANGE FOR A PRE-CONSTRUCTION MEETING WITH THE UTILITY BEFORE CONSTRUCTION OF THE WATER SYSTEM CAN BEGIN.
    - THESE COMMENTS ARE IN NO WAY ALL INCLUSIVE AS A HYDRAULIC REVIEW OF A SUBMITTED WATER IMPROVEMENT PLAN MUST BE COMPLETED.
    - FIRE SERVICE REQUIRES BACK FLOW ASSEMBLIES.
11. THE OVERALL DENSITY WILL BE RESTRICTED TO 0.9 DWELLING UNITS PER ACRE AS SPECIFIED IN THE TENTATIVE DEVELOPMENT PLAN (CONDITION ADDED BY TOWN COUNCIL).

EXISTING CONSTRUCTION KEY NOTES

1. EXIST. PAVED ROAD TO BE REMOVED
2. EXIST. VERTICAL CURB TO BE REMOVED
3. EXIST. HEADWALL TO REMAIN
4. EXIST. HEADWALL W/RAILING TO BE REMOVED
5. EXIST. 54" RCP'S TO BE EXTENDED
6. EXIST. 36" RCP'S TO BE EXTENDED
7. EXIST. 24" RCP TO BE EXTENDED
8. EXIST. RIP RAP TO BE REMOVED
9. EXIST. ELECTRICAL BOX TO REMAIN IN PLACE
10. EXIST. LIGHT POST TO REMAIN IN PLACE
11. EXIST. PEDESTAL TO REMAIN IN PLACE
12. EXIST. SIGN TO BE RELOCATED
13. EXIST. WATER METER TO REMAIN IN PLACE
14. EXIST. CATCH BASIN TO REMAIN IN PLACE
15. EXIST. BLOCK WALL TO REMAIN IN PLACE
16. EXIST. STORM DRAIN MANHOLES TO REMAIN IN PLACE
17. EXIST. SIGN TO REMAIN IN PLACE
18. EXIST. POST TO REMAIN IN PLACE
19. EXIST. CONCRETE HEADER TO REMAIN IN PLACE

OV1208-23
CONCEPTUAL SITE PLAN
FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

Registered Professional Engineer (Civil) CERTIFICATE NO. 36234 DAVID W. LITTLE Date Signed 10.1.14 ARIZONA U.S.A.
EXPIRES 6/30/2016

OCTOBER 2013
WLB NO. 199032-B-002/0105
CONTOUR INTERVAL: 1' SCALE: 1"=40'

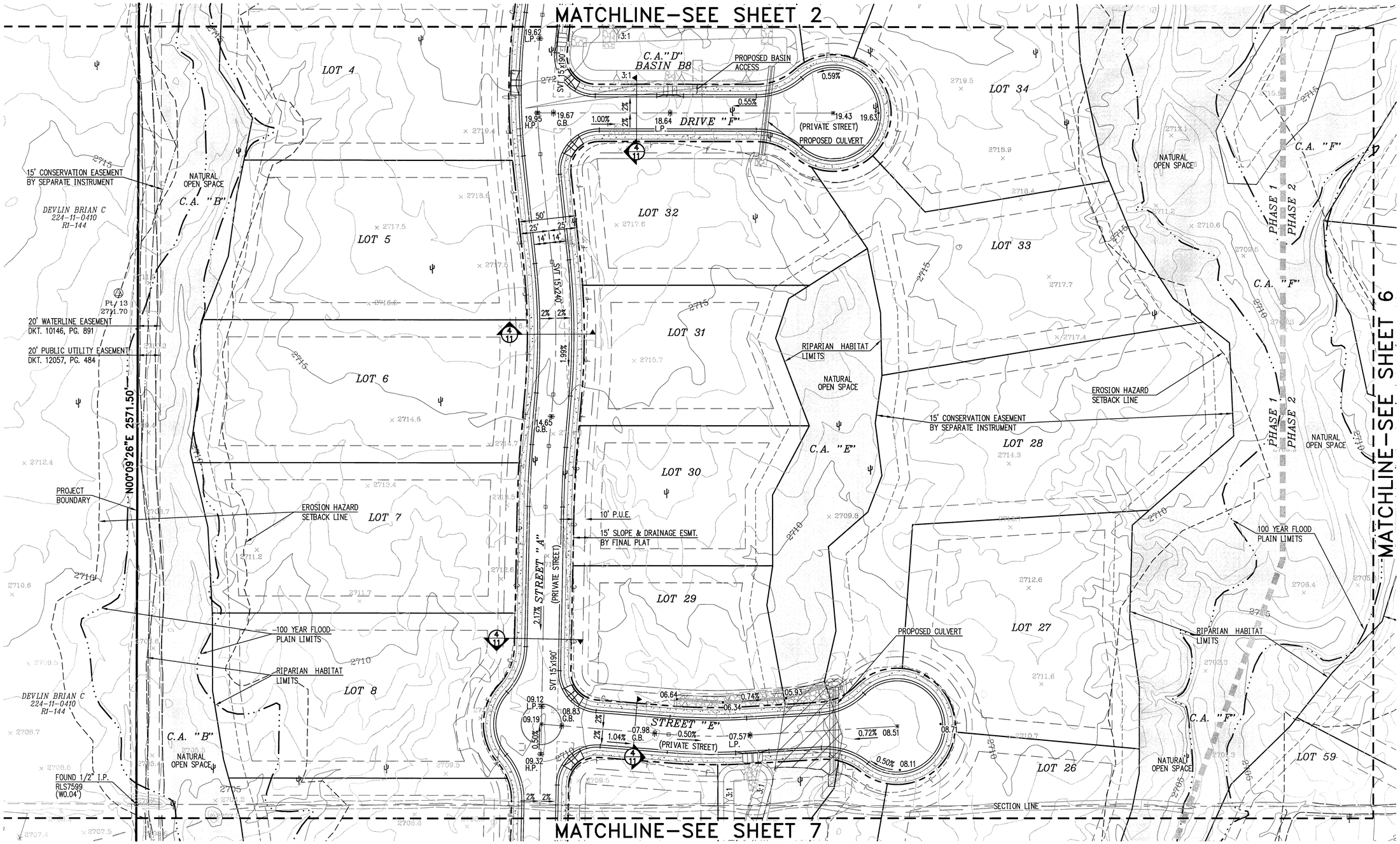
REF. CASE #OV9-05-06

The WLB Group INC. WLB
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

Two working days before you dig CALL FOR THE BLUESTAKES
1-800-782-5348
Blue Stake Center

CONTOUR INTERVAL=1'
0' 40' 80' 120'

N:\199032\CSP\CSP-04.dwg



EXISTING CONSTRUCTION KEY NOTES

1. EXIST. PAVED ROAD TO BE REMOVED
2. EXIST. VERTICAL CURB TO BE REMOVED
3. EXIST. HEADWALL TO REMAIN
4. EXIST. HEADWALL W/RAILING TO BE REMOVED
5. EXIST. 54" RCP'S TO BE EXTENDED
6. EXIST. 36" RCP'S TO BE EXTENDED
7. EXIST. 24" RCP TO BE EXTENDED
8. EXIST. RIP RAP TO BE REMOVED
9. EXIST. ELECTRICAL BOX TO REMAIN IN PLACE
10. EXIST. LIGHT POST TO REMAIN IN PLACE
11. EXIST. PEDESTAL TO REMAIN IN PLACE
12. EXIST. SIGN TO BE RELOCATED
13. EXIST. WATER METER TO REMAIN IN PLACE
14. EXIST. CATCH BASIN TO REMAIN IN PLACE
15. EXIST. BLOCK WALL TO REMAIN IN PLACE
16. EXIST. STORM DRAIN MANHOLES TO REMAIN IN PLACE
17. EXIST. SIGN TO REMAIN IN PLACE
18. EXIST. POST TO REMAIN IN PLACE
19. EXIST. CONCRETE HEADER TO REMAIN IN PLACE

The WLB Group INC.
WLB
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

Two working days before you dig CALL FOR THE BLUESTAKES
1-800-782-5348
Blue Stake Center

CONTOUR INTERVAL=1'
0' 40' 80' 120'

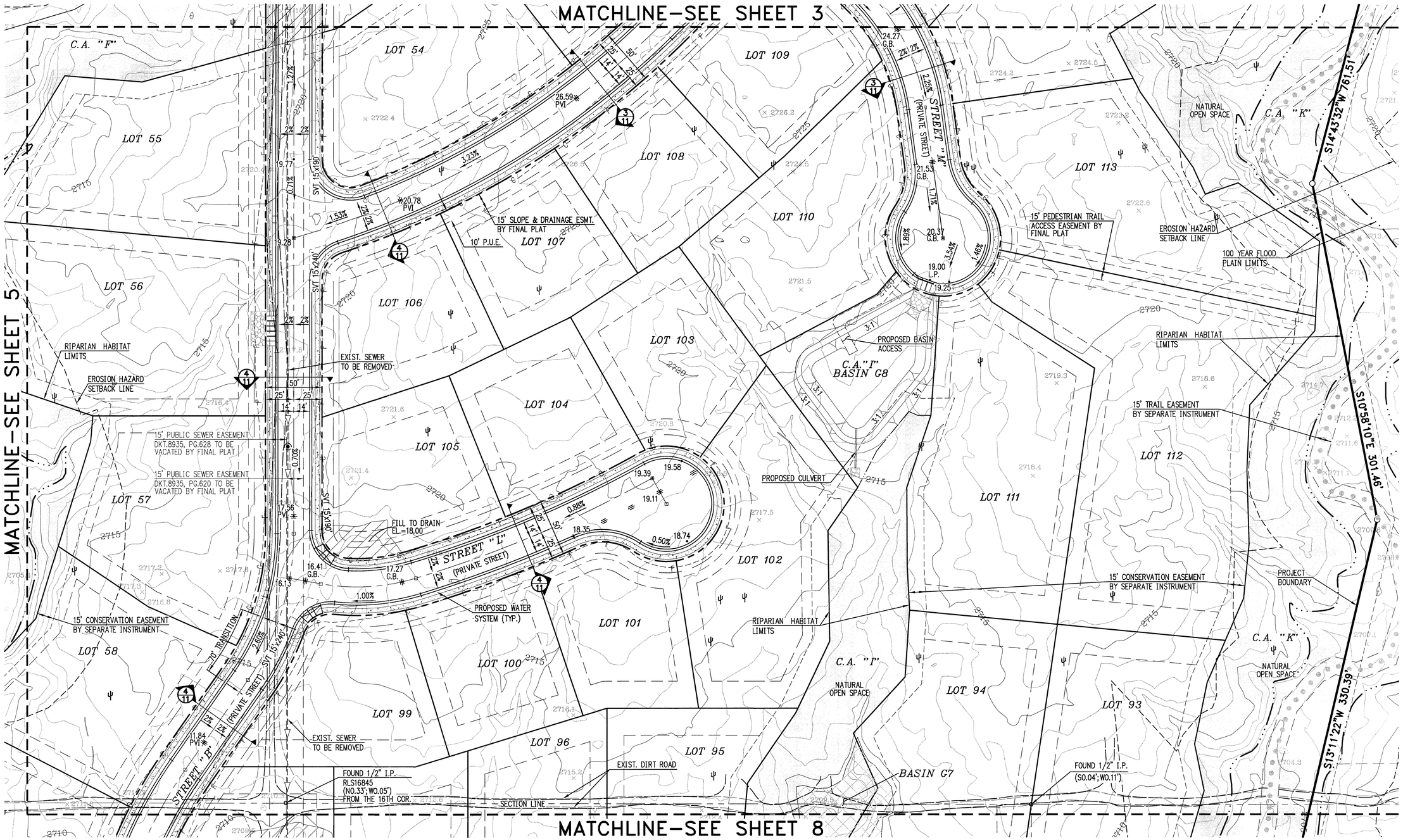
Registered Professional Engineer (Civil) CERTIFICATE NO. 36234 DAVID W. LITTLE Date Signed 10.22.14 ARIZONA U.S.A.
EXPIRES 6/30/2016

OV1208-23
CONCEPTUAL SITE PLAN FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

