

April 27, 2012

Real Estate Division
City of Tucson Arizona
201 N Stone, 6th Floor
Tucson Arizona 85701



RE: 45-day Landowner Notification
Removal of EPNG Taps on Lines 1100 & 1103 at MP515+1719
Within EPNG's Easement in the SE Quarter of Sec 4; Twp 13S; Rng 10E
On Pima County Tax Parcel ID: 208-39-002B

Dear Landowner:

As you are probably aware, El Paso Natural Gas Company ("EPNG") holds a 120' right of way easement for two gas pipelines and appurtenances through your above-referenced property. EPNG owns and operates its interstate natural gas pipeline system under the jurisdiction of the Federal Energy Regulatory Commission (the "FERC"). This letter is being sent to notify you that your property will be affected by an upcoming EPNG project to remove two above-ground taps in the Southeast Quarter of Section 4, Township 13S, Range 10E, Pima County, Arizona.

EPNG's project will affect approximately 400 square feet (0.009 acres) and will involve excavating at the two tap sites, removing them, and backfilling within our right of way. During construction, EPNG will exercise care to ensure your property is not disturbed any more than necessary. All land disturbed during construction will be restored to as close to its pre-construction grade and condition as possible. EPNG anticipates removing these taps within the next six months.

In compliance with the FERC's landowner notification regulations, EPNG is required to make a good faith effort to notify all landowners affected by this project at least 45 days prior to commencing construction. This 45-day notice period provides you with an opportunity to notify EPNG or the FERC should you have an objection to the proposed project prior to the end of the 45-day notification period. If you wish to waive this 45-day landowner notification, please sign the 45-day waiver release below and return this letter in the enclosed return envelope provided for your convenience.

April 27, 2012

Should you have any environmental mitigation problems or concerns during construction of this project, you may contact me at (520) 663-4243. If you feel that you did not receive an adequate response to your complaint, please feel free to call EPNG's Land Department toll-free Hotline at (877) 598-5263 and discuss your complaint with Mr. Dan Gredvig, EPNG's Land Department Manager. If you are not satisfied with Mr. Gredvig's response, you may seek information or the informal resolution of a dispute regarding a pipeline construction activity by contacting the FERC Dispute Resolution Service. Information about Dispute Resolution can be found on the internet at <http://www.ferc.gov/legal/adr.asp>. The FERC Dispute Resolution Staff can be contacted by:

Toll-free Telephone:	(877) 337-2237
Fax:	(202) 219-2730
E-Mail:	ferc.adr@ferc.gov
US Mail:	Federal Energy Regulatory Commission Dispute Resolution Service 888 First Street NE Washington, DC 20426

Thank you for your time and should you have any questions regarding this project or any of the information contained in this letter, please feel free to call me at (520) 663-4243.

Sincerely,

Deborah White, SR/WA, NAC
Independent Property Rights Specialist
providing Property Rights Services to
El Paso Natural Gas Company

cc: Butch Ward, EPNG Project Manager
Dan Gredvig, EPNG Land Dept. Manager
Nicholas M. Harding, EPNG Regulatory Affairs Analyst

45-day Landowner Waiver Release

I, _____, consent to waive the 45-day landowner notice period.
(Landowner Signature)

Date: _____

Land Agent Signature
Authorized Representative
EPNG Land Department

Date: _____

INFORMATION ON FERC DISPUTE RESOLUTION SERVICE

Note that the Dispute Resolution Service (DRS) staff may provide information to the public and give informal staff opinions. The opinions given are not binding on the General Counsel or the Commission. Any person may seek information or the informal resolution of a dispute by calling or writing to the DRS at the telephone number and address listed above. The DRS staff will informally seek information from the caller and any respondent, as appropriate. The DRS staff will attempt to resolve disputes without litigation or other formal proceedings and may not resolve matters that are before the Commission in docketed proceedings. All information and documents obtained through the DRS shall be treated as non-public by the Commission and its staff. Calls to the DRS may be made anonymously. Any person who contacts the DRS is not precluded from filing a formal action with the Commission if discussions assisted by the DRS staff are unsuccessful at resolving the matter. A caller may terminate use of the Dispute Resolution process at any time.

John/Bart,

Tucson Water staff have reviewed and discussed the elements contained within the subject Avra Valley Land Management Proposal which you have submitted for our consideration. The following outlines the results of those discussions and our conclusions.

As suggested, the proposal contains a number of ideas for programs to be pursued in managing the property held by the City of Tucson in Avra Valley. The issues are complex and critical to the support and effective management of these assets of the City and Tucson Water. To that end, Tucson Water has also developed programmatic responses over the years aimed at preservation, maintenance and management of these properties with varying degrees of success. In this process we have acquired a fair amount of experience and positive results as are evident today.

The proposal suggests several primary components which can generally be described by the following :

1. Conservation planning and managed enhancements to the land.

Many of the elements in this category have already been done or are currently being accomplished. Basic floral and faunal surveys have characterized the properties and have been, and will continue to be, associated with all future projects contemplated in Avra Valley. Collaboration with the same habitat managers referenced in the proposal has guided our staff in the selection of successful seed mixes and land management strategies and controls which are proving successful. We intend to continue those relationships and activities as suggested in your proposal.

2. Management controls

The suggestions contained in the proposal are the very activities we are doing now. We have implemented an aggressive and consistent program to fence properties, limit all activities which may disturb the land and work to enhance the natural recovery processes which are evident throughout the valley. Our intent is to continue that work and annual budgets for the department support that commitment.

3. Public use and access

The proposal contains several suggestions to increase the opportunity for the public to use these properties for various purposes. This is a very critical option. The successional recovery on these retired farmland properties has, in large part, been directly dependant upon the public being denied access to the land. Where we have seen encroachment we have observed the natural succession of the land adversely impacted by those uses. We have worked to strike a balance of public uses, where appropriate, and developed lease agreements to control, monitor and evaluate the effectiveness of such activities. This strategy will continue. In concert with this effort, we believe it is not in the best interests of managing the property to essentially market its existence through web sites and electronic listings as suggested.

4. Habitat conservation planning and future property disposition

The issue of HCP development for the City and its relationship to the Avra Valley properties is extremely critical to the City as well as Tucson Water. The suggestion to develop market potentials for these lands, at this time, we believe is premature. The City first needs to determine what its future requirements will be for HCP set-a-sides, mitigation and/or restoration efforts before we make suggestions about what properties in Avra Valley might be developed or set aside for these purposes. We are participating in the efforts of the City to develop the HCP and will continue to do so. Once those efforts have provided a clear and consistent roadmap of our future land use needs we can make the decisions necessary to change the status of Avra Valley properties either for conservation HCP needs or for coordinated development within Avra Valley. Doing so prior to having this clear guidance could be shortsighted.

Summary/Conclusions`

The City, through the capacity and needs of Tucson Water, owns a substantial amount of extremely valuable property and associated water rights in Avra Valley. These lands have been, through ongoing collaboration with land management agencies, successfully managed and controlled allowing a natural, successional recovery throughout the valley. The City is now at a critical point in the development of the HCP which will provide a well documented, defensible, and consensus driven approach to the management of all lands owned by the City. At this time we believe the focus should remain on the successful completion of the City of Tucson HCP which, once completed, will provide the roadmap we need to follow regarding the future management and disposition of retired farmlands owned by the City in Avra Valley. Accordingly, we do not feel the need to transfer Bart to Tucson Water but will continue to support the process for creating the City HCP and following the management strategies now in place for the properties in Avra Valley.

We want to thank you for the opportunity to evaluate your proposal and appreciate the time and effort you have expended in reviewing our program efforts to manage the properties held in Avra Valley. The success of these efforts is critical to the long term water supply components of the City and the enhancement of the value these properties may contribute to future options associated with the ongoing City HCP processes.

PROPERTY RECORD — CITY OF TUCSON, ARIZONA

Real Property No. 1744

OCL

Base Map No.

Township & Range or Subdivision T. 14 S., R. 10 E.

Section or Block No. 4 Area 608 ac sq. ft.

Parcel or Lot T. 13 S., R. 10 E. Size X

Location Tucker Road and Anway Road

Appraised Value _____ Date _____ Appraised by _____

How Acquired Deed of Trust & Deed for Cash Date 12/14/84 From Whom Patrick D. Tucker, Jr.

Status of Title Insured by Stewart Title

Deed Recorded 12/21/84 Book 7435 Page 318

Present Use Water Potential Use Aura Valley Grng.

Zoning _____ Improvements _____

Restrictions & Reservations _____

Remarks 208-39-003 298.4 ac Subject To Deed of Trust
201-42-016A JT Deed of Release & Full Reconveyance
201-42-016B 309.82 ac Recorded 1/20/95 Sta. 9963/316
208-39-002

PURCHASE PRICE, TAXES, ASSESSMENTS AND OTHER COSTS		
Date	Item	Amount
12-21-84		1,450,000.00

SCALE: One inch = _____ feet

SURPLUS PROPERTY DISPOSITION

Inspected, Date _____ By _____

Circularized: R.E.O. No. _____ Dated _____

Declared Surplus By _____ Date _____

Clear Title Action: _____

Q. C. From _____

Suit Entered, Date _____ Judgement No. _____ Date _____

Appraisal: Date Ordered _____ Date Completed _____

Review Committee Approval: Date _____ Offer Price \$ _____

To Mayor & Council, Date _____

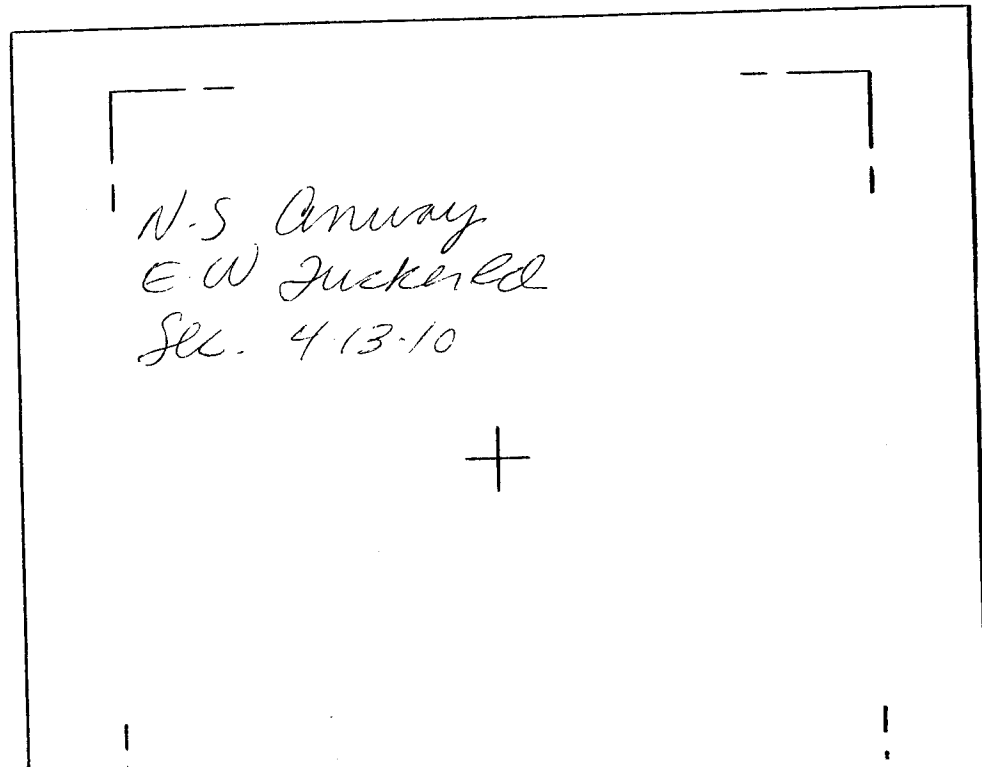
Bid Letter Distributed, Date _____

Advertised, Start _____ End _____ Bids Due _____

Sold, Date _____ To _____

Sale Price \$ _____

Remarks _____



PRESENT USE:	Water
BASE MAP PAGE #:	
CROSSROADS E-W:	Tucker Rd.
N-S:	Anway Road
SIZE	' x ' = sq.ft.
STATE CODE #:	
APPRAISAL DATE:	12/14/84
APPRAISAL AMOUNT:	\$
DATE ACQUIRED:	
HOW ACQUIRED:	Deed for Cash & Deed of Trust
BRIEF LEGAL:	
MARKETABLE TITLE:	YES NO
REMARKS:	201-42-016A 201-42-016B
RP 1744	

INACTIVE RP

RP No.: 1744 STATUS INACTIVE TAX CODE: 208390020X

RP ADDRESS:

INTERSECTION: ANWAY RD & TUCKER RD

SUBDIVISION NAME:

USE STATUS: WATER AVRA VALLEY IRRIG (TUCKER FARM)

RESPONSIBLE DEPT: WATER SPLIT: CODE:

DIMENSIONS: IRREG FIXED ASSET No:

SQ FT THIS PTN: 13,333,580.00 TOTAL RP SQ FT: 26,494,063.00

ACRES THIS PTN: 309.82 TOTAL RP ACRES: 608.22

PURCHASE DATE: 12/21/1984 PURCHASE DOCKET: 7435/318

PURCHASED FROM: PATRICK D TUCKER

TITLE INSURANCE: STEWART TITLE & TRUST OF TUCSON

ESCROW No: TITLE POLICY No:

EASEMENTS: GAS LINE EASEMENT [11400/1234]

PUR PRICE THIS PTN: TOTAL PURCHASE PRICE: \$1,450,000.00

SEC./TOWNSHIP/RANGE: WARD: OCL PURCHASE FUND:

041310 1310NW ZONE: RH IMPROVED/VACANT:

COMMENTS: SPLIT INTO 20839002A & 20839002B (FORMERLY 201-42-016B)

APPRAISAL INDEX: APPRAISER: PCA

APPRAISAL DATE: 8/8/1994 APPRAISED VALUE: \$549,715

LEGAL DESCRIPTION: LOTS 1 & 2 & S2 NE4 & SE4 & E330' OF NW4 EXC E660' OF N1980' OF NE4 & EXC N30' & E30' FOR RDS 309.82 AC AVID 309.82 AC SEC 4 T13S R10E

SALE DATE: 1/11/2006 SALE DOCKET: SALES FUND:

SALES PRICE: SALES ESCROW No:

SOLD TO: SPLIT INTO 20839002A & 20839002B

SALES COMMENTS: SPLIT INTO 20839002A & 20839002B (AVRA VALLEY FIRE DISTRICT)

ACTIVE RP

Date Last Modified: 1/11/2006 11:15:25 AM

RP No.: 1744 STATUS ACTIVE TAX CODE: 208390030

RP ADDRESS:

INTERSECTION: ANWAY RD & TUCKER RD

SUBDIVISION NAME:

USE STATUS: WATER AVRA VALLEY IRRIG (TUCKER FARM)

RESPONSIBLE DEPT: WATER SPLIT: CODE:

DIMENSIONS: IRREG FIXED ASSET No:

SQ FT THIS PTN: 12,942,110.00 TOTAL RP SQ FT: 26,494,063.00

ACRES THIS PTN: 298.40 TOTAL RP ACRES: 608.22

PURCHASE DATE: 12/21/1984 PURCHASE DOCKET: 7435/318

PURCHASED FROM: PATRICK D TUCKER

TITLE INSURANCE: STEWART TITLE & TRUST OF TUCSON

ESCROW No: TITLE POLICY No:

EASEMENTS: GAS LINE EASEMENT [11400/1234]

PUR PRICE THIS PTN: TOTAL PURCHASE PRICE: \$1,450,000.00

SEC./TOWNSHIP/RANGE: PURCHASE FUND:

041310 1310NW WARD: OCL ZONE: RH IMPROVED/VACANT:

ORDINANCE OR RESOLUTION: NUMBER: DATE:

COMMENTS: (FORMERLY 201-42-016A)

APPRAISAL INDEX: APPRAISER: PCA

APPRAISAL DATE: 8/8/1994 APPRAISED VALUE: \$447,615

LEGAL DESCRIPTION: W2 EXC E330' OF NW4 & LESS N30' FOR RD 298.41 AC AVID 298.41 AC SEC 4 T13S R10E

TICKLER:

ACTIVE RP

Date Last Modified: 1/11/2006 11:15:32 AM

RP No.: 1744 STATUS ACTIVE TAX CODE: 20839002A

RP ADDRESS: ANWAY RD & ORANGE GROVE RD

INTERSECTION: ANWAY RD & ORANGE GROVE RD

SUBDIVISION NAME:

USE STATUS: WATER AVRA VALLEY IRRIG (TUCKER FARM)

RESPONSIBLE DEPT: WATER SPLIT: YES CODE:

DIMENSIONS: IRREG FIXED ASSET No:

SQ FT THIS PTN: TOTAL RP SQ FT: 26,494,063.00

ACRES THIS PTN: TOTAL RP ACRES: 608.22

PURCHASE DATE: 12/21/1984 PURCHASE DOCKET: 7435/318

PURCHASED FROM: PATRICK D TUCKER

TITLE INSURANCE: STEWART TITLE & TRUST OF TUCSON

ESCROW No: TITLE POLICY No:

EASEMENTS: GAS LINE EASEMENT [11400/1234]

PUR PRICE THIS PTN: TOTAL PURCHASE PRICE: \$1,450,000.00

SEC./TOWNSHIP/RANGE: PURCHASE FUND:

041310 1310NW WARD: OCL ZONE: RH IMPROVED/VACANT:

ORDINANCE OR RESOLUTION: NUMBER: DATE:

COMMENTS: CREATED FROM SPLIT OF 208390020 (FORMERLY 201-42-016B)

APPRAISAL INDEX: APPRAISER: PCA

APPRAISAL DATE: 8/8/1994 APPRAISED VALUE: \$549,715

LEGAL DESCRIPTION: LOTS 1 & 2 & S2 NE4 & SE4 & E330' OF NW4 EXC E660' OF N1980' OF NE4 & EXC N30' & E30' FOR RDS 309.82 AC AVID 309.82 AC SEC 4 T13S R10E

TICKLER:

ACTIVE RP

Date Last Modified: 1/11/2006 11:15:36 AM

RP No.: 1744 STATUS ACTIVE TAX CODE: 20839002B

RP ADDRESS: 6401 N ANWAY

INTERSECTION: ANWAY RD & ORANGE GROVE RD

SUBDIVISION NAME:

USE STATUS: WATER AVRA VALLEY IRRIG (TUCKER FARM)

RESPONSIBLE DEPT: WATER SPLIT: YES CODE:

DIMENSIONS: IRREG FIXED ASSET No:

SQ FT THIS PTN: TOTAL RP SQ FT: 26,494,063.00

ACRES THIS PTN: TOTAL RP ACRES: 608.22

PURCHASE DATE: 12/21/1984 PURCHASE DOCKET: 7435/318

PURCHASED FROM: PATRICK D TUCKER

TITLE INSURANCE: STEWART TITLE & TRUST OF TUCSON

ESCROW No: TITLE POLICY No:

EASEMENTS: GAS LINE EASEMENT [11400/1234]

PUR PRICE THIS PTN: TOTAL PURCHASE PRICE: \$1,450,000.00

SEC./TOWNSHIP/RANGE: PURCHASE FUND:

041310 1310NW WARD: OCL ZONE: RH IMPROVED/VACANT:

ORDINANCE OR RESOLUTION: NUMBER: DATE:

COMMENTS: CREATED FROM SPLIT OF 208390020 (FORMERLY 201-42-016B)

APPRAISAL INDEX: APPRAISER: PCA

APPRAISAL DATE: 8/8/1994 APPRAISED VALUE: \$549,715

LEGAL DESCRIPTION: LOTS 1 & 2 & S2 NE4 & SE4 & E330' OF NW4 EXC E660' OF N1980' OF NE4 & EXC N30' & E30' FOR RDS 309.82 AC AVID 309.82 AC SEC 4 T13S R10E

TICKLER:

El Paso Global Networks Company Sort No. 540
 Tax Assessor Parcel Nos.208-45-0050
 The Northeast Quarter of the Northeast Quarter of Section 25, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated June 2, 1953 and June 1, 1953, recorded in Book 619, Pages 70 and 78, respectively, in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company Sort No. 540.5
 Tax Assessor Parcel Nos.208-45-0030
 The Northeast Quarter of the Southwest Quarter, The West Half of the Southeast Quarter and the Southeast Quarter of the Southeast Quarter of Section 24, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated June 2, 1953 and June 1, 1953, recorded in Book 619, Pages 70 and 78, respectively, in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company Sort No. 541
 Tax Assessor Parcel Nos.208-45-0020
 The South Half of the Northwest Quarter and the Northwest Quarter of the Northwest Quarter of Section 24, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated April 20, 1946 and February 17, 1949, recorded in Book 102, Page 471 and Book 172, Page 527, respectively, in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company Sort No 542
 Tax Assessor Parcel Nos.208-45-0010
 The Northeast Quarter of the Northeast Quarter of Section 23, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated May 2, 1946, May 2, 1946 and June 20, 1949, recorded in Book 97, Page 605, in Book 102, Page 468 and in Book 201, Page 573, respectively, in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company Sort No 543, 544, 545
 Tax Assessor Parcel Nos.208-41-0440
 The Northeast Quarter of the Southwest Quarter of Section 14, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated August 1, 1946 and January 14, 1949, recorded in Book 102, Page 445 and in Book 140, Page 537, respectively, in the office of the County Recorder of Pima County, Arizona; and
 The South Half of the Southeast Quarter of Section 14, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated April 20, 1946 and February 17, 1949, recorded in Book 102, Page 471 and in Book 172, Page 527, respectively, in the office of the County Recorder of Pima County, Arizona; and
 The Northwest Quarter of the Southeast Quarter of Section 14, Township 13 South, Range 10 East, G. & S. R. B. M. according to El Paso Natural Gas Company's rights for pipeline purposes under Section 28 of the Act of February 25, 1920 (41 Stat. 437) referenced in Patent from the United States of America dated August 11, 1950, recorded in Book 279, Page 415 in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company
 Sort #534,537,538,540,540.5,541,542,543,544,545,545.2,545.4,545.6,545.8,549,549.2,550,552

El Paso Global Networks Company Sort No. 545.2, 545.4, 545.6

Tax Assessor Parcel Nos.208-41-0480 & 208-41-0490

The South Half of the Northwest Quarter and the Northwest Quarter of the Northwest Quarter of Section 14, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated August 1, 1946 and January 14, 1949, recorded in Book 102, Page 445 and in Book 140, Page 537, respectively, in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company Sort No. 545.8

Tax Assessor Parcel Nos.208-42-0010

The Northeast Quarter of the Northeast Quarter of Section 15, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated August 1, 1946 and January 14, 1949, recorded in Book 102, Page 445 and in Book 140, Page 537, respectively, in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company Sort No. 549

Tax Assessor Parcel Nos.208-39-0020

The South Half of the Southeast Quarter and the Northwest Quarter of the Southeast Quarter of Section 4, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated June 1, 1953, recorded in Book 619, Pages 76 and 78 in the office of the County Recorder of Pima County, Arizona and according to El Paso Natural Gas Company's rights for pipeline purposes under Section 28 of the Act of February 25, 1920 (41 Stat. 437) referenced in Patent from the United States of America dated August 11, 1950, recorded in Book 279, Page 415 in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company Sort No. 549.2

Tax Assessor Parcel Nos.208-39-0030

Lot 4 (Northwest Quarter of the Northwest Quarter), the Northeast Quarter of the Southwest Quarter and the South Half of the Northwest Quarter of Section 4, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated June 1, 1953, recorded in Book 619 at Pages 76 and 78, in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company Sort No. 550

Tax Assessor Parcel Nos.208-39-0040

Lot 1 (Northeast Quarter of the Northeast Quarter of Section 5, Township 13 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated February 7, 1949 and recorded in Book 172, Page 525; March 19, 1946 and recorded in Book 97, Page 321, August 5, 1946 and recorded in Book 103, Page 247, August 5, 1946 and recorded in Book 102, Page 490 and dated May 14, 1947 and recorded in Book 111, Page 275 in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company Sort No. 552

Tax Assessor Parcel Nos.208-33-004A

Northeast Quarter of the Northeast Quarter of Section 31, Township 12 South, Range 10 East, G. & S. R. B. M. as described in the El Paso Natural Gas Company right of way and easements dated June 2, 1953 and recorded in Book 619, at Pages 68 and 72; June 1, 1953 and recorded in Book 619 at Page 78 and according to El Paso Natural Gas Company's rights for pipeline purposes under Section 28 of the Act of February 25, 1920 (41 Stat. 437) referenced in Patent from the United States of America dated August 11, 1950, recorded in Book 279, Page 415 in the office of the County Recorder of Pima County, Arizona

El Paso Global Networks Company

Sort #534,537,538,540,540.5,541,542,543,544,545,545.2,545.4,545.6,545.8,549,549.2,550,552

together with the right of ingress and egress along such easement and right of way and the right to use gates and existing roads for the aforesaid purposes (Grantee shall restore any damage to such gates or roads caused by its use thereof).

The communications system(s) shall be installed across the Property, and the said easement shall be limited to the area on the Property within the El Paso Gas existing pipeline right of way, as located as of the date of this instrument. The exact location of the Easement conveyed by this instrument shall be determined by the installation of Grantee's communication system(s), and the Easement shall extend for five feet on each side of the centerline of the first working communications system installed. During construction and maintenance operations, Grantee may utilize, if necessary or desirable, the adjacent lands within the existing El Paso Gas pipeline right of way as temporary workspace.

Grantee shall restore the surface of the Easement and temporary Easement as nearly as reasonably practical to its original grade and level after performing any construction or other work that disturbs the surface. Grantee shall cause reasonable payment to be made for actual damages to crops, timber, and improvements of Grantor directly resulting from the exercise, now or in the future, of the rights herein granted. Grantee shall not be liable for damages caused to trees, undergrowth, and brush removed from the Easement by Grantee after a communication system(s) has been constructed hereunder.

No rights reserved to Grantor herein shall be deemed to expand rights reserved to Grantor under any other easement. No limitation herein on the rights of Grantee shall be deemed to limit rights heretofore granted by Grantor or its predecessors in interest under any other easement.

The terms and provisions of this Agreement shall constitute covenants running with the land and shall be binding upon and inure to the benefit of the parties hereto, their successors, assigns, personal representatives, and heirs.

This instrument fully sets forth the terms and conditions of the Agreement. There are no oral or other written agreements between Grantor and Grantee that modify, alter, or amend this Agreement.

Grantee shall have the right to assign or transfer, without limitation, all or any part of the perpetual right, privilege, and easement of right of way granted herein.

Grantor covenants that Grantor has the right to convey the Easement, including the rights and privileges set forth herein; that Grantee shall have the quiet and peaceable possession, use, and enjoyment of the aforesaid Easement; and that Grantor shall execute such further assurances thereof as may be required.

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IN WITNESS WHEREOF, the Grantor has caused this Agreement to be signed hereto the day and year first above written.

GRANTOR

THE CITY OF TUCSON, a municipal corporation

Attest: *Kathleen A. DeWitt*

By: *[Signature]*
ROBERT E. WALKUP
MAYOR

Approved as to form

2000

[Signature]
Tobin Rosen
Principal Asst. City Attorney

By: _____

GRANTEE

EL PASO GLOBAL NETWORKS COMPANY, a Delaware Corporation

Attest: _____

By: *R. Bruce Northcutt*

By: _____

Corporate Acknowledgment

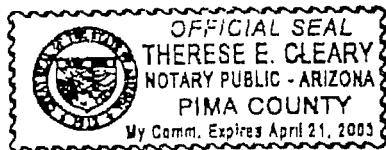
State of Arizona }
County of Pima } ss.

On this 3rd day of October, 2000 before me a Notary Public, personally appeared **ROBERT E. WALKUP**

as **MAYOR** of The City of Tucson, a municipal corporation, known to be or satisfactorily proven to be the person(s) whose name(s) are subscribed to this instrument and acknowledged that he/she/they executed same.

Therese E. Cleary
Notary Public
My Commission expires 4-21-03

SEAL



114001234

EXHIBIT "A"

PARCEL 1:

Lots 72 through 177 and their appurtenant Parking Areas, of Casitas Del Solar according to the plat of record in the office of the County Recorder of Pima County, Arizona, in Book 38 of Maps and Plats at page 31, and thereafter as amended by Judgment, Case No. 208053 recorded December 20, 1984 in Docket 7434 at page 989 of Pima County records.


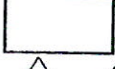


PARCEL 2:

Lots 1, 2, 12, 15 through 26 and 28 through 36 of The Summit at Finger Rock according to the Map recorded in Book 51 of Maps, Page 81, records of Pima County, Arizona.

EXCEPT any portion of any lot or common area lying within what was known as Lots 40 and 41 and Common Area A of Casitas Del Solar.

EL TIRO ACCESS ROAD

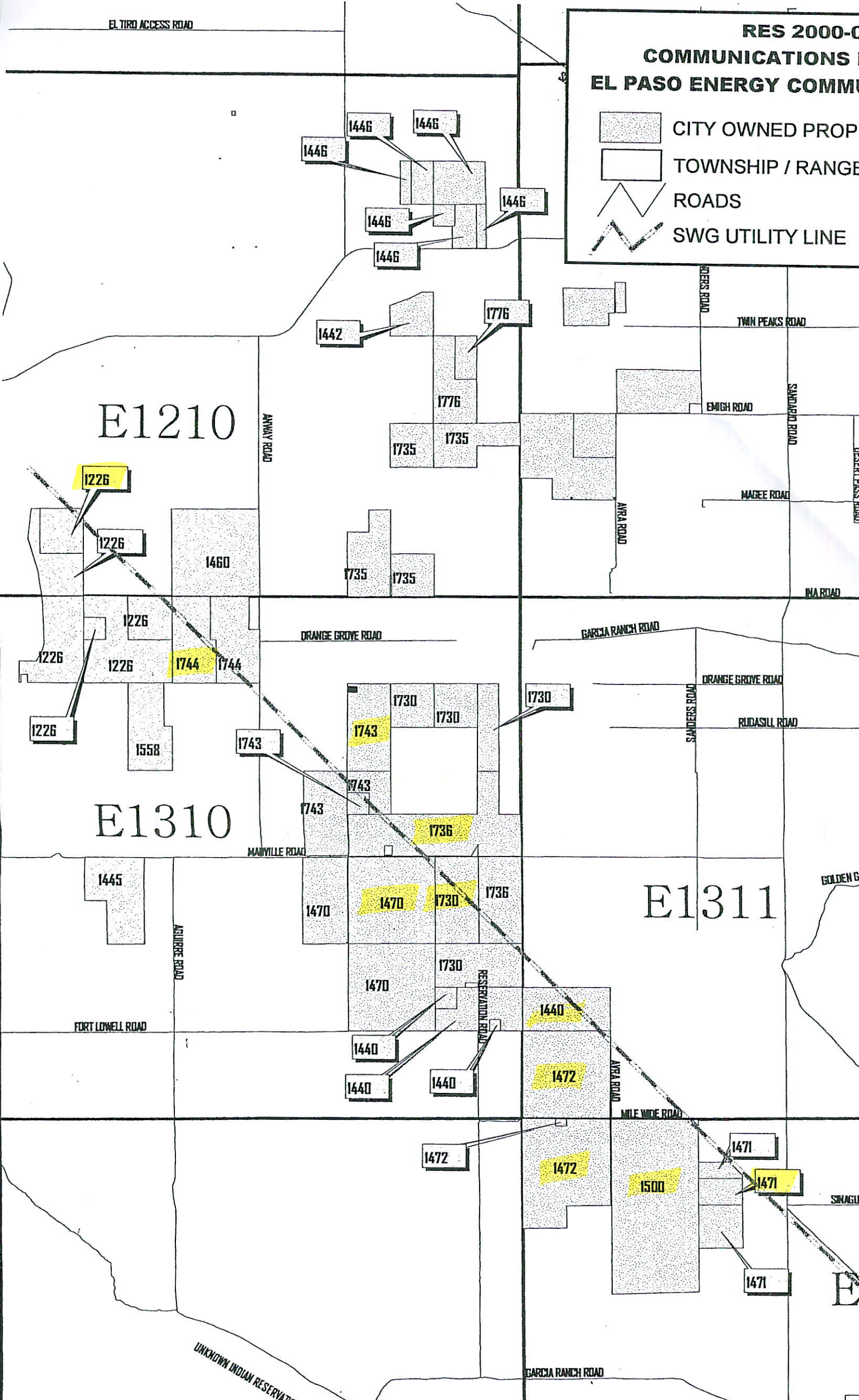
RES 2000-0
COMMUNICATIONS I
EL PASO ENERGY COMMU

-  CITY OWNED PROPI
-  TOWNSHIP / RANGE
-  ROADS
-  SWG UTILITY LINE

E1210

E1310

E1311





Mayor & Council Communication

Subject: **Intergovernmental Agreement (IGA)
between the City of Tucson and the
Avra Valley Fire District (AVFD)
(Outside City Limits)**

page 1 of 2

The proposed (IGA), submitted for Mayor & Council approval, provides the City fire protection for City property owned in Avra Valley and provides the Avra Valley Fire District (AVFD) a second fire station.

BACKGROUND

The City owns 22,368 acres of land in Avra Valley which lies 10 to 15 miles west of the City limits. This land was originally farms which were acquired for water rights. Because of the long distance to Avra Valley, the City does not currently have the capability of providing fire protection to the Avra Valley property without undue difficulty and expense. This situation leaves the Avra Valley properties with minimal fire protection. One of the farm acquisitions (RP 1744) is improved with a three bedroom house and a metal barn. The improvements are located at Anway Road and Orange Grove Road and are not presently used by the City.

PRESENT CONSIDERATION

The AVFD is upgrading its service capabilities with the establishment of a new substation. In order to develop the substation, they have requested use of the property referenced above and in exchange agree to provide the City no cost fire protection for its Avra Valley properties within the boundaries of the AVFD.

FINANCIAL CONSIDERATIONS

The City's improvements at R.P. 1744 are listed by the County Assessor's Office as having a value of approximately \$65,000. Considering all factors if the City were able to rent the property the fair market rent range would be between \$500 to \$700 per month. Concurrently, if the City were required to pay for

MAYOR & COUNCIL COMMUNICATION
Intergovernmental Agreement (IGA)
between the City of Tucson and the
Avra Valley Fire District (AVFD)
(Outside City Limits)

PAGE 2 OF 2

emergency fire response from the AVFD, the cost would be on average \$6,500 per call. Under the terms of the proposed IGA the City will provide to the AVFD use of its improved property (R.P. 1744) at no cost in return for free fire protection. Furthermore, the City will provide the improvements as is with no maintenance obligations.

POLICY CONSIDERATION

This agreement for the use of a small portion of one of the City's Avra Valley properties by the AVFD meets the Avra Valley Land Use Study guidelines for beneficial use of Avra Valley property which Mayor and Council approved on March 4, 1996.

RECOMMENDATION

In consideration of the above it is recommended that the Mayor & Council authorize execution of the attached IGA.

Respectfully submitted,

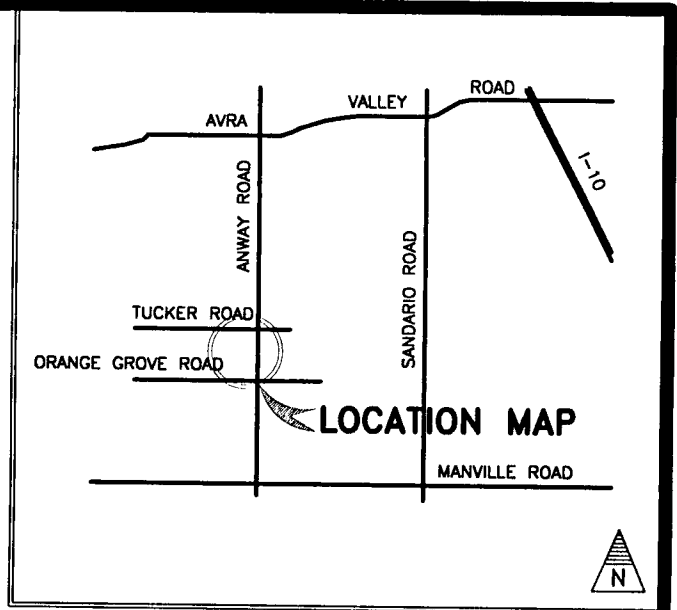
Michael F. Brown
City Manager

MFB:G.Parker:drb

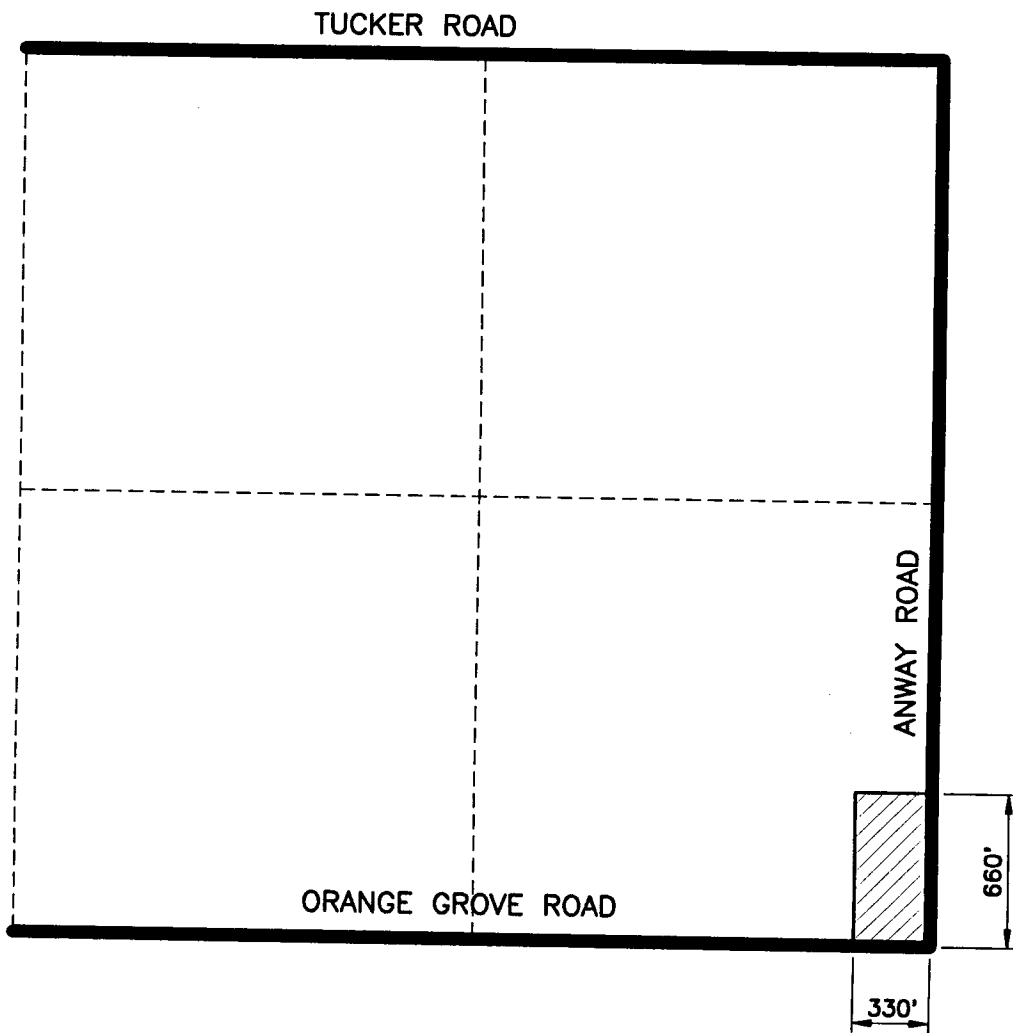
Transportation

Attachments: IGA
Sketch

EAST 1/2 OF THE SE 1/4,
 OF THE SE 1/4 OF THE SE 1/4
 OF SECTION 4, T13S, R10E

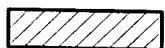


THIS PROJECT



NO SCALE

LEGEND



AREA TO BE LEASED
 ZONING

SR

SEC 4, T13S, R10E

BASE MAP

Drawn: RFV JULY '96

Scale: NO SCALE

Approved: _____
 City Engineer

INTERGOVERNMENTAL
 AGREEMENT WITH
 CITY OF TUCSON &
 AVRA VALLEY
 FIRE DISTRICT

City of Tucson, Arizona
 ENGINEERING DIVISION

PLAN # RP 1744

**INTERGOVERNMENTAL AGREEMENT
BETWEEN
CITY OF TUCSON, ARIZONA
AND
AVRA VALLEY FIRE DISTRICT**

This Agreement, made and entered into this _____ day of _____, 19___, by and between the City of Tucson, Arizona, an Arizona municipal corporation (hereafter "City"), and the Avra Valley Fire District, a Special Taxing District established pursuant to Title 48 of A.R.S., (hereafter "District") is for the purpose of providing fire protection from the District to the City's Avra Valley properties, and to allow the District to utilize a City facility in Avra Valley as a District substation.

W I T N E S S E T H :

WHEREAS, the City is the owner of multiple parcels of property in Avra Valley, most of which are undeveloped or in a natural state; and

WHEREAS, the City does not currently have the capability of providing fire service protection to the majority of its properties within the Avra Valley without undue difficulty and expense; and

WHEREAS, the City is the owner of an improved parcel of property at the intersection of Anway and Orange Grove Roads in Avra Valley, commonly known as the "Tucker Farm" and legally described in Exhibit A to this Agreement (hereafter the "Property"); and

WHEREAS, the District desires to utilize the Property for a District substation, and in exchange therefor, agrees to provide the City with fire protection for its Avra Valley properties; and

WHEREAS, the City and District desire to avail themselves of all provisions of law applicable to this Agreement and desire to jointly exercise their powers as provided for in A.R.S. § 11-951, *et seq.*

NOW, THEREFORE, CITY AND DISTRICT PURSUANT TO THE PROVISIONS OF A.R.S. § 11-951, ET SEQ., AND IN CONSIDERATION OF THE SERVICES TO BE RENDERED AND THE MUTUAL PROMISES HEREINAFTER SET OUT, MUTUALLY AGREE AS FOLLOWS:

1. **Recitals Incorporated.** The foregoing recitals are incorporated in and are made a part of this Agreement as though set forth fully herein haec verba.

2. **Use of Property by District.** City agrees, for the term of this Intergovernmental Agreement, to allow District to utilize the Property for a District substation. District agrees to take the Property as is, to improve the same if necessary at District's sole expense for District's purposes, and to vacate the same at the end of the term of this Agreement in at least as good a condition as the Property existed on the initial date of this Agreement. District shall be responsible for all costs associated with its use of the Property, including but not limited to, utility charges.

3. **District to Provide Fire Service to City.** In consideration for the City's allowing the District to use the Property as contemplated herein, District agrees to provide City, at no cost to the City, for the term of this Intergovernmental Agreement, any needed fire suppression or emergency services routinely offered by District at no cost to City on an as needed basis to all of the City-owned Avra Valley real properties

within the boundaries of the District. A listing and map of the City-owned Avra Valley properties are attached to this Agreement as Exhibits B and C, respectively.

4. **Termination.** City shall have the right in its absolute discretion to immediately terminate this Agreement if District fails to provide emergency services to City's properties within Avra Valley, at any time during the term of this Agreement.

5. **Financing.** City and District shall within their lawful methods of financing provide for payment of costs and expenses of any obligations arising each year under this Agreement from current annual budgeted funds for that year.

6. **Term.** The term of this Agreement shall be for one year from the date it is filed with the Pima County Recorder, and thereafter, shall be automatically renewed each year provided the provisions of A.R.S. § 11-951, *et seq.*, are met. However, either party may terminate this Agreement at any time with thirty (30) days' written notice. If funds are not appropriated by District for the fire services to be provided under this Agreement, the Agreement will be terminated at the beginning of the fiscal year for which no such funds are appropriated.

7. **Severability.** If any provisions of this Agreement or applications thereof to City or District are held invalid, such invalidity shall not effect other provisions or applications of this Agreement which can be given effect without the valid provision or application, and to this end, the provisions of this Agreement are severable.

8. **Jurisdiction.** Nothing in this Agreement shall be construed as either limiting or extending the statutory jurisdiction of either of the parties hereto.

9. **Arizona law applies.** This Agreement shall be construed according to the laws of the State of Arizona. This Agreement and all obligations imposed by it upon City and District arising therefrom shall be subject to any limitations imposed by applicable State law and regulations.

10. **Waiver.** A prior consent by either party to waive any covenant, promise, payment or performance under this Agreement shall not be construed as waiver of the subsequent performance of the covenant, promise, payment or performance under this Agreement. This Agreement may not be enlarged, modified, or altered, except in writing signed by both parties.

11. **Indemnity.** District and City shall each indemnify, defend, and hold harmless the other, its respective officers, departments, boards, employees and agents, from and against any and all suits, actions, legal or administrative proceedings, claims, demands, or damages of any kind or nature arising out of this Agreement which are attributable to any act or omission of District or City, their agents, employees, or anyone acting under their direction, control or on their behalf, in connection with or incidental to the performance of either party under this contract.

IN WITNESS WHEREOF, the City has, by resolution of its Mayor and Council duly adopted caused these presents to be executed by the Mayor, and attested to by the City Clerk, and said District, has by order of its Governing Board, caused these presents to be subscribed by the Chairman, on the day, month, and year first above written.

This Agreement shall comply with all applicable provisions of the Americans with Disabilities Act (Public Law 101-336, 42 USC 12101-12213), and all applicable Federal regulations under the Act, including 28 CFR Parts 35 and 36; provided, however, that any and all costs incurred in making the Property comply with any applicable provisions of the Americans with Disabilities Act shall be borne exclusively by the District.

CITY OF TUCSON

By _____ -
Its Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

AVRA VALLEY FIRE DISTRICT

By _____
Its Chairman

ATTEST:

Its Clerk

APPROVED AS TO FORM:

Legal Counsel for
Avra Valley Fire District

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**CITY OF TUCSON
REAL ESTATE DIVISION
RIGHT OF ENTRY**

**PARCEL NO. R. P.: 1744
DATED: July 12, 1996**

The City of Tucson ("CITY") hereby grants to AVRA VALLEY FIRE DEPARTMENT ("GRANTEE") a revocable right-of-entry to occupy the "SUBJECT PROPERTY" as shown in attached EXHIBIT "A", Pima County, Arizona, upon the following terms:

1. The Right-of-Entry shall commence July 15, 1996 and shall continue until terminated as hereinafter provided.
2. Subject Property to be used for Fire Station only, and for no other purpose.
3. GRANTEE shall vacate Subject Property on or before October 15, 1996. At such date this Right-of-Entry shall terminate.
4. GRANTEE shall at GRANTEE's own expense keep the Subject Property and all portions thereof in as good order, condition and repair as reasonable use will permit and shall leave the property free of trash and debris.
5. CITY shall have the right without notice or payment of any compensation whatsoever to GRANTEE to sell, destroy or otherwise dispose of any personal property left on the Subject Property by GRANTEE after GRANTEE has vacated or abandoned the Subject Property, or when this Right-of-Entry has been terminated.
6. GRANTEE shall indemnify, defend and save CITY harmless from any action or claim arising out of injury to GRANTEE or to any person in or upon the premises, or damage to any property thereon, caused by any act or omission of GRANTEE, its agents, employees, licensees or invitees, or caused by any defects in or about the Subject Property.
7. For so long as this Right-of-Entry shall be in force and effect, the GRANTEE shall maintain public liability and bodily injury insurance in the amount of \$500,000.00 for each individual person \$1,000,000.00 for each occurrence and \$100,000.00 property damages for each occurrence, and shall cause the CITY to be named as a co-insured for all purposes under such insurance. GRANTEE shall require that the insurance carrier shall provide the CITY with a certificate of coverage containing a provision for notice of cancellation. In any event, this Right-of-Entry shall terminate and be of no further or effect upon cancellation of said insurance.
8. CITY reserves the right to enter the Subject Property at any time for any purpose deemed necessary by CITY.


9. The failure or omission of CITY to terminate this Right of Entry for any violation of any of its terms, conditions or covenants, shall in no way bar, stop or prevent CITY from terminating this Right-of-Entry thereafter, either for such for any subsequent violation of any such term, condition or covenant.
10. Application/Use fee in the amount of \$ N/A for issuance of this Right-of-Entry is due and payable at time of acceptance by GRANTEE.
11. Grantee will be responsible for acquiring all the permits necessary to conduct the requested activity, and Grantee will be responsible for complying with all zoning and code requirements as established by the City Planning Department, the Development Services Department, Fire Department and Police Department and any other City-County and State code or statues that my apply. Copies of such shall be made available to City of Tucson Real Estate Division.

ACCEPTANCE:

GRANTEE:

CITY OF TUCSON

BY: _____

BY:  _____
Hector F. Martinez
Real Estate Administrator

TITLE: _____

R. P. 1744

GP:dcb

!

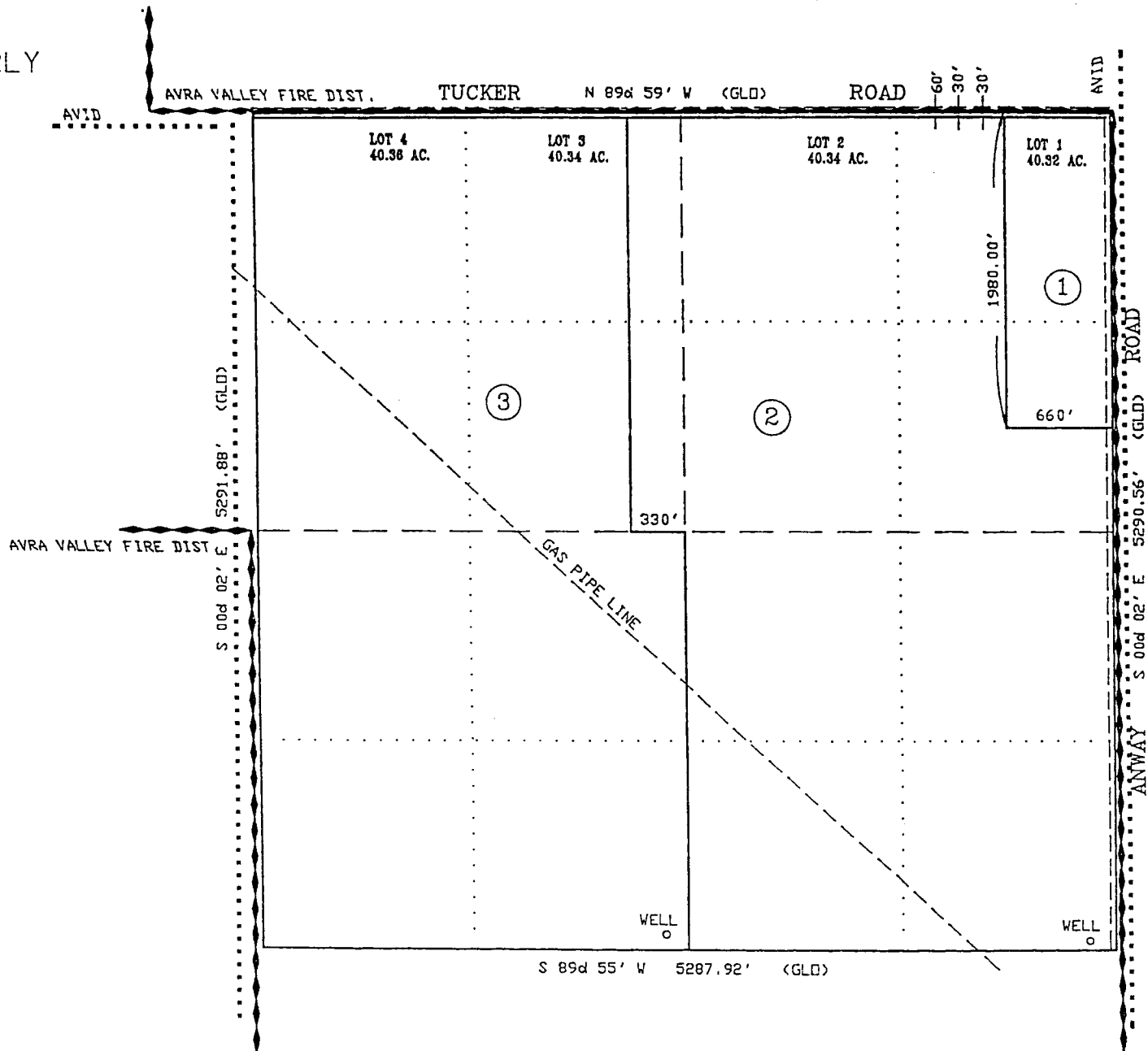
ASSESSOR'S RECORD MAP

208-39

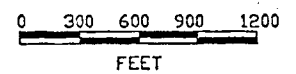
SECTION 04, TOWNSHIP 13 SOUTH, RANGE 10 EAST

AREA-CODE
0603

FORMERLY
201-42



1988-1
\\NT13S\R10E\S04 - 05/13/93 &X





CITY OF TUCSON

The Sunshine City

CITY HALL
P.O. BOX 27210
TUCSON, ARIZONA 85726-7210

DEPARTMENT OF TRANSPORTATION
REAL ESTATE DIVISION
201 N. STONE
PHONE: (520) 791-4181
FAX: (520) 791-5641


June 12, 1996

Avra Valley Fire Department
ATTN: Chief Barry Gerber
15790 West Silverbell Road
Marana, AZ 85650

Dear Chief Gerber:

Enclosed is draft copy of the proposed IGA between the City and Avra Valley Fire District. Please review and return your comments to me. Also provide me with estimated annual cost figures for emergency services that would be associated with providing your normal protection for City property and personnel. Also please indicate what the mill rate fire protection assessment is for the district's private property owners.

Sincerely,



George Parker
Property Manager

GP:dcB

cc: Dan Sweet, Well Maintenance Supervisor
Hector F. Martinez, Real Estate Administrator

Enclosure

C:\MSWORD\GP\GERBER.LTR

MODE = MEMORY TRANSMISSION

START=JUN-07 10:55

END=JUN-07 10:56

FILE NO. = 132

NO.	COM	ABBR/NTWK	STATION NAME/ TELEPHONE NO.	PAGES	PRG.NO.	PROGRAM NAME
001	OK		97915399	004/004		

-DEPT/TRANS. REAL ESTATE -

***** -602 791 5641 - ***** - 602 791 5641- *****




MEMORANDUM

OFFICE OF
THE
CITY ATTORNEY
CIVIL DIVISION
(520) 791-4221

DATE: May 7, 1996

TO: Jennifer Gillaspie
Water Operations Administration

FROM: 
Tobin Rosen
Principal Assistant
City Attorney

RE: PROPOSED AVRA VALLEY FIRE DISTRICT AGREEMENT TO USE TUCKER FARM

Based upon other model IGA's with fire districts, I have prepared the attached draft Intergovernmental Agreement between the City and the Avra Valley Fire District for use of the Tucker Farm property by the District for a fire station.

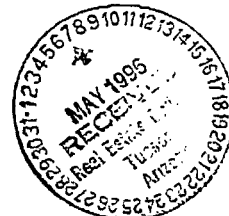
I would appreciate if you could review it, and let me know if there are any changes or additions you would have to this Agreement before submitting it to the District. By copy of this memo to Hector Martinez, I am also soliciting his comments on this draft.

Please let me know if you have any questions.

cc: Hector Martinez - Real Estate Administrator

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Post-it* Fax Note	7671	Date	6/7/96	# of pages	4
To	DAN SWEET	From	REAL ESTATE		
Co./Dept.		Co.			
Phone #		Phone #	791-4181		
Fax #	791-5399	Fax #	791-5641		






MEMORANDUM

OFFICE OF
THE
CITY ATTORNEY
CIVIL DIVISION
(520) 791-4221

DATE: May 7, 1996

TO: Jennifer Gillaspie
Water Operations Administration

FROM: 
Tobin Rosen
Principal Assistant
City Attorney

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AGREEMENT TO USE TUCKER FARM**

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Please let me know if you have any questions.

cc: Hector Martinez - Real Estate Administrator

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Post-it® Fax Note	7671	Date	6/7/96	# of pages	4
To	DAN SWEET	From	REAL ESTATE		
Co./Dept.		Co.			
Phone #		Phone #	791-4181		
Fax #	791-5399	Fax #	791-5641		



AVRA VALLEY



FIRE DISTRICT

15790 W. Silverbell Road
Marana, Arizona 85653

Marana 682-3256

June 28, 1996

George Parker
Property Manager
City of Tucson
P. O. Box 27210
Tucson, AZ 85726-7210

Dear Mr. Parker,

Enclosed is proposed IGA between the City and Avra Valley Fire District, that shows some very minor changes. I agree in form to the IGA showing these changes.

As you requested, the figures below relate to fire responses and containment. They are a per hour charge that extend the length of the operation:

Engine (Pumper)	\$400.00 per hour
Water Tender	250.00 per hour
Brush Truck	200.00 per hour
Fire Fighters	20.00 per hour per person

Normal FF response 6-7 persons.

Based on an average fire assignment of 6 hours, the cost estimate would be \$6,540.00 per fire call.

Additionally, per your request, our mill rate fire protection assessment to district residents is \$3.00 per hundred assessed value.

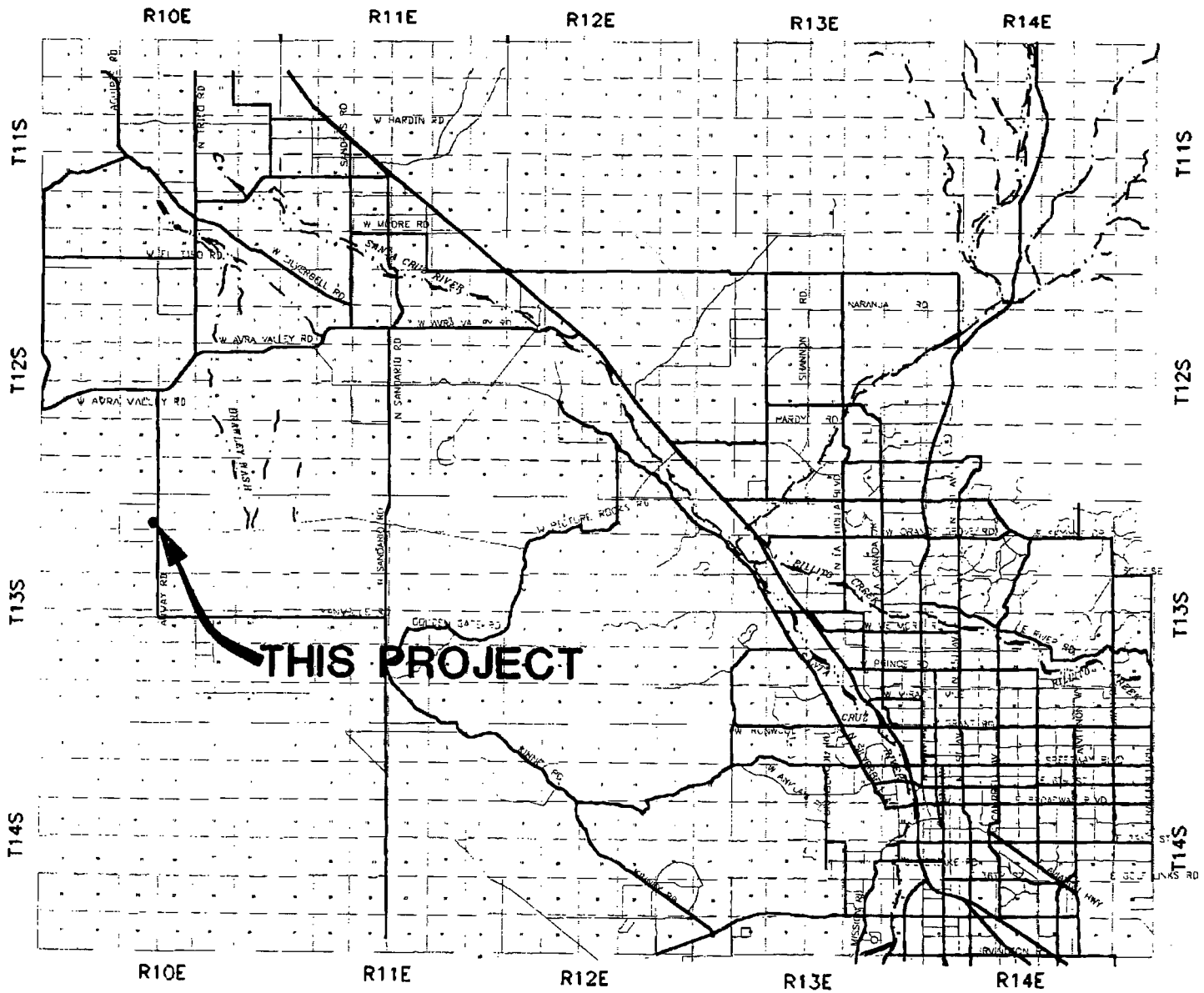
I hope this information is what you needed. Any questions please call me at 682-3255.

Sincerely

Barry Gerber
Fire Chief

cc: Dan Sweet, Well Maintenance Supervisor





DETAIL

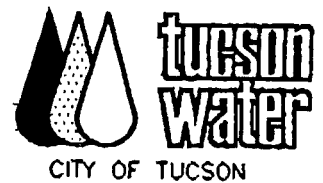
SEE
ATTACHED
SHEET

CASE
LOCATION MAP

REAL ESTATE
REQUEST NO. _____

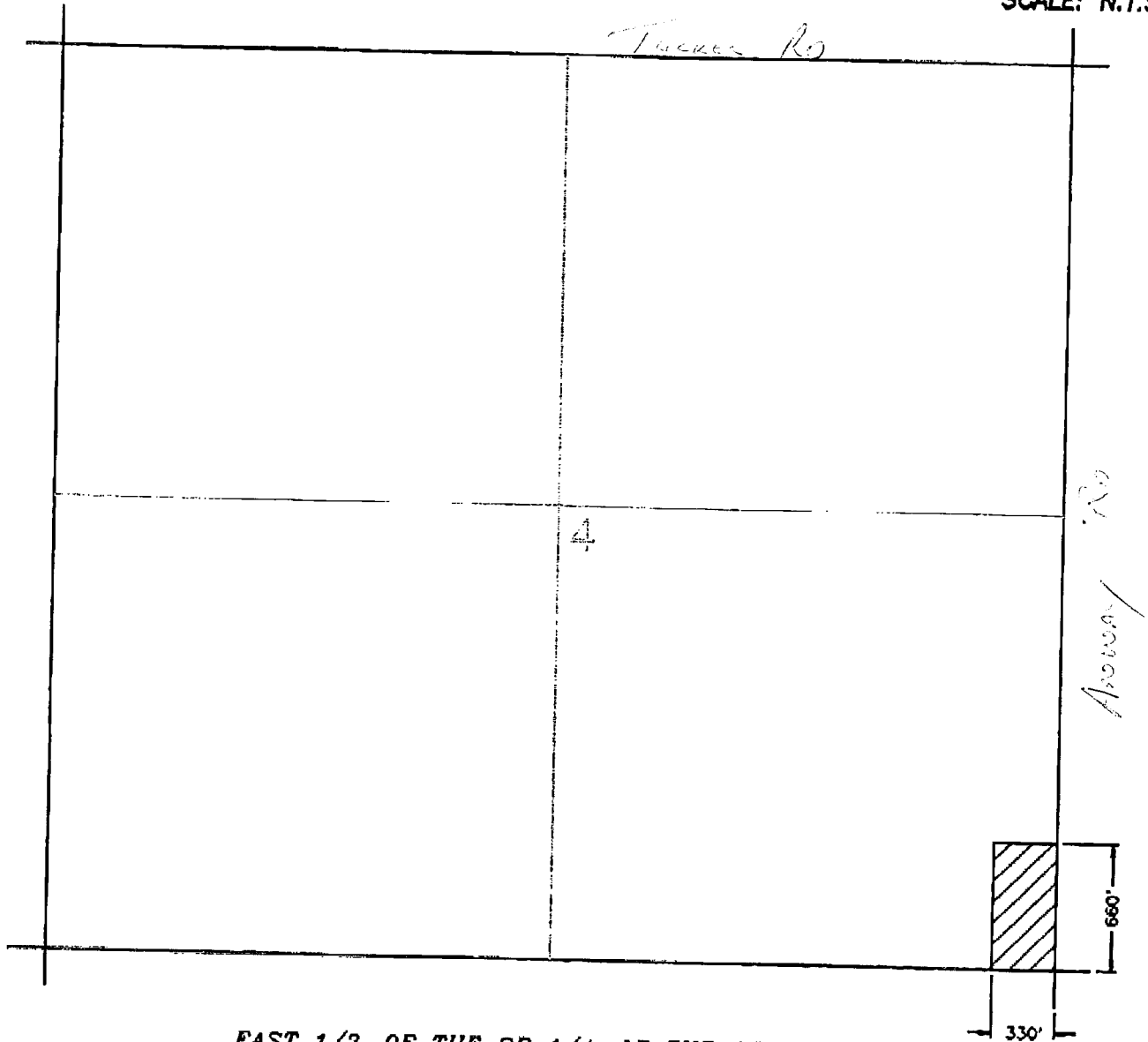
LOCATION SE 1/2 SEC. 4 T13S, R10E

SKETCH No. _____





SCALE: N.T.S.