OCTOBER 2013
WLB NO. 199032-B-002/0105
CONTOUR INTERVAL: 1'
SCALE: 1"=40'
REF. CASE #OV9-05-06

N:\199032\CSP\CSP-05.dwg



EXISTING CONSTRUCTION KEY NOTES

1. EXIST. PAVED ROAD TO BE REMOVED
2. EXIST. VERTICAL CURB TO BE REMOVED
3. EXIST. HEADWALL TO REMAIN
4. EXIST. HEADWALL W/RAILING TO BE REMOVED
5. EXIST. 54" RCP'S TO BE EXTENDED
6. EXIST. 36" RCP'S TO BE EXTENDED
7. EXIST. 24" RCP TO BE EXTENDED
8. EXIST. RIP RAP TO BE REMOVED
9. EXIST. ELECTRICAL BOX TO REMAIN IN PLACE
10. EXIST. LIGHT POST TO REMAIN IN PLACE
11. EXIST. PEDESTAL TO REMAIN IN PLACE
12. EXIST. SIGN TO BE RELOCATED
13. EXIST. WATER METER TO REMAIN IN PLACE
14. EXIST. CATCH BASIN TO REMAIN IN PLACE
15. EXIST. BLOCK WALL TO REMAIN IN PLACE
16. EXIST. STORM DRAIN MANHOLES TO REMAIN IN PLACE
17. EXIST. SIGN TO REMAIN IN PLACE
18. EXIST. POST TO REMAIN IN PLACE
19. EXIST. CONCRETE HEADER TO REMAIN IN PLACE

The WLB Group INC.
WLB
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

Two working days before you dig CALL FOR THE BLUESTAKES
1-800-782-5348
Blue Stake Center

CONTOUR INTERVAL=1'
0' 40' 80' 120'

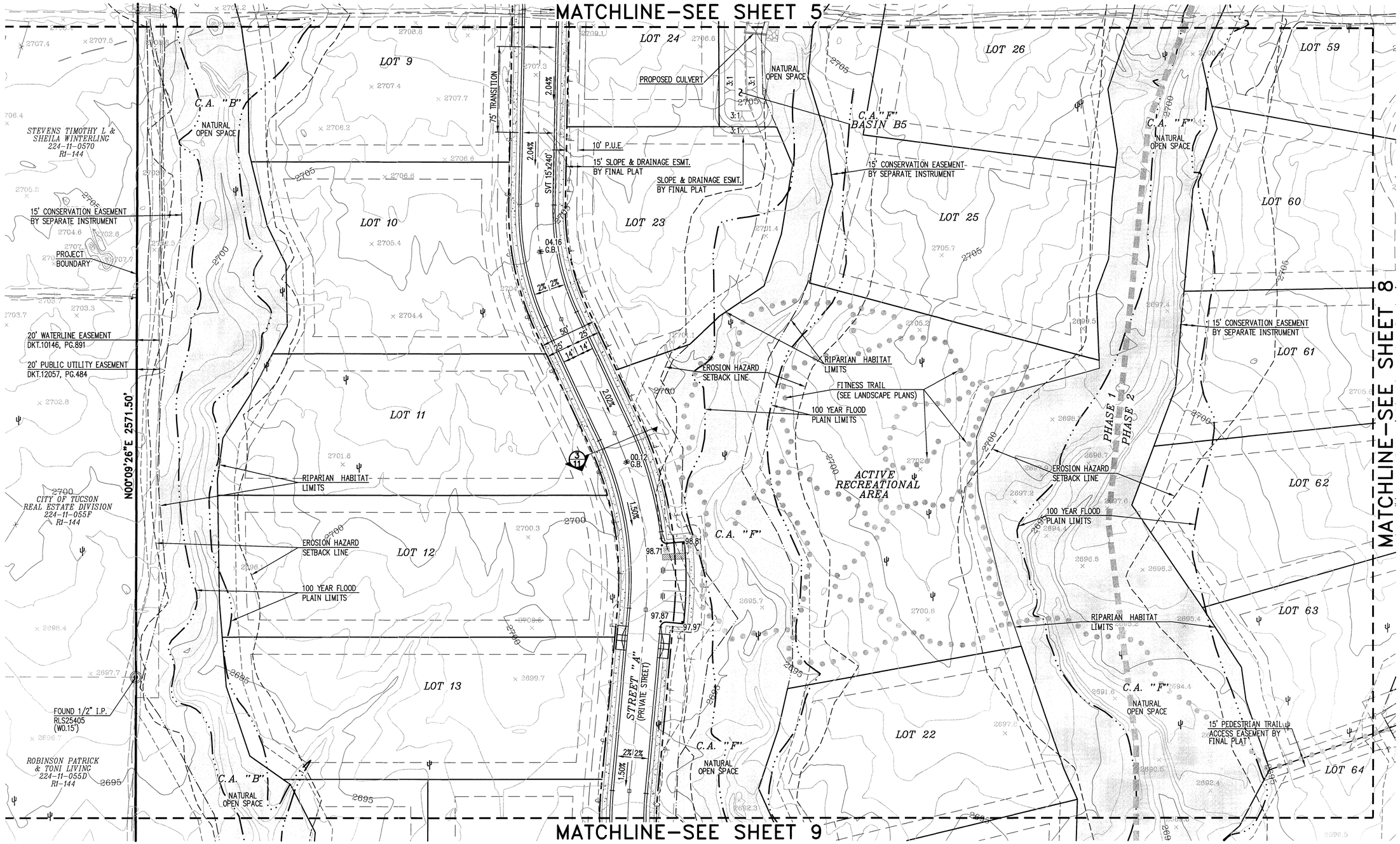
Registered Professional Engineer (Civil) CERTIFICATE NO. 38234 DAVID W. LITTLE Date Signed 12.22.14 ARIZONA U.S.A.
EXPIRES 6/30/2016

OV1208–23
CONCEPTUAL SITE PLAN
FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

OCTOBER 2013
WLB NO. 199032–B–002/0105
CONTOUR INTERVAL: 1'
SCALE: 1"=40'
REF. CASE #OV9–05–06

N:\199032\CSP\CSP-06.dwg



EXISTING CONSTRUCTION KEY NOTES

1. EXIST. PAVED ROAD TO BE REMOVED
2. EXIST. VERTICAL CURB TO BE REMOVED
3. EXIST. HEADWALL TO REMAIN
4. EXIST. HEADWALL W/RAILING TO BE REMOVED
5. EXIST. 54" RCP'S TO BE EXTENDED
6. EXIST. 36" RCP'S TO BE EXTENDED
7. EXIST. 24" RCP TO BE EXTENDED
8. EXIST. RIP RAP TO BE REMOVED
9. EXIST. ELECTRICAL BOX TO REMAIN IN PLACE
10. EXIST. LIGHT POST TO REMAIN IN PLACE
11. EXIST. PEDESTAL TO REMAIN IN PLACE
12. EXIST. SIGN TO BE RELOCATED
13. EXIST. WATER METER TO REMAIN IN PLACE
14. EXIST. CATCH BASIN TO REMAIN IN PLACE
15. EXIST. BLOCK WALL TO REMAIN IN PLACE
16. EXIST. STORM DRAIN MANHOLES TO REMAIN IN PLACE
17. EXIST. SIGN TO REMAIN IN PLACE
18. EXIST. POST TO REMAIN IN PLACE
19. EXIST. CONCRETE HEADER TO REMAIN IN PLACE

The WLB Group INC.
WLB
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

Two working days before you dig CALL FOR THE BLUESTAKES
1-800-782-5348
Blue Stake Center

CONTOUR INTERVAL=1'
0' 40' 80' 120'

Registered Professional Engineer (Civil) CERTIFICATE NO. 36234 DAVID W. LITTLE Date Signed 1/22/14 ARIZONA U.S.A.
EXPIRES 6/30/2016

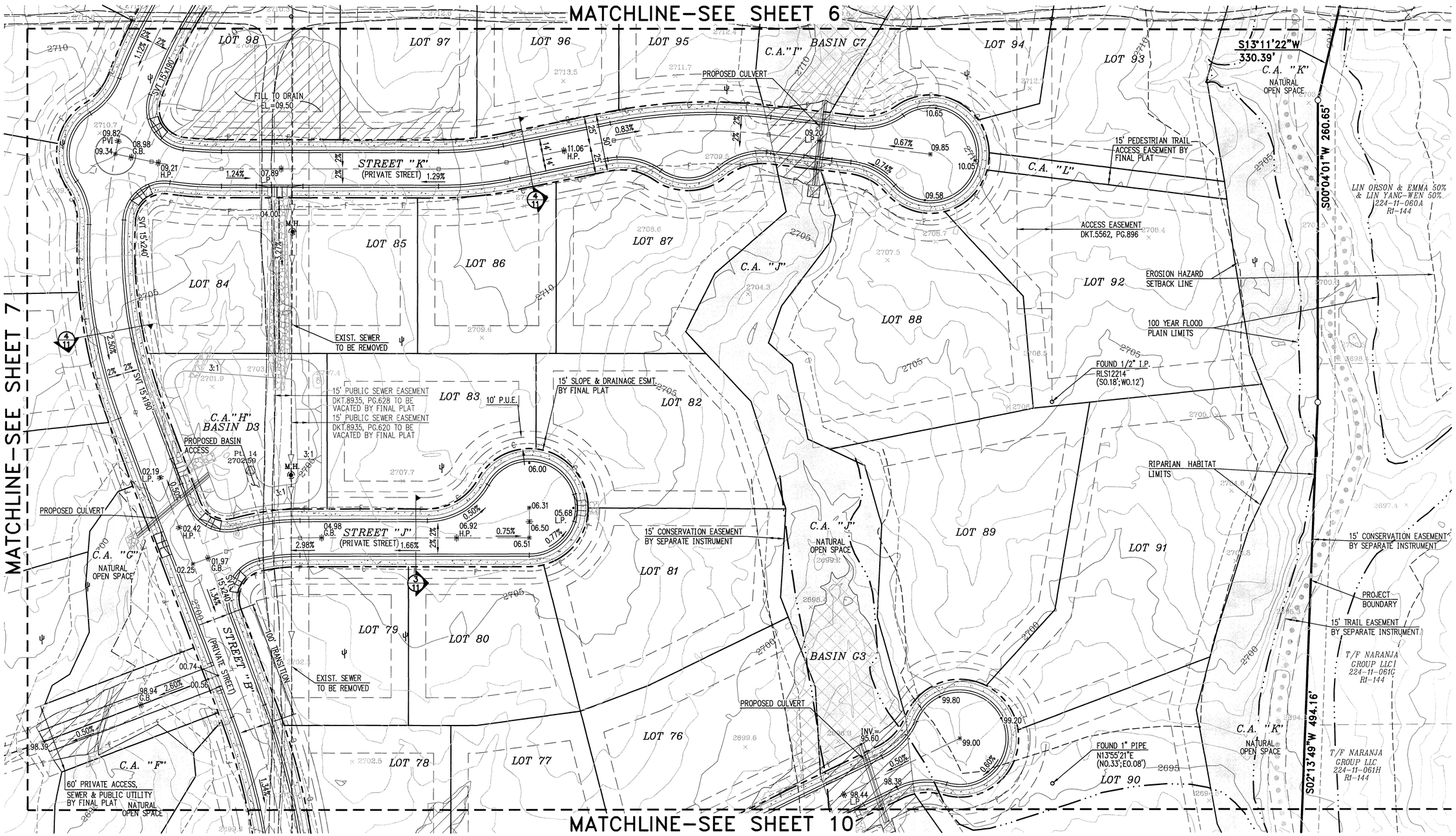
OV1208–23
CONCEPTUAL SITE PLAN FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

REF. CASE #OV9-05-06

OCTOBER 2013
WLB NO. 199032-B-002/0105
CONTOUR INTERVAL: 1'
SCALE: 1"=40'

N:\199032\CSD\CD\199032-07.dwg



EXISTING CONSTRUCTION KEY NOTES

1. EXIST. PAVED ROAD TO BE REMOVED
2. EXIST. VERTICAL CURB TO BE REMOVED
3. EXIST. HEADWALL TO REMAIN
4. EXIST. HEADWALL W/RAILING TO BE REMOVED
5. EXIST. 54" RCP'S TO BE EXTENDED
6. EXIST. 36" RCP'S TO BE EXTENDED
7. EXIST. 24" RCP TO BE EXTENDED
8. EXIST. RIP RAP TO BE REMOVED
9. EXIST. ELECTRICAL BOX TO REMAIN IN PLACE
10. EXIST. LIGHT POST TO REMAIN IN PLACE
11. EXIST. PEDESTAL TO REMAIN IN PLACE
12. EXIST. SIGN TO BE RELOCATED
13. EXIST. WATER METER TO REMAIN IN PLACE
14. EXIST. CATCH BASIN TO REMAIN IN PLACE
15. EXIST. BLOCK WALL TO REMAIN IN PLACE
16. EXIST. STORM DRAIN MANHOLES TO REMAIN IN PLACE
17. EXIST. SIGN TO REMAIN IN PLACE
18. EXIST. POST TO REMAIN IN PLACE
19. EXIST. CONCRETE HEADER TO REMAIN IN PLACE

The WLB Group INC.
WLB
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

Two working days before you dig CALL FOR THE BLUESTAKES
1-800-782-5348
Blue Stake Center

CONTOUR INTERVAL=1'
0' 40' 80' 120'

OV1208-23
CONCEPTUAL SITE PLAN
FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

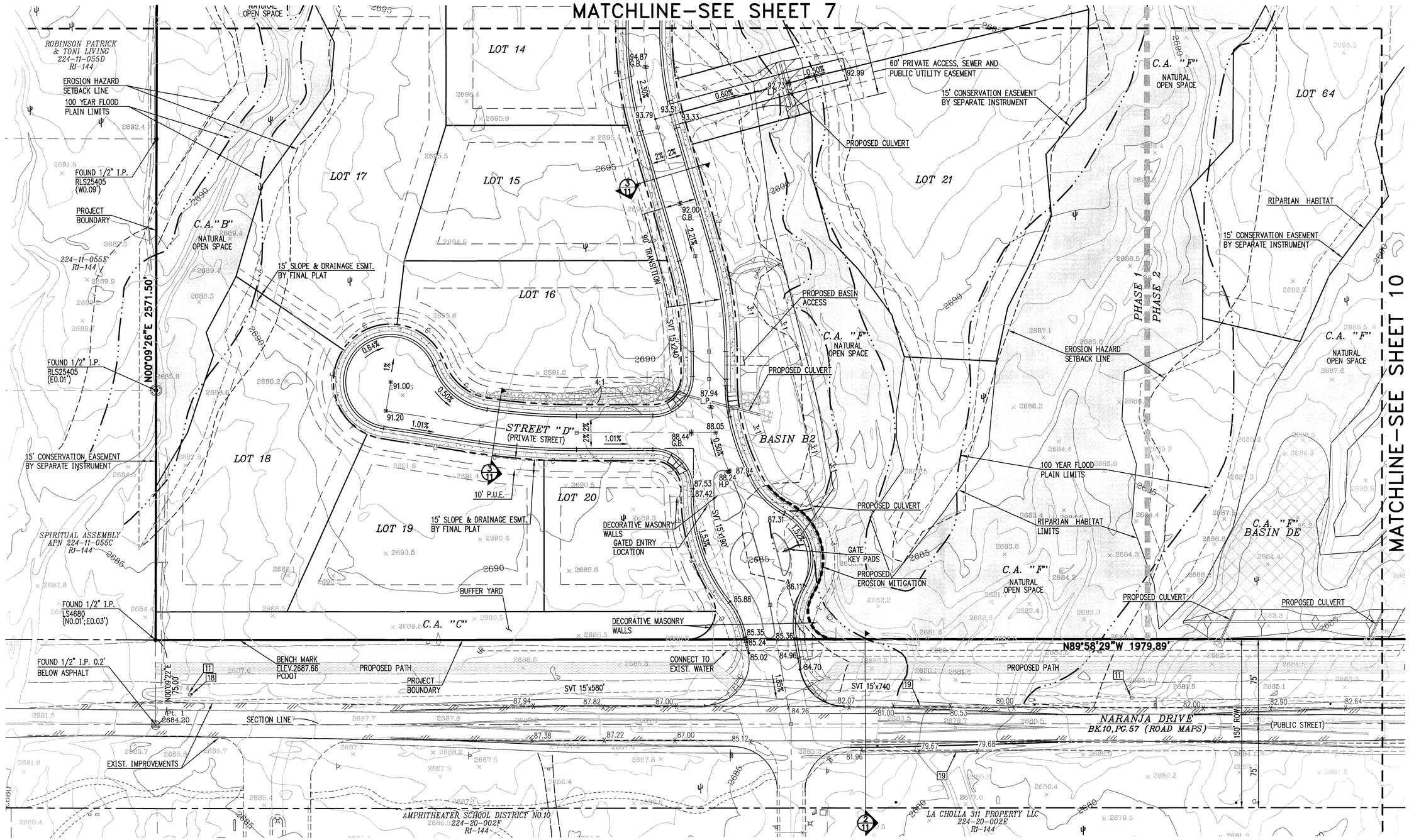
BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

Registered Professional Engineer (Civil) CERTIFICATE NO. 36234 DAVID W. LITTLE Date Signed 10/21/14 ARIZONA U.S.A.
EXPIRES 6/30/2016

REF. CASE #OV9-05-06

OCTOBER 2013
WLB NO. 199032-B-002/0105
CONTOUR INTERVAL: 1'
SCALE: 1"=40'

N:\199032\CSP\CSP-08.dwg



EXISTING CONSTRUCTION KEY NOTES

1. EXIST. PAVED ROAD TO BE REMOVED
2. EXIST. VERTICAL CURB TO BE REMOVED
3. EXIST. HEADWALL TO REMAIN
4. EXIST. HEADWALL W/RAILING TO BE REMOVED
5. EXIST. 54" RCP'S TO BE EXTENDED
6. EXIST. 36" RCP'S TO BE EXTENDED
7. EXIST. 24" RCP TO BE EXTENDED
8. EXIST. RIP RAP TO BE REMOVED
9. EXIST. ELECTRICAL BOX TO REMAIN IN PLACE
10. EXIST. LIGHT POST TO REMAIN IN PLACE
11. EXIST. PEDESTAL TO REMAIN IN PLACE
12. EXIST. SIGN TO BE RELOCATED
13. EXIST. WATER METER TO REMAIN IN PLACE
14. EXIST. CATCH BASIN TO REMAIN IN PLACE
15. EXIST. BLOCK WALL TO REMAIN IN PLACE
16. EXIST. STORM DRAIN MANHOLES TO REMAIN IN PLACE
17. EXIST. SIGN TO REMAIN IN PLACE
18. EXIST. POST TO REMAIN IN PLACE
19. EXIST. CONCRETE HEADER TO REMAIN IN PLACE

The WLB Group INC.
WLB
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

Two working days before you dig CALL FOR THE BLUESTAKES
1-800-782-5348
Blue Stake Center

CONTOUR INTERVAL=1'
0' 40' 80' 120'

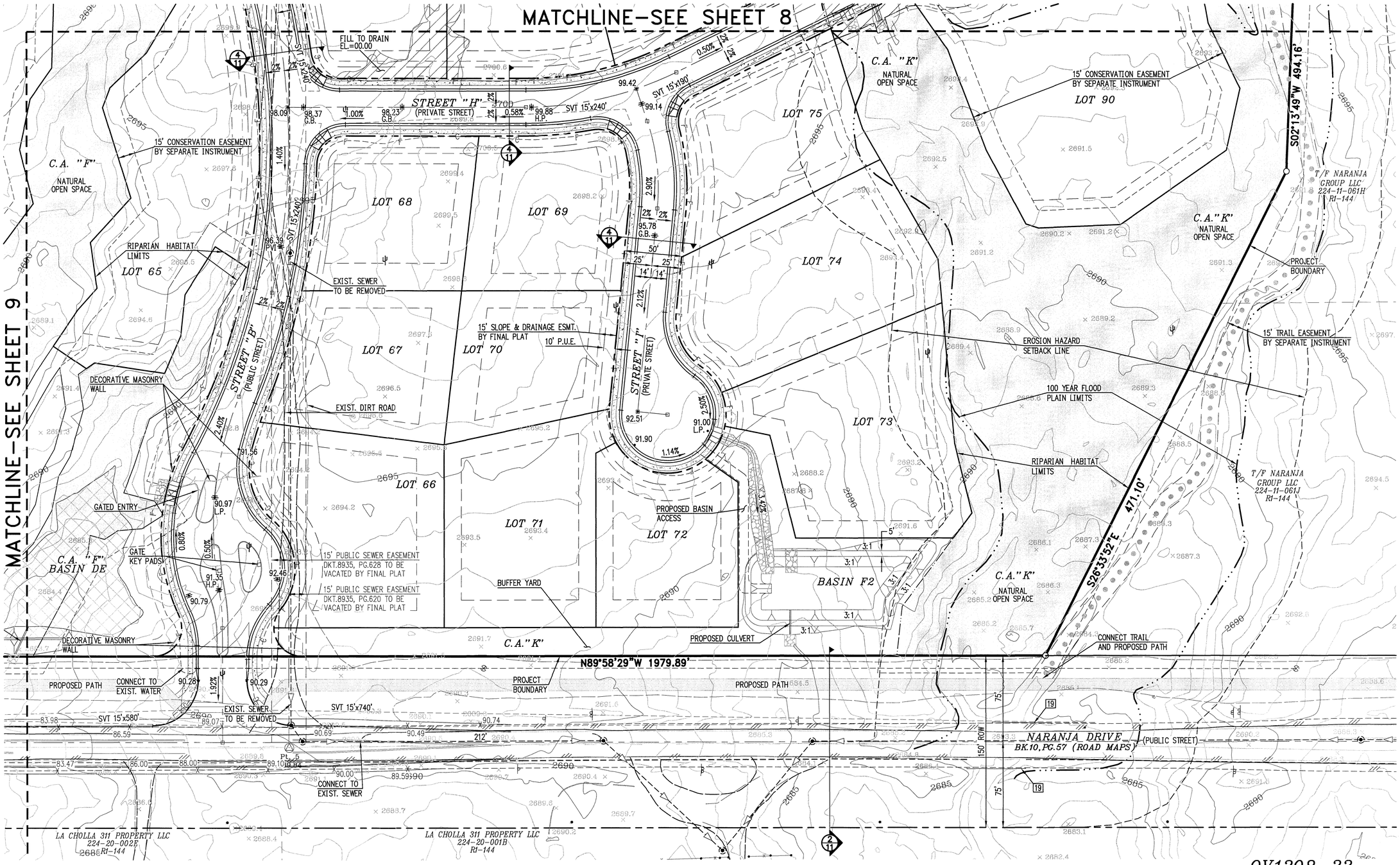
Registered Professional Engineer (Civil) CERTIFICATE NO. 36234 DAVID W. LITTLE Date Signed 10/24/14 ARIZONA U.S.A.
EXPIRES 6/30/2016

OV1208–23
CONCEPTUAL SITE PLAN
FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

OCTOBER 2013
WLB NO. 199032-B-002/0105
CONTOUR INTERVAL: 1'
SCALE: 1"=40'
REF. CASE #OV9-05-06

N:\199032\CSP\CSP-09.dwg



EXISTING CONSTRUCTION KEY NOTES

1. EXIST. PAVED ROAD TO BE REMOVED
2. EXIST. VERTICAL CURB TO BE REMOVED
3. EXIST. HEADWALL TO REMAIN
4. EXIST. HEADWALL W/RAILING TO BE REMOVED
5. EXIST. 54" RCP'S TO BE EXTENDED
6. EXIST. 36" RCP'S TO BE EXTENDED
7. EXIST. 24" RCP TO BE EXTENDED
8. EXIST. RIP RAP TO BE REMOVED
9. EXIST. ELECTRICAL BOX TO REMAIN IN PLACE
10. EXIST. LIGHT POST TO REMAIN IN PLACE
11. EXIST. PEDESTAL TO REMAIN IN PLACE
12. EXIST. SIGN TO BE RELOCATED
13. EXIST. WATER METER TO REMAIN IN PLACE
14. EXIST. CATCH BASIN TO REMAIN IN PLACE
15. EXIST. BLOCK WALL TO REMAIN IN PLACE
16. EXIST. STORM DRAIN MANHOLES TO REMAIN IN PLACE
17. EXIST. SIGN TO REMAIN IN PLACE
18. EXIST. POST TO REMAIN IN PLACE
19. EXIST. CONCRETE HEADER TO REMAIN IN PLACE

The WLB Group INC. **WLB**
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

Two working days before you dig CALL FOR THE BLUESTAKES
1-800-782-5348
Blue Stake Center

CONTOUR INTERVAL=1'
0' 40' 80' 120'

Registered Professional Engineer (Civil) CERTIFICATE NO. 36234 DAVID W. LITTLE Date Signed 10/22/14 ARIZONA U.S.A.
EXPIRES 6/30/2016

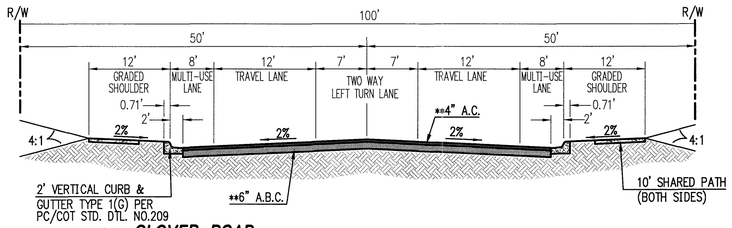
OV1208–23
CONCEPTUAL SITE PLAN
FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