EAST 1/2. OF THE SE 1/4. OF THE SE 1/4
OF THE SE 1/4 OF SECTION 4, T 13 S, R 10 E



6/21/96
SCALE: N.T.S.
DRAWN BY: C. RUSSO

~~SITE~~ LOCATION MAP
of City of Tucson
AGREEMENT WITH
AVRA VALLEY FIRE DISTRICT
FOR USE OF TUCKER FARM

RP 1744
C:\MISC\CAVLOC.DWG

AVRA VALLEY



FIRE DISTRICT

15790 W. Silverbell Road
Marana, Arizona 85653

Marana 682-3256

April 25, 1996

Kent McClain
Director
Tucson Water

Subj.: IGA

After many conversations and letters back and forth, I am extremely happy to be able to present our proposal to Tucson Water.

We suggest an Inter-Governmental Agreement between the City of Tucson and Avra Valley Fire District pursuant to A.R.S. § 11-952. This agreement would allow Avra Valley Fire District to utilize a building and land owned by Tucson Water. This property would be used as a second fire station, staffed 24 hours per day and would house equipment necessary to extinguish local fires.

In being able to use this property, Avra Valley Fire District would be able to offer Tucson Water security for this property on a continuing basis. In addition, Avra Valley Fire District would agree to extinguish brush fires on City of Tucson property as they may arise, prior to any damage being caused to other property in the area. This joint venture would also enhance service to the local residents and neighbors of City of Tucson property. We will be able to respond in a more timely fashion in area, thus affording both residents and Tucson improved service.

I am sure you can see the advantage of the agreements and will concur that it is a worth while endeavor.

Sincerely,

Barry Gerber
Fire Chief

CHEN ASSORS' VALUE OF TUCSON HOUSE

AVRA VALLEY FIRE DISTRICT PROPOSAL
USE OF C.O.T. LAND IN AVRA VALLEY

April 26, 1996
11:00 am
Water Plant 1

Barry Gerber, Chief, AVFD
Hector Martinez, C.O.T. Real Estate Administrator
Jennifer Gillaspie, Water Operations Administrator
Dan Sweet, Water Operations Superintendent

1. Introductions
2. City Objectives And Interests In Avra Valley Land Management
 - a. Aquifer & water rights protection
 - b. Benefit to customers
 - c. Engagement in good neighborliness
 - d. Avoidance or Reduction of liability
 - e. Clean up & Remediation
3. AVFD Needs And Interests
 - a. Provision of fire protection
 - b. Good management of resources
 - c. Public service consistent with basic mission
 - d.
 - e.
4. Generation of Best Mutual Proposal
 - a. necessary elements
 - b. desirable elements
 - c. political considerations?
 - d. outline of proposal
5. Next Steps

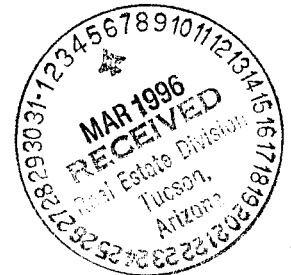


March 1, 1996

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Andy Bowden
6301 N. Anway
Marana, AZ 85653

RE: TUCKER FARM - NOTICE TO VACATE PREMISES



Dear Mr. Bowden:

This letter will serve as formal notification that you are to vacate the City of Tucson-owned property known as Tucker Farm at 6301 N. Anway Road, Marana, Arizona, (hereafter the "Premises") no later than sixty days from the date of this letter. This notice to vacate is based upon several factors.

There is no legal basis for you to continue occupying the Premises. Any rights incident to the City's purchase of your father's farm by virtue of the initial lease agreement with the City have expired long ago. Furthermore, assuming that the verbal authorization which you apparently received to occupy the Premises was authorized in the first place, it has also long ago expired. This notice is specifically intended to terminate any holdover tenancy which was created by virtue of your continued occupancy of the Premises or any other City-owned real property after the end of your lease term. See, Pima County v. Testin, 173 Ariz. 117, 840 P.2d 293 (App. 1992).

In addition, you have created, maintained, and aggravated a potential environmental hazard on the Premises in violation of multiple provisions of the Uniform Fire Code. A copy of the February 27, 1996, letter to you from Capt. Daniel W. Uthe of the hazardous materials unit of the Tucson Fire Dept., is attached to this letter and incorporated herein by this reference.

For all of the foregoing reasons, the City of Tucson hereby elects to terminate your occupancy of the Premises. You are to remove all of your personal property and equipment, and to leave the Premises in an environmentally safe and clean manner and in at least as good a condition as it was when you began your occupancy, no later than sixty days from the date of this letter.

Letter to Mr. A. Bowden

March 1, 1996

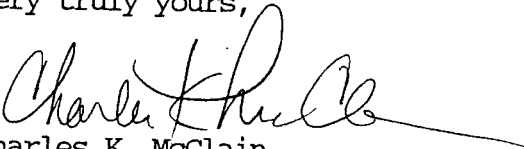
Page 2

Please contact Dan Sweet, Tucson Water Well Maintenance Superintendent at 791-4023 within seven days of the date of this letter. Mr. Sweet will arrange for an inspection of the property to be made by City of Tucson staff in your presence. The inspection will take place within thirty (30) days of the date of this letter. The purpose of the inspection is identify ownership of all property on the Premises, as well as to determine the extent of your responsibility for any outstanding environmental problems.

The City of Tucson reserves the right to seek indemnification and damages from you for any environmental condition which requires remediation on the Premises after you have vacated.

Please call me at 791-2666 should you have any questions regarding this notice to vacate.

Very truly yours,



Charles K. McClain
Director
Tucson Water

Attachment.

CKM:TR:nb

cc: Tobin Rosen, Principal Assistant City Attorney
Jennifer Gillaspie, Water Operations Administrator
Dan Sweet, Well Maintenance Superintendent
Karen van Rijn, City of Tucson Office of Environmental Management
George Parker, Property Manager, City of Tucson Real Estate Division
Capt. Daniel W. Uthe, Hazardous Materials Unit, Tucson Fire Department
Stephen Wetherell, City of Tucson City Attorney's Office

e:\ds\tucker.wp



CITY OF TUCSON
FIRE DEPARTMENT
P.O. Box 27210
Tucson, Arizona 85726-7210
Fire Prevention Division
Environmental Services Section
(602) 791-4014
FRED L. SHIPMAN FIRE CHIEF
FAX: (602) 791-5346

February 27, 1996

Andy Bowden
6301 N. Anway
Marana, AZ 85653

CERTIFIED: P 675 457 318

RE: Tucker Farm

Dear Mr. Bowden:

The Fire Prevention Division of the Tucson Fire Department has the responsibility to ensure code compliance within the city limits and all city-owned property. On January 26, 1996, during an inspection of the Tucker Farm, the following Tucson Fire Code violations were noted:

1. Soil Contamination

IFC Section 8001.5.1 - Release of Hazardous Materials.
Hazardous Materials shall not be released into a sewer, storm drain, ditch, drainage canal, lake, river or tidal waterway, or upon the ground, sidewalk, street, highway or into the atmosphere.

IFC Section 8001.5.2.5 - Responsibility for Cleanup.
The person, firm, or corporation responsible for an unauthorized discharge shall institute and complete all actions necessary to remedy the effects of such unauthorized discharge, whether sudden or gradual, at no cost to the jurisdiction. When deemed necessary by the chief, cleanup may be initiated by the fire department or by an authorized individual or firm. Costs associated with such a cleanup shall be borne by the owner, operator or other person responsible for the unauthorized discharge.

Inspection Findings

There was evidence of unauthorized discharges of hazardous materials, including waste motor oil. Extensive soil discoloration was noted around the maintenance shop area, under the aboveground storage tanks and in the chemical and pesticide storage area. Also, waste oil was pooling in the irrigation canal.

Andy Bowden
February 27, 1996
Page 2

Compliance Required

A site assessment to determine the potential fire and environmental risks shall be completed. The assessment shall include a sampling plan, any mitigation action needed, and a remediation plan.

2. Aboveground Storage Tanks (ASTs)

TFC Section 7904.2.5.4 - Location. Tanks containing Class I or II liquids shall be kept outside of and at least 50 feet from buildings and combustible storage.

Compliance Required

The ASTs shall be relocated 50 feet from buildings and combustible storage.

TFC Section 7904.2.5.5.3 - Tanks for Gravity Discharge. Supports to elevate the tank for gravity discharge shall be of adequate strength and designed to provide stability, and bottom or end openings for gravity discharge shall be equipped with a valve located adjacent to the tank shell which will close automatically in the event of fire through the operation of an effective heat actuated releasing device. If this valve cannot be operated manually, it shall be supplemented by a second manually operated valve. The gravity discharge outlet shall be provided with an approved hose equipped with a self-closing valve at the discharge end of a type that can be padlocked to its hanger.

Inspection Findings

The ASTs were inadequately supported and were settling.

Compliance Required

When the tanks are relocated, the tanks should be placed on a concrete pad to ensure stability. A heat actuated releasing device and an approved hose equipped with self-closing valve shall be installed.

Andy Bowden
February 27, 1996
Page 3

TFC Section 7904.2.3 - Marking of Tanks and Containers.
Tanks and containers for the storage of liquids aboveground shall be conspicuously marked with the name of the product which they contain and FLAMMABLE - KEEP FIRE AND FLAME AWAY.

Compliance Required
The tanks shall be marked as described above.

TFC Section 7904.2.6 - Spill Control, Drainage Control and Diking. ... Outdoor storage areas shall be provided with drainage control or diking as set forth in Section 7902.2.8.

Compliance Required
Diking around the ASTs shall be provided.

TFC Section 105.8.f.3.6 - Permits Required. To install, alter, remove, abandon, place temporarily out of service or otherwise dispose of a flammable or combustible liquid tank.

3. Container Storage of Hazardous Materials.

TFC Section 8001.6 - Material Safety Data Sheets. Material safety data sheets (MSDS) shall be readily available on the premises for hazardous materials regulated by Article 80.

Compliance Required
All hazardous materials shall have a MSDS on site.

TFC Section 8001.7 - Identification Signs. Individual containers, cartons or packages shall be conspicuously marked or labeled in accordance with nationally recognized standards.

Compliance Required
All containers shall be marked with the product stored.

Andy Bowden
February 27, 1996
Page 4

TFC Section 8001.4.7.3 - Defective containers and tanks.
Defective containers and tanks shall be removed from service, repaired or disposed of in an approved manner.

Inspection Findings
The storage of hazardous materials was haphazard, incompatible materials stored together, unmarked containers, leaking containers and overall poor housekeeping. Housekeeping and container storage needs to be improved.

Compliance Required
Leaking and defective containers shall be emptied and disposed of in an approved manner.

As the occupant, you are responsible to ensure compliance with these regulations. Failure to comply with the requirements set forth in this letter may result in the initiation of legal procedures to fulfill our responsibility under the law. Your cooperation in correcting this matter will be appreciated.

I suggest a meeting with representatives from Tucson Water Department, Office of Environmental Management, and myself to determine responsibility for correction of the noted violations, to set a compliance schedule and to determine clean-up requirements.

If you have any questions, or need additional information, please contact me at (520) 791-4014.

Sincerely,

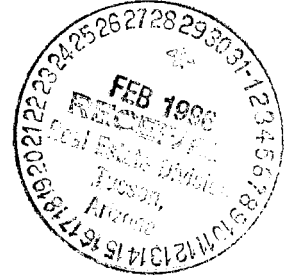


Daniel W. Uthe
Captain
Hazardous Materials Unit

xc: Jennifer Gillaspie, Tucson Water
Karen van Rijn, Office of Environmental Management
George Parker, Real Estate Division
Tobin Rosen, City Attorney's Office
Stephen Wetherell, City Attorney's Office
Michael Brandt, Tucson Fire



CITY OF TUCSON
FIRE DEPARTMENT
P.O. Box 27210
Tucson, Arizona 85726-7210
Fire Prevention Division
Environmental Services Section
(602) 791-4014
FRED L. SHIPMAN FIRE CHIEF
FAX: (602) 791-5346



February 27, 1996

Andy Bowden
6301 N. Anway
Marana, AZ 85653

RE: Tucker Farm

Dear Mr. Bowden:

The Fire Prevention Division of the Tucson Fire Department has the responsibility to ensure code compliance within the city limits and all city-owned property. On January 26, 1996, during an inspection of the Tucker Farm, the following Tucson Fire Code violations were noted:

1. Soil Contamination

TFC Section 8001.5.1 - Release of Hazardous Materials.

Hazardous Materials shall not be released into a sewer, storm drain, ditch, drainage canal, lake, river or tidal waterway, or upon the ground, sidewalk, street, highway or into the atmosphere.

TFC Section 8001.5.2.5 - Responsibility for Cleanup.

The person, firm, or corporation responsible for an unauthorized discharge shall institute and complete all actions necessary to remedy the effects of such unauthorized discharge, whether sudden or gradual, at no cost to the jurisdiction. When deemed necessary by the chief, cleanup may be initiated by the fire department or by an authorized individual or firm. Costs associated with such a cleanup shall be borne by the owner, operator or other person responsible for the unauthorized discharge.

Inspection Findings

There was evidence of unauthorized discharges of hazardous materials, including waste motor oil. Extensive soil discoloration was noted around the maintenance shop area, under the aboveground storage tanks and in the chemical and pesticide storage area. Also, waste oil was pooling in the irrigation canal.

Compliance Required

A site assessment to determine the potential fire and environmental risks shall be completed. The assessment shall include a sampling plan, any mitigation action needed, and a remediation plan.

2. Aboveground Storage Tanks (ASTs)

TFC Section 7904.2.5.4 - Location. Tanks containing Class I or II liquids shall be kept outside of and at least 50 feet from buildings and combustible storage.

Compliance Required

The ASTs shall be relocated 50 feet from buildings and combustible storage.

TFC Section 7904.2.5.5.3 - Tanks for Gravity Discharge.

Supports to elevate the tank for gravity discharge shall be of adequate strength and designed to provide stability, and bottom or end openings for gravity discharge shall be equipped with a valve located adjacent to the tank shell which will close automatically in the event of fire through the operation of an effective heat actuated releasing device. If this valve cannot be operated manually, it shall be supplemented by a second manually operated valve. The gravity discharge outlet shall be provided with an approved hose equipped with a self-closing valve at the discharge end of a type that can be padlocked to its hanger.

Inspection Findings

The ASTs were inadequately supported and were settling.

Compliance Required

When the tanks are relocated, the tanks should be placed on a concrete pad to ensure stability. A heat actuated releasing device and an approved hose equipped with self-closing valve shall be installed.

TFC Section 7904.2.3 - Marking of Tanks and Containers.
Tanks and containers for the storage of liquids aboveground shall be conspicuously marked with the name of the product which they contain and FLAMMABLE - KEEP FIRE AND FLAME AWAY.

Compliance Required

The tanks shall be marked as described above.

TFC Section 7904.2.6 - Spill Control, Drainage Control and Diking. ... Outdoor storage areas shall be provided with drainage control or diking as set forth in Section 7902.2.8.

Compliance Required

Diking around the ASTs shall be provided.

TFC Section 105.8.f.3.6 - Permits Required. To install alter, remove, abandon, place temporarily out of service or otherwise dispose of a flammable or combustible liquid tank.

3. Container Storage of Hazardous Materials.

TFC Section 8001.6 - Material Safety Data Sheets.
Material safety data sheets (MSDS) shall be readily available on the premises for hazardous materials regulated by Article 80.

Compliance Required

All hazardous materials shall have a MSDS on site.

TFC Section 8001.7 - Identification Signs. Individual containers, cartons or packages shall be conspicuously marked or labeled in accordance with nationally recognized standards.

Compliance Required

All containers shall be marked with the product stored.

Andy Bowden
February 27, 1996
Page 4

TFC Section 8001.4.7.3 - Defective containers and tanks.
Defective containers and tanks shall be removed from service, repaired or disposed of in an approved manner.

Inspection Findings

The storage of hazardous materials was haphazard, incompatible materials stored together, unmarked containers, leaking containers and overall poor housekeeping. Housekeeping and container storage needs to be improved.

Compliance Required

Leaking and defective containers shall be emptied and disposed of in an approved manner.

As the occupant, you are responsible to ensure compliance with these regulations. Failure to comply with the requirements set forth in this letter may result in the initiation of legal procedures to fulfill our responsibility under the law. Your cooperation in correcting this matter will be appreciated.

I suggest a meeting with representatives from Tucson Water Department, Office of Environmental Management, and myself to determine responsibility for correction of the noted violations, to set a compliance schedule and to determine clean-up requirements.

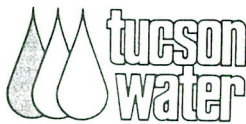
If you have any questions, or need additional information, please contact me at (520) 791-4014.

Sincerely,



Daniel W. Uthe
Captain
Hazardous Materials Unit

xc: Jennifer Gillaspie, Tucson Water
Karen van Rijn, Office of Environmental Management
✓ George Parker, Real Estate Division
Tobin Rosen, City Attorney's Office
Stephen Wetherell, City Attorney's Office
Michael Brandt, Tucson Fire



March 27, 1996

CERTIFIED MAIL
RETURN RECEIPT REQUESTED



Mr. Andrew R. Bowden
6301 N. Anway
Marana, AZ 85653

Dear Mr. Bowden:

RE: TUCKER FARM - RESPONSE TO YOUR REQUEST OF MARCH 15, 1996

We have received your letter of March 15, 1996 requesting that you be allowed to remain in residence on Tucker Farm for up to 120 days.

In your letter and your discussion with Mr. Sweet you said you were removing all of your fuel, oil, tanks, equipment, and equipment maintenance operations from Tucker Farm immediately, and were proceeding with property cleaning.

We agree you may remain in residence only on Tucker Farm until July 15, 1996 providing you cooperate with us by meeting these conditions:

1. You complete the removal of your fuel, oil, tanks, and equipment by April 15, 1996, if you have not already done so.
2. You schedule with Dan Sweet, Well Maintenance Superintendent, 791-4023, the property inspection requested in our letter of March 1, 1996, to take place no later than April 15, 1996.
3. You cooperate with Captain Uthe in correcting any outstanding Code violations for which you are responsible.
4. You keep in communication with Mr. Sweet about your plans, and notify him of your date of final moving out at least one week before moving. This will allow us to take possession of and responsibility for the property at the time of your final move.

Please contact Mr. Sweet about your plans.

Sincerely,

Charles K. McClain
Director
Tucson Water

CKM:DS

C: Tobin Rosen, Principal Assistant City Attorney
Jennifer Gillaspie, Water Operations Administrator
Dan Sweet, Well Maintenance Superintendent
Karen van Rijn, City of Tucson Office of Environmental Management
George Parker, Property Manager, City of Tucson Real Estate Division
Capt. Daniel W. Uthe, Hazardous Materials Unit, Tucson Fire Department

Tucson Water • City of Tucson • P.O. Box 27210 • Tucson, AZ 85726-7210
(602) 791-2666 • FAX: (602) 791-3293



MEMORANDUM



DATE: March 13, 1996

TO: Kent McClain
Director
Tucson Water

FROM: Dan Sweet
Well Maintenance
Superintendent

SUBJECT: Report Of Meeting With Mr. Bowden At Tucker Farm

On March 5, 1996, Mr. Andy Bowden resident of Tucker Farm called, said he had your letter of March 1 and asked me to meet with him.

On Monday March 11, I met and talked with Mr. Bowden at Tucker Farm. Mr. Bowden's father, Jimmy Bowden, with whom the City had originally made the tenancy agreement, arrived while we were talking and participated in the conversation.

Mr. Bowden said the letter had come as a surprise at a difficult time and he wished we had given him more notice. He said he had begun to remove his equipment, fuel tanks, and oil and would complete the removal within a week. He said he was cleaning the property and would leave it in better condition than it was when the City allowed him to move in.

Mr. Bowden said there were three families living on the property, his family in the main house, an employee's family in the smaller house, and another employee's family in the trailer. He said it would be a great hardship for him to locate or prepare other housing and move the three families within 60 days because it was the beginning of a planting season and their living depended on completing the planting.

Mr. Bowden said he was removing all equipment, fuel, oil, and maintenance operations from Tucker Farm immediately and would cooperate with us in every way possible, but hoped we would allow him to remain in residence only for longer than 60 days.

I asked Mr. Bowden how soon he could move without great hardship. He said he could complete his planting and move the families in 120 days. I said I would relate our conversation but could not make such a decision. I recommended that he write to you with his request and explanation. He said he would do so.

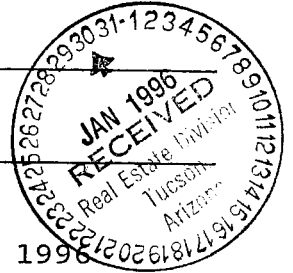
e:\ds\avland\bowdenmt.kmc

C: Jennifer Gillaspie, Water Operations Administrator
Tobin Rosen, Principal Assistant City Attorney
Dan Uthe, Captain, Tucson Fire
George Parker, Property Manager, Real Estate Division





MEMORANDUM



DATE: January 26, 1996

TO: Michael F. Brown
City Manager

Charles K. McClain
FROM: Charles K. McClain
Director
Tucson Water

SUBJECT: Tucker Farm Site, Avra Valley, C.M.REF.NO. 96-00069

We began investigating the Tucker Farm property on November 30, 1995 when Tucson Water staff accompanying the multi-media team inspection observed the environmental problems documented by Environmental Management staff.

Through Real Estate Division we found the tenant, a Mr. Andy Bowden, to have been in residence through a lease entered into in 1984 as part of the purchase of another Avra Valley property. The lease expired over two years ago and has not been renewed. According to the City Attorney, however, we must still consider Mr. Bowden to be a tenant rather than a trespasser since we have not notified him to vacate the property.

On Monday, January 22, 1996, representatives of the Office of Environmental Management (OEM), Real Estate Division (RED), Tucson Fire Department (TFD), and the City Attorney's Office (CAO) met with our staff to assist in laying out a plan of action for rresolving the Tucker Farm problem. These actions were planned:

ACTIONS PLANNED

1. OEM staff will assist Captain Uthe of TFD's Hazardous Materials Section in an inventory the improperly stored hazardous materials. Present schedule for inventory is January 26, 1996, at 9:30 am.
2. Captain Uthe will issue an order to Mr. Bowden to properly dispose of the hazardous materials. The order will require documentation, based on OEM's inventory, of proper disposal.
3. Tucson Water will inform the tenant his lease has expired, but his tenancy will be continued on the terms of the original lease for whatever reasonable time is required for him to remediate the improper hazardous materials storage. After the remediation is complete he must vacate the property unless his tenancy can be regularized through another lease approved by the Mayor and Council.

TO: Michael F. Brown
FROM: Charles K. McClain

DATE: January 26, 1996
RE: Tucker Farm, Avra Valley

DISCUSSION

We believe most of the improperly stored materials are Mr. Bowden's responsibility and we want him to dispose of them properly, but we must proceed carefully for several reasons.

If we do not structure our order for proper disposal carefully, the tenant might carry out an improper disposal which could cause us great expense in the future.

If the tenant were to simply move and leave the property vacant, vandalism could rapidly depreciate the structures on the property and worsen the hazardous materials situation. We should be prepared to protect the property and the hazardous materials site if our actions cause the tenant to move out.

If the tenant does not comply voluntarily with the order to properly dispose of the hazardous materials, we may not have effective means of compelling him to comply or compelling him to pay for the disposal.

KMC:JAG:DS e:\ds\avland\tuckrfrm.cmr

Attached: Memo. 1/11/96, K. van Rijn to C.K. McClain, Tucker Farm

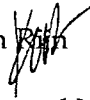
C: Karen van Rijn, Director, Environmental Management
Captain Dan Uthe, HAZMAT Section, Tucson Fire
George Parker, Property Manager, Real Estate
Terry Anderson, Risk Manager, Risk Management
Tobin Rosen, Principal Assistant City Attorney
Jennifer Gillaspie, Water Operations Administrator



MEMORANDUM

DATE: January 11, 1996

TO: Kent McClain
Director
Water Department

FROM: Karen van 
Director
Environmental Management
Ext. 5414

SUBJECT: Tucker Farm Site
Avra Valley

Pursuant a multi-media team inspection at the Tucker Farm Site located in Avra Valley on Anway Road, one mile south of Tucker Road, it has come to our attention that numerous environmental concerns require immediate action by Tucson Water and the lessee (Tucker Farm).

Those concerns identified during the inspections included:

- aboveground storage tanks (ASTs) appear to have leaked fuel onto the surrounding soil;
- 55-gallon drums containing grease and oil are deteriorated, thereby causing leakage;
- other areas indicate stained soil with pools of oil; and
- pesticide and herbicide containers stored in the barn are deteriorated and leaking.

In addition, the attached photographic summary is provided to you to help identify those areas of concern with your lessee. Please feel free to contact our office if we can be of any assistance to your department in regards to the Tucker Farm site. We would appreciate a follow-up with the Water Department to assess the aforementioned site for taking the necessary actions to address the said facility maintenance issues. I look forward to your expedient response.

KVR:slg

cc: Luis Gutierrez, City Manager's Office
John Nachbar, City Manager's Office
Mike Brandt, Fire Department
Jan McClay, Risk Management
Terry Anderson, Risk Management



00000139827

CHECK NUMBER

CITY OF TUCSON

ACCOUNTING DIVISION
PO BOX 7450
TUCSON, AZ 85726-7450

FOR INFORMATION CONCERNING
THIS CHECK, PLEASE CALL THE
ACCOUNTING DIVISION AT (602) 791-4561

INVOICE NUMBER	VOUCHER NUMBER			ACCOUNT NUMBER		AMOUNT
15579	KT000037655	081	710	7437	217	85.00
TOTAL						85.00

*mailed
2/7/95*

DETACH BEFORE DEPOSITING CHECK

CITY OF TUCSON
REAL ESTATE DIVISION

TO: CITY CLERK

FROM: REAL ESTATE ADMINISTRATOR

Subject: *Rf. 174 of - Tucker Farm
Oura Valley Irrigated Acreage*

Date: *1/26/95*

The attached documents are for your files:

- Deed of Release and Full Reconveyance, Dkt. 9963/316
- Title Policy
- Release
- Easement
- Consent
- Covenant
- Agreement
-
-

for *David B. Sauer*
REAL ESTATE ADMINISTRATOR

F. ANN RODRIGUEZ, RECORDER
RECORDED BY: RBJ
DEPUTY RECORDER
2234 RD15



DOCKET: 9963
PAGE: 316
NO. OF PAGES: 4
SEQUENCE: 95008770
01/20/95
RECON 10:09:00
MAIL
AMOUNT PAID \$ 10.00

TSTTI
CITY OF TUCSON
P O BOX 27450
ACCOUNTING DEPT
TUCSON AZ 85726

DOCUMENT TITLE

Deed of Release and Full Reconveyance

FILE NO. 15579

WHEN RECORDED MAIL DOCUMENT TO:

City of Tucson

Accounting Division
PO PO BOX 27450

Tucson, Az 85726 Attn; Hazel Sager SR/WA

Resolution No. 12985

STATE OF ARIZONA

COUNTY OF

ss.

I hereby certify that the within instrument was filed and recorded
In DOCKET page and indexed

Fee No.

at the request of

When recorded mail to:

Witness my hand and official seal.

By

County Recorder

Deputy Recorder

Compared
Photostated
Fee

DEED OF RELEASE AND FULL RECONVEYANCE

#15579

Stewart Title & Trust of Tucson, an Arizona corporation, as duly appointed Trustee under the Deed of Trust, dated December 14, 1984, in which CITY OF TUCSON, a municipal corporation is Trustor, and PATRICK D. TUCKER and JACQUELYN TUCKER, husband and wife** is Beneficiary, and recorded on December 21, 1984, in Docket 7435 at page 319, in the office of the County Recorder of Pima County, Arizona, having received under said Deed of Trust from Beneficiary or the successor thereto a written request to release and reconvey, reciting that all indebtedness secured by said Deed of Trust has been fully satisfied, does hereby release and reconvey, without covenant or warranty, express or implied, to the person or persons legally entitled thereto, all right, title and interest now held by said Trustee thereunder in and to the property described in said Deed of Trust, situated in Pima County, Arizona, as follows:

SEE EXHIBIT ATTACHED HERETO AND MADE A PART HEREOF FOR THE LEGAL DESCRIPTION

SUBSEQUENTLY ASSIGNED TO THE TUCKER LIVING TRUST BY ASSIGNMENT OF BENEFICIAL INTEREST IN DEED OF TRUST RECORDED NOVEMBER 27, 1989 DOCKET 8671 PAGE 542.

The undersigned Beneficiary has requested said Trustee to execute and issue the within instrument and hereby releases the property herein reconveyed by said Trustee from any and all interest of Beneficiary therein as was created by said Deed of Trust.

Dated: January 13, 19 95

STEWART TITLE & TRUST OF TUCSON, as Trustee

By *Frank C. McElwain*
Assistant Secretary

Jacquelyn Tucker
THE TUCKER LIVING TRUST DATED SEPTEMBER 8, 1989
Patrick D. Tucker
Beneficiary

STATE OF ARIZONA }
COUNTY OF PIMA } ss.

STATE OF ARIZONA }
COUNTY OF Pima } ss.

The foregoing instrument was acknowledged before me this 15 day of March, 1995, by Jacquelyn Tucker and Patrick D. Tucker as Trustees of The Tucker Living Trust dated 9-8-89

The foregoing instrument was acknowledged before me this 13th day of January, 19 95, by Frank C. McElwain Assistant Secretary of Stewart Title & Trust of Tucson, an Arizona corporation, on behalf of the corporation.

Frank C. McElwain
Notary Public
My commission expires October 16, 1992

Frank C. McElwain
Notary Public
My commission expires 8/15/97

95R23

LEGAL DESCRIPTION

Exhibit "A"

Lots 1 and 2;

The South half of the Northeast quarter;

The Southeast quarter;

and the East 330 feet of the Northwest quarter of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of the North 1980 feet of the Northeast quarter;

The North 30 feet and the East 30 feet of Section 4.

(JV Arb 4)

LEGAL DESCRIPTION

Exhibit "B"

Lots 3 and 4;

The South half of the Northwest quarter and the Southwest quarter of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT The East 330 feet of the Northwest quarter and the North 30 feet thereof.

SCENARKE 1766 & 12452
3777 E. Broadway
Tucson, Az 85716

143 P02 JUN 23 '95 08:15
STATEMENT

DATE
January 23, 1995
ACCOUNT NUMBER
Acc # 15579

City of Tucson
Dept of Transportation
Real Estate Division
201 N Stone
Tucson, Az

Attn; Hazel Sager

AMOUNT
ENCLOSED \$ _____

RETURN THIS PORTION WITH PAYMENT

1-23-95	Closing fee	25.00
	Recording & Reconveyance	50.00
	Total due to close acc. # 15579	85.00
Thank you		
Amanda McGlendon Acc. Services		

PAY LAST AMOUNT
IN THIS COLUMN

THANK YOU





The Sunshine City

CITY OF TUCSON

CITY HALL
P.O. BOX 27210
TUCSON, ARIZONA 85726-7210

DEPARTMENT OF TRANSPORTATION
REAL ESTATE DIVISION
201 N. STONE
PHONE: (602) 791-4181
FAX: (602) 791-5641

January 17, 1995

Stewart Title & Trust of Tucson
Amanda, Accounts Servicing
P.O. Box 42704
Tucson, Az. 85733-2704

SUBJECT: Account No. 15579 - City of Tucson
Patrick D. Tucker, Jr. (R.P. 1744)

Dear Amanda:

The City of Tucson made the final payment on the subject account in December, 1994. Please proceed with the recording of the Deed of Release and Reconveyance. Send me the invoice for the reconveyance fees due from the City of Tucson as soon as possible.

Please contact me at 791-4181 if you have any questions.

Sincerely,

Hazel B. Sager, SR/WA
Property Agent

HBS:drb

RP 1744

4472

Contract # ~~9976~~ W326
Tucker Farm

Resolution #12985
December 17, 1984
Vendor #1076080

Orig. Sale	\$1,450,000
Down Pymt.	450,000
Cont. Bal.	\$1,000,000

Final
12/21/94

Pay To: Stewart Title & Trust
Acct. #15579
P.O. Box 42704
Tucson, AZ 85733-2704

Paid 12/18/94

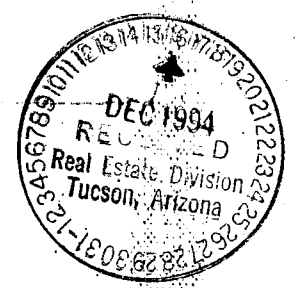
Payments: Balance of purchase price shall be made quarterly for 5 years, interest only, and quarterly for the succeeding five years interest and principal until paid. Interest rate is 10%. See repayment schedule on other side.