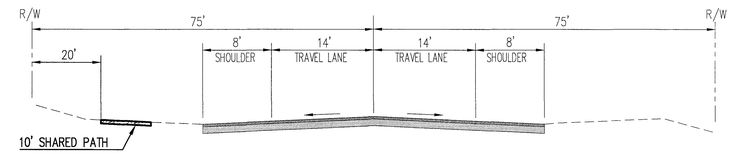
REF. CASE #OV9–05–06

OCTOBER 2013
W.L.B NO. 199032–B–002/0105
CONTOUR INTERVAL: 1' SCALE: 1"=40'

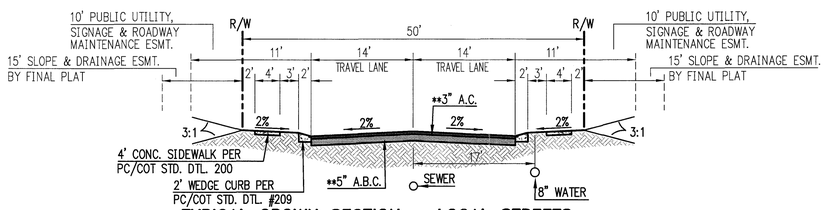
N:\199032\CSP\CSP-10.dwg



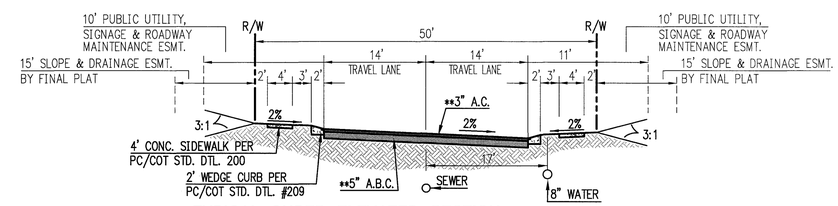
1 GLOVER ROAD
PER SEPARATE PLANS — NO SCALE



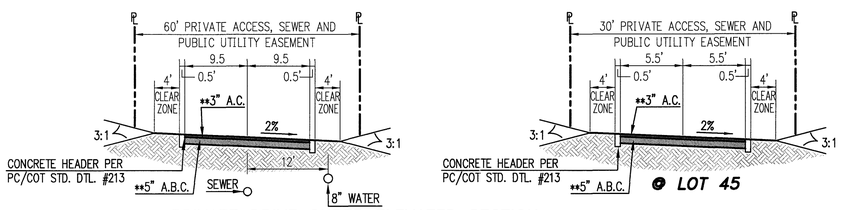
2 NARANJA DRIVE
FOR REFERENCE ONLY — NO SCALE



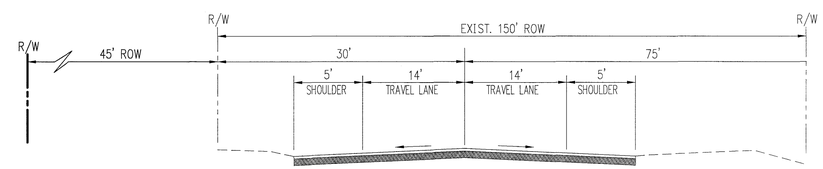
3 TYPICAL CROWN SECTION – LOCAL STREETS
** SEE PAVEMENT ENGINEERING REPORT — NO SCALE



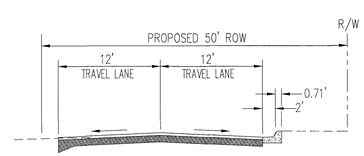
4 TYPICAL SUPER ELEVATED SECTION LOCAL STREETS
** SEE PAVEMENT ENGINEERING REPORT — NO SCALE



5 PRIVATE DRIVE SUPER ELEVATED SECTION
** SEE PAVEMENT ENGINEERING REPORT — NO SCALE



6 LA CHOLLA BLVD.
FOR REFERENCE ONLY — NO SCALE



7 GLOVER ROAD
FOR REFERENCE ONLY — NO SCALE

OV1208–23

CONCEPTUAL SITE PLAN
FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

Registered Professional Engineer (Civil) CERTIFICATE NO. 36234 DAVID W. LITTLE Date Signed 10-22-14 ARIZONA, U.S.A.
EXPIRES 6/30/2016

OCTOBER 2013
WLB NO. 199032–B–002/0105
CONTOUR INTERVAL: 1'
SCALE: N.T.S.
REF. CASE #OV9–05–06

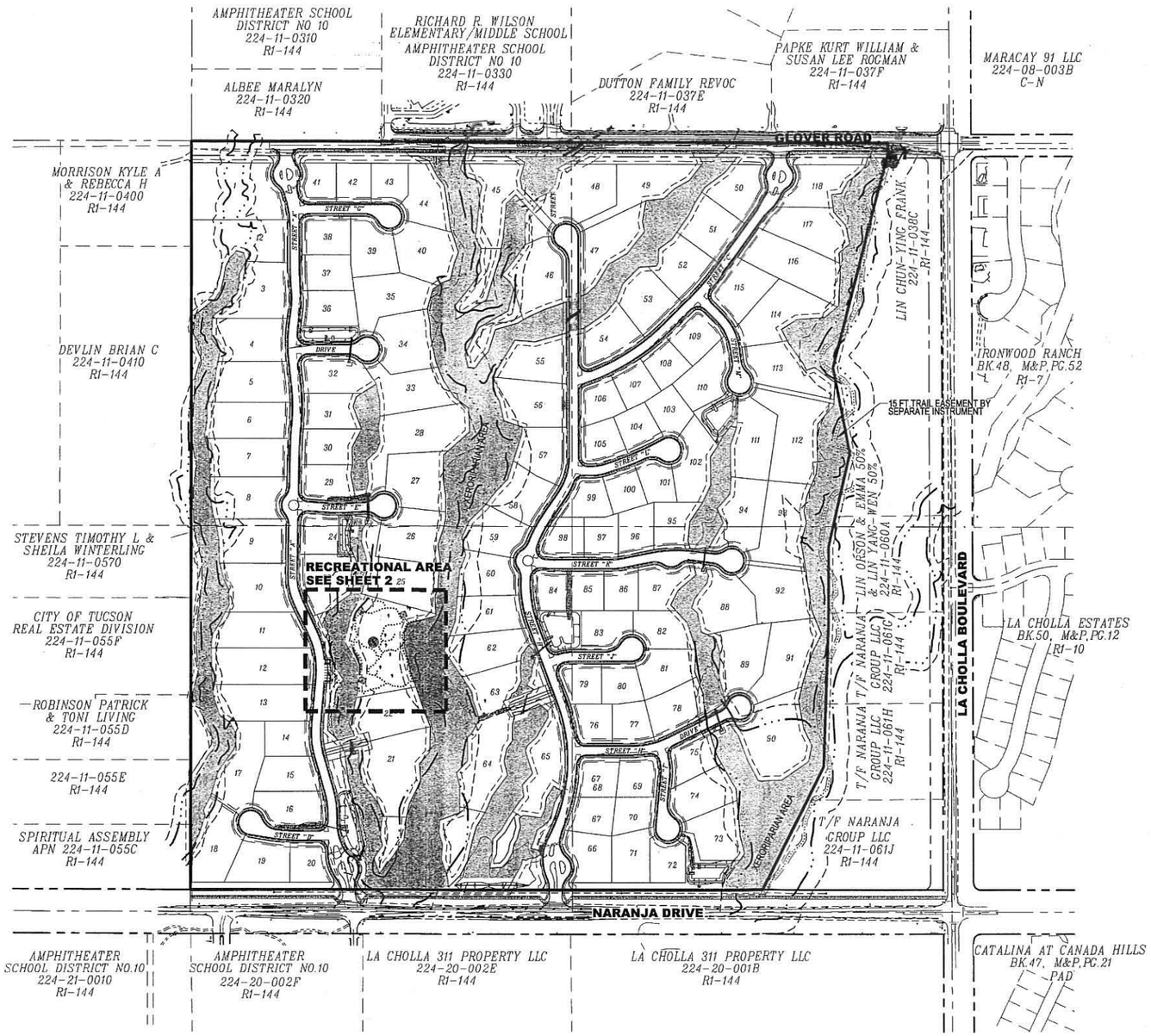
SHEET 11 OF 11

The WLB Group INC. **WLB**
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881–7480

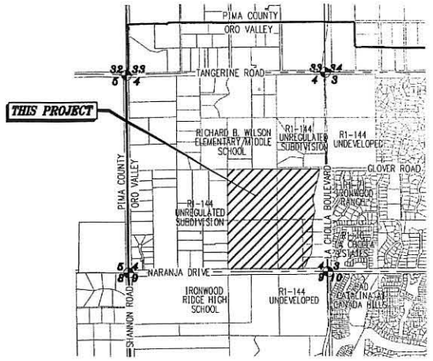
Two working days before you dig CALL FOR THE BLUESTAKES
1-800-782-5348
Blue Stake Center

N:\199032\CSP\CSP-11.dwg

RECREATIONAL AREA PLAN
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"
OV12-08-23



PROJECT LAYOUT
SCALE 1"=200'



LOCATION MAP
3" = 1 MILE

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

GENERAL NOTES

1. THIS RECREATIONAL AREA PLAN IS DESIGNED TO MEET THE REQUIREMENTS AND INTENTIONS OF THE FOLLOWING PLANS AND ORDINANCES:
   A. THE RECREATIONAL AREA PLAN REQUIREMENTS, SECTION 26.5
   B. THE NATIVE PLANT SALVAGE AND LANDSCAPE PLAN REQUIREMENTS, SECTION 27.6
   C. ORO VALLEY LANDSCAPE CODE, SECTION 27.6.
2. RECREATIONAL FACILITIES AND PARKING IMPROVEMENTS SHALL BE COMPLETED AND IN PLACE BY THE TIME THIRTY-FIVE (35) PERCENT OF THE BUILDING PERMITS ARE ISSUED.
3. TRAIL ALIGNMENT TO BE FIELD ADJUSTED AS NEEDED TO AVOID PROTECTED NATIVE PLANTS AND SIGNIFCANT VEGETATION.
4. DURING THE LIFE OF THE PROJECT, CONTROL AND ERADICATION OF NON-NATIVE INVASIVE PLANT SPECIES SUCH AS BUFFLEGRASS, FOUNTAIN GRASS, SOFT FEATHER PAPPUSGRASS, RUSSIAN THISTLE, TELEGRAPH PLANT, DESERT BROOM, RAGWEED, PIGWEED, BURRO BRUSH, ETC.) SHALL BE WEEDED IN ORDER TO PREVENT THE SPREAD OF SUCH SPECIES ONTO ADJACENT PROPERTIES.
5. REFER TO THE PRELIMINARY PLAT, LANDSCAPE PLAN AND NATIVE PLANT PRESERVATION PLANS (SEE GENERAL NOTES) FOR CONSISTENCY IN DEVELOPMENT.
6. EXISTING ZONING: R1-144
7. GROSS AREA : 131.5 ACRES

SHEET INDEX

SHEET 1	COVER SHEET
SHEET 2	RECREATIONAL AREA PLAN LAYOUT
SHEET 3	RECREATIONAL AREA PLAN DETAILS

OWNER / DEVELOPER

LIN TRUST & KINO INVESTMENT GROUP
6088 W. ARIZONA PAVILIONS DRIVE SUITE 1
MARANA, AZ 85743
PHONE: (520) 744-8500
ATTENTION: GREG WEXLER
greg@swvp.com

OV12-08-23
RECREATIONAL AREA PLAN
FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

REGISTERED PROFESSIONAL ENGINEER (CIVIL) 25621 GARY L. GRIZZLE Date signed 1-23-14 ARIZONA U.S.A. EXPIRES 12/31/14

JANUARY 2014
WLB NO. 199032-B-002/0200
CONTOUR INTERVAL: 1' SCALE: AS SHOWN

REF. CASE #OV12-08-23
OV9-05-06

SHEET 1 OF 3

COVER SHEET

The WLB Group INC **WLB**
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

N:\199032\Recreation Plan\199032 saguaro viejos_rec area1.dwg Plotted: Jan. 15, 2014 - 1:49pm

RECREATION EQUIPMENT KEYNOTES

1. SHADE STRUCTURE (3). 20 X 20 X 14 MIRACLE PLAYCOVER SHADE, POST COLOR: SAND. SAIL COLOR: TERRA-COTTA. INSTALL TO MANUFACTURER'S RECOMMENDATIONS. CONTACT MONTE CORLEY AT MIRACLEPLAYGROUND [monte@miracleplayground.com]
2. 6' BENCH (6): WABASH CN420D. IN-GROUND MOUNT PER MANUFACTURER RECOMMENDATIONS. COLOR: BEIGE AVAILABLE FROM DAVE BANG (800) 456-7903.
3. TRASH RECEPTACLE (2): WABASH LR300D. COLOR: BEIGE WITH MATCHING FT200N LID. SURFACE MOUNT PER MANUFACTURER'S RECOMMENDATIONS. AVAILABLE FROM DAVE BANG (800) 456-7903.
4. BIKE LOOPS (4): WAUSAU MF9006. IN-GROUND MOUNT PER MANUFACTURER RECOMMENDATIONS. COLOR: MF-BEIGE. AVAILABLE FROM DAVE BANG (800) 456-7903.
5. PET STATION (1): "DOGIPOT" #1003-L. METAL RECEPTACLE & DISPENSER, ALUMINUM "ON-LEASH" SIGN, GALVANIZED POST. COLOR: "FOREST GREEN". AVAILABLE FROM: PRO-PET DESTRIBUTORS, 20801 SANTA FE AVE., CARSON, CA. 90810 WWW.PROPET.ORG (407) 240-0953 LOCATE POST NO CLOSER THAN 5 (FIVE) FEET FROM EDGE OF ASPHALT TRAIL. FACE OF SIGN TO BE PARALLEL TO TRAIL.
6. 8' WIDE X 3" THICK STABILIZED DECOMPOSED GRANITE PATHWAY: SEE DETAIL ON SHEET 3. INSTALL PER STABILZER MANUFACTURER'S RECOMMENDATIONS.