Time: First interest payment due 3/21/85 with subsequent payments due the twenty-first day of each succeeding quarter thereafter until paid in full.

3-21
6-21
9-21
12-21

30.00/yr. commission fee = 7.50/3 mos.

112195 - Amanda, Accounts Servicing



326
LAND

End of Quarter	End of Year	Balance Due	Principal	Interest	Total
3/31/85	1	\$1,000,000	-0-	\$ 25,000	\$ 25,000
	2	1,000,000	-0-	25,000	25,000
	3	1,000,000	-0-	25,000	25,000
	4	1,000,000	-0-	25,000	25,000
3/31/86	1	1,000,000	-0-	25,000	25,000
	5	1,000,000	-0-	25,000	25,000
	6	1,000,000	-0-	25,000	25,000
	7	1,000,000	-0-	25,000	25,000
	8	1,000,000	-0-	25,000	25,000
3/31/87	2	1,000,000	-0-	25,000	25,000
	9	1,000,000	-0-	25,000	25,000
	10	1,000,000	-0-	25,000	25,000
	11	1,000,000	-0-	25,000	25,000
	12	1,000,000	-0-	25,000	25,000
3/31/88	3	1,000,000	-0-	25,000	25,000
	13	1,000,000	-0-	25,000	25,000
	14	1,000,000	-0-	25,000	25,000
	15	1,000,000	-0-	25,000	25,000
	16	1,000,000	-0-	25,000	25,000
3/31/89	4	1,000,000	-0-	25,000	25,000
	17	1,000,000	-0-	25,000	25,000
	18	1,000,000	-0-	25,000	25,000
	19	1,000,000	-0-	25,000	25,000
3/31/90	5	1,000,000	-0-	25,000	25,000
	20	960,853	\$ 39,147	25,000	64,147
	21	920,727	40,126	24,021	64,147
	22	879,598	41,129	23,018	64,147
	23	837,441	42,157	21,990	64,147
3/31/91	6	794,230	43,211	20,936	64,147
	24	749,939	44,291	19,856	64,147
	25	704,540	45,399	18,748	64,147
12/91	7	658,006 ✓	46,534 ✓	17,613 ✓	64,147 ✓
3/31/92		610,309	47,697 ✓	16,450 ✓	64,147 ✓
6/30/92		561,420	48,889 ✓	15,258	64,147 ✓
9/30/92		511,308	50,112	14,035	64,147
3/31/93	8	459,944	51,364	12,783	64,147
	32	407,296	52,648	11,499	64,147
	33	353,331	53,965	10,182	64,147
	34	298,017	55,314	8,833	64,147
	35	241,320	56,697	7,450.43	64,147.43
3/31/94	9	183,206	58,114-3.54	6,033	64,147
	36	123,639	59,567	4,580	64,147
	37	62,583	61,056-2.194	3,091	64,147
	38	-0-	62,583	1,565	64,148
	39				
	40				
TOTAL		\$1,000,000	\$ 782,941	\$1,782,941	

Pd ✓ 1/92
 Pd ✓ 5/92
 Pd ✓ 9/92
 Pd ✓ 1/92
 Pd ✓ 1/92

TITLEHOLDER CONTRACT PURCHASER SEC TWN RNG GRID CENSUS ZONE LEGAL DESCRIPTION	DATE-PRG DKT-PG	REC-DATE	PRIM-ASSESS SEC ASSESS	LC IC	PROP TAX YR	TOTAL LIM																																																								
208-39-0020 PO BOX 27210 CITY OF TUCSON 04 13S 10E 100-00 4405	PO BOX 27210 TUCSON AZ 85726 7435- 318 12-21-84		\$0 \$0 \$0 \$0		309.820 AC 16.0% 0603 \$0.00 93	\$549,715 \$464,730 \$84,985 \$549,715																																																								
(4 13S 10E) LOTS 1 & 2 & S2 NE4 & SE4 & E 330' OF NW4 EXC E 66 0' OF N 1980' OF NE4 & EXC N 30' & E 30' FOR RDS 3 09.82 AC AVID 309.82 AC SEC 4-13-10 (FORMERLY 201-42-016B)																																																														
<table border="1"> <thead> <tr> <th>TYPE OF IMPROVEMENT</th> <th>YR</th> <th>HGT</th> <th>STY</th> <th>GR-FL-AREA</th> <th>TL-FL-AREA</th> <th>GR-PMTR</th> <th>EXTERIOR WALL</th> <th>COND</th> <th>CMP</th> <th>OBSO</th> <th>MODN</th> <th>IMPROVE</th> <th>FCV</th> </tr> </thead> <tbody> <tr> <td>SINGLE FAMILY DWELLING</td> <td>57</td> <td>8</td> <td>1.0</td> <td>720</td> <td>720</td> <td>112</td> <td>WOOD OR STEEL</td> <td>100%</td> <td></td> <td></td> <td></td> <td>\$12,969</td> <td></td> </tr> <tr> <td>SINGLE FAMILY DWELLING</td> <td>57</td> <td>8</td> <td>1.0</td> <td>720</td> <td>720</td> <td>112</td> <td>WOOD OR STEEL</td> <td>100%</td> <td></td> <td></td> <td></td> <td>\$12,969</td> <td></td> </tr> <tr> <td>SINGLE FAMILY DWELLING</td> <td>52</td> <td>8</td> <td>1.0</td> <td>1,857</td> <td>1,857</td> <td>189</td> <td>CONCRETE</td> <td>100%</td> <td></td> <td></td> <td></td> <td>\$59,047</td> <td></td> </tr> </tbody> </table>							TYPE OF IMPROVEMENT	YR	HGT	STY	GR-FL-AREA	TL-FL-AREA	GR-PMTR	EXTERIOR WALL	COND	CMP	OBSO	MODN	IMPROVE	FCV	SINGLE FAMILY DWELLING	57	8	1.0	720	720	112	WOOD OR STEEL	100%				\$12,969		SINGLE FAMILY DWELLING	57	8	1.0	720	720	112	WOOD OR STEEL	100%				\$12,969		SINGLE FAMILY DWELLING	52	8	1.0	1,857	1,857	189	CONCRETE	100%				\$59,047	
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SINGLE FAMILY DWELLING	52	8	1.0	1,857	1,857	189	CONCRETE	100%				\$59,047																																																		
208-39-0030 PO BOX 27210 CITY OF TUCSON 04 13S 10E 100-00 4405	PO BOX 27210 TUCSON AZ 85726 7435- 318 12-21-84		\$0 \$0 \$0 \$0		298.410 AC 15.0% 0603 \$0.00 93	\$447,615 \$447,615 \$0 \$447,615																																																								
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208-39-0040 CITY OF TUCSON 05 13S 10E 100-00 4405	5243- 322 04-07-76		\$0 \$0 \$0 \$0		158.720 AC 16.0% 0600 \$0.00 93	\$238,080 \$238,080 \$0 \$238,080																																																								
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208-39-0050 CITY OF TUCSON 05 13S 10E 100-00 4405	5243- 322 04-07-76		\$0 \$0 \$0 \$0		40.000 AC 16.0% 0601 \$0.00 93	\$60,000 \$60,000 \$0 \$60,000																																																								
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208-39-0060 CITY OF TUCSON 05 13S 10E 100-00 4405	5243- 322 04-07-76		\$0 \$0 \$0 \$0		442.000 AC 16.0% 0601 \$0.00 93	\$663,000 \$663,000 \$0 \$663,000																																																								
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208-39-0070 18201 W TUCKER RD MARANA WELLS RICHARD 06 13S 10E 100-00 4405	11150 BALLEJO ST CHANDLER AZ 85248 7355- 414 08-27-84		\$0 \$0 \$4,310 \$4,310		4.990 AC 10.0% 0601 \$772.64 93	\$49,841 \$11,976 \$37,865 \$43,100																																																								
(6 13S 10E) CENT PTN OF S660' OF N2 N2 4.99 AC SEC 6-13-10 AKA SELY PT OF PCL 6 RS 1/46 (FORMERLY: 201-43-002V) (FORMERLY 201-43-0070)																																																														
<table border="1"> <thead> <tr> <th>BLDG SF</th> <th>YR</th> <th>STORY</th> <th>ROOM</th> <th>BATH</th> <th>PATIO</th> <th>GARAGE</th> <th>POOL</th> <th>HEATING</th> <th>SOL</th> <th>A/C</th> <th>EXTERIOR WALL</th> <th>ROOF</th> <th>CLASS</th> <th>CONDITION</th> </tr> </thead> <tbody> <tr> <td>1,296</td> <td>60</td> <td>1</td> <td>5</td> <td>3</td> <td>CP 1</td> <td>GR 2</td> <td></td> <td>FORCED</td> <td></td> <td>EVAP</td> <td>FRAME WOOD</td> <td>ROLL</td> <td>R3</td> <td>AVERAGE</td> </tr> </tbody> </table>							BLDG SF	YR	STORY	ROOM	BATH	PATIO	GARAGE	POOL	HEATING	SOL	A/C	EXTERIOR WALL	ROOF	CLASS	CONDITION	1,296	60	1	5	3	CP 1	GR 2		FORCED		EVAP	FRAME WOOD	ROLL	R3	AVERAGE																										
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TRW-REDI

Nationwide 1-800-345-7334

Copyright 1994
All Rights Reserved

208-39-0080

PIMA

1994

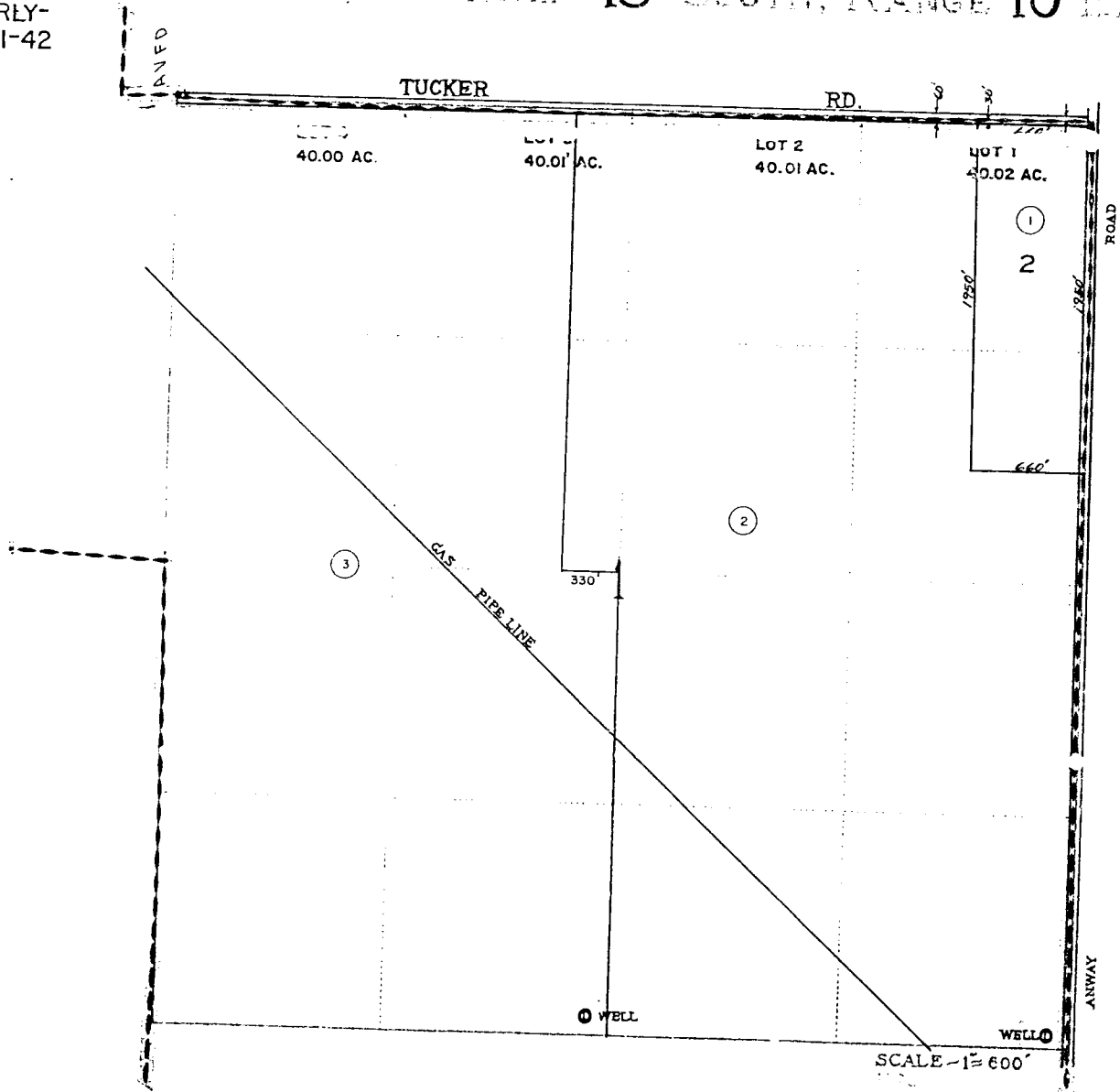
TAX PARCEL _____ OWNER MAILING ADDRESS _____ SALE PRICE / DATE _____ TI VC _____ PCL SIZE _____ TOTAL FCV _____

ASSESSOR'S RECORD MAP

208-39

-FORMERLY-
201-42

SECTION 4, TOWNSHIP 13 SOUTH, RANGE 10 EAST



- U.S. LAND -----
- STATE LAND -----
- ROADS -----
- F. R. OF W. -----
- PAT. MINERAL CLAIMS -----
- SUBDIVISIONS -----

- ACREAGE ASSESSED IN THIS BOOK
- IRRIGATED -----
 - IRRIGABLE -----
 - DRY FARM -----
 - DRY LAND -----
 - GRAZING -----
 - WASTE -----
 - DESERT HOMESTEAD -----
 - SUBURBAN -----
 - CANALS -----
 - WELLSITES -----
 - SAND PITS -----
 - ACREAGE ASSESSED -----
 - TOTAL ACREAGE -----

SCALE 1" = 600'

1988



The Sunshine City

CITY OF TUCSON

CITY HALL
P O BOX 27210
TUCSON, ARIZONA 85726-7210

DEPARTMENT OF TRANSPORTATION
REAL ESTATE DIVISION
201 N. STONE
PHONE: (602) 791-4181
FAX: (602) 791-4608

October 12, 1993

Patrick Tucker
6750 N. Wade Road
Tucson, AZ 85743

To Whom It May Concern:

Enclosed is a copy of the Purchase Agreement between the City of Tucson and Patrick D. Tucker which references the sale of his farm to the City. Please note the sentence I have highlighted in Covenant III B. The sentence clearly indicates that interest paid relative to the agreement is a municipal obligation of the City. As I understand it, the interest earned from such obligations is not usually subject to state or federal income tax.

Sincerely,


George Parker
Property Manager

GP:slg
Enclosure



CITY OF TUCSON

The Sunshine City

CITY HALL
P.O. BOX 27210
TUCSON, ARIZONA 85726-7210

OFFICE OF THE CITY MANAGER
(602) 791-4204

July 26, 1990

Herb Kai
2305 W. Ruthrauff Rd.
Tucson, Arizona 85705

Dear Mr. Kai:

Thank you for your letter of July 17, 1990 concerning the trade of the City owned Tucker Farm. I have reviewed the subject with Tucson Water employees and we have determined that there is no justification for the City to trade the property. For that reason we respectfully decline your offer.

Sincerely,



George Barker
Property Agent

GP:d1

KAI FARMS COMPANY
2305 WEST RUTHRAUFF ROAD
TUCSON, ARIZONA 85705

July 17, 1990

Mr. George Parker
Department of Transportation
Real Estate Division
255 West Alameda
Tucson, AZ 85701

Dear Mr. Parker:

We would like the city of Tucson to consider the possibility of trading **756** more or less irrigation acres, just north of your Santa Cruz Ranch Farm holdings, for the Pat Tucker Farm, which is located on Anway Road and Tucker Road. We feel that the possibility of sewer water availability maybe better at Tucker Farm verses north of Santa Cruz Ranch Farm.

Kai deeded property location:

Farrell:	Legal description:	Section 9, Twp 11, Rge 10
Sandhill:	Legal description:	Section 9, Twp 11, Rge 10

Should you have any questions, please contact me at 744-1573.

Very truly yours,

Herbert Kai

Herbert Kai





CITY OF TUCSON

DEPARTMENT OF TRANSPORTATION
REAL ESTATE DIVISION
255 WEST ALAMEDA
PHONE (602) 791-4181

July 15, 1986

Western Savings
Suite 132B
1161 North El Dorado Place
Tucson, Arizona 85715-4623

ATTENTION: PATRICK ZELLAR

Dear Mr. Zellar:

Enclosed is a copy of the recorded Purchase Agreement between Patrick D. Tucker, Jr. and Jacquelyn L. Tucker and the City of Tucson. No further information can be supplied by the Real Estate Division.

Sincerely,

George Parker
Property Manager

GP:ldc



REQUEST FOR VERIFICATION OF EMPLOYMENT

INSTRUCTIONS: LENDER - Complete Items 1 thru 7. Have applicant complete Item 8. Forward directly to employer named in Item 1.
EMPLOYER - Please complete either Part II or Part III as applicable. Sign and return directly to lender named in Item 2.

PART I - REQUEST

1. TO (Name and address of employer) City of Tucson
Real Estate Division
250 W. Alameda
Tucson, Arizona 85701

2. FROM (Name and address of lender)
WESTERN SAVINGS AND LOAN ASSOCIATION
1161 El Dorado Place, Suite 132
Tucson, Arizona 85715

3. SIGNATURE OF LENDER

4. TITLE

Loan Processor

5. DATE

7/8/86

6. LENDER'S NUMBER
(optional)

I have applied for a mortgage loan and stated that I am now or was formerly employed by you. My signature below authorizes verification of this information.

7. NAME AND ADDRESS OF APPLICANT (Include employee or badge number)

Patrick Tucker
P.O. BOX 578, Marana, Az 85653

8. SIGNATURE OF APPLICANT

PART II - VERIFICATION OF PRESENT EMPLOYMENT

EMPLOYMENT DATA

PAY DATA

9. APPLICANT'S DATE OF EMPLOYMENT

12A. CURRENT BASE PAY (Enter Amount and Check Period)
 ANNUAL HOURLY
 MONTHLY OTHER
\$ _____ WEEKLY (Specify)

12C. FOR MILITARY PERSONNEL ONLY

PAY GRADE

10. PRESENT POSITION

11. PROBABILITY OF CONTINUED EMPLOYMENT

13. IF OVERTIME OR BONUS IS APPLICABLE, IS ITS CONTINUANCE LIKELY?

OVERTIME YES NO
BONUS YES NO

12B. EARNINGS		
TYPE	YEAR TO DATE	PAST YEAR
BASE PAY	\$ _____	\$ _____
OVERTIME	\$ _____	\$ _____
COMMISSIONS	\$ _____	\$ _____
BONUS	\$ _____	\$ _____

TYPE	MONTHLY AMOUNT
BASE PAY	\$ _____
RATIONS	\$ _____
FLIGHT OR HAZARD	\$ _____
CLOTHING	\$ _____
QUARTERS	\$ _____
PRO PAY	\$ _____
OVERSEAS OR COMBAT	\$ _____

14. REMARKS (If paid hourly, please indicate average hours worked each week during current and past year.)

PART III - VERIFICATION OF PREVIOUS EMPLOYMENT

15. DATES OF EMPLOYMENT

16. SALARY/WAGE AT TERMINATION PER (Year) (Month) (Week)

BASE _____ OVERTIME _____ COMMISSIONS _____ BONUS _____

17. REASON FOR LEAVING

18. POSITION HELD

19. SIGNATURE OF EMPLOYER

20. TITLE

21. DATE

The confidentiality of the information you have furnished will be preserved except where disclosure of this information is required by applicable law. The form is to be transmitted directly to the lender and is not to be transmitted through the applicant or any other party.

P R O M I S S O R Y N O T E

December 14, 1984

\$1,000,000.00

Tucson, Arizona

For value received, the undersigned
CITY OF TUCSON, a municipal corporation

jointly and severally, promise to pay to the order of
PATRICK D. TUCKER, JR. AND JACQUELYN TUCKER, husband and wife

at the office of Stewart Title & Trust of Tucson; 3777 E. Broadway: or order,
in the City of Tucson, the principal sum of

ONE MILLION AND NO/00-----DOLLARS
with interest from December 21, 1984 at the rate of 10 per cent per annum,

each, the first of which installments shall be due March 21, 1985
and succeeding installments shall be payable quarterly thereafter.

The payment of the deferred balance shall be made in accordance with the terms as
set forth on Exhibit "A" which is attached hereto and made a part hereof.

Each payment shall be credited first on the interest then due, and the
remainder thereof on the principal sum, and interest shall thereupon cease
upon the amount so paid upon the principal sum. Should default be made in
the payment of any of said installments when due, then the whole sum of
principal and interest then unpaid shall become immediately due and payable
at the option of the holder of this note, or if the holder of this note
so elect, the accrued interest shall become a part of the principal and shall
bear like interest as the principal. Principal and interest payable in legal
tender of the United States. Should time of payment be extended by agreement
with any of the makers without the knowledge or consent of the others, after
the said extension, the liability of all parties shall remain as if no ex-
tension had been made. The makers and endorsers hereof waive grace, present-
ment, claim of homestead exemption, or rights of exemption, demand, notice
of dishonor and protest. In case this Note is placed in the hands of an
attorney for collection we agree to pay a reasonable attorney fee.

CITY OF TUCSON, a municipal corporation

BY: Charles Ford
Mayor Pro Tempore

ATTEST: _____

BY: Donald Seal et al.
CITY CLERK

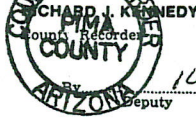
EXHIBIT "A"

PAYMENT SCHEDULE

<u>End of Quarter</u>	<u>End of Year</u>	<u>Balance Due</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
1		\$1,000,000	-0-	\$ 25,000	\$ 25,000
2		1,000,000	-0-	25,000	25,000
3		1,000,000	-0-	25,000	25,000
4	1	1,000,000	-0-	25,000	25,000
5		1,000,000	-0-	25,000	25,000
6		1,000,000	-0-	25,000	25,000
7		1,000,000	-0-	25,000	25,000
8	2	1,000,000	-0-	25,000	25,000
9		1,000,000	-0-	25,000	25,000
10		1,000,000	-0-	25,000	25,000
11		1,000,000	-0-	25,000	25,000
12	3	1,000,000	-0-	25,000	25,000
13		1,000,000	-0-	25,000	25,000
14		1,000,000	-0-	25,000	25,000
15		1,000,000	-0-	25,000	25,000
16	4	1,000,000	-0-	25,000	25,000
17		1,000,000	-0-	25,000	25,000
18		1,000,000	-0-	25,000	25,000
19		1,000,000	-0-	25,000	25,000
20	5	1,000,000	-0-	25,000	25,000
21		960,853	\$ 39,147	25,000	64,147
22		920,727	40,126	24,021	64,147
23		879,598	41,129	23,018	64,147
24	6	837,441	42,157	21,990	64,147
25		794,230	43,211	20,936	64,147
26		749,939	44,291	19,856	64,147
27		704,540	45,399	18,748	64,147
28	7	658,006	46,534	17,613	64,147
29		610,309	47,697	16,450	64,147
30		561,420	48,889	15,258	64,147
31		511,308	50,112	14,035	64,147
32	8	459,944	51,364	12,783	64,147
33		407,296	52,648	11,499	64,147
34		353,331	53,965	10,182	64,147
35		298,017	55,314	8,833	64,147
36	9	241,320	56,697	7,450	64,147
37		183,206	58,114	6,033	64,147
38		123,639	59,567	4,580	64,147
39		62,583	61,056	3,091	64,147
40	10	-0-	62,583	1,565	64,148
TOTAL			\$1,000,000	\$ 782,941	\$1,782,941

STATE OF ARIZONA }
COUNTY OF PIMA } ss.
Witness my hand and Official Seal.

I hereby certify that the within instrument was filed for record in Pima County, State of Arizona



Indexed	Paged	Blotted

FORM 4-12

No. 61457
Book 7785 Page 824-826
Date: MAV 15 '86 - 2:00 PM
Request of: CITY CLERK'S OFFICE
Fee: 7.00

STATE OF ARIZONA }
COUNTY OF PIMA } ss.
Witness my hand and Official Seal.

I hereby certify that the within instrument was filed for record in Pima County, State of Arizona



Indexed	Paged	Blotted

FORM 4-12

No. 7435
Book 7435 Page 305-317
Date: DEC 21 '84 - 8:00 AM
Request of: STEWART TITLE & TRUST
Fee: 50.00

*When recorded, mail to: City of Tucson
PO Box 27210
Tucson, AZ 85726
Attn: Hazel Page*

CITY CLERK'S NOTE:
This document is being re-recorded due to a scrivener's error
DLDM/tc 5/14/86.

ADOPTED BY THE
MAYOR AND COUNCIL
DEC 17 1984

RESOLUTION NO. 12985

RELATING TO WATER; AUTHORIZING THE PURCHASE OF A 608 ACRE PARCEL IN THE AVRA VALLEY FROM PATRICK D. TUCKER, JR. AND JACQUELYN L. TUCKER TO AUGMENT MUNICIPAL SOURCES OF WATER.

BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF TUCSON, ARIZONA, AS FOLLOWS:

SECTION 1. Pursuant to the governing body's policy of acquiring additional irrigated agricultural acreage in the Avra Valley to augment municipal water supplies, the Purchase Agreement, attached hereto as Exhibit "A", between the City of Tucson and Patrick D. Tucker, Jr. and Jacquelyn L. Tucker, husband and wife, is hereby adopted and approved.

SECTION 2. The Mayor is hereby authorized and directed to execute the attached Purchase Agreement for and on behalf of the City of Tucson and the City Clerk is authorized and directed to countersign the same, and the City Manager and all other City officers and employees are authorized and directed to perform all acts necessary or desirable to give effect to this resolution.

SECTION 3. WHEREAS, it is necessary for the preservation of the peace, health and safety of the City of Tucson that this resolution become immediately effective, an emergency is hereby declared to exist, and this resolution shall be effective immediately upon its passage and adoption.

PASSED, ADOPTED AND APPROVED by the Mayor and Council of the City of Tucson, Arizona, DEC 17 1984

MAYOR

ATTEST:

CITY CLERK

APPROVED AS TO FORM:

CITY ATTORNEY

REVIEWED BY:

CITY MANAGER

#dmp
12/06/84

CERTIFIED PAGE 1 of 11

~~7435 306~~

7785 825

7435
305
7785
824

84-11-109 24685-11

PURCHASE AGREEMENT

DATE: Nov. 16, 1984

SELLERS: PATRICK D. TUCKER, JR. and JACQUELYN L. TUCKER, husband and wife,
as joint tenants with right of survivorship

BUYER: CITY OF TUCSON, a municipal corporation

RECITALS

SELLERS are the owners of the real property hereinafter described, which includes any and all rights in and to property incident and appurtenant thereto including but not limited to any and all property rights in and to surface and underground water and/or rights to the use of surface and underground water, together with the personal property listed and described on Exhibit "B" attached hereto. BUYER is desirous of purchasing said property from SELLERS and SELLERS are desirous of selling said property to BUYER subject to the terms and conditions set forth herein.

COVENANTS

I.

SELLERS hereby agree to sell to BUYER and BUYER hereby agrees to purchase from SELLERS the following described real property situate in Pima County, Arizona, to-wit:

See Exhibit "A" attached hereto.

together with all improvements situate thereon, including, but not limited to, two (2) irrigation wells, which are equipped with pumping engines, pumps, gearheads, and other pumping equipment which together with the other personal property listed and particularly described in Exhibit "B" attached, includes all personal property covered by this sale and purchase. This sale includes any crop allotments assigned to the farm acreage the subject hereof by the Agricultural Stabilization and Conservation Service of the United States Department of Agriculture. SELLERS warrant that, except for all minerals as reserved in patents from the United States of America, the real property which is the subject matter of this sale is free and clear of all liens and encumbrances.

~~7435 307~~

II.

SELLERS and BUYER hereby understand and agree that a purpose of this sale and purchase is to effect a transfer from SELLERS to BUYER of water rights and therefor this sale and purchase specifically includes, but is not limited to, any and all property and other rights in and to surface and ground waters and any rights to use these waters on the subject property for the growth of crops or otherwise, from or vested in the above-described real property. SELLERS warrant that 608 acres of the 608 total acres of this Farm have grandfathered irrigation right as certified by the Arizona Department of Water Resources. Certificate evidencing above-mentioned grandfathered rights attached as Exhibit "C" incorporated herein by this reference.

III.

The total consideration for this sale and purchase of said property shall be the sum of ONE MILLION FOUR HUNDRED FIFTY THOUSAND AND NO/100 (\$1,450,000.00) DOLLARS, payable as follows:

- A. FOUR HUNDRED FIFTY THOUSAND AND NO/100 (\$450,000.00) DOLLARS cash payable in escrow for the benefit of SELLERS upon closing.
- B. The balance of the purchase price in the sum of ONE MILLION AND NO/100 (\$1,000,000.00) DOLLARS in forty (40) quarterly installments of TWENTY FIVE THOUSAND AND NO/100 (\$25,000.00) DOLLARS for the first twenty (20) quarters and SIXTY FOUR THOUSAND ONE HUNDRED FORTY SEVEN AND NO/100 (\$64,147.00) DOLLARS for the next nineteen (19) quarters, and SIXTY FOUR THOUSAND ONE HUNDRED FORTY EIGHT AND NO/100 (\$64,148.00) DOLLARS for the last quarter, all of which includes interest accruing at the rate of Ten Percent (10%) per annum from the date of closing. The first payment shall be due and payable on March 14, 1985 with remaining payments due on the same date of each succeeding quarter until paid in accordance with the schedule in Exhibit "D". These payments shall be made to the escrow agent who is authorized to make an equal payment to the SELLERS. The obligations of the BUYER to the SELLERS shall be evidenced by a Promissory Note to be prepared by the escrow agent on its usual form. It is understood and agreed by the parties hereto that any interest payments are a municipal obligation of the City of Tucson and that the rights under this Purchase Agreement

~~7435 308~~

are fully assignable provided that no assignment or transfer, in whole or in part of any right granted by this Purchase Agreement shall be effective until notice is given to the City of Tucson as provided in Paragraph IX hereof. BUYER may not, unless so approved by SELLERS, pre-pay any installments due. This Purchase Agreement shall be duly acknowledged by the parties hereto and recorded at the time this transaction is closed, following the recording of the warranty deed referred to in Paragraph V hereof. The BUYER will execute a deed of trust in favor of SELLERS encumbering the real property, the personalty and any water rights including Grandfathered Water Rights being conveyed. The form of deed of trust shall be upon the usual form of the escrow agent. It is understood by the BUYER and the SELLERS that the Promissory Note executed by the BUYER to the SELLERS is a non-recourse Promissory Note and SELLERS' rights shall be limited to recovering the property by enforcing whatever rights the SELLERS have under the deed of trust. The remedies of the SELLERS in the event of default or failure to make any payment when due, however, shall not include specific performance but shall be limited to the sums of money previously paid by BUYER on account of the purchase price and to a forfeiture of any interest of the BUYER in and to the property in question.

IV.

SELLERS warrant that they will comply with the provisions of Arizona Revised Statutes, Sections 3-202 and 3-215, and Rule No. 4 of Quarantine Regulation No. 5 of the Arizona Commission on Agriculture and Horticulture concerning plowing of cotton stubble prior to conveying physical possession of the property to BUYER.

V.

STEWART TITLE AND TRUST OF TUCSON, BEL AIR OFFICE, is hereby designated escrow agent by the parties. The provisions of this Agreement shall constitute escrow instructions. Closing date of said escrow shall be at the option of SELLERS, but in no event later than December 14, 1984 and BUYER and SELLERS agree to deposit into escrow and to execute any and all documents, including, but not limited to, deeds and bills of sale, necessary and proper

~~7425 300~~

to effectuate the closing of the purchase and sale. Upon closing this sale, SELLERS shall issue to BUYER a Warranty Deed for the property the subject of this transaction and escrow agent shall immediately record the Warranty Deed and this Purchase Agreement in that order.

VI.

BUYER agrees to defer the date of possession to not later than December 31, 1984, or until such time as the 1984 crop is completely harvested. BUYER reserves the right to monitor water levels and pumping rates, using existing equipment on any wells utilized in the irrigation of the property by SELLERS during the time in which SELLERS remain in possession of the property. SELLERS agree that at any time during which they are in possession of the property pursuant to this Agreement they will hold BUYER harmless from and against any and all claims, demands, causes of action, suits and proceedings, regardless of the merits of same, resulting from any act or omission of the SELLERS or anyone directly employed by SELLERS, and further that SELLERS will name BUYER as a co-insured on SELLERS' liability insurance policy during the period of time SELLERS are in possession of said real property.

SELLERS shall be responsible for payment of all charges for electricity and/or natural gas used by them in connection with their agricultural activities on the property until such time as the real and personal property is physically transferred over to BUYER; thereafter, all such charges shall be the sole responsibility of BUYER.

VII.

A. This transaction is subject to SELLERS being able to furnish marketable title, as evidenced by a standard form owner's title insurance policy, issued by escrow agent at the price and under the terms and conditions herein set forth.

B. SELLERS shall transfer free and clear of all liens and encumbrances by Bill of Sale to BUYER all items set forth on Exhibit "B" attached hereto.

C. SELLERS shall be responsible for unpaid ad valorem property taxes and unpaid assessments accruing up to closing, December 14, 1984. BUYER shall be responsible for taxes and assessments thereafter.

~~7435 310~~

7785 829

D. Recording and escrow fees shall be divided between BUYER and SELLERS according to the usual and customary practice in Pima County, Arizona. Any servicing contract fees shall be paid by SELLERS.

E. BUYER and SELLERS warrant and represent that no real estate or brokerage commission will become due as a result of this transaction.

F. BUYER and SELLERS agree that if the title to the property subject hereof be found by the escrow agent to be unmarketable at the time of closing, thirty (30) days from the time of closing will be given SELLERS to perfect same. If said title is not perfected within said time, any monies deposited into escrow by BUYER, shall, upon demand of BUYER, be returned to BUYER and this contract shall be null and void. SELLERS shall be liable for any cancellation charges levied by the Title Company in the event of such cancellation.

G. SELLERS agree at their sole cost to furnish BUYER a title insurance policy in the amount of ONE MILLION FOUR HUNDRED FIFTY THOUSAND AND NO/100 (\$1,450,000.00) DOLLARS issued by STEWART TITLE AND TRUST OF TUCSON, said title insurance policy to show title to said premises subject to the usual exceptions contained in the regular form of owner's title insurance policy, and subject only to specific matters as set forth herein.

VIII.

The terms of this Agreement encompass the entire understandings and agreements of the parties and all previous understandings and agreements, written or oral, are superseded hereby and parole evidence shall never be admissible in any court, tribunal or governmental agency to modify, amend, or vary the terms of this Agreement; provided, however, the parties shall have the right to amend this Agreement by an instrument in writing executed with the same formality as this Agreement is executed. Any and all such amendments shall be delivered to the escrow agent who shall record the same and make it a part of this Agreement.

~~7435 311~~

7785 830

IX.

Any and all notices required to be given under the terms of this Agreement or any amendment thereof shall be in writing and shall be valid and sufficiently served, given or made if mailed by certified or registered mail with postage prepaid. All notices intended for SELLERS shall be addressed to:

Patrick D. and Jacquelyn L. Tucker

P. O. Box 578

Marana, Arizona 85238

If intended for the BUYER, the notices shall be addressed to:

CITY OF TUCSON - REAL ESTATE DIVISION

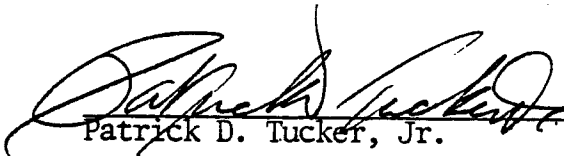
250 West Alameda

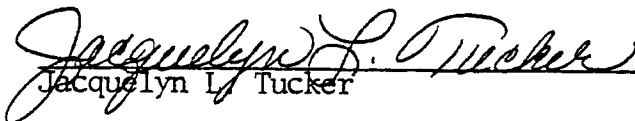
Tucson, Arizona 85701

BUYER and SELLERS agree that time is of the essence of this Agreement. This Agreement and the provisions herein contained shall inure to the benefit of and be binding upon the agents, representatives, successors and assigns of SELLERS and inure to the municipality of the CITY OF TUCSON and be binding thereon, and upon closing of escrow and delivery of the deed and/or other documents required hereunder, the terms, covenants and provisions hereof shall continue to survive the closing and delivery.

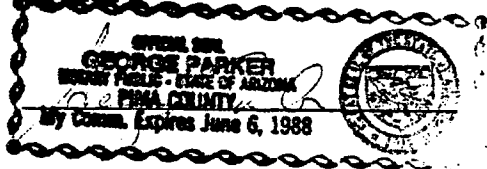
IN WITNESS WHEREOF, SELLERS have executed this instrument as of the date it bears and the BUYER has caused the same to be executed as of said date by its Mayor and attested by its City Clerk, duly authorized by resolution of its City Council to execute the same, and has caused its seal to be hereunto affixed.

SELLERS:


Patrick D. Tucker, Jr.


Jacquelyn L. Tucker

ATTEST:

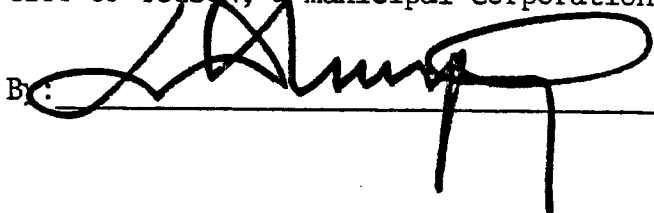


BUYER:

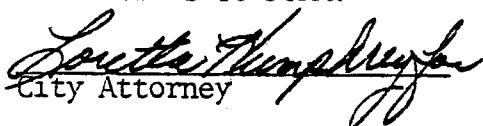
CITY OF TUCSON, a municipal corporation

COUNTERSIGNED:


City Clerk

By: 

APPROVED AS TO FORM:


City Attorney

-6-

~~7435 312~~

7785 831

EXHIBIT "A" ^{to} EX. A TO RESOLUTION NO. 12985

The West Half of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 330 feet of the Northwest Quarter and less 30 feet for road.

Lots 1 and 2 and South Half of Northeast Quarter and Southeast Quarter and East 330 feet of Northwest Quarter of Section 4, Township 13 South, ~~Range 11~~ Range 11 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of North 1980 feet of Northeast Quarter and EXCEPT North 30 feet and East 30 feet for roads.

*Range 10

CORRECTION OF SCRIVENER'S ERROR

~~7435 313~~

2 Irrigation Wells, Pumps and Equipment
V-125 Climax Engines

1 Domestic Well 7½ HP

1 3-Bedroom Home - 1,844 square feet

1 Barn - 36' x 30'

1 Garage - 30' x 20'

1 Shop - 20' x 30'

2 Laborer Houses

~~7435 314~~

EXHIBIT "C" ^{to} EX. A TO RESOLUTION NO. 12985

Certificate Of Grandfathered Groundwater Right

COUNTY OF PIMA

STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES

This is to certify that pursuant to the provisions of Title 45, Chapter 2, Arizona Revised Statutes



PATRICK D., JR., AND JACQUELYN L. TUCKER
Box 578
Marana, Arizona 85238

is granted
IRRIGATION GRANDFATHERED RIGHTS
in the
TUCSON ACTIVE MANAGEMENT AREA

for 608.23 irrigation acres of land. The rights are appurtenant to and groundwater may be used only on the irrigation acres of land described as follows:

Assessor's Parcel Number 201-42-016A, as of 5/82: W $\frac{1}{2}$ excluding east 330' of NW $\frac{1}{4}$ and less north 30' for road in Sec 4 T13S R10E; Assessor's Parcel Number 201-42-016B: Lots 1 and 2 and S $\frac{1}{2}$ NE $\frac{1}{4}$ and SE $\frac{1}{4}$ and east 330' of NW $\frac{1}{4}$ excluding east 660' of north 1980' of NE $\frac{1}{4}$ and excluding north 30' and east 30' for roads in Sec 4 T13S R10E, GSRB&M. A copy of the Assessor's Map depicting your certified acreage is on file with this Department.

The use of groundwater on the above described land shall be for irrigation purposes in accordance with the laws of the State of Arizona and restrictions placed on use by the Director of the Department of Water Resources pursuant to Title 45, Chapter 2, Arizona Revised Statutes.



CERTIFICATE NO. 58-111916
is granted this 6th day of April, 1983

ARIZONA DEPARTMENT OF WATER RESOURCES

Wesley E. [Signature]
Director

7435
313

CERTIFIED PAGE 10 of 11

The Department of Water Resources must be notified if the above named person(s) changes his address, conveys ownership of the land to another person(s), or wishes to convert the right to a non-irrigation grandfathered right associated with retired irrigated land.

7785 834

PAYMENT SCHEDULE

<u>End of Quarter</u>	<u>End of Year</u>	<u>Balance Due</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
1		\$1,000,000	-0-	\$ 25,000	\$ 25,000
2		1,000,000	-0-	25,000	25,000
3		1,000,000	-0-	25,000	25,000
4	1	1,000,000	-0-	25,000	25,000
5		1,000,000	-0-	25,000	25,000
6		1,000,000	-0-	25,000	25,000
7		1,000,000	-0-	25,000	25,000
8	2	1,000,000	-0-	25,000	25,000
9		1,000,000	-0-	25,000	25,000
10		1,000,000	-0-	25,000	25,000
11		1,000,000	-0-	25,000	25,000
12	3	1,000,000	-0-	25,000	25,000
13		1,000,000	-0-	25,000	25,000
14		1,000,000	-0-	25,000	25,000
15		1,000,000	-0-	25,000	25,000
16	4	1,000,000	-0-	25,000	25,000
17		1,000,000	-0-	25,000	25,000
18		1,000,000	-0-	25,000	25,000
19		1,000,000	-0-	25,000	25,000
20	5	1,000,000	-0-	25,000	25,000
21		960,853	\$ 39,147	25,000	64,147
22		920,727	40,126	24,021	64,147
→ 23		879,598	41,129	23,018	64,147
24	6	837,441	42,157	21,990	64,147
25		794,230	43,211	20,936	64,147
26		749,939	44,291	19,856	64,147
27		704,540	45,399	18,748	64,147
28	7	658,006	46,534	17,613	64,147
29		610,309	47,697	16,450	64,147
30		561,420	48,889	15,258	64,147
31		511,308	50,112	14,035	64,147
32	8	459,944	51,364	12,783	64,147
33		407,296	52,648	11,499	64,147
34		353,331	53,965	10,182	64,147
35		298,017	55,314	8,833	64,147
36	9	241,320	56,697	7,450	64,147
37		183,206	58,114	6,033	64,147
38		123,639	59,567	4,580	64,147
39		62,583	61,056	3,091	64,147
40	10	-0-	62,583	1,565	64,148
TOTAL			\$1,000,000	\$ 782,941	\$1,782,941

~~7435~~ 316

7785 835

Certificate of Clerk

• City of Tucson •

State of Arizona }
County of Pima } ss

I, Donald L. De Ment, the duly appointed and qualified City Clerk of the City of Tucson, Arizona, do hereby certify that the foregoing is a true, correct, and compared copy of Resolution No. 12985, which was passed and adopted by the Mayor and Council of the City of Tucson, Arizona, at a meeting held on the 17th day of December, 19 84, at which a quorum was present, by the affirmative vote of not less than five-sixths of the Council, taken by ayes and noes.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the City of Tucson, Arizona, this 18th day of December, 19 84

Total of 11 page(s) certified.

Donald L. De Ment
City Clerk

~~7435 317~~

7785 836

STATE OF ARIZONA)
COUNTY OF PIMA) ss.

I hereby certify that the within instrument was filed for record in Pima County, State of Arizona

No. **61458**
Book **7785** Page **837-838**

Witness my hand and Official Seal
Indexed Paged Blotted

RICHARD J. KENNEDY
County Recorder

Date: **MAY 15 '86 - 2:00 PM**
Request of: **CITY CLERK'S OFFICE**
Fee **3.00**

By
Deputy

148500
148500

STATE OF ARIZONA)
COUNTY OF PIMA) ss.

I hereby certify that the within instrument was filed for record in Pima County, State of Arizona

No. **7435** Page **318**

Witness my hand and Official Seal
Indexed Paged Blotted

RICHARD J. KENNEDY
County Recorder

Date: **DEC 21 '84 - 8:00 AM**
Request of: **STEWART TITLE & TRUST OF TUCSON**
Fee **3.00**

By
Deputy

Hand recorded mail to: City of Tucson; P.O. Box 27210; Tucson, AZ 85726; Acc: Hazel Dager

For and in consideration of the sum of One Dollar and other valuable considerations the undersigned, PATRICK D. TUCKER, JR. and JACQUELYN TUCKER husband and wife;

do(es) hereby CONVEY unto the CITY OF TUCSON, a municipal corporation, the following described property situate in Pima County, Arizona:

The West Half of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 330 feet of the Northwest Quarter and less 30 feet for road.

TOGETHER WITH

Lots 1 and 2 and South Half of Northeast Quarter and Southeast Quarter and East 330 feet of Northwest Quarter of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of North 1980 feet of Northeast Quarter and EXCEPT North 30 feet and East 30 feet for roads.

Initials:

P.D.T., Jr.

JT

300-17-105

7785
837
C4686-41
C4685-41

THIS INSTRUMENT IS BEING RE-RECORDED TO CORRECT A SCRIVENER'S ERROR IN THE LEGAL DESCRIPTION AND FOR NO OTHER PURPOSE.

AND the undersigned warrant(s) the title against any persons whomsoever.

DATED this 14th day of December, 19 84.

Patrick D. Tucker, Jr.
Patrick D. Tucker, Jr.
Jacquelyn Tucker
Jacquelyn Tucker

STATE OF ARIZONA)
COUNTY OF PIMA) ss.

This instrument was acknowledged before me this 20th day of December 19 84 by Patrick D. Tucker, Jr. and Jacquelyn Tucker

In witness whereof I hereunto set my hand and official seal.

6-8-86

Notarius P. Malone
Notary Public

7435 318

HBS:c 12/84 Avra Valley Irrigated Acreage fw

L-2550

WD-P 9-80 (wt)

7785
838



MEMORANDUM

DATE: May 12, 1986

TO: City Clerk
Donald L. DeMent

FROM: *Barbara Hillegonds*
Barbara Hillegonds
Real Estate Services Coordinator
Real Estate Division
Ext.: 4181

SUBJECT: Original real property documents filed with the City Clerk

Occasionally, the Real Estate Division finds it necessary to re-record a real property document (deed, easement, etc.) usually due to the discovery of a scrivener's error that is not detected until after a document has already been recorded in the Pima County Recorder's Office.

When this happens, the original document must be retrieved from the City Clerk's file, the error corrected and initialed by the signing parties, and the instrument re-recorded (as has recently happened re: the Deed in Docket 7435, Page 318 -- please refer to the attached materials).

The indexing procedures in your office apparently are such that the grantor(s) and Section, Township and Range (or Subdivision, Block and Lot) are underlined and initialed in red on the original real property document prior to filing in your record system. I am wondering if your procedure could be altered so that the "red-lining and initialing" could be done on a Xerox copy rather than on the original documents. If your indexing procedure could be changed, we would avoid having the "red-lining" showing up on public records when an instrument has to be re-recorded. My concern is that the appearance of the "red-lining" on the instrument being re-recorded could cause some confusion on the part of persons doing title searches and reading these instruments in future years. Also, of course, if your procedure could be changed the appearance of the re-recorded document would be identical to the original document except for the correction causing the re-recording.

I would appreciate your consideration of the above request for a change in your indexing procedures. If you feel that this is not a workable solution to the problem, perhaps we could discuss this and come up with some other procedure that would be mutually acceptable.

BH:td
Attachment

described property situate in Pima County, Arizona: ... and following

The West Half of Section 4, Township 13 South, Range 10 East,
Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 330 feet of the Northwest Quarter and less
30 feet for road.

TOGETHER WITH

Lots 1 and 2 and South Half of Northeast Quarter and Southeast
Quarter and East 330 feet of Northwest Quarter of Section 4,
Township 13 South, Range 10 East, Gila and Salt River Base and
Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of North 1980 feet of Northeast Quarter
and EXCEPT North 30 feet and East 30 feet for roads.

Initials:
PDT, Jr.
JT

64685-741

THIS INSTRUMENT IS BEING RE-RECORDED TO CORRECT A SCRIVENER'S ERROR IN THE
LEGAL DESCRIPTION AND FOR NO OTHER PURPOSE.

AND the undersigned warrant(s) the title against any persons whomsoever.

DATED this 14th day of December, 19 84.

Patrick D. Tucker, Jr.
Patrick D. Tucker, Jr.
Jacquelyn Tucker
Jacquelyn Tucker

STATE OF ARIZONA)
COUNTY OF PIMA) ss.

This instrument was acknowledged before me this 20th day of December 19 84,
by Patrick D. Tucker, Jr. and Jacquelyn Tucker

In witness whereof I hereunto set my hand and official seal.

6-8-86

Patricia A. Malone
Notary Public

7435 318

HBS:c 12/84 Avra Valley Irrigated Acreage

L-2550

STATE OF ARIZONA)
COUNTY OF PIMA) ss.

Hereby certify that the within instrument was filed for record in Pima County, State of Arizona

No. Book 7435 Page 318

Witness my hand and Official Seal

RICHARD J. KENNEDY
County Recorder
By W

Date: DEC 21 '84 - 8 00 AM

Request of: STEWART TITLE & TRUST OF TUCSON
Fec 3. 50

Indexed Paged Blotted

*When recorded mail to: City of Tucson: P.O. Box 27210; Tucson, AZ 85726
Attn: Hazel Logan*

DEED

For and in consideration of the sum of One Dollar and other valuable considerations the undersigned, PATRICK D. TUCKER, JR and JACQUELYN TUCKER, husband and wife;

do(es) hereby CONVEY unto the CITY OF TUCSON, a municipal corporation, the following described property situate in Pima County, Arizona:

The West Half of Section 4, Township 13 South, Range 10 East Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 330 feet of the Northwest Quarter and less 30 feet for road.

TOGETHER WITH

Lots 1 and 2 and South Half of Northeast Quarter and Southeast Quarter and East 330 feet of Northwest Quarter of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of North 1980 feet of Northeast Quarter and EXCEPT North 30 feet and East 30 feet for roads.

Initials:
PDT, Jr.
JT

64686-41
64688-41

THIS INSTRUMENT IS BEING RE-RECORDED TO CORRECT A SCRIVENER'S ERROR IN THE LEGAL DESCRIPTION AND FOR NO OTHER PURPOSE.

AND the undersigned warrant(s) the title against any persons whomsoever.

DATED this 14th day of December, 19 84.

Patrick D. Tucker, Jr.
Patrick D. Tucker, Jr.



MEMORANDUM

DATE: April 21, 1986

TO: John Brady
Assistant City Attorney

FROM: George Parker
Property Manager
Real Estate Division

SUBJECT: Correction of Scribners Error, Resolution 12985.

Please indicate by a memo to the Clerk's Office, that a Scribners Error on Exhibit "A" to Exhibit "A" of Resolution 12985, is being corrected. The error is noted on Page 8 of the enclosed document. The legal description of Lots 1 and 2 are erroneously described in Range 11 East instead of correctly in Range 10 East.

GP:ja

The West Half of Section 4, Township 13 South, Range 10 East,
Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 330 feet of the Northwest Quarter and less
30 feet for road.

Lots 1 and 2 and South Half of Northeast Quarter and Southeast
Quarter and East 330 feet of Northwest Quarter of Section 4,
Township 13 South, Range 11 East, Gila and Salt River Base and
Meridian, Pima County, Arizona.

EXCEPT the Ea
and EXCEPT No

northeast Quarter
ads.

Should read
Range 10
(not Range 11)
SEMI-PUBLIC LANDS
BUREAU OF LAND MANAGEMENT



MEMORANDUM

DATE: April 11, 1986

TO: Donald L. DeMent
City Clerk

FROM: John Kross
Real Estate Administrator
Real Estate Division
Ext.: 4181

SUBJECT: Request for Recorded Deed and Resolution No. 12985
Tucker to City of Tucson
(R.P. #1744)

Please return the recorded Deed from Patrick D. Tucker, Jr. and Jacquelyn Tucker to City of Tucson that was recorded December 21, 1984 in Docket 7435 at page 318 and Resolution No. 12985 recorded in Docket 7435 at page 303-317.

The deed will need to be re-recorded to correct the legal description. If you have any questions, please call Hazel Sager at extension 4181.

JK:HBS:1dc

STATE OF ARIZONA)
COUNTY OF PIMA) ss.

I hereby certify that the within
instrument was filed for record
in Pima County, State of Arizona

No. _____
Book 7435 Page 37

Witness my hand and Official Seal

RICHARD J. KENNEDY
County Recorder
By 12 Deputy

Date: DEC 21 '84 - 8 00 AM
Request of:
STEWART TITLE & TRUST OF TUCSON
Fec 3 30

Indexed Paged Blotted

After recorded mail to: City of Tucson; P.O. Box 27210; Tucson, AZ 85726; Attn: Hazel Dager
DEED

For and in consideration of the sum of One Dollar and other valuable considerations the undersigned, PATRICK D. TUCKER, JR. and JACQUELYN TUCKER, husband and wife;

do(es) hereby CONVEY unto the CITY OF TUCSON, a municipal corporation, the following described property situate in Pima County, Arizona:

The West Half of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 330 feet of the Northwest Quarter and less 30 feet for road.

TOGETHER WITH

Lots 1 and 2 and South Half of Northeast Quarter and Southeast Quarter and East 330 feet of Northwest Quarter of Section 4, Township 13 South, Range 11 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of North 1980 feet of Northeast Quarter and EXCEPT North 30 feet and East 30 feet for roads.

*C4686-711
C4688-711*

AND the undersigned warrant(s) the title against any persons whomsoever.

DATED this 14th day of December, 19 84.

Patrick D. Tucker, Jr.
Patrick D. Tucker, Jr.
Jacquelyn Tucker
Jacquelyn Tucker

STATE OF ARIZONA)
COUNTY OF PIMA) ss.

This instrument was acknowledged before me this 20th day of December, 19 84, by Patrick D. Tucker, Jr. and Jacquelyn Tucker

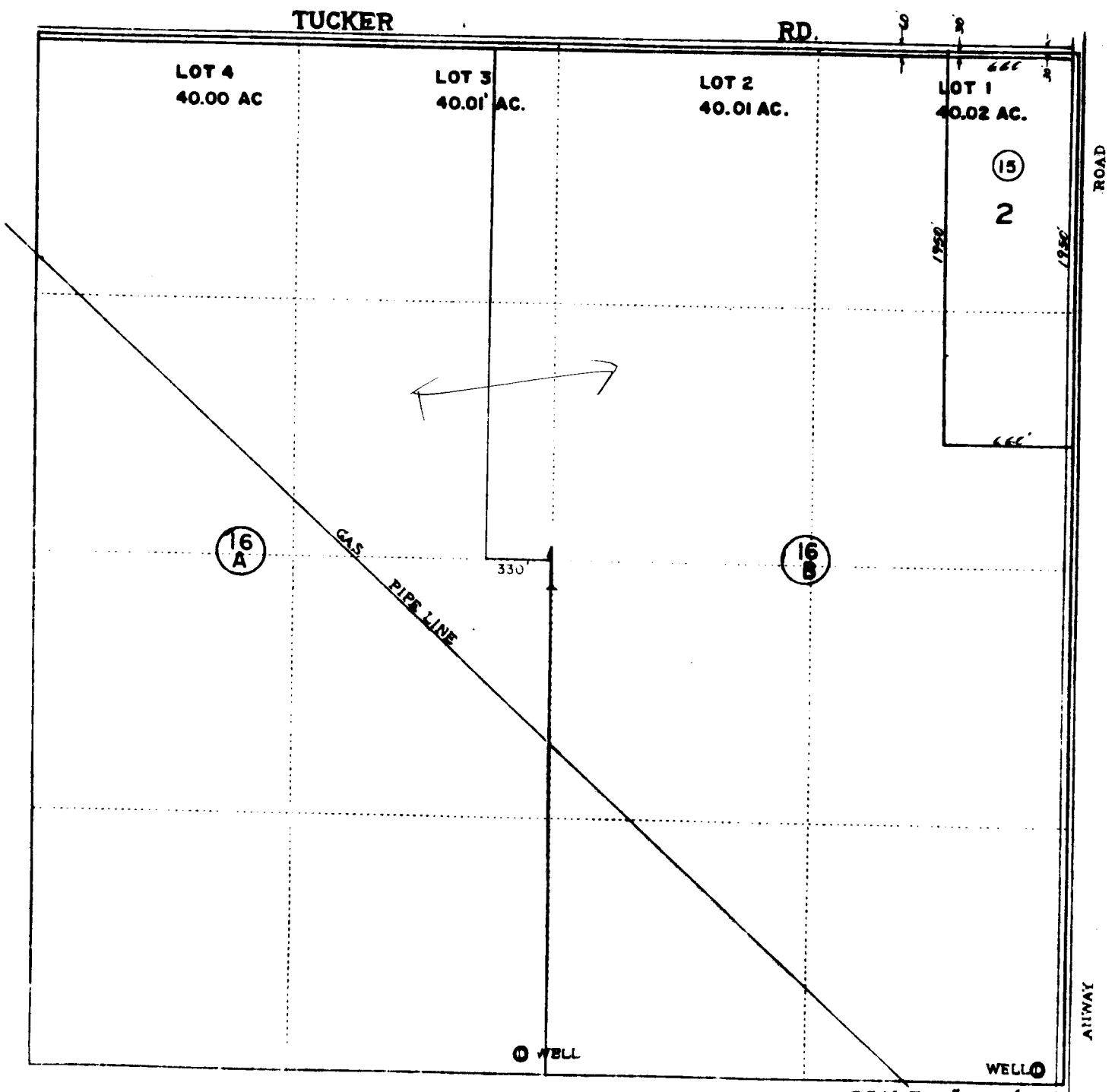
In witness whereof I hereunto set my hand and official seal.

G. J. 86

Richard J. Kennedy
Notary Public

OWNER'S RECORD MAP

SECTION 4, TOWNSHIP 13 SOUTH, RANGE 10 EAST



SCALE - 1" = 600'
1972

STATE OF ARIZONA
COUNTY OF PIMA

I hereby certify that the within instrument was filed and recorded
in DOCKET 7435 page 319-322 and indexed

Fee No.

at the request of STEWART TITLE & TRUST OF TUCSON

DEC 21 '84 - 8 00 AM

When recorded mail to:
Stewart Title & Trust of Tucson
3777 E. Broadway
Tucson, AZ 85716
ATT: Collection Department

Witness my hand and official seal.
RICHARD J. KENNEDY County Recorder,
By Deputy Recorder

Compared
Photostated
Fee

64685 H1 84-11-104
64686 H1 84-11-105

DEED OF TRUST AND ASSIGNMENT OF RENTS

This Deed of Trust, made this 14th day of December, 1984 between
CITY OF TUCSON, a municipal corporation, herein called here in called Trustor
whose mailing address is P. O. Box 27210; Tucson, AZ 85726 (number and street) (city) (state and zip code)
STEWART TITLE & TRUST OF TUCSON, an Arizona corporation, herein called Trustee, and
PATRICK D. TUCKER, JR. AND JACQUELYN TUCKER, husband and wife, herein called Beneficiary,
whose mailing address is P.O. Box 578 Marana, Arizona 85238 (number and street) (city) (state and zip code)

WITNESSETH: That Trustor conveys, transfers and assigns to Trustee in Trust, with Power of Sale, the follow-
ing described real property in PIMA County, Arizona:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF FOR THE LEGAL DESCRIPTION
SEE EXHIBIT "B" ATTACHED HERETO AND MADE A PART HEREOF FOR THE LEGAL DESCRIPTION

*Approved as to form
Hester Humphrey
Deputy City Attorney
12/17/84*

TOGETHER WITH the rents, issues, profits and income thereof (all of which are hereinafter called "Property Income"),
SUBJECT HOWEVER, to the right, power and authority hereinafter given to and conferred upon Beneficiary to collect and
apply such Property Income.

THIS DEED OF TRUST is given for the purpose of securing: (1) Performance of each agreement of Trustor herein contained.
(2) Payment of the indebtedness evidenced by ONE promissory note(s) of even date herewith and any extension or
renewal thereof in the principal sum of \$ 1,000,000.00, executed by Trustor in favor of Beneficiary or order.

To protect the security of this DEED OF TRUST, it is agreed that:

(1) Trustor shall keep said property in good condition and repair; shall not remove or demolish any building thereon;
shall complete or restore promptly and in good and workmanlike manner any building which may be constructed, damaged or
destroyed thereon and shall pay when due all claims for labor performed and materials furnished therefor; shall comply with
all laws affecting said property or requiring any alterations or improvements to be made thereon; shall not commit or permit
waste thereof; shall not commit, suffer or permit any act upon said property in violation of law; shall cultivate, irrigate, ferti-
lize, fumigate, prune and do all other acts which from the character or use of said property may be reasonably necessary, the
specific enumerations herein not excluding the general.

(2) Trustor shall keep all improvements now or hereafter erected on the said property continuously insured against loss
by fire or other hazards in an amount not less than the total obligation secured hereby. All policies shall be held by the Ben-
eficiary and be in such companies as the Beneficiary may approve and have loss payable first to the Beneficiary, as his in-
terest may appear and then to the Trustor. The amount collected under any insurance policy may be applied upon any indebted-
ness hereby secured and in such order as the Beneficiary may determine or at option of Beneficiary the entire amount so
collected or any part thereof may be released to Trustor, such application of release shall not constitute or waive any default here-
under nor cause discontinuance of any action that may have been or may thereafter be taken by Beneficiary or Trustee be-
cause of such default.

(3) Trustor shall appear in and defend any action or proceeding purporting to affect the security hereof or the rights or
powers of the Beneficiary or Trustee; and shall pay all costs and expenses, including cost of evidence of title and attorney's
fees in a reasonable sum, in such action or proceeding, in which Beneficiary or Trustee may appear, and in any suit brought
by Beneficiary to foreclose this DEED OF TRUST.

(4) Trustor shall pay: at least ten days before delinquency all taxes and assessments affecting said property, when
due, all encumbrances, charges and liens, with interest, on said property or any part thereof, which appear to be prior or
superior hereto; when due, all costs, fees and expenses of this Trust, including, without limiting the generality of the fore-
going, the fees of Trustee for issuance of any DEED OF PARTIAL RELEASE and PARTIAL RECONVEYANCE or DEED
OF RELEASE and FULL RECONVEYANCE and all lawful charges, costs and expenses in the event of reinstatement of,
following default in, this DEED OF TRUST or the obligations secured hereby.

(5) Should Trustor fail to make . . . payment or to do any act as provided in this DEED OF TRUST, then Beneficiary or Trustee, but without obligation so to do and without notice to or demand upon Trustor and without releasing Trustor from any obligation hereof, may: make or do the same in such manner and to such extent as either may deem necessary to protect the security hereof, Beneficiary or Trustee being authorized to enter upon said property for such purposes: pay, purchase, contest or compromise any encumbrance, charge or lien which in the judgment of either appears to be prior or superior hereto, and, in exercising any such power, pay necessary expenses, employ counsel and pay his reasonable fees. Trustor shall pay immediately and without demand all sums so expended by Beneficiary or Trustee, with interest from date of expenditure at the highest rate allowed by law in effect at the date hereof.

(6) Any award of damages in connection with any condemnation for public use of or injury to said property or any part thereof is hereby assigned and shall be paid to Beneficiary who may apply or release such moneys received by him in the same manner and with the same effect as above provided for disposition of proceeds of fire or other insurance.

(7) By accepting payment of any sum secured hereby after its due date, Beneficiary does not waive his right either to require prompt payment when due of all other sums so secured or to declare default for failure so to pay.