7A. FITNESS STATION: FITNESS EXERCISE STATION. MODEL: 160-017 ROPE CLIMB BY MIRACLE RECREATION. COLOR: SAND. INSTALL PER MANUFACTURER RECOMMENDATIONS. CONTACT MONTE CORLEY AT MIRACLEPLAYGROUND [monte@miracleplayground.com]

7B. FITNESS STATION: FITNESS EXERCISE STATION. MODEL: 160-020 LEG STRETCH BY MIRACLE RECREATION. COLOR: SAND. INSTALL PER MANUFACTURER RECOMMENDATIONS. CONTACT MONTE CORLEY AT MIRACLEPLAYGROUND [monte@miracleplayground.com]

7C. FITNESS STATION: FITNESS EXERCISE STATION. MODEL: 160-002 LEG LIFT BY MIRACLE RECREATION. COLOR: SAND. INSTALL PER MANUFACTURER RECOMMENDATIONS. CONTACT MONTE CORLEY AT MIRACLEPLAYGROUND [monte@miracleplayground.com]

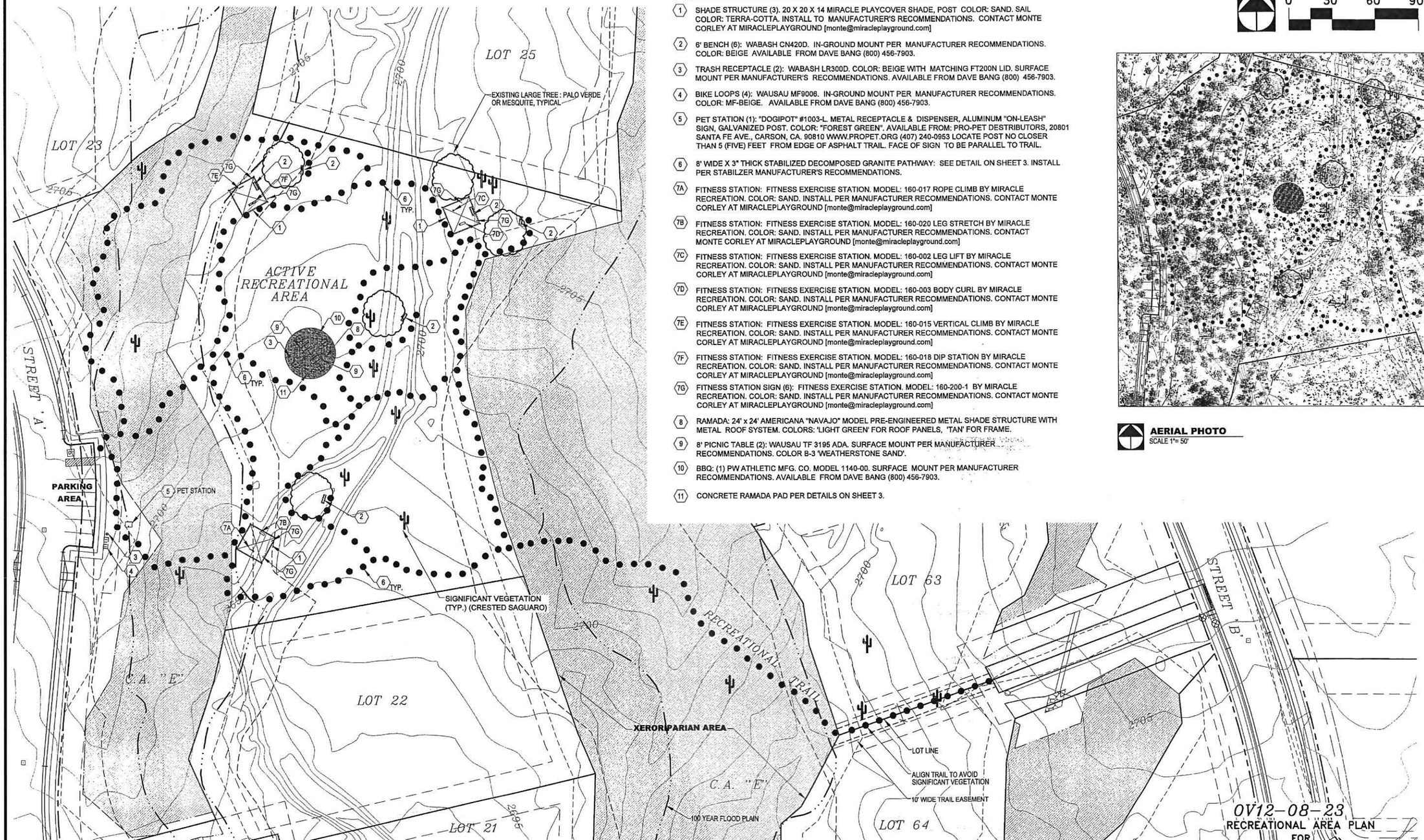
7D. FITNESS STATION: FITNESS EXERCISE STATION. MODEL: 160-003 BODY CURL BY MIRACLE RECREATION. COLOR: SAND. INSTALL PER MANUFACTURER RECOMMENDATIONS. CONTACT MONTE CORLEY AT MIRACLEPLAYGROUND [monte@miracleplayground.com]

7E. FITNESS STATION: FITNESS EXERCISE STATION. MODEL: 160-015 VERTICAL CLIMB BY MIRACLE RECREATION. COLOR: SAND. INSTALL PER MANUFACTURER RECOMMENDATIONS. CONTACT MONTE CORLEY AT MIRACLEPLAYGROUND [monte@miracleplayground.com]

7F. FITNESS STATION: FITNESS EXERCISE STATION. MODEL: 160-018 DIP STATION BY MIRACLE RECREATION. COLOR: SAND. INSTALL PER MANUFACTURER RECOMMENDATIONS. CONTACT MONTE CORLEY AT MIRACLEPLAYGROUND [monte@miracleplayground.com]

7G. FITNESS STATION SIGN (6): FITNESS EXERCISE STATION. MODEL: 160-200-1 BY MIRACLE RECREATION. COLOR: SAND. INSTALL PER MANUFACTURER RECOMMENDATIONS. CONTACT MONTE CORLEY AT MIRACLEPLAYGROUND [monte@miracleplayground.com]

8. RAMADA: 24' x 24' AMERICANA "NAVAJO" MODEL PRE-ENGINEERED METAL SHADE STRUCTURE WITH METAL ROOF SYSTEM. COLORS: 'LIGHT GREEN' FOR ROOF PANELS, 'TAN' FOR FRAME.
9. 8' PICNIC TABLE (2): WAUSAU TF 3195 ADA. SURFACE MOUNT PER MANUFACTURER RECOMMENDATIONS. COLOR B-3 'WEATHERSTONE SAND'.
10. BBQ: (1) PW ATHLETIC MFG. CO. MODEL 1140-00. SURFACE MOUNT PER MANUFACTURER RECOMMENDATIONS. AVAILABLE FROM DAVE BANG (800) 456-7903.
11. CONCRETE RAMADA PAD PER DETAILS ON SHEET 3.



PROJECT LAYOUT
SCALE 1"= 30'

AERIAL PHOTO
SCALE 1"= 50'

RECREATION LEGEND

- AREAS OF SIGNIFICANT VEGETATION (SAGUAROS)
- DENOTES LARGE TREES / PALO VERDE - MESQUITE LIMB-UP AS REQUIRED TO PROVIDE ACCESS TO SEATING AREA)
- RECREATIONAL TRAIL - STABILIZED DECOMPOSED GRANITE TRAIL ALIGNMENT TO BE FIELD ADJUSTED AS NEEDED TO AVOID PROTECTED NATIVE PLANTS AND SIGNIFCANT VEGETATION. (STAKE TRAIL IN FIELD FOR APPROVAL PRIOR TO INSTALLATION) TRAIL TO BE PRIMITIVE THROUGH RIPARIAN AREAS TO FURTHER MINIMIZE DISTURBANCE.

RECREATIONAL AREA PLAN LAYOUT / AERIAL PHOTO

The WLB Group INC. **WLB**
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

REGISTERED LAND SURVEYOR 25621 GARY L. GRIZZLE ARIZONA U.S.A. Date signed 1-23-14 EXPIRES 12/31/14

0V12-08-23
RECREATIONAL AREA PLAN FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

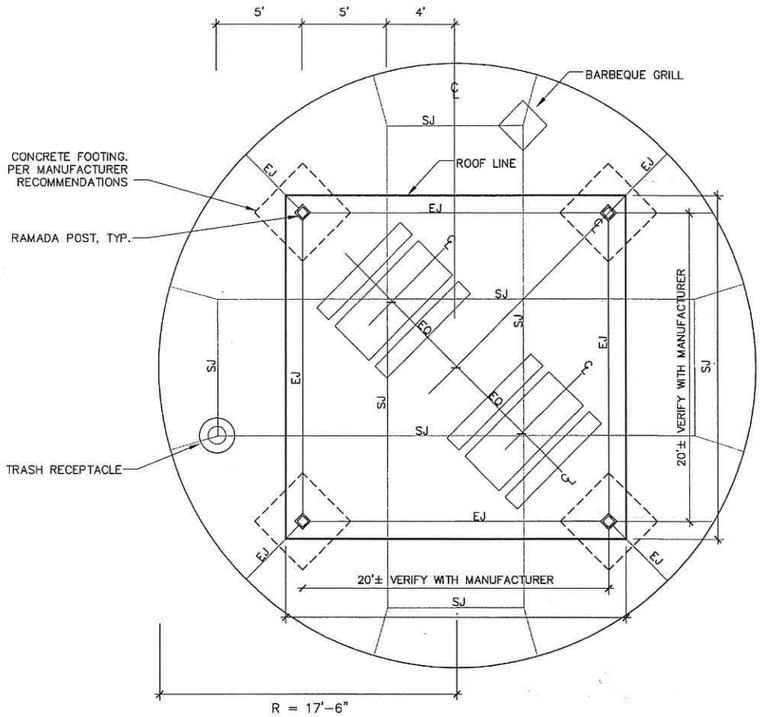
BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

JANUARY 2014
WLB NO. 199032-B-002/0200
CONTOUR INTERVAL: 1' SCALE: AS SHOWN

REF. CASE #0V12-08-23
0V9-05-06

SHEET 2 OF 3

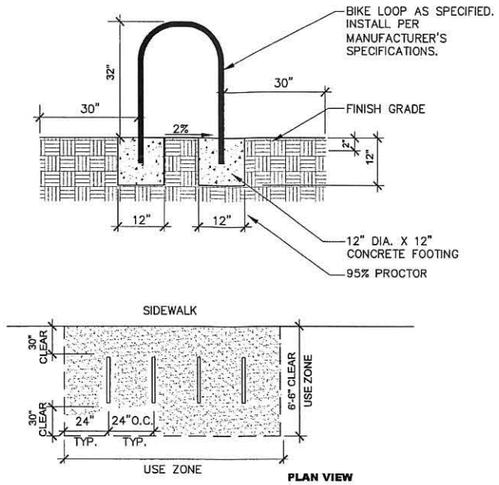
N:\199032\Recreation Plan\199032 saguaro viejos_rec area2.dwg Plotted: Jan. 23, 2014 - 1:17pm



NOTES: CONCRETE LAYOUT AND RAMADA COLUMN LOCATIONS TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
PROVIDE EXPANSION JOINTS @ ALL CONSTRUCTION JOINTS.
MAXIMUM LONGITUDINAL FALL ON ALL PATHS IS 5%, MAX CROSS FALL 2%.