(8) At any time or from time to time, without liability therefor and without notice, upon written request of Beneficiary and presentation of this DEED OF TRUST and said note(s) for endorsement, and without affecting the personal liability of any person for payment of the indebtedness secured hereby, and upon payment of its fees, Trustee may: (A) by DEED OF PARTIAL RELEASE and PARTIAL RECONVEYANCE release and reconvey, without covenant or warranty, express or implied, any portion(s) of the property then held hereunder; the recitals in such DEED OF PARTIAL RELEASE and PARTIAL RECONVEYANCE of any matters shall be conclusive proof of the truthfulness thereof; the grantee in such DEED OF PARTIAL RELEASE and PARTIAL RECONVEYANCE may be described as "The Person or Persons Legally Entitled Thereto"; (B) consent to the making of any map or plat thereof; (C) join in granting any easement thereon; or (D) join in any extension agreement subordinating the lien or charge hereof. Beneficiary shall execute his release upon such DEED if so requested by Trustee.

(9) Upon written request of Beneficiary stating that all sums secured hereby have been paid and upon surrender of this DEED OF TRUST and said note(s) to Trustee for cancellation and retention and upon payment of its fees, Trustee shall by DEED OF RELEASE and FULL RECONVEYANCE release and reconvey, without covenant or warranty, express or implied, the property then held hereunder. The recitals in such DEED OF RELEASE and FULL RECONVEYANCE of any matters shall be conclusive proof of the truthfulness thereof. The grantee in such DEED OF RELEASE and FULL RECONVEYANCE may be described as "The Person or Persons Legally Entitled Thereto". Seven years after issuance of such DEED OF RELEASE and FULL RECONVEYANCE, Trustee may destroy this DEED OF TRUST, said note(s), all evidence of assignments hereof and all other documents relating hereto.

(10) As additional security, Trustor hereby gives to and confers upon Beneficiary the right, power and authority during the continuance of this Trust, to collect the Property Income, reserving unto Trustor the right, prior to any default by Trustor in payment of any indebtedness secured hereby or in performance of any agreement hereunder, to collect and retain such Property Income as it becomes due and payable. Upon such default, Beneficiary may at any time without notice, either in person by agent, or by a receiver to be appointed by a court, and without regard to the adequacy of any security for the indebtedness hereby secured or the solvency of the Trustor, enter upon and take possession of said property or any part thereof, in his own name sue for or otherwise collect such Property Income, including that past due and unpaid, and apply the same, less costs and expenses of operation and collection including reasonable attorney's fees, upon any indebtedness secured hereby and in such order as Beneficiary may determine. The entering upon and taking possession of said property, the collection of such Property Income and the application thereof as aforesaid shall, not cure or waive any default or notice of default hereunder or invalidate any act done pursuant to such notice.

(11) Upon default by Trustor in payment of any obligation secured hereby or in performance of any other agreement hereunder, and upon delivery by Beneficiary to Trustee of written declaration of such default, (A) all sums secured hereby shall become immediately due and payable on delivery to Trustee of Beneficiary's written declaration that such sums are immediately due and payable, and (B) the Trustee shall proceed to sell at public auction the property secured hereby under the Power of Sale contained herein on delivery by Beneficiary to Trustee of written notice of election to have said property sold and after the giving of notice of sale in the manner provided by law. Beneficiary also shall deposit with Trustee this DEED OF TRUST, said note(s) and all documents evidencing expenditures secured hereby. At a sale of said property under the Power of Sale contained herein any person, including Trustor, Trustee or Beneficiary as hereafter defined, may purchase at such sale; Trustee shall deliver to purchaser its TRUSTEE'S DEED, without covenant or warranty, express or implied, to the property so sold. After deducting costs and expenses of exercising the Power of Sale, and of the sale, including but not limited to costs of evidence of title, the Trustee's fees and Trustee's attorney's fees, if any, Trustee shall apply the proceeds of the Trustee's sale in the manner provided by law. The purchaser at the Trustee's sale shall be entitled to immediate possession of the property as against the Trustor and shall have a right to the summary proceedings to obtain possession provided in Chapter 8, Article 4, Arizona Revised Statutes, together with costs and reasonable attorney's fee.

(12) Trustee herein may resign by mailing or delivering notice thereof to Beneficiary and to Trustor. Upon such resignation, the Beneficiary may appoint a successor trustee, which appointment shall constitute a substitution of trustee upon the mailing and recording of written notice thereof by the Beneficiary in the manner prescribed by law for the substitution of a trustee of a DEED OF TRUST. A successor trustee herein shall, without conveyance from the predecessor trustee, succeed to all the predecessor's title, estate, rights, powers and duties.

(13) This DEED OF TRUST applies to, inures to the benefit of, and binds all parties hereto, their heirs, legatees, devisees, administrators, executors, successors and assigns. The term Beneficiary shall mean the owner and holder including pledgee, of the promissory note(s) secured hereby, whether or not named as Beneficiary herein. In this DEED OF TRUST, whenever the context so requires the masculine gender includes the feminine and/or neuter, and the singular number includes the plural.

(14) Trustee accepts this trust when this DEED OF TRUST, duly executed and acknowledged, is made a public record as provided by law. Trustee is not obligated to notify any party hereto of pending sale under any other DEED OF TRUST or of any action or proceeding in which Trustor, Beneficiary or Trustee shall be a party unless brought by Trustee.

(15) This is the essence of this DEED OF TRUST and each and every provision hereof.

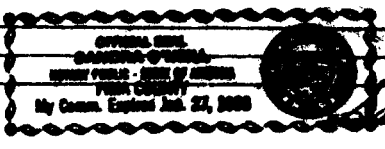
ATTEST:

Charles Ford
CITY CLERK
STATE OF ARIZONA

Signature of Trustor
CITY OF TUCSON, a municipal corporation
BY *Charles Ford*
Charles Ford
Mayor Pro Tempore

COUNTY OF PIMA

The foregoing instrument was acknowledged before me this 18th day of December, 19 84
by Charles Ford



My commission expires: Andrew L. O'Neill
Notary Public

Title Order No. 84-11-104 Escrow or Loan No. 64685 H1
84-11-105 64686 H1

LEGAL DESCRIPTION

Exhibit "A"

Lots 1 and 2;

The South half of the Northeast quarter;

The Southeast quarter;

and the East 330 feet of the Northwest quarter of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of the North 1980 feet of the Northeast quarter;

The North 30 feet and the East 30 feet of Section 4.

(JV Arb 4)

7435 321

LEGAL DESCRIPTION

EXHIBIT "B"

Lots 3 and 4;

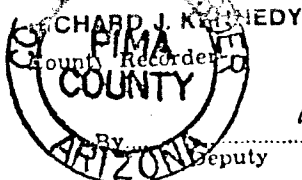
The South half of the Northwest quarter and the Southwest quarter of Section 4, Township
13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona.

EXCEPT The East 330 feet of the Northwest quarter and the North 30 feet thereof.

7435 322

STATE OF ARIZONA
COUNTY OF PIMA
Witness my hand and Official Seal.

I hereby certify that the within instrument was filed for record in Pima County, Arizona



No. 7435
Book 7435 Page 305-317
Date DEC 21 1984
Request of STEWART TITLE & TRUST
Dec. 21, 1984
Fee: 6.50 + 1.00

Indexed	Paged	Blotted

FORM 4-13

*When recorded mail to: City of Tucson
P.O. Box 27210
Tucson, AZ 85726
Attn: Hazel, Roger*

ADOPTED BY THE
MAYOR AND COUNCIL

DEC 17 1984

RESOLUTION NO. 12985

7435
305

RELATING TO WATER; AUTHORIZING THE PURCHASE OF A 608 ACRE PARCEL IN THE AVRA VALLEY FROM PATRICK D. TUCKER, JR. AND JACQUELYN L. TUCKER TO AUGMENT MUNICIPAL SOURCES OF WATER.

BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF TUCSON, ARIZONA, AS FOLLOWS:

SECTION 1. Pursuant to the governing body's policy of acquiring additional irrigated agricultural acreage in the Avra Valley to augment municipal water supplies, the Purchase Agreement, attached hereto as Exhibit "A", between the City of Tucson and Patrick D. Tucker, Jr. and Jacquelyn L. Tucker, husband and wife, is hereby adopted and approved.

SECTION 2. The Mayor is hereby authorized and directed to execute the attached Purchase Agreement for and on behalf of the City of Tucson and the City Clerk is authorized and directed to countersign the same, and the City Manager and all other City officers and employees are authorized and directed to perform all acts necessary or desirable to give effect to this resolution.

SECTION 3. WHEREAS, it is necessary for the preservation of the peace, health and safety of the City of Tucson that this resolution become immediately effective, an emergency is hereby declared to exist, and this resolution shall be effective immediately upon its passage and adoption.

PASSED, ADOPTED AND APPROVED by the Mayor and Council of the City of Tucson, Arizona, DEC 17 1984

MAYOR

ATTEST:

Doree S. Sout...
CITY CLERK

APPROVED AS TO FORM:

REVIEWED BY:

When recorded mail to: City of Tucson,
P.O. Box 27210
Tucson, 85726
Attn: Hazel Stager

ADOPTED BY THE
MAYOR AND COUNCIL

DEC 17 1984

RESOLUTION NO. 12985

7435

305

RELATING TO WATER; AUTHORIZING THE PURCHASE OF A 608 ACRE
PARCEL IN THE AVRA VALLEY FROM PATRICK D. TUCKER, JR. AND
JACQUELYN L. TUCKER TO AUGMENT MUNICIPAL SOURCES OF WATER.

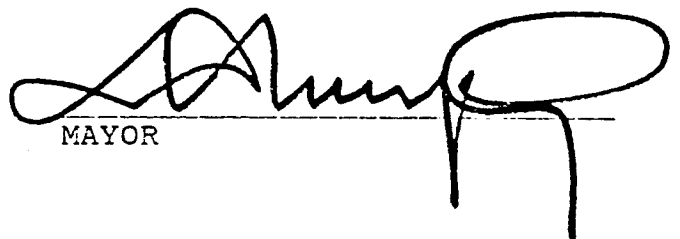
BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF
TUCSON, ARIZONA, AS FOLLOWS:

SECTION 1. Pursuant to the governing body's policy of
acquiring additional irrigated agricultural acreage in the Avra
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Tucson and Patrick D. Tucker, Jr. and Jacquelyn L. Tucker,
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Tucson that this resolution become immediately effective, an
emergency is hereby declared to exist, and this resolution shall
be effective immediately upon its passage and adoption.

PASSED, ADOPTED AND APPROVED by the Mayor and Council
of the City of Tucson, Arizona, DEC 17 1984


MAYOR

ATTEST:


CITY CLERK

APPROVED AS TO FORM:


CITY ATTORNEY

REVIEWED BY:


CITY MANAGER

#H:dmp
12/06/84

7435 306

PURCHASE AGREEMENT

DATE: Nov. 16, 1984

SELLERS: PATRICK D. TUCKER, JR. and JACQUELYN L. TUCKER, husband and wife,
as joint tenants with right of survivorship

BUYER: CITY OF TUCSON, a municipal corporation

RECITALS

SELLERS are the owners of the real property hereinafter described, which includes any and all rights in and to property incident and appurtenant thereto including but not limited to any and all property rights in and to surface and underground water and/or rights to the use of surface and underground water, together with the personal property listed and described on Exhibit "B" attached hereto. BUYER is desirous of purchasing said property from SELLERS and SELLERS are desirous of selling said property to BUYER subject to the terms and conditions set forth herein.

COVENANTS

I.

SELLERS hereby agree to sell to BUYER and BUYER hereby agrees to purchase from SELLERS the following described real property situate in Pima County, Arizona, to-wit:

See Exhibit "A" attached hereto.

together with all improvements situate thereon, including, but not limited to, two (2) irrigation wells, which are equipped with pumping engines, pumps, gearheads, and other pumping equipment which together with the other personal property listed and particularly described in Exhibit "B" attached, includes all personal property covered by this sale and purchase. This sale includes any crop allotments assigned to the farm acreage the subject hereof by the Agricultural Stabilization and Conservation Service of the United States Department of Agriculture. SELLERS warrant that, except for all minerals as reserved in patents from the United States of America, the real property which is the subject matter of this sale is free and clear of all liens and encumbrances.

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II.

SELLERS and BUYER hereby understand and agree that a purpose of this sale and purchase is to effect a transfer from SELLERS to BUYER of water rights and therefor this sale and purchase specifically includes, but is not limited to, any and all property and other rights in and to surface and ground waters and any rights to use these waters on the subject property for the growth of crops or otherwise, from or vested in the above-described real property. SELLERS warrant that 608 acres of the 608 total acres of this Farm have grandfathered irrigation right as certified by the Arizona Department of Water Resources. Certificate evidencing above-mentioned grandfathered rights attached as Exhibit "C" incorporated herein by this reference.

III.

The total consideration for this sale and purchase of said property shall be the sum of ONE MILLION FOUR HUNDRED FIFTY THOUSAND AND NO/100 (\$1,450,000.00) DOLLARS, payable as follows:

- A. FOUR HUNDRED FIFTY THOUSAND AND NO/100 (\$450,000.00) DOLLARS cash payable in escrow for the benefit of SELLERS upon closing.
- B. The balance of the purchase price in the sum of ONE MILLION AND NO/100 (\$1,000,000.00) DOLLARS in forty (40) quarterly installments of TWENTY FIVE THOUSAND AND NO/100 (\$25,000.00) DOLLARS for the first twenty (20) quarters and SIXTY FOUR THOUSAND ONE HUNDRED FORTY SEVEN AND NO/100 (\$64,147.00) DOLLARS for the next nineteen (19) quarters, and SIXTY FOUR THOUSAND ONE HUNDRED FORTY EIGHT AND NO/100 (\$64,148.00) DOLLARS for the last quarter, all of which includes interest accruing at the rate of Ten Percent (10%) per annum from the date of closing. The first payment shall be due and payable on MARCH 14, 1985 with remaining payments due on the same date of each succeeding quarter until paid in accordance with the schedule in Exhibit "D". These payments shall be made to the escrow agent who is authorized to make an equal payment to the SELLERS. The obligations of the BUYER to the SELLERS shall be evidenced by a Promissory Note to be prepared by the escrow agent on its usual form. It is understood and agreed by the parties hereto that any interest payments are a municipal obligation of the City of Tucson and that the rights under this Purchase Agreement

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are fully assignable provided that no assignment or transfer, in whole or in part of any right granted by this Purchase Agreement shall be effective until notice is given to the City of Tucson as provided in Paragraph IX hereof. BUYER may not, unless so approved by SELLERS, pre-pay any installments due. This Purchase Agreement shall be duly acknowledged by the parties hereto and recorded at the time this transaction is closed, following the recording of the warranty deed referred to in Paragraph V hereof. The BUYER will execute a deed of trust in favor of SELLERS encumbering the real property, the personalty and any water rights including Grandfathered Water Rights being conveyed. The form of deed of trust shall be upon the usual form of the escrow agent. It is understood by the BUYER and the SELLERS that the Promissory Note executed by the BUYER to the SELLERS is a non-recourse Promissory Note and SELLERS' rights shall be limited to recovering the property by enforcing whatever rights the SELLERS have under the deed of trust. The remedies of the SELLERS in the event of default or failure to make any payment when due, however, shall not include specific performance but shall be limited to the sums of money previously paid by BUYER on account of the purchase price and to a forfeiture of any interest of the BUYER in and to the property in question.

IV.

SELLERS warrant that they will comply with the provisions of Arizona Revised Statutes, Sections 3-202 and 3-215, and Rule No. 4 of Quarantine Regulation No. 5 of the Arizona Commission on Agriculture and Horticulture concerning plowing of cotton stubble prior to conveying physical possession of the property to BUYER.

V.

STEWART TITLE AND TRUST OF TUCSON, BEL AIR OFFICE, is hereby designated escrow agent by the parties. The provisions of this Agreement shall constitute escrow instructions. Closing date of said escrow shall be at the option of SELLERS, but in no event later than December 14, 1984 and BUYER and SELLERS agree to deposit into escrow and to execute any and all documents, including, but not limited to, deeds and bills of sale, necessary and proper

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to effectuate the closing of the purchase and sale. Upon closing this sale, SELLERS shall issue to BUYER a Warranty Deed for the property the subject of this transaction and escrow agent shall immediately record the Warranty Deed and this Purchase Agreement in that order.

VI.

BUYER agrees to defer the date of possession to not later than December 31, 1984, or until such time as the 1984 crop is completely harvested. BUYER reserves the right to monitor water levels and pumping rates, using existing equipment on any wells utilized in the irrigation of the property by SELLERS during the time in which SELLERS remain in possession of the property. SELLERS agree that at any time during which they are in possession of the property pursuant to this Agreement they will hold BUYER harmless from and against any and all claims, demands, causes of action, suits and proceedings, regardless of the merits of same, resulting from any act or omission of the SELLERS or anyone directly employed by SELLERS, and further that SELLERS will name BUYER as a co-insured on SELLERS' liability insurance policy during the period of time SELLERS are in possession of said real property.

SELLERS shall be responsible for payment of all charges for electricity and/or natural gas used by them in connection with their agricultural activities on the property until such time as the real and personal property is physically transferred over to BUYER; thereafter, all such charges shall be the sole responsibility of BUYER.

VII.

A. This transaction is subject to SELLERS being able to furnish marketable title, as evidenced by a standard form owner's title insurance policy, issued by escrow agent at the price and under the terms and conditions herein set forth.

B. SELLERS shall transfer free and clear of all liens and encumbrances by Bill of Sale to BUYER all items set forth on Exhibit "B" attached hereto.

C. SELLERS shall be responsible for unpaid ad valorem property taxes and unpaid assessments accruing up to closing, December 14, 1984. BUYER shall be responsible for taxes and assessments thereafter.

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D. Recording and escrow fees shall be divided between BUYER and SELLERS according to the usual and customary practice in Pima County, Arizona. Any servicing contract fees shall be paid by SELLERS.

E. BUYER and SELLERS warrant and represent that no real estate or brokerage commission will become due as a result of this transaction.

F. BUYER and SELLERS agree that if the title to the property subject hereof be found by the escrow agent to be unmarketable at the time of closing, thirty (30) days from the time of closing will be given SELLERS to perfect same. If said title is not perfected within said time, any monies deposited into escrow by BUYER, shall, upon demand of BUYER, be returned to BUYER and this contract shall be null and void. SELLERS shall be liable for any cancellation charges levied by the Title Company in the event of such cancellation.

G. SELLERS agree at their sole cost to furnish BUYER a title insurance policy in the amount of ONE MILLION FOUR HUNDRED FIFTY THOUSAND AND NO/100 (\$1,450,000.00) DOLLARS issued by STEWART TITLE AND TRUST OF TUCSON, said title insurance policy to show title to said premises subject to the usual exceptions contained in the regular form of owner's title insurance policy, and subject only to specific matters as set forth herein.

VIII.

The terms of this Agreement encompass the entire understandings and agreements of the parties and all previous understandings and agreements, written or oral, are superseded hereby and parole evidence shall never be admissible in any court, tribunal or governmental agency to modify, amend, or vary the terms of this Agreement; provided, however, the parties shall have the right to amend this Agreement by an instrument in writing executed with the same formality as this Agreement is executed. Any and all such amendments shall be delivered to the escrow agent who shall record the same and make it a part of this Agreement.

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IX.

Any and all notices required to be given under the terms of this Agreement or any amendment thereof shall be in writing and shall be valid and sufficiently served, given or made if mailed by certified or registered mail with postage prepaid. All notices intended for SELLERS shall be addressed to:

Patrick D. and Jacquelyn L. Tucker
P. O. Box 578
Marana, Arizona 85238

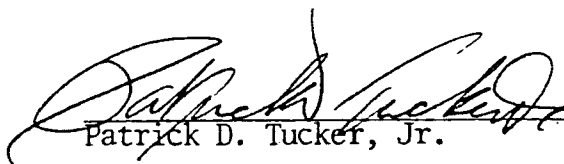
If intended for the BUYER, the notices shall be addressed to:


CITY OF TUCSON - REAL ESTATE DIVISION
250 West Alameda
Tucson, Arizona 85701

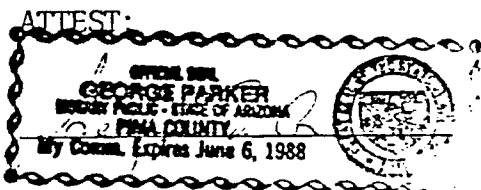
BUYER and SELLERS agree that time is of the essence of this Agreement. This Agreement and the provisions herein contained shall inure to the benefit of and be binding upon the agents, representatives, successors and assigns of SELLERS and inure to the municipality of the CITY OF TUCSON and be binding thereon, and upon closing of escrow and delivery of the deed and/or other documents required hereunder, the terms, covenants and provisions hereof shall continue to survive the closing and delivery.

IN WITNESS WHEREOF, SELLERS have executed this instrument as of the date it bears and the BUYER has caused the same to be executed as of said date by its Mayor and attested by its City Clerk, duly authorized by resolution of its City Council to execute the same, and has caused its seal to be hereunto affixed.

SELLERS:


Patrick D. Tucker, Jr.


Jacquelyn L. Tucker

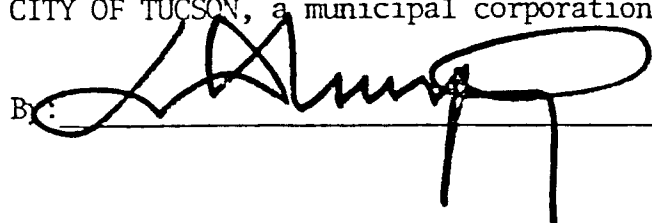


BUYER:

CITY OF TUCSON, a municipal corporation

COUNTERSIGNED:


City Clerk

By: 

APPROVED AS TO FORM:


City Attorney

The West Half of Section 4, Township 13 South, Range 10 East,
Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 330 feet of the Northwest Quarter and less
30 feet for road.

Lots 1 and 2 and South Half of Northeast Quarter and Southeast
Quarter and East 330 feet of Northwest Quarter of Section 4,
Township 13 South, Range 11 East, Gila and Salt River Base and
Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of North 1980 feet of Northeast Quarter
and EXCEPT North 30 feet and East 30 feet for roads.

2 Irrigation Wells, Pumps and Equipment
V-125 Climax Engines

1 Domestic Well 7½ HP

1 3-Bedroom Home - 1,844 square feet

1 Barn - 36' x 30'

1 Garage - 30' x 20'

1 Shop - 20' x 30'

2 Laborer Houses

Certificate Of Grandfathered Groundwater Right

COUNTY OF PIMA

STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES

This is to certify that pursuant to the provisions of Title 45, Chapter 2, Arizona Revised Statutes



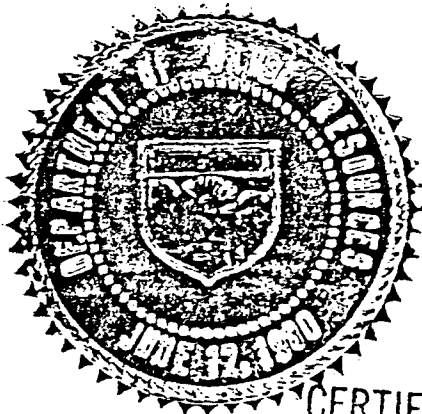
PATRICK D., JR., AND JACQUELYN L. TUCKER
Box 578
Marana, Arizona 85238

is granted
IRRIGATION GRANDFATHERED RIGHTS
in the
TUCSON ACTIVE MANAGEMENT AREA

for 608.23 irrigation acres of land. The rights are appurtenant to and groundwater may be used only on the irrigation acres of land described as follows:

Assessor's Parcel Number 201-42-016A, as of 5/82: W $\frac{1}{2}$ excluding east 330' of NW $\frac{1}{4}$ and less north 30' for road in Sec 4 T13S R10E; Assessor's Parcel Number 201-42-016B: Lots 1 and 2 and S $\frac{1}{2}$ NE $\frac{1}{4}$ and SE $\frac{1}{4}$ and east 330' of NW $\frac{1}{4}$ excluding east 660' of north 1980' of NE $\frac{1}{4}$ and excluding north 30' and east 30' for roads in Sec 4 T13S R10E, GSRB&M. A copy of the Assessor's Map depicting your certified acreage is on file with this Department.

The use of groundwater on the above described land shall be for irrigation purposes in accordance with the laws of the State of Arizona and restrictions placed on use by the Director of the Department of Water Resources pursuant to Title 45, Chapter 2, Arizona Revised Statutes.



CERTIFICATE NO. 58-111916

is granted this 6th day of April, 1983

ARIZONA DEPARTMENT OF WATER RESOURCES

Wesley C. [Signature]
Director

CERTIFIED PAGE 10 of 11

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The Department of Water Resources must be notified if the above named person(s) changes his address, conveys ownership of the land to another person(s), or wishes to convert the right to a non-irrigation grandfathered right associated with retired irrigated land.

PAYMENT SCHEDULE

<u>End of Quarter</u>	<u>End of Year</u>	<u>Balance Due</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
1		\$1,000,000	-0-	\$ 25,000	\$ 25,000
2		1,000,000	-0-	25,000	25,000
3		1,000,000	-0-	25,000	25,000
4	1	1,000,000	-0-	25,000	25,000
5		1,000,000	-0-	25,000	25,000
6		1,000,000	-0-	25,000	25,000
7		1,000,000	-0-	25,000	25,000
8	2	1,000,000	-0-	25,000	25,000
9		1,000,000	-0-	25,000	25,000
10		1,000,000	-0-	25,000	25,000
11		1,000,000	-0-	25,000	25,000
12	3	1,000,000	-0-	25,000	25,000
13		1,000,000	-0-	25,000	25,000
14		1,000,000	-0-	25,000	25,000
15		1,000,000	-0-	25,000	25,000
16	4	1,000,000	-0-	25,000	25,000
17		1,000,000	-0-	25,000	25,000
18		1,000,000	-0-	25,000	25,000
19		1,000,000	-0-	25,000	25,000
20	5	1,000,000	-0-	25,000	25,000
21		960,853	\$ 39,147	25,000	64,147
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29		610,309	47,697	16,450	64,147
30		561,420	48,889	15,258	64,147
31		511,308	50,112	14,035	64,147
32	8	459,944	51,364	12,783	64,147
33		407,296	52,648	11,499	64,147
34		353,331	53,965	10,182	64,147
35		298,017	55,314	8,833	64,147
36	9	241,320	56,697	7,450	64,147
37		183,206	58,114	6,033	64,147
38		123,639	59,567	4,580	64,147
39		62,583	61,056	3,091	64,147
40	10	-0-	62,583	1,565	64,148
TOTAL			\$1,000,000	\$ 782,941	\$1,782,941

7435 316

Certificate of Clerk

• City of Tucson •

State of Arizona }
County of Pima } 55

I, Donald L. De Ment, the duly appointed and qualified City Clerk of the City of Tucson, Arizona, do hereby certify that the foregoing is a true, correct, and compared copy of Resolution No. 12985, which was passed and adopted by the Mayor and Council of the City of Tucson, Arizona, at a meeting held on the 17th day of December, 19 84, at which a quorum was present, by the affirmative vote of not less than five-sixths of the Council, taken by ayes and noes.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the City of Tucson, Arizona, this 18th day of December, 19 84

Total of 11 page(s) certified.

Donald L. De Ment
City Clerk

POLICY OF TITLE INSURANCE ISSUED BY

STEWART TITLE GUARANTY COMPANY

SUBJECT TO SCHEDULE B AND THE CONDITIONS AND STIPULATIONS HEREOF, STEWART TITLE GUARANTY COMPANY, a Texas corporation, herein called the Company, insures the insured, as of Date of Policy shown in Schedule A, against loss or damage, not exceeding the amount of insurance stated in Schedule A, and costs, attorneys' fees and expenses which the Company may become obligated to pay hereunder, sustained or incurred by said insured by reason of:

1. Title to the estate or interest described in Schedule A being vested other than as stated therein;
2. Any defect in or lien or encumbrance on such title;
3. Unmarketability of such title; or
4. Any lack of the ordinary right of an abutting owner for access to at least one physically open street or highway if the land, in fact, abuts upon one or more such streets or highways;

and in addition, as to an insured lender only:

5. Invalidity of the lien of the insured mortgage upon said estate or interest except to the extent that such invalidity, or claim thereof, arises out of the transaction evidenced by the insured mortgage and is based upon
 - a. usury, or
 - b. any consumer credit protection or truth in lending law;
6. Priority of any lien or encumbrance over the lien of the insured mortgage, said mortgage being shown in Schedule B in the order of its priority; or
7. Invalidity of any assignment of the insured mortgage, provided such assignment is shown in Schedule B.

Signed under seal for the Company, but this Policy is to be valid only when it bears an authorized countersignature.

STEWART TITLE
GUARANTY COMPANY

Carlson Morris

Chairman of the Board

Countersigned:

STEWART TITLE & TRUST
of Tucson

[Signature]

Authorized Countersignature



Stewart Morris

President

SCHEDULE A

Order No.: 84-11-104

~~XXXXXX~~

Effective Date: December 21, 1984 @8:00 A.M.

Policy No.: OTUC 156676

Amount \$ 1,450,000.00

~~XXXXXX~~

1. Name of Insured

CITY OF TUCSON, a municipal corporation

2. The estate or interest in the land described herein and which is covered by this Policy is:

A FEE TITLE

3. The estate or interest referred to herein is at Date of Policy vested in:

CITY OF TUCSON, a municipal corporation

4. The land referred to in this Policy is situated in the State of Arizona

County of Pima and is described as follows:

SEE ATTACHED LEGAL DESCRIPTION

SCHEDULE B

This policy does not insure against loss or damage, nor against costs, attorneys' fees or expenses, any or all of which arise by reason of the following:

PART I

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water.
6. Any right, title, interest, estate or easement in land beyond the lines of the area specifically described or referred to in Schedule A, or in abutting streets, roads, avenues, alleys, lanes, ways or waterways, but nothing in this paragraph shall modify or limit the extent to which the ordinary right of an abutting owner for access to a physically open street or highway is insured by this policy.
7. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
8. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records.
9. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not shown by the public records and not otherwise excluded from coverage but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had been a purchaser or encumbrancer for value without knowledge.

SCHEDULE B
PART II

1. Taxes for the last half of the year 1984.
2. Reservations contained in Patent from the United States of America, recorded September 2, 1950 in Docket 279 at Page 415.
3. Such rights for pipe line purposes at the El Paso Natural Gas Company, may have as set forth in Patent recorded September 2, 1950 in Docket 279 at Page 415.
4. Easement to El Paso Natural Gas Company, a corporation, for easement to construct, maintain and operate a pipe line, a telephone line, a power transmission line and road, recorded July 3, 1953 in Docket 619 at Pages 76 and 78.
5. Deed of Trust executed by City of Tucson, a municipal corporation, as Trustor; Stewart Title & Trust of Tucson, an Arizona corporation, as Trustee; and Patrick D. Tucker, Jr. and Jacquelyn Tucker, husband and wife, as Beneficiaries, dated December 14, 1984 and recorded December 21, 1984 in Docket 7435 at Page 319, in the original amount of \$1,000,000.00. Collateral Assignment of Beneficial Interest to Mary L. Tucker dated December 20, 1984 and recorded December 21, 1984 in Docket 7435 at Page 323.

LEGAL DESCRIPTION

PARCEL I:

The West Half of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 330 feet of the Northwest Quarter and the North 30 feet thereof.

PARCEL II:

Lots 1 and 2;

The South Half of the Northeast Quarter;

The Southeast Quarter; and

The East 330 feet of the Northwest Quarter of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of the North 1980 feet of the Northeast Quarter; The North 30 feet and the East 30 feet of Section 4.

DEMAND COPY

CITY OF TUCSON, ARIZONA 284762

REMITTANCE ADVICE

DATE	CHECK NUMBER	PURCHASE ORDER	ACCOUNT CHARGED				AMOUNT INVOICED	DISCOUNT	NET AMOUNT	
			FD	GEN. LED.	ACTIVITY	OBJ.				JOB NO.
Dec 18		493272	41	242	7516	415	7266	450,613.95		450,613.95
TOTALS								450,613.95		450,613

DEPOSIT THIS ADVICE BEFORE DEPOSITING

FOR INFORMATION CONCERNING THIS WARRANT, PLEASE CALL ACCOUNTING DIV. 602 - 791-4561

E w No. <u>04085 H1</u>	Date <u>12-19-84</u>
Received From <u>City of Tucson, Arizona</u>	
<u>Four hundred fifty thousand six hundred thirteen</u> ^{95/100} Dollars <u>450,613.95</u>	
<u>closing costs</u>	Check No. <u>284762</u> <u>450,613.95</u>
Clearance Requested:	Cash
Clearance Received:	Total <u>450,613.95</u>
Part Title & Trust of Tucson	by <u>Yvonne / Pat Malone</u> Esrow Officer

PURCHASE AGREEMENT

DATE: Nov. 16, 1984

SELLERS: PATRICK D. TUCKER, JR. and JACQUELYN L. TUCKER, husband and wife,
as joint tenants with right of survivorship

BUYER: CITY OF TUCSON, a municipal corporation

RECITALS

SELLERS are the owners of the real property hereinafter described, which includes any and all rights in and to property incident and appurtenant thereto including but not limited to any and all property rights in and to surface and underground water and/or rights to the use of surface and underground water, together with the personal property listed and described on Exhibit "B" attached hereto. BUYER is desirous of purchasing said property from SELLERS and SELLERS are desirous of selling said property to BUYER subject to the terms and conditions set forth herein.

COVENANTS

I.

SELLERS hereby agree to sell to BUYER and BUYER hereby agrees to purchase from SELLERS the following described real property situate in Pima County, Arizona, to-wit:

See Exhibit 'A' attached hereto.

together with all improvements situate thereon, including, but not limited to, two (2) irrigation wells, which are equipped with pumping engines, pumps, gearheads, and other pumping equipment which together with the other personal property listed and particularly described in Exhibit "B" attached, includes all personal property covered by this sale and purchase. This sale includes any crop allotments assigned to the farm acreage the subject hereof by the Agricultural Stabilization and Conservation Service of the United States Department of Agriculture. SELLERS warrant that, except for all minerals as reserved in patents from the United States of America, the real property which is the subject matter of this sale is free and clear of all liens and encumbrances.

II.

SELLERS and BUYER hereby understand and agree that a purpose of this sale and purchase is to effect a transfer from SELLERS to BUYER of water rights and therefor this sale and purchase specifically includes, but is not limited to, any and all property and other rights in and to surface and ground waters and any rights to use these waters on the subject property for the growth of crops or otherwise, from or vested in the above-described real property. SELLERS warrant that 608 acres of the 608 total acres of this Farm have grandfathered irrigation right as certified by the Arizona Department of Water Resources. Certificate evidencing above-mentioned grandfathered rights attached as Exhibit "C" incorporated herein by this reference.

III.

The total consideration for this sale and purchase of said property shall be the sum of ONE MILLION FOUR HUNDRED FIFTY THOUSAND AND NO/100 (\$1,450,000.00) DOLLARS, payable as follows:

- A. FOUR HUNDRED FIFTY THOUSAND AND NO/100 (\$450,000.00) DOLLARS cash payable in escrow for the benefit of SELLERS upon closing.
- B. The balance of the purchase price in the sum of ONE MILLION AND NO/100 (\$1,000,000.00) DOLLARS in forty (40) quarterly installments of TWENTY FIVE THOUSAND AND NO/100 (\$25,000.00) DOLLARS for the first twenty (20) quarters and SIXTY FOUR THOUSAND ONE HUNDRED FORTY SEVEN AND NO/100 (\$64,147.00) DOLLARS for the next nineteen (19) quarters, and SIXTY FOUR THOUSAND ONE HUNDRED FORTY EIGHT AND NO/100 (\$64,148.00) DOLLARS for the last quarter, all of which includes interest accruing at the rate of Ten Percent (10%) per annum from the date of closing. The first payment shall be due and payable on March 17, 1985 with remaining payments due on the same date of each succeeding quarter until paid in accordance with the schedule in Exhibit "D". These payments shall be made to the escrow agent who is authorized to make an equal payment to the SELLERS. The obligations of the BUYER to the SELLERS shall be evidenced by a Promissory Note to be prepared by the escrow agent on its usual form. It is understood and agreed by the parties hereto that any interest payments are a municipal obligation of the City of Tucson and that the rights under this Purchase Agreement

are fully assignable provided that no assignment or transfer, in whole or in part of any right granted by this Purchase Agreement shall be effective until notice is given to the City of Tucson as provided in Paragraph IX hereof. BUYER may not, unless so approved by SELLERS, pre-pay any instalments due. This Purchase Agreement shall be duly acknowledged by the parties hereto and recorded at the time this transaction is closed, following the recording of the warranty deed referred to in Paragraph V hereof. The BUYER will execute a deed of trust in favor of SELLERS encumbering the real property, the personalty and any water rights including Grandfathered Water Rights being conveyed. The form of deed of trust shall be upon the usual form of the escrow agent. It is understood by the BUYER and the SELLERS that the Promissory Note executed by the BUYER to the SELLERS is a non-recourse Promissory Note and SELLERS' rights shall be limited to recovering the property by enforcing whatever rights the SELLERS have under the deed of trust. The remedies of the SELLERS in the event of default or failure to make any payment when due, however, shall not include specific performance but shall be limited to the sums of money previously paid by BUYER on account of the purchase price and to a forfeiture of any interest of the BUYER in and to the property in question.

IV.

SELLERS warrant that they will comply with the provisions of Arizona Revised Statutes, Sections 3-202 and 3-215, and Rule No. 4 of Quarantine Regulation No. 5 of the Arizona Commission on Agriculture and Horticulture concerning plowing of cotton stubble prior to conveying physical possession of the property to BUYER.

V.

STEWART TITLE AND TRUST OF TUCSON, BEL AIR OFFICE, is hereby designated escrow agent by the parties. The provisions of this Agreement shall constitute escrow instructions. Closing date of said escrow shall be at the option of SELLERS, but in no event later than December 14, 1959 and BUYER and SELLERS agree to deposit into escrow and to execute any and all documents, including, but not limited to, deeds and bills of sale, necessary and proper

to effectuate the closing of the purchase and sale. Upon closing this sale, SELLERS shall issue to BUYER a Warranty Deed for the property the subject of this transaction and escrow agent shall immediately record the Warranty Deed and this Purchase Agreement in that order.

VI.

BUYER agrees to defer the date of possession to not later than December 31, 1984, or until such time as the 1984 crop is completely harvested. BUYER reserves the right to monitor water levels and pumping rates, using existing equipment on any wells utilized in the irrigation of the property by SELLERS during the time in which SELLERS remain in possession of the property. SELLERS agree that at any time during which they are in possession of the property pursuant to this Agreement they will hold BUYER harmless from and against any and all claims, demands, causes of action, suits and proceedings, regardless of the merits of same, resulting from any act or omission of the SELLERS or anyone directly employed by SELLERS, and further that SELLERS will name BUYER as a co-insured on SELLERS' liability insurance policy during the period of time SELLERS are in possession of said real property.

SELLERS shall be responsible for payment of all charges for electricity and/or natural gas used by them in connection with their agricultural activities on the property until such time as the real and personal property is physically transferred over to BUYER; thereafter, all such charges shall be the sole responsibility of BUYER.

VII.

A. This transaction is subject to SELLERS being able to furnish marketable title, as evidenced by a standard form owner's title insurance policy, issued by escrow agent at the price and under the terms and conditions herein set forth.

B. SELLERS shall transfer free and clear of all liens and encumbrances by Bill of Sale to BUYER all items set forth on Exhibit "B" attached hereto.

C. SELLERS shall be responsible for unpaid ad valorem property taxes and unpaid assessments accruing up to closing, December 14, 1984. BUYER shall be responsible for taxes and assessments thereafter.

D. Recording and escrow fees shall be divided between BUYER and SELLERS according to the usual and customary practice in Pima County, Arizona. Any servicing contract fees shall be paid by SELLERS.

E. BUYER and SELLERS warrant and represent that no real estate or brokerage commission will become due as a result of this transaction.

F. BUYER and SELLERS agree that if the title to the property subject hereof be found by the escrow agent to be unmarketable at the time of closing, thirty (30) days from the time of closing will be given SELLERS to perfect same. IF said title is not perfected within said time, any monies deposited into escrow by BUYER, shall, upon demand of BUYER, be returned to BUYER and this contract shall be null and void. SELLERS shall be liable for any cancellation charges levied by the Title Company in the event of such cancellation.

G. SELLERS agree at their sole cost to furnish BUYER a title insurance policy in the amount of ONE MILLION FOUR HUNDRED FIFTY THOUSAND AND NO/100 (\$1,450,000.00) DOLLARS issued by STEWART TITLE AND TRUST OF TUCSON, said title insurance policy to show title to said premises subject to the usual exceptions contained in the regular form of owner's title insurance policy, and subject only to specific matters as set forth herein.

VIII.

The terms of this Agreement encompass the entire understandings and agreements of the parties and all previous understandings and agreements, written or oral, are superseded hereby and parole evidence shall never be admissible in any court, tribunal or governmental agency to modify, amend, or vary the terms of this Agreement; provided, however, the parties shall have the right to amend this Agreement by an instrument in writing executed with the same formality as this Agreement is executed. Any and all such amendments shall be delivered to the escrow agent who shall record the same and make it a part of this Agreement.

IX.

Any and all notices required to be given under the terms of this Agreement or any amendment thereof shall be in writing and shall be valid and sufficiently served, given or made if mailed by certified or registered mail with postage prepaid. All notices intended for SELLERS shall be addressed to:

Patrick D. and Jacquelyn L. Tucker
P. O. Box 578
Marana, Arizona 85238

If intended for the BUYER, the notices shall be addressed to:

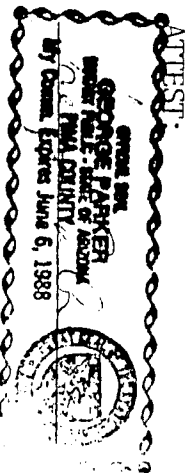
CITY OF TUCSON - REAL ESTATE DIVISION
250 West Alameda
Tucson, Arizona 85701

BUYER and SELLERS agree that time is of the essence of this Agreement. This Agreement and the provisions herein contained shall inure to the benefit of and be binding upon the agents, representatives, successors and assigns of SELLERS and inure to the municipality of the CITY OF TUCSON and be binding thereon, and upon closing of escrow and delivery of the deed and/or other documents required hereunder, the terms, covenants and provisions hereof shall continue to survive the closing and delivery.

IN WITNESS WHEREOF, SELLERS have executed this instrument as of the date it bears and the BUYER has caused the same to be executed as of said date by its Mayor and attested by its City Clerk, duly authorized by resolution of its City Council to execute the same, and has caused its seal to be hereunto affixed.

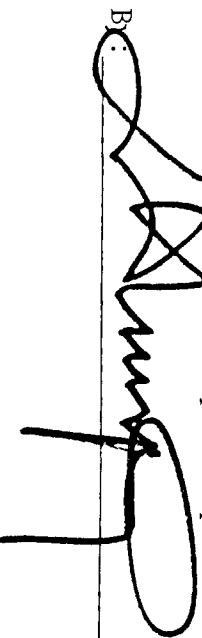
SELLERS:

Patrick D. Tucker, Jr.



BUYER:
COUNTERSIGNED:
Paula J. ...
City Clerk


Jacquelyn L. Tucker

CITY OF TUCSON, a municipal corporation
By: 

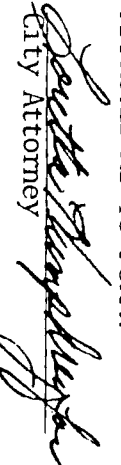
APPROVED AS TO FORM:

City Attorney

EXHIBIT "A" ^{to} EX. A TO RESOLUTION NO. 12985

The West Half of Section 4, Township 15 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 330 feet of the Northwest Quarter and less 30 feet for road.

lots 1 and 2 and South Half of Northeast Quarter and Southeast Quarter and East 330 feet of Northwest Quarter of Section 4, Township 15 South, Range 11 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of North 1980 feet of Northeast Quarter and EXCEPT North 30 feet and East 30 feet for roads.

EXHIBIT "B" ^b EX. A TO RESOLUTION NO. 12985

- 2 Irrigation Wells, Pumps and Equipment
- V-125 Climax Engines
- 1 Domestic Well 7½ HP
- 1 3-Bedroom Home - 1,844 square feet
- 1 Barn - 36' x 30'
- 1 Garage - 30' x 20'
- 1 Shop - 20' x 30'
- 2 Laborer Houses

Certificate of Grandfathered Groundwater Right

COUNTY OF PIMA

STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES

*This is to certify that pursuant to the provisions of
Title 45, Chapter 2, Arizona Revised Statutes*



PATRICK D., JR., AND JACQUELYN L. TUCKER
Box 578
Marana, Arizona 85238

is granted
IRRIGATION GRANDFATHERED RIGHTS
in the
TUCCSON ACTIVE MANAGEMENT AREA

for 608.23 irrigation acres of land. The rights are appurtenant to and groundwater may be used only on the irrigation acres of land described as follows:

Assessor's Parcel Number 201-42-016A, as of 5/82: W $\frac{1}{2}$ excluding east 330' of NW $\frac{1}{4}$ and less north 30' for road in Sec 4 T13S R10E; Assessor's Parcel Number 201-42-016B: Lots 1 and 2 and S $\frac{1}{2}$ NE $\frac{1}{4}$ and SE $\frac{1}{4}$ and east 330' of NW $\frac{1}{4}$ excluding east 660' of north 1980' of NE $\frac{1}{4}$ and excluding north 30' and east 30' for roads in Sec 4 T13S R10E, GSR&M. A copy of the Assessor's Map depicting your certified acreage is on file with this Department.

The use of groundwater on the above described land shall be for irrigation purposes in accordance with the laws of the State of Arizona and restrictions placed on use by the Director of the Department of Water Resources pursuant to Title 45, Chapter 2, Arizona Revised Statutes.

CERTIFICATE NO. 58-111916

is granted this 6th day of April, 1983

ARIZONA DEPARTMENT OF WATER RESOURCES



Charles E. Peterson
Director

The Department of Water Resources must be notified if the above named person(s) changes his address, conveys ownership of the land to another person(s), or wishes to convert the right to a non-irrigation grandfathered right associated with retired irrigated land.

EXHIBIT "D" EX. ^{to} A TO RESOLUTION NO. 12985

PAYMENT SCHEDULE

<u>End of Quarter</u>	<u>End of Year</u>	<u>Balance Due</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
1		\$1,000,000	-0-	25,000	\$ 25,000
2		1,000,000	-0-	25,000	25,000
3		1,000,000	-0-	25,000	25,000
4	1	1,000,000	-0-	25,000	25,000
5		1,000,000	-0-	25,000	25,000
6		1,000,000	-0-	25,000	25,000
7		1,000,000	-0-	25,000	25,000
8	2	1,000,000	-0-	25,000	25,000
9		1,000,000	-0-	25,000	25,000
10		1,000,000	-0-	25,000	25,000
11		1,000,000	-0-	25,000	25,000
12	3	1,000,000	-0-	25,000	25,000
13		1,000,000	-0-	25,000	25,000
14		1,000,000	-0-	25,000	25,000
15		1,000,000	-0-	25,000	25,000
16	4	1,000,000	-0-	25,000	25,000
17		1,000,000	-0-	25,000	25,000
18		1,000,000	-0-	25,000	25,000
19		1,000,000	-0-	25,000	25,000
20	5	1,000,000	-0-	25,000	25,000
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38		123,639	59,567	4,580	64,147
39		62,583	61,056	3,091	64,147
40	10	-0-	62,583	1,565	64,148
TOTAL			\$1,000,000	\$ 782,941	\$1,782,941

STATE OF ARIZONA

COUNTY OF

I hereby certify that the within instrument was filed and recorded
In DOCKET page and indexed

Fee No.

at the request of

When recorded mail to:
Stewart Title & Trust of Tucson
3777 E. Broadway
Tucson, AZ 85716
ATT: Collection Department

Witness my hand and official seal.

County Recorder,

By

Deputy Recorder

Compared
Photostated
Fee

64685 H1 84-11-104

64686 H1 84-11-105

DEED OF TRUST AND ASSIGNMENT OF RENTS

This Deed of Trust, made this 14th day of December, 1984 between
CITY OF TUCSON, a municipal corporation, herein called Trustor

whose mailing address is (number and street) (city) (state and zip code)

STEWART TITLE & TRUST OF TUCSON, an Arizona corporation, herein called Trustee, and
PATRICK D. TUCKER, JR. AND JACQUELYN TUCKER, husband and wife, herein called Beneficiary,

whose mailing address is P.O. Box 578 Marana, Arizona 85238
(number and street) (city) (state and zip code)

WITNESSETH: That Trustor conveys, transfers and assigns to Trustee in Trust, with Power of Sale, the follow-
ing described real property in PIMA County, Arizona:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF FOR THE LEGAL DESCRIPTION

SEE EXHIBIT "B" ATTACHED HERETO AND MADE A PART HEREOF FOR THE LEGAL DESCRIPTION

*Approved as to form
Heather Kempney
Assistant City Attorney
12/17/84*

TOGETHER WITH the rents, issues, profits and income thereof (all of which are hereinafter called "Property Income"),
SUBJECT HOWEVER, to the right, power and authority hereinafter given to and conferred upon Beneficiary to collect and
apply such Property Income.

THIS DEED OF TRUST is given for the purpose of securing: (1) Performance of each agreement of Trustor herein contained.
(2) Payment of the indebtedness evidenced by ONE promissory note(s) of even date herewith and any extension or
renewal thereof in the principal sum of \$1,000,000.00, executed by Trustor in favor of Beneficiary or order.

To protect the Security of this DEED OF TRUST, it is agreed that:

(1) Trustor shall keep said property in good condition and repair; shall not remove or demolish any building thereon;
shall complete or restore promptly and in good and workmanlike manner any building which may be constructed, damaged or
destroyed thereon and shall pay when due all claims for labor performed and materials furnished therefor; shall comply with
all laws affecting said property or requiring any alterations or improvements to be made thereon; shall not commit or permit
waste thereof; shall not commit, suffer or permit any act upon said property in violation of law; shall cultivate, irrigate, ferti-
lize, fumigate, prune and do all other acts which from the character or use of said property may be reasonably necessary, the
specific enumerations herein not excluding the general.

(2) Trustor shall keep all improvements now or hereafter erected on the said property continuously insured against loss
by fire or other hazards in an amount not less than the total obligation secured hereby. All policies shall be held by the Ben-
eficiary and be in such companies as the Beneficiary may approve and have loss payable first to the Beneficiary, as his in-
terest may appear and then to the Trustor. The amount collected under any insurance policy may be applied upon any indebt-
edness hereby secured and in such order as the Beneficiary may determine or at option of Beneficiary the entire amount so
collected or any part thereof may be released to Trustor. Such application or release shall not cure or waive any default here-
under nor cause discontinuance of any action that may have been or may thereafter be taken by Beneficiary or Trustee be-
cause of such default.

(3) Trustor shall appear in and defend any action or proceeding purporting to affect the security hereof or the rights or
powers of the Beneficiary or Trustee; and shall pay all costs and expenses, including cost of evidence of title and attorney's
fees in a reasonable sum, in such action or proceeding in which Beneficiary or Trustee may appear, and in any suit brought
by Beneficiary to foreclose this DEED OF TRUST.

(4) Trustor shall pay: at least ten days before delinquency all taxes and assessments affecting said property, when
due, all encumbrances, charges and liens, with interest, on said property or any part thereof, which appear to be prior or
superior hereto; when due, all costs, fees and expenses of this Trust, including, without limiting the generality of the fore-
going, the fees of Trustee for issuance of any DEED OF PARTIAL RELEASE and PARTIAL RECONVEYANCE or DEED
OF RELEASE and FULL RECONVEYANCE and all lawful charges, costs and expenses in the event of reinstatement of,
following default in, this DEED OF TRUST or the obligations secured hereby.

(5) Should Trustor fail to make any payment or to do any act as provided in this [] OF TRUST, then Beneficiary or Trustee, but without obligation so to do and without notice to or demand upon Trustor and without releasing Trustor from any obligation hereof, may: make or do the same in such manner and to such extent as either may deem necessary to protect the security hereof, Beneficiary or Trustee being authorized to enter upon said property for such purposes; pay, purchase, contest or compromise any encumbrance, charge or lien which in the judgment of either appears to be prior or superior hereto; and, in exercising any such powers, pay necessary expenses, employ counsel and pay his reasonable fees. Trustor shall pay immediately and without demand all sums so expended by Beneficiary or Trustee, with interest from date of expenditure at the highest rate allowed by law in effect at the date hereof.

(6) Any award of damages in connection with any condemnation for public use of or injury to said property or any part thereof is hereby assigned and shall be paid to Beneficiary who may apply or release such moneys received by him in the same manner and with the same effect as above provided for disposition of proceeds of fire or other insurance.

(7) By accepting payment of any sum secured hereby after its due date, Beneficiary does not waive his right either to require prompt payment when due of all other sums so secured or to declare default for failure so to pay.

(8) At any time or from time to time, without liability therefor and without notice, upon written request of Beneficiary and presentation of this DEED OF TRUST and said note(s) for endorsement, and without affecting the personal liability of any person for payment of the indebtedness secured hereby, and upon payment of its fees, Trustee may: (A) by DEED OF PARTIAL RELEASE and PARTIAL RECONVEYANCE release and reconvey, without covenant or warranty, express or implied, any portion(s) of the property then held hereunder; the recitals in such DEED OF PARTIAL RELEASE and PARTIAL RECONVEYANCE of any matters shall be conclusive proof of the truthfulness thereof; the grantee in such DEED OF PARTIAL RELEASE and PARTIAL RECONVEYANCE may be described as "The Person or Persons Legally Entitled Thereto"; (B) consent to the making of any map or plat thereof; (C) join in granting any easement thereon; or (D) join in any extension agreement subordinating the lien or charge hereof. Beneficiary shall execute his release upon such DEED if so requested by Trustee.

(9) Upon written request of Beneficiary stating that all sums secured hereby have been paid and upon surrender of this DEED OF TRUST and said note(s) to Trustee for cancellation and retention and upon payment of its fees, Trustee shall by DEED OF RELEASE and FULL RECONVEYANCE release and reconvey, without covenant or warranty, express or implied, the property then held hereunder. The recitals in such DEED OF RELEASE and FULL RECONVEYANCE of any matters shall be conclusive proof of the truthfulness thereof. The grantee in such DEED OF RELEASE and FULL RECONVEYANCE may be described as "The Person or Persons Legally Entitled Thereto". Seven years after issuance of such DEED OF RELEASE and FULL RECONVEYANCE, Trustee may destroy this DEED OF TRUST, said note(s), all evidence of assignments hereof and all other documents relating hereto.

(10) As additional security, Trustor hereby gives to and confers upon Beneficiary the right, power and authority during the continuance of this Trust, to collect the Property Income, reserving unto Trustor the right, prior to any default by Trustor in payment of any indebtedness secured hereby or in performance of any agreement hereunder, to collect and retain such Property Income as it becomes due and payable. Upon such default, Beneficiary may at any time without notice, either in person by agent, or by a receiver to be appointed by a court, and without regard to the adequacy of any security for the indebtedness hereby secured or the solvency of the Trustor, enter upon and take possession of said property or any part thereof, in his own name sue for or otherwise collect such Property Income, including that past due and unpaid, and apply the same, less costs and expenses of operation and collection including reasonable attorney's fees, upon any indebtedness secured hereby and in such order as Beneficiary may determine. The entering upon and taking possession of said property, the collection of such Property Income and the application thereof as aforesaid shall, not cure or waive any default or notice of default hereunder or invalidate any act done pursuant to such notice.

(11) Upon default by Trustor in payment of any obligation secured hereby or in performance of any other agreement hereunder, and upon delivery by Beneficiary to Trustee of written declaration of such default, (A) all sums secured hereby shall become immediately due and payable on delivery to Trustee of Beneficiary's written declaration that such sums are immediately due and payable, and (B) the Trustee shall proceed to sell at public auction the property secured hereby under the Power of Sale contained herein on delivery by Beneficiary to Trustee of written notice of election to have said property sold and after the giving of notice of sale in the manner provided by law. Beneficiary also shall deposit with Trustee this DEED OF TRUST, said note(s) and all documents evidencing expenditures secured hereby. At a sale of said property under the Power of Sale contained herein any person, including Trustor, Trustee or Beneficiary as hereafter defined, may purchase at such sale; Trustee shall deliver to purchaser its TRUSTEE'S DEED, without covenant or warranty, express or implied, to the property so sold. After deducting costs and expenses of exercising the Power of Sale, and of the sale, including but not limited to costs of evidence of title, the Trustee's fees and Trustee's attorney's fees, if any, Trustee shall apply the proceeds of the Trustee's sale in the manner provided by law. The purchaser at the Trustee's sale shall be entitled to immediate possession of the property as against the Trustor and shall have a right to the summary proceedings to obtain possession provided in Chapter 8, Article 4, Arizona Revised Statutes, together with costs and reasonable attorney's fee.

(12) Trustee herein may resign by mailing or delivering notice thereof to Beneficiary and to Trustor. Upon such resignation, the Beneficiary may appoint a successor trustee, which appointment shall constitute a substitution of trustee upon the mailing and recording of written notice thereof by the Beneficiary in the manner prescribed by law for the substitution of a trustee of a DEED OF TRUST. A successor trustee herein shall, without conveyance from the predecessor trustee, succeed to all the predecessor's title, estate, rights, powers and duties.

(13) This DEED OF TRUST applies to, inures to the benefit of, and binds all parties hereto, their heirs, legatees, devisees, administrators, executors, successors and assigns. The term Beneficiary shall mean the owner and holder including pledgee, of the promissory note(s) secured hereby, whether or not named as Beneficiary herein. In this DEED OF TRUST, whenever the context so requires the masculine gender includes the feminine and/or neuter, and the singular number includes the plural.

(14) Trustee accepts this trust when this DEED OF TRUST, duly executed and acknowledged, is made a public record as provided by law. Trustee is not obligated to notify any party hereto of pending sale under any other DEED OF TRUST or of any action or proceeding in which Trustor, Beneficiary or Trustee shall be a party unless brought by Trustee.

(15) Time is of the essence of this DEED OF TRUST and each and every provision hereof.

ATTEST:

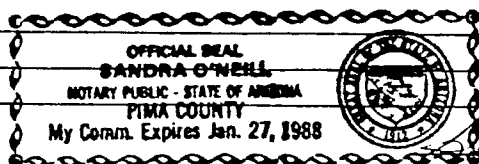
Sandra Wood et al.
CITY CLERK
STATE OF ARIZONA

Signature of Trustor
CITY OF TUCSON, a municipal corporation
BY: Charles Ford
Mayor Pro Tempore

COUNTY OF PIMA

The foregoing instrument was acknowledged before me this 18th day of December, 19 84
by Charles Ford

My commission expires:



Sandra L. O'Neill
Notary Public

Title Order No. 84-11-104
84-11-105

Escrow or Loan No. 64685 H1
64686 H1

LEGAL DESCRIPTION

Exhibit "A"

Lots 1 and 2;

The South half of the Northeast quarter;

The Southeast quarter;

and the East 330 feet of the Northwest quarter of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT the East 660 feet of the North 1980 feet of the Northeast quarter;

The North 30 feet and the East 30 feet of Section 4.

(JV Arb 4)

LEGAL DESCRIPTION

Exhibit "B"

Lots 3 and 4;

The South half of the Northwest quarter and the Southwest quarter of Section 4, Township 13 South, Range 10 East, Gila and Salt River Base and Meridian, Pima County, Arizona;

EXCEPT The East 330 feet of the Northwest quarter and the North 30 feet thereof.

STEWART TITLE & TRUST of Tucson



MAIN OFFICE - 3777 EAST BROADWAY

TUCSON, ARIZONA

327-7373

DATE December 14, 1984

CLOSING STATEMENT

FILE No. 64685-H1

SELLER (MORTGAGOR): TUCKER, JR., PATRICK D. AND JACQUELYN
 BUYER (MORTGAGEE): CITY OF TUCSON
 PROPERTY ADDRESS: N/A
 PRO-RATION DATE: 12/28/84

	DEBIT	CREDIT
SALES PRICE	\$ 1,450,000.00	\$
All 1984 taxes have been paid by the Seller in full		
1984 taxes prorated from 12/21/84 to 12/31/84 based on the combined total 1984 tax figure of \$10,062.92	307.45	
The parties herein accept proration of taxes as shown herein. Any adjustment caused by the taxes being different from those used in escrow closing will be made between the parties outside of escrow.		
Escrow Fee to Stewart Title & Trust-Tucson $\frac{1}{2}$ and $\frac{1}{2}$	275.00	
Recording Fees	14.00	
Advance Collection Fees to Stewart Title & Trust-Tucson $\frac{1}{2}$ and $\frac{1}{2}$	17.50	
Note and Deed of Trust by Buyer to Seller		1,000,000.00
Possessions and utilities if any to be settled between the parties outside of escrow.		
Funds due in escrow from Buyers		450,613.95
	1,450,613.95	1,450,613.95

We hereby approve the above statement as true and correct, and instruct Stewart Title & Trust of Tucson to record necessary instruments to convey title. We hereby approve any variance in the terms of the transaction from those originally provided in escrow or preliminary sales agreement. The terms and conditions on the reverse side hereof are a part of this statement. The parties herein by signing below acknowledge receipt of a copy of this Closing Statement.