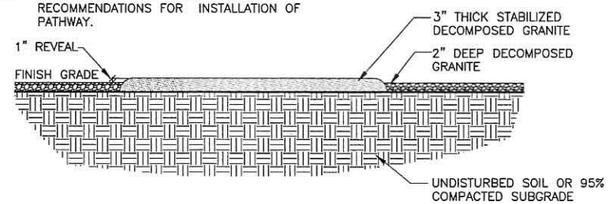
SJ – SCORE JOINT PER DETAIL BELOW
EJ – EXPANSION JOINT PER PER DETAIL BELOW

1 RAMADA SLAB LAYOUT
NTS

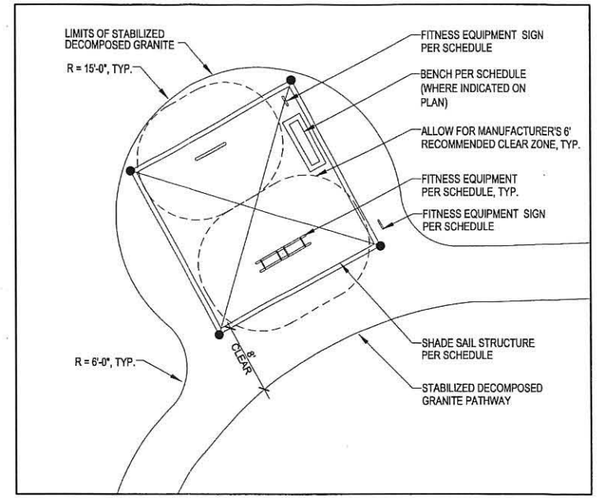


2 BICYCLE PARKING
NTS

NOTE:
1. APPLY PRE-EMERGENT TO SUBGRADE SURFACE.
2. SEE PLANT LEGEND FOR DECOMPOSED GRANITE DESCRIPTIONS.
3. FOLLOW STABILIZER MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION OF PATHWAY.

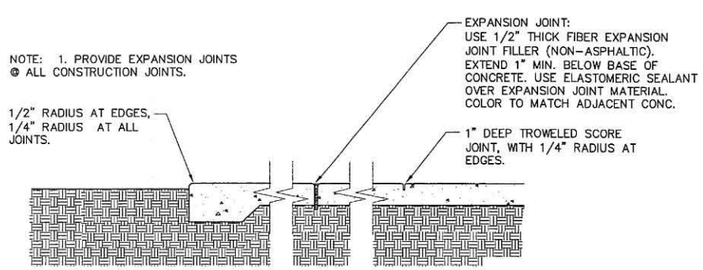


3 STABILIZED DECOMPOSED GRANITE PATHWAY
NTS

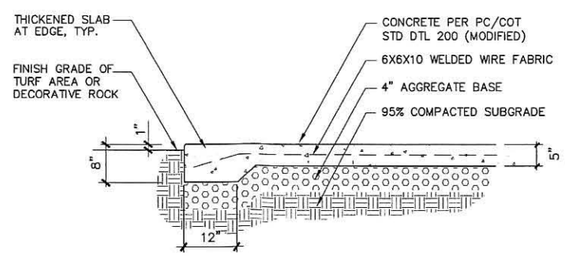


6 TYPICAL FITNESS AREA
NTS

NOTE: 1. PROVIDE EXPANSION JOINTS @ ALL CONSTRUCTION JOINTS.



4 CONCRETE JOINTS
NTS



5 CONCRETE PAVING
NTS

The WLB Group INC
WLB
Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in: Tucson, Phoenix, and Flagstaff, Arizona and Las Vegas, Nevada.
4444 E. Broadway Tucson, Az. 85711
(520) 881-7480

RECREATIONAL AREA PLAN DETAILS

25621 GARY L. GRIZZLE Registered Professional Engineer (Civil) ARIZONA U.S.A. EXPIRES 12/31/14

OV12-08-23
RECREATIONAL AREA PLAN
FOR
SAGUAROS VIEJOS
LOTS 1 THRU 118 AND COMMON AREAS "A" THRU "L"

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 12 SOUTH, RANGE 13 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

JANUARY 2014
WLB NO. 199032-B-002/0200
CONTOUR INTERVAL: 1' SCALE: AS SHOWN

REF. CASE #OV12-08-23
OV9-05-06

SHEET 3 OF 3

N:\199032\Recreation Plan\199032 saguaro viejos_rec area 3.dwg Plotted: Jan. 23, 2014 - 1:16pm

Conceptual Site Plan
Conceptual Design Review Board Staff Report

CASE NUMBER:	OV1208-23 Saguaros Viejos Subdivision
MEETING DATE:	March 11, 2014
AGENDA ITEM:	2
STAFF CONTACT:	Matt Michels, Senior Planner mmichels@orovalleyaz.gov (520) 229-4822

Applicant:	Paul Oland, WLB Group
Request:	**Conceptual Site Plan for 118 single family lots on 131 acres**
Location:	Northwest corner of La Cholla Boulevard and Naranja Drive
Recommendation:	Approve requested Conceptual Site Plan subject to conditions of Attachment 1

SUMMARY:

This project includes the development of a 131 acre property into a 118 lot single-family residential development. The project will be built in three phases. The CDRB review is focused on the fundamental elements of the Conceptual Site Plan, including: site layout; drainage/grading; connectivity; and landscape concept. The information must be sufficient to demonstrate that the design concept is achievable and to ensure community fit.

The Conceptual Site Plan has been evaluated for conformance to the Design Principles, Design Standards, and Riparian Habitat Overlay Zone.

This report contains staff analysis, proposed conditions of approval and suggested motions for the Conceptual Site Plan. The Conceptual Design Principles are utilized as primary guidance for CDRB evaluation of the application. The Addendum "A" Design Standards are used as secondary guidance, as appropriate. The Location Map (Attachment 2) provides context of the site in relation to the surrounding area. The proposed Conceptual Site Plan is provided as Attachment 3 and Conceptual Landscape Plan is provided as Attachment 4.

BACKGROUND:

Land Use Context

The property is vacant and is zoned R1-20 (Single Family Residential/20,000 Square Foot Minimum Lot Size). Surrounding uses include:

Direction	Land Use(s)
North	Wilson K-8 School and Low-Density Residential
East	Medium-Density residential
South	Vacant future residential and Ironwood Ridge High School
West	Low-Density residential

A Zoning Map for the area is provided as Attachment 6. As can be seen on the Zoning Map, the site is designated Medium Density Residential (MDR) on the General Plan Future Land Use Map.

Site Conditions

- Site is 131 acres
- Property is vacant
- Property is within the Riparian Habitat Overlay Zone

Project Data Table

The table below summarizes the project data associated with the request.

	Allowed / Required	Proposed
Building Heights	18', Two-stories	18', Applicant has offered to limit all lots to one-story
Lot Size Range	Minimum lot area: Base Zoning: 20,000 s.f. Min. lot are utilizing Riparian Overlay Incentive: 16,000 s.f.	Minimum lot size: 16,129 s.f. Average lot size: 30,087 s.f.
Open Space	None required	26% (8.2 acres)

Approvals-To-Date

- Rezoning to R1-20 (Single Family Residential) approved in 2007.

Proposed Conceptual Site Plan

The Conceptual Site Plan (Attachment 3) depicts 118 single-family lots, ranging in size between 16,129 square feet (.37 acres) and 63,100 square feet (1.45 acres). There are four (4) points of egress/ingress; two (2) at the southern end of the property off Glover Road, and two (2) at the northern end of the property off Naranja Drive. The subdivision will be gated.

All riparian areas on the site will be preserved (see Attachment 5), with three (3) wash crossings proposed to enable access and circulation. An additional 15-foot protective apron is provided adjacent to the riparian areas to prevent construction disturbance in the riparian area.

The proposed landscape concept depicts the general landscape design including rainwater harvesting basins within the common areas. A 25-foot landscaped buffer yard "B" will be provided along the northern (Glover Road) and southern (Naranja Drive) boundaries of the project, which will screen the subdivision from Glover Road and Naranja Drive and provide additional screening and privacy for residents of the subdivision.

A number of rezoning conditions must be completed prior to approval of the grading plan for the project, including required improvements to Glover Road and multi-use paths along Glover Road and Naranja Drive. See Sheet 4 of the Conceptual Site Plan (Attachment 3) for a complete list of rezoning conditions.

Proposed Recreational Area

A 2.5-acre recreational area (Attachment 4) is proposed on the western side of the subdivision. The area provided exceeds the Zoning Code requirement of 1 acre per 85 units by 1.2 acres. The recreational area will contain the required active and passive recreational amenities, including:

- A recreational trail
- Seven (7) fitness stations located under covered shade structures
- Six (6) benches
- Two (2) picnic tables
- One (1) barbeque
- One (1) 24'x24' ramada

The recreational area will be landscaped consistent with Town requirements.

Since the proposed recreational area location is relatively far from homes on the east side of the subdivision, a condition has been added to Attachment 1 to require a natural surface trail along the full length of the main riparian corridor to provide better pedestrian access to the recreational area and to provide an additional passive recreational opportunity.

DISCUSSION / ANALYSIS:

Conceptual Site Design Principles, Section 22.9.D.5.a

The Conceptual Site Plan is in general conformance with all applicable Conceptual Site Design Principles. Following are key Design Principles (*in italics*), followed by staff evaluation of how the design addresses the principles:

Building orientation: the location, orientation and size of structures shall promote a complementary relationship of structures to one another.

Staff Commentary: The subdivision design is significantly influenced by the presence of several riparian corridors running north to south through the property. Many of the lots back to a riparian area, which enhances privacy and view sheds. Several lot sizes are proposed, with the larger lots generally around the periphery of the subdivision. This lot arrangement serves to provide a transition in density between the larger lot (3.3 acre) development to the west and north and the smaller lots (.4 acre) on the interior of the subdivision.

Drainage/grading: site grading shall minimize impacts on natural grade and landforms and provide for subtle transitions of architectural elements to grade. Significant cuts and fills in relation to natural grade shall be avoided or minimized to the extent practical given property constraints.

Staff Commentary: The property slopes generally north to south. Cross sections showing the relationship between the proposed homes and adjacent properties are included as Attachment 7. A 15-foot apron will be provided on all lots abutting riparian areas to ensure construction activities and development disturbance are kept away from the riparian areas. No significant cuts or fills will be required.

The proposed development is exempt from the Environmentally Sensitive Lands (ESL) regulations as the R1-20 zoning was approved prior to adoption of the ESL requirements.

Development of this parcel will increase runoff due to the addition of non-permeable surfaces associated with residential structures and subdivision streets. A full drainage report will be required as part of the Final Design review submittal to verify conformance with the Town's Drainage Criteria Manual. All post-development flow shall be mitigated and released in the same manner and quantity as the existing conditions.

Connectivity: strengthen the usability and connectivity of the pedestrian environment internally and externally by enhancing access to the public street system, transit, adjoining development and pedestrian and bicycle transportation routes. Buildings and uses should provide access to adjacent open space and recreational areas where appropriate.

Staff Commentary: The proposed neighborhood will be accessible from Glover Road on the north and Naranja Drive on the south. Sidewalks are proposed throughout the subdivision to provide pedestrian access and circulation through the subdivision. Multi-use paths will be provided along both sides of Glover Road and the north side of Naranja Drive.

The proposed condition requiring a native material trail through the main riparian (Common Area "F") area will strengthen pedestrian connectivity through the subdivision and provide more convenient access to the recreation area.

In addition, a "permanent non-motorized public recreation easement" is required along the eastern side of the subdivision within the riparian area (Common Area "K") to allow continuation of Trail #33, aka the "Poppy Trail", which is identified in the *Oro Valley Trails Task Force Report* as a wash trail. The trail is part of the larger Big Wash/Honey Bee Trail Loop, which is a part of the Pima County and Arizona State Parks trail systems.

Design Standards, Addendum "A"

Provide open space at project entries (Section 3.1.A.1.c)

Staff Commentary: The Conceptual Site Plan conforms to this standard. The required buffer yards along Glover Road and Naranja Drive will provide open space at all subdivision entries. The riparian areas adjacent to the proposed entries from Naranja Drive will provide more extensive open space buffers in proximity to these entries.

Way finding shall be provided for subdivisions over 40 acres using the following: (a) Directional signage and; (b) Themed landscaping along roadways (Section 3.1.D.3.a & b).

Staff Commentary: This subdivision will be subject to these requirements. Compliance will be evaluated at the Final Site Plan stage.

Local streets shall not exceed 600 linear feet without a curve or break in circulation, such as a traffic circle, unless approved by the Town Engineer (Section 3.1.D.5)

Staff Commentary: The subdivision design conforms to this standard with the exception along the northern side of proposed Streets "A" and "B" Engineering staff has added a condition to Attachment 1 to ensure conformance with this Design Standard.

ENGINEERING COMMENTS

Traffic
The increased traffic created by the proposed residential subdivision will be accommodated by the surrounding street network with minimal impact. Subdivisions generally produce a low volume of traffic and the generation of new traffic from the proposed subdivision will be comparable to other subdivisions of similar size and character.

All internal streets within this development will be private and the subdivision will be gated. Streets will be constructed to the Town of Oro Valley Subdivision Street Standards. Traffic speed within the development will be controlled by the use of strategically placed round-about intersections and other traffic control devices.

Access to the subdivision will be provided via gated ingress/egress points on Glover Road and Naranja Drive. Glover Road will be widened and extended by the developer to serve this project. All required public roadway improvements will be the responsibility of

the developer. All constructed improvements within the public right-of-way will require a permit from the Town Engineer's office.

Drainage
The drainage system for the proposed development will be designed per the Town's Drainage Criteria Manual and Floodplain Ordinance to ensure that all habitable structures will be protected from flooding and erosion. Increased stormwater generated as a result of the development will be captured and conveyed into constructed detention basins.

The detention basins will slow stormwater discharge so that there is no increase in peak flow or negative impacts to downstream areas. Under post-developed conditions, all flows shall be mitigated to discharge to the south in the same or reduced intensity, manner and location as in the existing form. The specifics of the drainage scheme shall be determined through the Final Site Plan process.

Grading
The project is a custom-graded residential subdivision. A Type 2 Grading Permit is required to construct internal streets, drainage facilities, and utilities. Individual Type 1 Grading Permits shall be required for the construction of each individual residential lot. All grading will adhere to chapter 27.9 of the Town of Oro Valley Zoning Code.

PUBLIC PARTICIPATION:

Summary of Public Notice
Notice to the public was provided consistent with Town-adopted noticing procedures, which includes the following:

- Notification of residents within 600 feet
- Posting at Town Hall
- All registered HOAs

Neighborhood Meeting

A neighborhood meeting was held on February 6, 2014. Approximately 10 residents attended the meeting and had concerns related to traffic, protection of environmental resources, aesthetic of the development, and school impacts. A copy of the neighborhood meeting summary notes are attached (see Attachment 8).

No correspondence has been received to date.

RECOMMENDATION:

Based on a finding that the Conceptual Site Plan is in conformance with the Oro Valley Design Principles and applicable Design Standards, it is recommended that the Conceptual Design Review Board take the following action:

Recommend approval to the Town Council of the requested Conceptual Site Plan under case OV1208-23, subject to the conditions on Attachment 1.

SUGGESTED MOTIONS:

I move to recommend approval of the Conceptual Site Plan subject to the conditions in Attachment 1, finding that the proposed Conceptual Site Plan for Saguaros Viejos is in conformance with the Oro Valley Design Principles and applicable Design Standards.

OR

I move to recommend denial of the Conceptual Site Plan for Saguaros Viejos finding that it is not in conformance with the Oro Valley Design Principles and applicable Design Standards, specifically
_____.

CDRB ATTACHMENTS:

NOT ATTACHED TO COUNCIL COMMUNICATION. SEE OTHER COUNCIL COMMUNICATION ATTACHMENTS

1. Conditions of Approval
2. Location Map
3. Conceptual Site Plan
4. Recreation Area Plan
5. Riparian Habitat Overlay District Map
6. Zoning Map
7. Site Cross Sections
8. 2/6/14 Neighborhood Meeting Summary Notes

DRAFT MINUTES
ORO VALLEY CONCEPTUAL DESIGN REVIEW BOARD
REGULAR SESSION
MARCH 11, 2014
ORO VALLEY COUNCIL CHAMBERS
11000 N. LA CANADA DRIVE

CALL TO ORDER AT OR AFTER 6:00 PM

Chair Eggerding called the Oro Valley Conceptual Design Review Board Regular Session to order at 6:00 PM.

ROLL CALL

PRESENT:
Richard Eggerding, Chairman
Bruce Wyckoff, Vice Chairman
Nathan Basken, Member
Kit Donley, Member
Harold Linton, Member

ALSO PRESENT:
Lou Waters, Town Council Liaison
Joe Hornat, Town Council Representative

2. CONCEPTUAL SITE PLAN FOR A PROPOSED 118 LOT SUBDIVISION ON 131 ACRES KNOWN AS SAGUAROS VIEJOS, LOCATED AT THE NORTHWEST CORNER OF NARANJA RD. AND LA CHOLLA BLVD., OV1208-23.

Matt Michels, Senior Planner, presented the staff report which included the following:

-Location Map
-Location Detail
-Zoning for the area
-Conceptual Design Review
-Riparian Habitat Overlay District
-Conceptual Site Plan & Proposed Conditions
* Natural surface trail through main wash
* Pedestrian easement to recreation area
* Traffic calming measures

-Recommendation - Approval subject to conditions in attachment 1, not to include Planning Condition #3

Paul Oland, representing the property owner WLB Group, described the potential traffic calming designs for members of the Board. Mr. Oland explained the site plan was designed to maximize lot sizes as well as conserve the washes. The developer felt the larger lots on the exterior of the plan, and smaller lots on the interior, combined with the natural trails would be best to preserve the natural landscape. Mr. Oland stated that the developer has been working with Amphi School District regarding the traffic impacts to both Wilson and Ironwood Ridge schools. The vacant land to the east of the development would be available for future development.

Eric Gormally, Oro Valley Resident, expressed his concern regarding the proposed development. Mr. Gormally owns 9 acres neighboring the project area and would prefer to see the natural desert left undisturbed by further development.

MOTION: A motion was made by Bruce Wyckoff, Vice Chairman and seconded by Kit Donley, Member to approve OV1208-23, Subject to the Conditions of Approval in Attachment 1, except for Planning Condition #3.

Attachment 1
Conditions of Approval
Saguaros Viejos Conceptual Site Plan
OV1208-23

Planning:
The Final Site Plan shall incorporate the following conditions:
1. Provide a natural surface trail within the wash confines along the full length of Common Area "F"
2. Provide a pedestrian easement between Lots 61 and 62 and/or Lots 63 and 64 to provide pedestrian connectivity to the recreation area.
~~3. As proposed by the applicant, all homes shall be limited to one (1) story, no greater than 18 feet.~~
Engineering:
4. Provide a traffic calming measure approved by the Town Engineer on the northern segment of Streets "A" and "B"
5. Provide an updated Traffic Impact Analysis that reflects current site and traffic conditions.

Member Baskin suggested a Friendly Amendment to include playground equipment at the recreational area, which was accepted by Vice Chair Wycoff and Member Donley.

MOTION carried, 5-0.

DRAFT

Saguaro Viejos Residential Subdivision
2/6/14 Neighborhood Meeting Summary

Following are questions raised at the meeting (followed by responses, if known)

- **Will the project result in greater congestion on adjacent roadways, including Glover Road?** (a Traffic Impact Analysis is required to evaluate the impacts to the roadway. Off-site improvements to the roadway will be required as warranted)

- **Will Naranja Drive be widened?** (Yes, there are plans to widen Naranja Dr. beginning in summer 2014, depending on Pima Association of Governmants (PAG) availability)

- **Will Glover Road be extended and improved?** (Improvements will be developer driven and will be required on a project by project basis)

- **What is the timing of La Cholla improvements?** (The widening project is programmed for the second (2012-2016) and third (2017-2021) periods of the Regional Transportation Authority (RTA) plan. They are currently working from the south on the portion from Magee Rd. to Overton Rd.)

- **What is the maximum building height?** (18' and 2 stories)

- **Will the entire site be graded?** (Maximum grading limits will be established on the plat)

- **What is the price range?** (Unknown at this time. To be determined by builder)

- **What are the school Impacts?** (Amphi School District reviews development proposals)

- **What will be developed on the land east along La Cholla?** (No plans at this time. Current zoning is for large lot residential).

- **Will water pressure in the area be addressed?** (Yes, the Oro Valley Water Utility requires an engineered water plan for the project)

- **Will native plants be preserved?** (Yes, protected native plants and significant vegetation will be identified and preserved. The applicant will be required to mitigate (replace) plants that are destroyed through the development process)

- **Will the homes be custom or "production" (tract type) homes?** (Undetermined at this time. However, the applicant stated that they will be "semi-custom" models, where each plan has multiple configurations/options and varied elevations/styles)

- **When will construction commence?** (Unknown at this time. However, applicant stated that they intend to start construction early to mid 2015)

Town Council Regular Session **Item # 3.**

Meeting Date: 04/16/2014
Requested by: Councilmember Garner & Councilmember Zinkin
Submitted By: Julie Bower, Town Clerk's Office
Department: Town Clerk's Office

Information

SUBJECT:

DISCUSSION AND POSSIBLE ACTION TO INITIATE THE 60-DAY PUBLIC NOTICE PROCESS FOR A FUTURE DISCUSSION REGARDING REVENUE OPTIONS

RECOMMENDATION:

N/A

EXECUTIVE SUMMARY:

Councilmember Garner and Councilmember Zinkin have requested that this item be placed on the agenda.

BACKGROUND OR DETAILED INFORMATION:

Pursuant to A.R.S. 9-499.15, the Town must post a public notice on its website at least sixty days prior to the date any proposed new or increased fee or tax is scheduled to be discussed and approved or disapproved at a meeting of the Town Council.

The only issue to be discussed at tonight's meeting is whether or not to initiate the 60-day public notice process to allow Council to have a future discussion about revenue options and what options will be discussed. The statute does not allow discussion regarding the merits of the revenue options at tonight's meeting.

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

I MOVE to (initiate or not initiate) the 60-day public notice process to discuss _____ (insert revenue option(s)) at the regular Council meeting on June 18, 2014.

Town Council Regular Session **Item # 4.**

Meeting Date: 04/16/2014

Requested by: Stacey Lemos **Submitted By:** Stacey Lemos, Finance

Department: Finance

Information

SUBJECT:

PUBLIC HEARING: LOCAL ALTERNATIVE EXPENDITURE LIMITATION ELECTION (HOME RULE OPTION)

RECOMMENDATION:

This item is a public hearing only. No formal action is required.

EXECUTIVE SUMMARY:

On April 2, 2014, the Town Council held the first of two required public hearings regarding the extension of the Alternative Expenditure Limitation, commonly referred to as the "Home Rule Option." Tonight is the second public hearing.

Following the closing of the public hearing, the Town Council shall convene a special session to vote on the resolution proposing an extension of the Alternative Expenditure Limitation - Home Rule Option as prescribed by Arizona Revised Statute 41-563.01.1.

BACKGROUND OR DETAILED INFORMATION:

N/A

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

N/A

Town Council Regular Session **Item # 1.**

Meeting Date: 04/16/2014

Requested by: Stacey Lemos **Submitted By:** Stacey Lemos, Finance

Department: Finance

Information

SUBJECT:

RESOLUTION NO. (R)14-27, A RESOLUTION OF THE TOWN OF ORO VALLEY PROPOSING AN EXTENSION OF THE ALTERNATIVE EXPENDITURE LIMITATION (HOME RULE OPTION)

RECOMMENDATION:

Staff recommends approval.

EXECUTIVE SUMMARY:

On April 2, 2014, the Town Council held the first of two required public hearings regarding the alternative expenditure limitation, commonly referred to as the Home Rule Option. Tonight is the second public hearing. Staff is seeking approval of the resolution to place this question on the August 26, 2014, Primary Election ballot for voter approval. An affirmative vote of two-thirds (2/3) of the Town Council (5 votes) is required to place the Home Rule Option on the August 26, 2014, election ballot.

BACKGROUND OR DETAILED INFORMATION:

Provisions of the Arizona State Constitution and Arizona Revised Statutes impose an annual expenditure limitation on Arizona cities and towns, including the Town of Oro Valley. The state-imposed limitation uses actual payments of local revenues for FY 1979-80 as the spending base limit and adjusts the limit annually based on population growth and inflation. Article IX of the Arizona Constitution also allows a city or town to adopt a local alternative expenditure limitation, or Home Rule Option, with the approval of a majority of the qualified voters of the community. The Home Rule Option allows a community to determine locally what its spending limits will be rather than being restricted to the formula-based limit imposed by the State of Arizona.

The Town of Oro Valley's revenues and other financing sources for fiscal years 2015-16 through 2018-19, along with the state-imposed expenditure limitation have been estimated and are summarized below:

Fiscal Year	Estimated Revenues	Expenditure Limitation	Difference
2015-2016	$112,766,507	$42,353,640	$70,412,867
2016-2017	$114,460,028	$43,047,101	$71,412,927
2017-2018	$109,084,068	$36,731,985	$72,352,083
2018-2019	$111,612,381	$40,335,018	$71,277,363

Without voter approval of the Home Rule Option on August 26, 2014, the Town will be limited to spending the state-imposed amounts, even though revenues and other financing sources are estimated to exceed the limit by the difference indicated in the table. If voters fail to approve the Home Rule Option, no new alternative expenditure limitation may be submitted to the voters for at least two consecutive fiscal years.

The documents attached to this communication are required to be completed, reviewed and approved by the Auditor General's office in preparation for the Home Rule Option election. The Town received updated inflation factors from the Arizona Department of Revenue since the last public hearing on April 2nd, therefore, the calculation of the state-imposed expenditure limitation changed slightly in these documents.

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

I MOVE to approve Resolution No. (R)14-27, proposing an extension of the Local Alternative Expenditure Limitation.

or

I MOVE...

Attachments

R14-27 Home Rule - English
R14-27 Home Rule - Spanish
Home Rule Detailed Analysis
Home Rule Summary Analysis
Home Rule Summary Analysis Worksheet

RESOLUTION NO. (R)14-27

A RESOLUTION OF THE TOWN OF ORO VALLEY, ARIZONA PROPOSING AN EXTENSION OF THE ALTERNATIVE EXPENDITURE LIMITATION

WHEREAS, the Arizona State Constitution permits the submission to the voters of a Town of an Alternative Expenditure Limitation; and

WHEREAS, the voters of the Town of Oro Valley in 2010 adopted an Alternative Expenditure Limitation; and

WHEREAS, the Town Council of Oro Valley after two public hearings has determined that an extension of the Alternative Expenditure Limitation is necessary for the Town of Oro Valley.

NOW, THEREFORE, BE IT RESOLVED by the Town Council of Oro Valley that the following alternative expenditure limitation be submitted to the voters of the Town of Oro Valley.

Shall the following be adopted by the Town of Oro Valley as an Alternative Expenditure Limitation:

"The Mayor and Common Council of the Town of Oro Valley shall annually, as part of the annual budget adoption process, adopt an alternative expenditure limitation equal to the total amount of budgeted expenditures/expenses as it appears on the annual budget as adopted by the Council to apply to the Town of Oro Valley for each of the four fiscal years immediately following adoption of the alternative expenditure limitation. The Alternative Expenditure Limitation shall be adopted each year after a public hearing at which the citizens of the Town of Oro Valley may comment on the proposed alternative expenditure limitation. No expenditures may be made in violation of such alternative expenditure limitation, nor may any proposed expenditures be in excess of estimated available revenues, except that the Mayor and Common Council may, by three-fourths vote, declare an emergency and suspend the Alternative Expenditure Limitation. The suspension of the Alternative Expenditure Limitation shall be in effect only one fiscal year at a time."

PASSED AND ADOPTED BY THE TOWN OF ORO VALLEY, ARIZONA, this 16th day of April, 2014.

_____
Dr. Satish I. Hiremath, Mayor

ATTEST:

_____
Julie K. Bower, Town Clerk

Date:_____

APPROVED AS TO FORM:

_____
Tobin Sidles, Legal Services Director

Date:_____

RESOLUCIÓN NO. (R)14-27

UNA RESOLUCIÓN DE LA CIUDAD DE ORO VALLEY, ARIZONA, PROPONIENDO UNA EXTENSIÓN A LA LIMITACIÓN ALTERNATIVA DE GASTOS

CONSIDERANDO, que la Constitución del Estado de Arizona, A.R.S. Const. Art 9 § 20, permite presentar a los votantes de una Ciudad una Limitación Alternativa de Gastos; y

CONSIDERANDO, que los votantes de la Ciudad de Oro Valley adoptaron una Limitación Alternativa de Gastos en 2010; y

CONSIDERANDO, que el Concejo Municipal de Oro Valley, después de dos audiencias públicas, ha determinado que una extensión de la Limitación Alternativa de Gastos es necesaria para la Ciudad de Oro Valley.

AHORA, POR TANTO, SE RESUELVE por parte del Concejo Municipal de Oro Valley que la siguiente limitación alternativa de gastos sea presentada a los votantes de la Ciudad de Oro Valley.

Debiera la Ciudad de Oro Valley adoptar la siguiente como Limitación Alternativa de Gastos:

"El Alcalde y el Concejo Común de la Ciudad de Oro Valley, como parte del proceso anual de adopción de presupuesto, adoptarán anualmente una limitación alternativa de gastos equivalente a la cantidad total de desembolsos/gastos presupuestados como aparece en el presupuesto anual adoptado por el Concejo para aplicarse a la Ciudad de Oro Valley para cada uno de los cuatro años fiscales inmediatamente siguientes a la adopción de la limitación alternativa de gastos. La Limitación Alternativa de Gastos será adoptada cada año después de una audiencia pública en la cual los ciudadanos de la Ciudad de Oro Valley pueden comentar sobre la limitación alternativa de gastos propuesta. No se hará ningún gasto que infrinja dicha limitación alternativa de gastos, ni puede ningún gasto propuesto exceder los ingresos disponibles estimados, excepto que el Alcalde y Concejo Común pueden, por voto de tres cuartas partes, declarar una emergencia y suspender la limitación alternativa de gastos. La suspensión de la Limitación Alternativa de Gastos estará vigente durante solamente un año fiscal a la vez."

APROBADO Y ADOPTADO POR LA CIUDAD DE ORO VALLEY, ARIZONA, este día 16th de Abril, 2014.

_____
Dr. Satish I. Hiremath, Alcalde

DOY FE:

_____
Julie K. Bower, Secretaria Municipal

Fecha:_____

APROBADO EN CUANTO A FORMA:

_____
Tobin Sidles, Director de Servicios Legales

Fecha:_____

ALTERNATIVE EXPENDITURE LIMITATION
(Home Rule Option)
DETAILED ANALYSIS

Pursuant to the Arizona State Constitution, the Town of Oro Valley as authorized by Resolution No. (R)14-27, passed on April 16, 2014 will seek voter approval to adopt an alternative expenditure limitation (Home Rule Option) to apply to the Town for the next four years beginning in 2015-2016.

Under a Home Rule Option if approved by the voters, the town estimates it will be allowed to expend approximately $112,766,507 in 2015-2016, $114,460,028 in 2016-2017, $109,084,068 in 2017-2018 and $111,612,381 in 2018-2019.

With approval of the Home Rule Option, the town will utilize the expenditure authority for all local budgetary purposes including Public Safety, Streets and Roads Maintenance, Development Services, Transit Services, Parks and Recreation, Tourism and Economic Development, Water Utility, Magistrate Court, Stormwater Utility, Administration, Capital Improvement Projects, Municipal Debt Service and Contingency Reserves. We estimate that the expenditures for the next four years under the Home Rule Option will be as follows:

ESTIMATED AMOUNTS TO BE EXPENDED IN SPECIFIC AREAS

Purpose	**2015-2016**	**2016-2017**	**2017-2018**	**2018-2019**
Public Safety	$14,861,206	$15,439,859	$16,026,674	$16,634,710
Streets & Roads	4,258,386	4,008,437	4,258,441	4,343,610
Development Services	4,214,824	4,299,897	4,470,682	4,647,451
Transit Services	1,516,697	1,547,031	1,577,972	1,609,531
Parks & Recreation	2,333,562	2,412,940	2,500,346	2,591,002
Tourism & Economic Development	941,961	950,148	963,087	982,349
Water Utility	15,734,184	15,232,267	12,840,879	13,097,697
Magistrate Court	809,401	839,519	870,962	903,788
Stormwater Utility	991,479	925,676	944,190	963,073
Administration	8,660,457	8,988,791	9,153,710	9,535,908
Capital Projects	6,417,000	7,154,000	4,075,000	7,434,000
Municipal Debt Service	6,209,456	6,208,539	6,198,945	6,209,693
Contingency Reserves	45,817,894	46,452,924	45,203,180	42,659,569
Total Expenditures	**$ 112,766,507**	**$ 114,460,028**	**$ 109,084,068**	**$ 111,612,381**

If approved, the expenditures authorized will be funded from revenues obtained from federal, state and local sources. It is estimated that the amount of revenue from each source for the next four years will be as follows:

ESTIMATED AMOUNTS OF REVENUE FROM EACH AND ANY SOURCE

Source	**2015-2016**	**2016-2017**	**2017-2018**	**2018-2019**
Federal	$670,000	$670,000	$670,000	$670,000
State	20,820,198	21,172,674	14,490,622	17,623,871
Local	91,276,309	92,617,354	93,923,446	93,318,510
Total Revenues	**$ 112,766,507**	**$ 114,460,028**	**$ 109,084,068**	**$ 111,612,381**

The Town of Oro Valley has no local property tax.

In determining the revenue sources to fund the authorized additional expenditures under the alternative expenditure limitation, it is assumed that the federal, state and local revenues received by the town will continue to be available in 2015-2016 as they have for the past four years. Their continued availability is also assumed for the next three consecutive years following 2015-2016.

Any and all dollar figures in this analysis are estimated figures only and are based upon information available at the time of preparation of this report. The budget and actual expenditures in any given year may be more or less than the figures noted above depending on available revenues. The actual expenditure limitation for each fiscal year shall be adopted as an integral part of the budget for that fiscal year.

ALTERNATIVE EXPENDITURE LIMITATION
(Home Rule Option)

SUMMARY ANALYSIS

The voters of the Town of Oro Valley in 1982, 1986, 1990, 1994, 1998, 2002, 2006 and 2010 adopted an alternative expenditure limitation (Home Rule Option). The purpose of this election is for the continued use of the Home Rule Option.

Pursuant to the Arizona State Constitution, the Town of Oro Valley seeks voter approval to adopt a Home Rule Option to apply to the town for the next four years beginning in 2015-2016. Under a Home Rule Option if approved by the voters, the town estimates it will be allowed to expend approximately $112,766,507 in 2015-2016, $114,460,028 in 2016-2017, $109,084,068 in 2017-2018 and $111,612,381 in 2018-2019.

With approval of the Home Rule Option, the town will utilize the expenditure authority for all local budgetary purposes including Public Safety, Streets and Roads Maintenance, Development Services, Transit Services, Parks and Recreation, Tourism and Economic Development, Water Utility, Magistrate Court, Stormwater Utility, Administration, Capital Improvement Projects, Municipal Debt Service and Contingency Reserves.

Under the state-imposed limitation, the town estimates it will be allowed to expend approximately $42,353,640 in 2015-2016, $43,047,101 in 2016-2017, $36,731,985 in 2017-2018 and $40,335,018 in 2018-2019 for the operation of your local government. These expenditures include expenditures of constitutionally excludable revenues.

The amount of revenue estimated to be available to fund the operation of your town government is $112,766,507 in 2015-2016, $114,460,028 in 2016-2017, $109,084,068 in 2017-2018 and $111,612,381 in 2018-2019. These revenue estimates are the same under the Home Rule Option or the state-imposed expenditure limitation. The Town of Oro Valley has no local property tax.

Any and all dollar figures presented in this summary are estimates only and are based upon information available at the time of preparation of this analysis. The budget and actual expenditures in any of the four years may be more or less than the expenditures noted above depending on available revenue.

If no alternative expenditure limitation is approved, the state-imposed expenditure limitation will apply to the town.

ALTERNATIVE EXPENDITURE LIMITATION
(Home Rule Option)
SUMMARY ANALYSIS WORKSHEET

POPULATION FACTOR COMPUTATION

Fiscal Year	Prior Fiscal Year Population	/	1978 Population	=	Population Factor
2015-2016	42,000	/	1,475	=	28.474576
2016-2017	42,400	/	1,475	=	28.745763
2017-2018	42,800	/	1,475	=	29.016949
2018-2019	43,300	/	1,475	=	29.355932

STATE-IMPOSED EXPENDITURE LIMITATION

Fiscal Year	1979-80 Base Limit	x	Population Factor	x	Inflation Factor	=	Projected State Imposed Expenditure Limitation	+	Estimated Exclusions	Total Expenditures Under State-Imposed Limit
2015-2016	$ 272,317	x	28.474576	x	2.8758	=	$ 22,299,273	+	$ 20,054,367	$ 42,353,640
2016-2017	$ 272,317	x	28.745763	x	2.9245	=	$ 22,892,869	+	$ 20,154,232	$ 43,047,101
2017-2018	$ 272,317	x	29.016949	x	2.9706	=	$ 23,473,112	+	$ 13,258,873	$ 36,731,985
2018-2019	$ 272,317	x	29.355932	x	3.0200	=	$ 24,142,241	+	$ 16,192,777	$ 40,335,018