CITY OF TUCSON, a municipal corporation

STEWART TITLE & TRUST of Tucson

BY: _____ Address: _____

_____ Address: _____

By _____

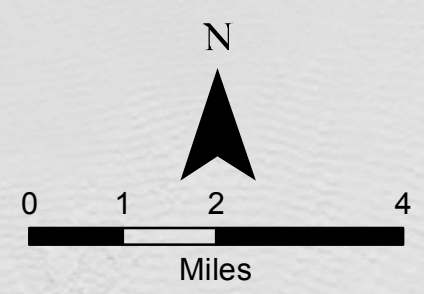
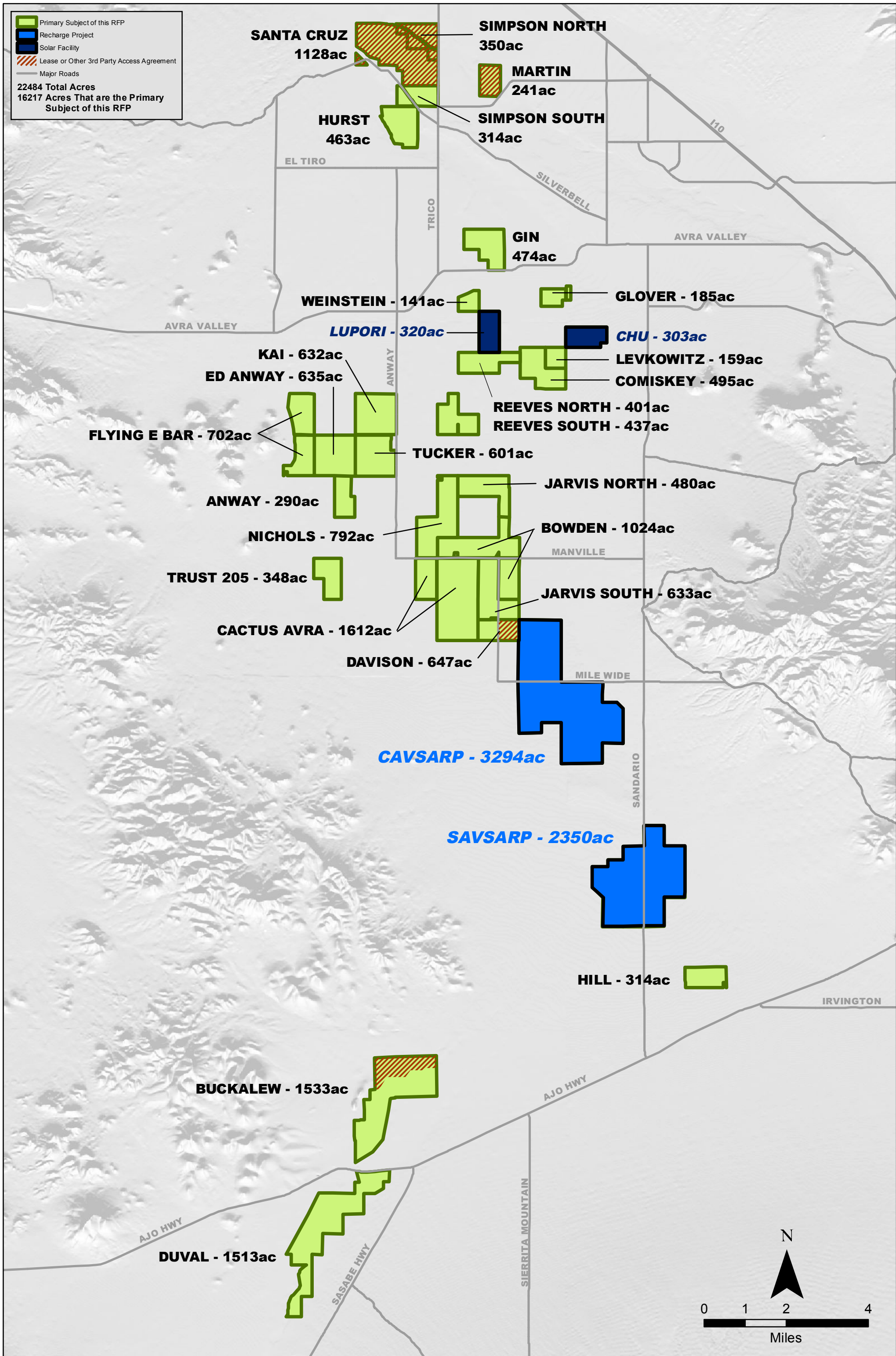
EXHIBIT "A"

PAYMENT SCHEDULE

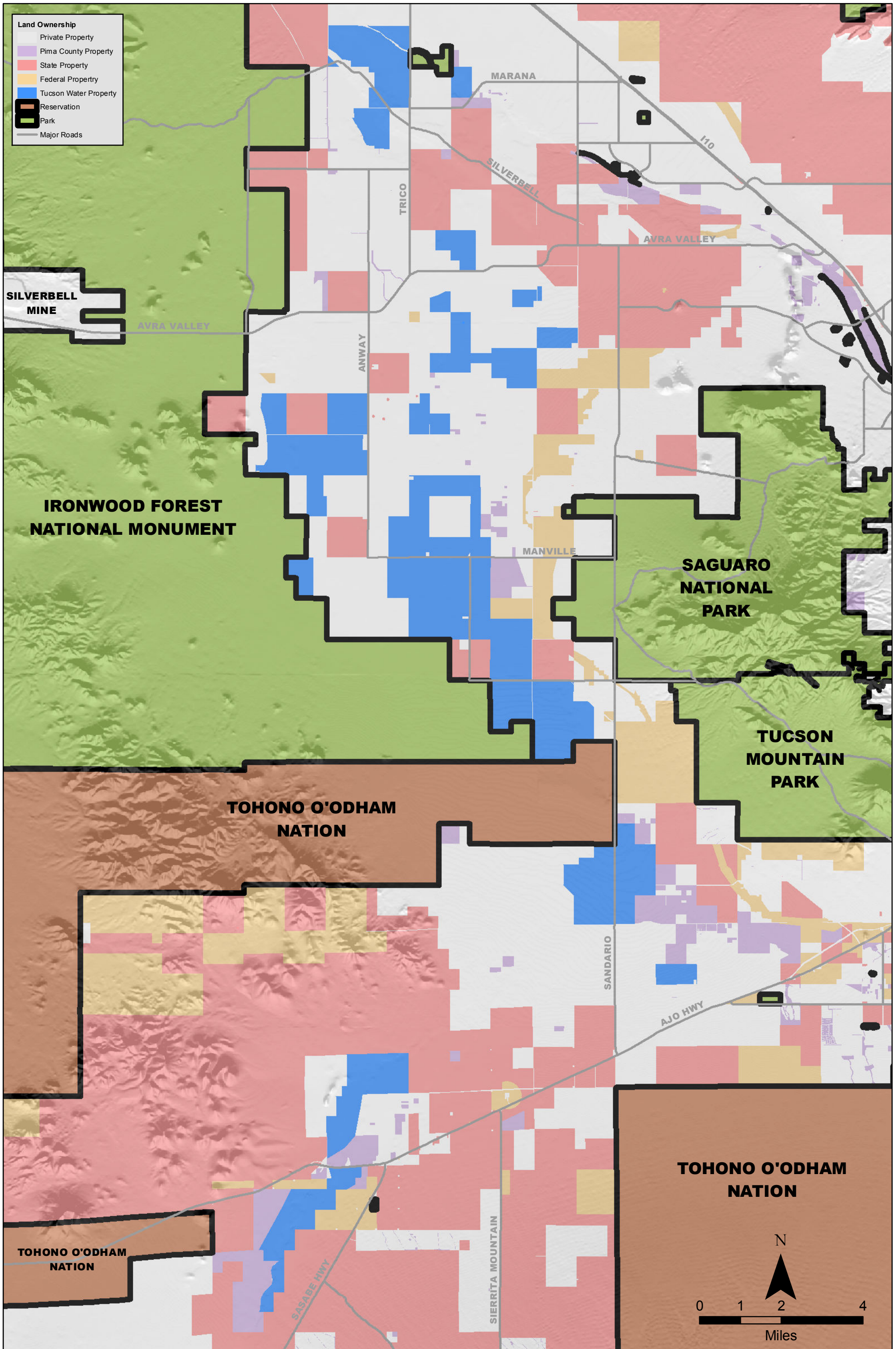
<u>End of Quarter</u>	<u>End of Year</u>	<u>Balance Due</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
1		\$1,000,000	-0-	\$ 25,000	\$ 25,000
2		1,000,000	-0-	25,000	25,000
3		1,000,000	-0-	25,000	25,000
4	1	1,000,000	-0-	25,000	25,000
5		1,000,000	-0-	25,000	25,000
6		1,000,000	-0-	25,000	25,000
7		1,000,000	-0-	25,000	25,000
8	2	1,000,000	-0-	25,000	25,000
9		1,000,000	-0-	25,000	25,000
10		1,000,000	-0-	25,000	25,000
11		1,000,000	-0-	25,000	25,000
12	3	1,000,000	-0-	25,000	25,000
13		1,000,000	-0-	25,000	25,000
14		1,000,000	-0-	25,000	25,000
15		1,000,000	-0-	25,000	25,000
16	4	1,000,000	-0-	25,000	25,000
17		1,000,000	-0-	25,000	25,000
18		1,000,000	-0-	25,000	25,000
19		1,000,000	-0-	25,000	25,000
20	5	1,000,000	-0-	25,000	25,000
21		960,853	\$ 39,147	25,000	64,147
22		920,727	40,126	24,021	64,147
23		879,598	41,129	23,018	64,147
24	6	837,441	42,157	21,990	64,147
25		794,230	43,211	20,936	64,147
26		749,939	44,291	19,856	64,147
27		704,540	45,399	18,748	64,147
28	7	658,006	46,534	17,613	64,147
29		610,309	47,697	16,450	64,147
30		561,420	48,889	15,258	64,147
31		511,308	50,112	14,035	64,147
32	8	459,944	51,364	12,783	64,147
33		407,296	52,648	11,499	64,147
34		353,331	53,965	10,182	64,147
35		298,017	55,314	8,833	64,147
36	9	241,320	56,697	7,450	64,147
37		183,206	58,114	6,033	64,147
38		123,639	59,567	4,580	64,147
39		62,583	61,056	3,091	64,147
40	10	-0-	62,583	1,565	64,148
TOTAL			\$1,000,000	\$ 782,941	\$1,782,941

Attachment 1a: Tucson Water Avra Valley Retired Farm Property - Property Names and Acreage

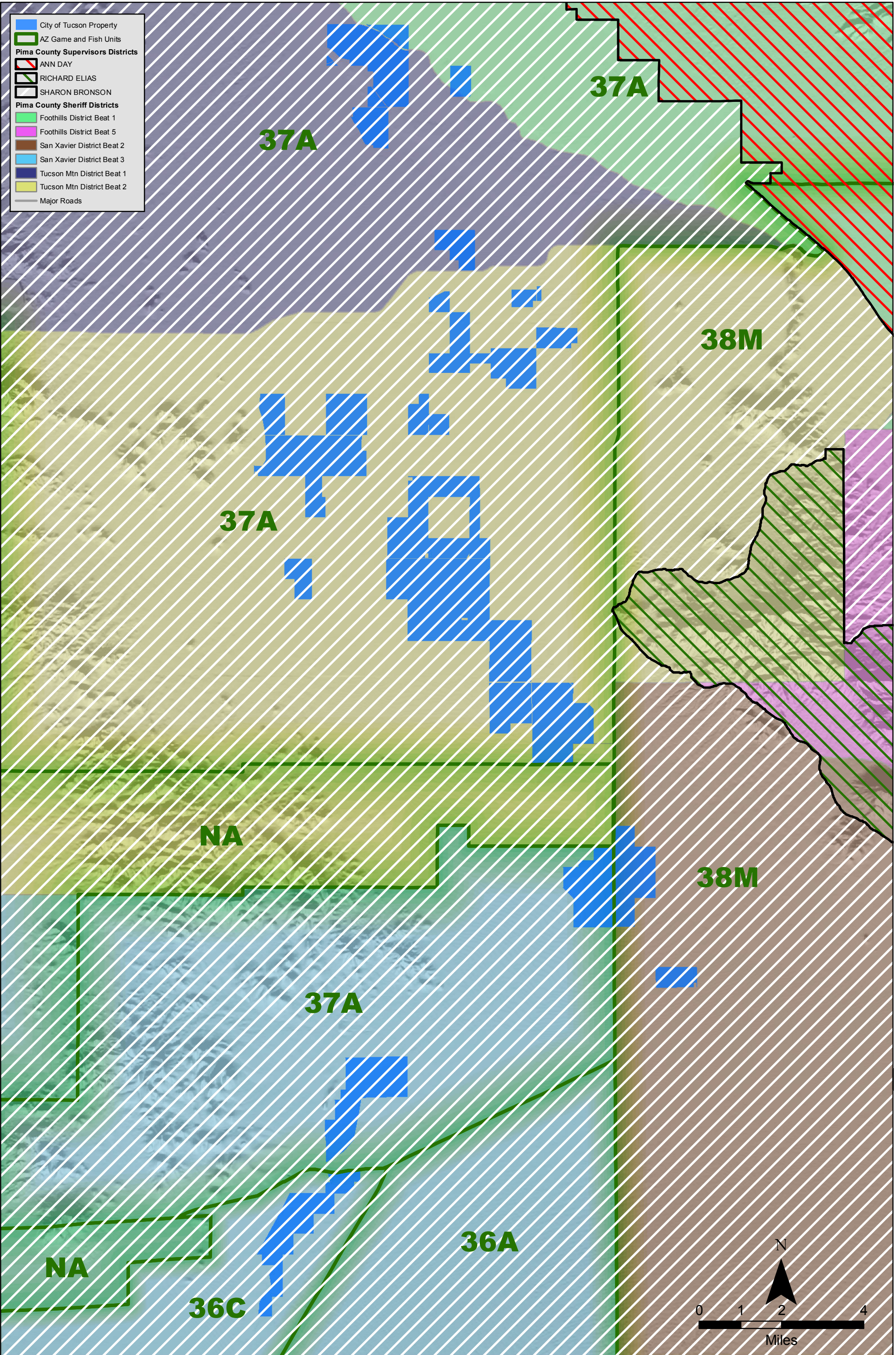
■ Primary Subject of this RFP
■ Recharge Project
■ Solar Facility
 Lease or Other 3rd Party Access Agreement
 Major Roads
22484 Total Acres
16217 Acres That are the Primary Subject of this RFP



Attachment 1b: Tucson Water Avra Valley Retired Farm Property - Neighboring Land Ownership



Attachment 1c: Tucson Water Avra Valley Retired Farm Property - Political and Law enforcement Districts



CITY OF TUCSON

MAYOR AND COUNCIL

WATER
POLICIES

ADOPTED

JANUARY 26, 1998

RESOLUTION NO. 17929

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I. DEFINITIONS

A.	ADEQ	Arizona Department of Environmental Quality
B.	ADWR	Arizona Department of Water Resources
C.	A MA	Active Management Area
D.	Applicant	Owner, authorized representative, or corporation requesting service, use and/or construction of Tucson Water facilities
E.	CAP	Central Arizona Project
F.	City	City of Tucson
G.	Cost of Service	Charges for water service shall be made in direct proportion to the cost of securing, developing and delivering water to the Utility's various customer classes.
H.	CWAC	Citizens' Water Advisory Committee
I.	Effluent	The product of a treatment plant, having received primary and/or secondary treatment.
J.	EPA	U.S. Environmental Protection Agency
K.	GWMA	1980 Groundwater Management Act
L.	Hydraulically Connected Riparian Area	An aquatic or terrestrial ecosystem that relies, at least in part, on subsurface water flows.
M.	IGA	Intergovernmental Agreement
N.	Non-potable water	Water not fit for human consumption, such as effluent, reclaimed water and untreated CAP water.
O.	Potable water	Water which meets EPA and ADEQ water drinking water standards
P.	Reclaimed	Effluent receiving post-secondary water treatment.
Q.	Utility	The Tucson Water Department
R.	Water Provider	Private water companies, districts, or municipalities that provide water service.
S.	Tucson Water Department	The City Of Tucson's municipally-owned water utility
T.	Tucson Water Service Area	The lands represented on the service area maps filed annually with the Arizona Department of Water Resources
U.	Waste water	Water which carries waste to a treatment facility through a conveyance system.
V.	Water revenue	Revenue derived from the operations of Tucson Water.
W.	Emergency Supply	A temporary water supply provided by Tucson Water to local private water companies for equipment or system failures and not for the purpose of resolving deficiencies in the system requesting the emergency supply

II. ASSUMPTIONS

- A. All financing shall be done in accordance with all city, state and federal requirements.
- B. To the extent that conservation programs succeed in reducing demand, capital improvement programs may be deferred and rate increases adjusted accordingly.

III. POLICIES

A. Finance

1. Enterprise Basis

- a. The Utility shall be a self-supporting enterprise with all costs associated with the Utility to be funded from revenues derived from the sale of water and other water-related income sources.
- b. An annual average debt service coverage of 1.75 shall be maintained.
- c. Revenues collected in excess of operating needs of the Utility shall be carried forward for future capital bond funding requirements and shall not be transferred to the City's General Fund.
- d. The Utility shall maintain cash reserves adequate for known future obligations plus an allowance for unbudgeted contingencies set at five percent (5%) of revenues from water sales.
- e. Low-income water users living within the City may be supplied a minimum amount of water at reduced rates or other form of subsidized water service at the discretion of Mayor and Council. The cost of this subsidy will be funded from the general fund of the City and not from water rates.

2. Water Rates and Charges

a. cost-of-service basis

- (1) Insofar as possible charges for water utility service shall be made on a cost-of-service basis.
- (2) Marginal cost aspects of the water utility will be continually studied by staff and considered as a factor in the making of rates.

- (3) The substitution of effluent and reclaimed water for potable water is an important element in achieving safe yield in the Tucson Basin. Rate setting for effluent shall be in accordance with the following precepts:
 - (a) charges for effluent and reclaimed water shall be based on the cost of service whenever possible;
 - (b) to the extent that charges for effluent and reclaimed water based on cost of service do not provide an adequate price incentive, the price of reclaimed water shall be based on a market value which encourages its use;
 - (c) CWAC shall review and make recommendations and the Mayor and Council shall hold a duly advertised public hearing prior to entering into any agreement to sell reclaimed water to any customer at a rate other than that rate established by ordinance and contained in the Tucson Code.
- (4) In the event that Tucson Water enters into contract with other water providers for treatment and delivery of CAP allocations, the City shall recover its total cost of providing this service.

b. water rate design elements

- (1) Commodity charges shall reflect the costs of service across customer classes and seasons, using rate structure features such as: seasonal rates; isolated areas service charge and reserve fund surcharge.
- (2) Customers shall be charged for fixed and recurring costs of service such as:
 - (a) new connections
 - (b) re-connections
 - (c) meter reading
 - (d) billing
- (3) Rate structures shall be designed so as to encourage water conservation and to control peak demand.
- (4) Water rates and charges shall be reviewed annually and changes in the rate structure shall be implemented so as to avoid sudden and large-scale shifts in water rates.

- (5) Water rates for customers inside and outside the City limits shall be the same within each customer class unless there is reasonable justification based on cost-of-service rate differentials.
- (6) The City shall provide an open process for determination of competitive wholesale water service rates. This process shall include formal participation by the governing bodies of other cities and towns within which wholesale water service may occur.
- (7) The City shall work cooperatively with wholesale water customers to develop rate structures which avoid excessive retail water rate increases in any given year, with appropriate consideration for City policy regarding full cost recovery.
- (8) The City shall work cooperatively with wholesale water customers to establish rate structures which comply with Arizona Corporation Commission requirements.
- (9) With regard to existing agreements for wholesale water service, the City will develop rates consistent with the provisions of the agreements.

3. System Development Requirements

- a. All costs of water system facilities necessary to serve a new applicant shall be paid by that applicant.
- b. A provision shall be made to refund that portion of the costs not directly attributable to the development as follows:
 - (1) the cost differential of any oversizing of mains beyond what is required for the applicant shall be refunded by Tucson Water; and
 - (2) properties not financially participating in the construction of certain Tucson Water facilities shall be assessed a charge upon connection. Funds collected shall be reimbursed to the party that financed the original facility installation. The charge shall be updated annually to reflect current construction costs.
- c. Area-specific charges shall be assessed to developments within Tucson Water Service Area where significant capital investment for the importation and distribution of water solely to serve the specific area is required.

4. Service Area Expansion

- a. The City shall not expand its water utility service area into areas not presently served by other providers unless:
 - (1) Costs to existing rate-payers are considered;
 - (2) Water supply factors are considered; and
 - (3) Regional plans are considered.

5. Capital Improvements

- a. Various combinations of revenue, general obligation bonds, tax-secured bonds and water revenues shall be used to finance water capital improvements.
- b. Repayment of the bonds shall be made from water system revenues.
- c. The type of bond financing to be used shall result in the least total cost to rate-payers based on present value.
- d. The term of repayment of debt shall not exceed the useful life of the improvement funded by such debt.
- e. Capital requirements for relocations or other modifications to the water system required to accommodate other public works shall be derived from sources other than the water utility.
- f. Revenues accumulated in any reserve fund shall be set aside for specific purposes, such as water augmentation or water quality projects.

B. Acquisitions

1. Systems Acquisitions

- a. The City shall purchase other water delivery systems only if such purchase is beneficial to the customers of Tucson Water. Delivery systems whose purchase may contribute to the achievement of Tucson Water's aims should:
 - (1) possess water resources that might have a significant effect on water quality, availability, and supply;
 - (2) be located adjacent to or near the Utility's existing service area; and
 - (3) not raise the cost of providing water to existing customers of the Utility.

- b. The CWAC shall review all potential water system acquisitions and make recommendations to the Mayor and Council.
- c. Whenever Tucson Water supplies water to another water provider, the contract or agreement governing this transaction shall encourage the water provider to implement a program that includes conservation incentives.

2. Water Rights Acquisitions & Sales

- a. The City may purchase or sell grandfathered water rights or stored water credits when the Mayor and Council determine the transaction is consistent with short and long-term goals and policies of the City.
- b. Water rights and stored water credits may be considered in price negotiations for reclaimed water and CAP water.

C. Water Supply, Management and Development

1. Water Quality

- a. Tucson Water shall provide all customers water which is safe and palatable, and which meets all primary Federal and State standards, including that all water shall:
 - (1) contain no substance naturally occurring or man-made in amounts that exceed the maximum contaminant level established by the EPA Interim Drinking Water Standards, the Arizona Department of Environmental Quality or the Arizona Department of Health Services
 - (2) meet local standards to protect health and safety in the absence of national or state standards
 - (3) contain no pathogens
 - (4) be tested for contaminants at representative locations throughout the distribution system as appropriate or required by regulatory agencies to apprehend possible health, economic, or environmental threats
- b. All non-potable water use shall be consistent with all local, state, and federal regulations.

- c. Tucson Water shall be responsive and responsible to concerns regarding water quality and will provide the public with timely and accurate information on matters relating to water quality issues.
- d. Tucson Water will fund remediation of groundwater contamination commensurate with its responsibility for the problem.

2. Contingency Plans

- a. The Utility shall develop and maintain contingency plans to manage a water loss, shortage, delivery interruption, contamination, severe land subsidence or other water emergency. Any emergency demand reduction strategy will not be based solely on an across-the-board-percentage reduction on historic, residential, commercial or industrial water usage. The emergency conservation measure shall focus on the reduction or elimination of water intensive uses that don't affect public health or safety.
- b. Emergency water supplies shall be provided to local private water companies subject to Tucson Water's ability to meet the demands of its customers.

3. Service Area Management

- a. The City shall maintain the right of control of effluent in accordance with adopted IGA's.
- b. Tucson Water shall maintain a 100-year assured water supply in accordance with ADWR assured water supply rules.
- c. The City shall encourage other water providers to participate financially in the regional management of water.
- d. The City shall continue to work cooperatively with all potential CAP water users in Pima County and with all agencies of government to facilitate implementation of the CAP in Pima County.
- e. The City may enter into agreements to treat and deliver CAP water to other water providers to ensure that their CAP allocations are utilized in the Tucson AMA.
- f. The City shall cooperate fully with the ADWR to develop augmentation programs that may include water importation and storage and/or artificial groundwater recharge.
- g. Tucson Water shall cooperate in the planning and implementation of regional recharge programs.

- h. The City shall continue to seek Tucson AMA wide groundwater management through cooperation between water users and agencies of government, including ADWR.
- i. In considering funding projects which are sponsored by entities other than the Tucson Water Department, CWAC shall review the rate impacts and policy implications of participation in the project.
- j. The City of Tucson shall strive to become the sole retail water provider within its corporate boundaries, as they may exist, now or in the future.
- k. The City shall offer to negotiate intergovernmental agreements with other cities and towns governing the provision of new retail water service within the boundaries of those jurisdictions in order to clarify the relationship among the City, the other cities and towns and the affected retail customers.
- l. Where legally and physically feasible, ownership and control of existing Tucson Water retail service facilities within the boundaries of other cities and towns shall be negotiated with those entities. The City shall work in cooperation with those entities to determine fair market value of the facilities.

4. Non-Potable Water

Priority shall be given to the development of treatment capacity and delivery systems for non-potable water. Wherever possible, the use of non-potable water in place of potable water shall be required for landscape irrigation and industrial uses.

- a. The following shall be considered for potential uses of non-potable water:
 - (1) Landscape irrigation and industrial uses
 - (2) Direct recharge
 - (3) Agricultural irrigation and livestock watering
- b. The following priorities, from highest to lowest, are established for utilization of non-potable water:
 - (1) Direct use to replace an existing use of potable water
 - (2) Storage and recovery within the area of hydrologic impact to replace an existing use of potable water
 - (3) Direct use to replace a new use of potable water

- (4) Storage and recovery within the area of hydrologic impact to serve a new use that otherwise would use potable water
- (5) Storage and recovery outside the area of hydrologic impact to replace either an existing or a new use of potable water
- c. Since contractual rights to the use of effluent may result in added value to a user's property, contracts shall recognize that possibility and require waiver by the owner of any such added value in the event of purchase or condemnation of the property by the City through negotiation.
- d. The City shall monitor effluent sales and deliveries by the Pima County Wastewater Management Department to ensure compliance with the sewer system transfer IGA and shall take steps to correct any failure to so conform when necessary.
- e. The potential for using reclaimed water shall be evaluated and included in all new and existing water and land use plans.
- f. Tucson Water shall actively work with new and existing large water users, including golf courses, parks, schools, cemeteries, industrial and multi-family complexes, to provide practical and economic service by the reclaimed water system.
- g. New turf facilities and golf course development shall use effluent or reclaimed water for irrigation purposes.
- h. Any conditions of interim use of potable water shall be made a part of water service agreements and other appropriate contracts to assure prompt action converting to the maximum use of effluent or reclaimed water for irrigation purposes. These conditions shall include, but not be limited to:
 - (1) the date by which the City is required to have its portion of the system in place;
 - (2) requirements for financial participation by the developer in the construction of the project;
 - (3) penalties for non-compliance; and
 - (4) a surcharge equaling 50% of the potable water rate in addition to the regular rates and charges. This surcharge shall not apply when the continued use of potable water is required solely due to deficiencies in the City's system or delays in City construction.

i. When private development requires reclaimed water service in advance of the City's construction schedule, developers shall work with Tucson Water to formulate a plan of service to be implemented at the sole expense of the developer with facilities to be dedicated to Tucson Water upon completion.

j. When funding is available, the City will finance or participate in the construction of reclaimed water pipelines in the Tucson Water service area to serve customers whose estimated reclaimed water usage is sufficient to justify pipeline construction on the basis of economic feasibility.

k. effluent control (IGA)

(1) Effluent use shall be controlled as follows:

(a) The use of all effluent derived from water developed by the City, including the City's allocation of CAP water, shall be directly controlled by the City.

(b) Effluent from any County treatment plant derived from water developed by entities other than the City may be controlled by the City on a case-by-case basis through contracts between the City and others subject to applicable conditions to include:

i) conditions requested by Pima County in the development of their waste water systems that are consistent with the water management plans and goals of the Tucson AMA.

ii) that the use of effluent shall reduce the amount of groundwater which the other party could otherwise lawfully have pumped.

iii) that the terms of the contract shall be sufficient to amortize the cost of system improvements.

(2) The City may only enter a contract with the County under the terms of which the County would control the effluent under conditions mutually agreed upon, with no payment by the County to the City, except for sharing net profits as provided in the Sewer Transfer IGA, when the City:

(a) is not using the effluent;

(b) has no plans to use the effluent;

(c) has no contract with another party for use of effluent;

(d) has no plans for entering into a contract with another for the use of the effluent;

(e) has no existing or proposed projects which could be negatively impacted.

5. Recharge

- a. Groundwater recharge shall be used as a strategy for augmenting the groundwater and for providing long-term operational flexibility to Tucson Water's supply system.
- b. Tucson Water shall develop demonstration projects as required to assess the feasibility of recharging various water sources for operational and long-term storage.
- c. Tucson Water shall fully participate with other agencies to develop programs for water supply augmentation within the Tucson AMA.
- d. The City may provide recharge water only to entities which have the legal authority to store water.

6. Wholesale Water Service

- a. Tucson Water shall offer to provide wholesale water service to other retail water providers in the region.
- b. Tucson Water shall offer both interruptible and non-interruptible water service to wholesale customers.
- c. Tucson Water shall be responsible for delivering a specified flow rate at a specified pressure range to the point of delivery to wholesale customers.
- d. Each wholesale customer shall be responsible for all necessary storage and transmission facilities beyond the point of wholesale delivery, unless otherwise provided for in separately negotiated agreements.
- e. Tucson Water shall be responsible for delivering wholesale water in accordance with the primary water quality standards established pursuant to the Federal Safe Drinking Water Act (42 United States Code Sections 300F et seq.) at the point of delivery to the retail water service provider.
- f. Each wholesale customer shall be solely responsible for maintaining water quality within its own retail water distribution system.
- g. Tucson Water shall deliver to a wholesale customer only water which is not debited against a City of Tucson groundwater account established by the Arizona Department of Water Resources.
- h. Central Arizona Project water held under subcontract by any wholesale water customer may be treated and directly delivered or may be stored underground by Tucson Water on behalf of the wholesale customer.
- i. Agreements to treat and deliver or to recharge wholesale customers' CAP water shall be separately negotiated.

7. Design Standards

- a. Tucson Water shall utilize its published design criteria for the development of all utility facilities, except when rezoning, neighborhood plans, or other Mayor and Council actions set aesthetic standards for the area that differ from Tucson Water's standard. In these cases, Tucson Water shall work with the City Planning Department, the developer and the neighborhood to design facilities that are consistent with the architectural theme or prevailing landscape type of the area.

8. Avra Valley Land

a. Ground water use, storage, and recovery

- (1) No lands with appurtenant water rights shall be sold.
- (2) City staff shall take all necessary actions to establish, maximize and preserve water rights on lands.
- (3) No users other than Tucson Water shall export any ground water extracted from Tucson Water Avra Valley properties.
- (4) Facilities to store and recover imported water may be constructed on Avra Valley lands.
- (5) Imported water, including CAP and effluent, which is recharged on Avra Valley lands, may be recovered within the area of hydrologic impact.

b. Land use

- (1) Land use shall:
 - (a) Benefit the Tucson Water Department rate payers
 - (b) Be consistent with all land use requirements and environmental regulations
 - (c) Be undertaken only in conjunction with notice to adjoining property owners and/or a public process to inform area residents of the use
 - (d) To the extent possible, preserve those lands having abundant vegetative cover in their natural state
 - (e) In conjunction with on-site construction, vegetation shall be replaced or restored as part of the project.

c. Leases

- (1) Use shall include all economically reasonable water-saving designs, techniques and equipment.
- (2) The quantity of water to be used as well as other non-monetary benefits to Tucson Water rate payers shall be considered
- (3) Any use shall result in reduction or elimination of the City's maintenance costs.
- (4) Use shall produce significant income to Tucson Water and/or value in excess of the City's cost of contract administration benefiting Tucson Water rate payers.
- (5) In flood-prone areas, uses shall conform to flood plain regulations.
- (6) Lessees shall be responsible for all necessary licenses, permits and all applicable fees and taxes.
- (7) User shall be required to post a bond at the beginning of the lease guaranteeing reclamation and revegetation of the land at lease expiration.
- (8) Where appropriate users shall be required in the lease to construct and/or maintain appropriate fencing.
- (9) Leases shall contain provisions to protect against risk of environmental damage, including groundwater pollution.
- (10) Where appropriate all users shall be required to construct and/or maintain all necessary on-site flood control structures.

9. Protection of Hydraulically-Connected Riparian Areas

a. identification of areas

- (1) the areas on the City's Environmental Resource Zone and Pima County Flood Control District maps shall be subject to the policies described in this section.

b. drilling of new wells

- (1) except under circumstances involving special conditions in which no hydrologic impacts can be identified, Tucson Water shall not drill any new wells inside or within one (1) mile of designated hydraulically-connected riparian areas.

c. operation and evaluation of existing wells

- (1) Tucson Water wells located inside or within one (1) mile of designated hydraulically-connected riparian areas shall be operated so as to preserve these riparian areas
- (2) the feasibility of CAP recharge inside or within one (1) mile of designated hydraulically-connected riparian areas shall be evaluated.

d. preservation through conservation

- (1) Tucson Water shall utilize conservation as a mechanism to reduce the need for local pumping in areas having designated hydraulically-connected riparian habitats.
- (2) Tucson Water shall work with private water companies and private well owners to develop conservation programs to reduce local groundwater pumping in areas having designated hydraulically-connected riparian habitats.

D. Conservation

1. The City of Tucson is required to meet conservation targets as established by the Arizona Department of Water Resources. Conservation program elements, such as public information and education, incentives and ordinances, will be developed and implemented to achieve conservation targets.
2. The City of Tucson will "Lead by Example" by promoting water conservation and environmental aesthetics by applying the principles of Xeriscape to public projects and following adopted regulations.

E. Policy Review Process

1. Policies review

- a. Mayor and Council policies shall be reviewed annually or more frequently as warranted.

2. Long-range plan

- a. The long-range plan, including a comprehensive water conservation program, shall be annually reviewed and revised.



SUMMER 2012 PRELIMINARY DRAFT (AUGUST VERSION)

Note: Figure and Table References to be finalized prior to submission to U.S. Fish and Wildlife Service.

CITY OF TUCSON AVRA VALLEY HABITAT CONSERVATION PLAN

To be submitted to the United States Fish and Wildlife Service pursuant to Section 10(a)(1)(B) of the Endangered Species Act

Prepared by

The City of Tucson's Office of Conservation and Sustainable Development, Tucson Water Department, and SWCA Environmental Consultants

with input from many others

August 2012

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Acronyms and Abbreviations

ac	Acre
AZGFD	Arizona Game and Fish Department
BOMA	Burrowing Owl Management Area
WBO	Western Burrowing Owl (<i>Athene cunicularia hypugaea</i>)
C	Celsius
CAVSARP	Central Avra Valley Storage and Recovery Project
CFPO	Cactus Ferruginous Pygmy-owl (<i>Glaucidium brasilianum cactorum</i>)
CFR	Code of Federal Regulations
CIP	Capital Improvement Project
City	City of Tucson
cm	Centimeter

DS	Development Standard
DT	Desert Tortoise (Sonoran Population) (<i>Gopherus agassizii</i>)
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
F	Fahrenheit
FR	Federal Register
ft	Feet
GIS	Geographic Information System
ha	Hectare
HCP	Habitat Conservation Plan
HDMS	Arizona Game and Fish Department's Heritage Data Management System
in	Inches
km	Kilometers
L	Liter
LLNB	Lesser Long-nosed Bat (<i>Leptonycteris curasoae yerbabuena</i>)
LUC	Land Use Code
m	Meter
MBTA	Migratory Bird Treaty Act
mi	Mile
NEPA	National Environmental Policy Act
NPPO	Native Plant Preservation Ordinance
OHV	Off Highway Vehicle
Permit	Endangered Species Act section 10(a)(1)(B) Incidental Take Permit
PRA	Protected Riparian Area
PTBB	Pale Townsend's Big-eared Bat (<i>Corynorhinus townsendii pallescens</i>)
SAVSARP	Southern Avra Valley Storage and Recovery Project
sq	Square
TAC	Technical Advisory Committee
TSNS	Tucson Shovel-nosed Snake (<i>Chionactis occipitalis klauberi</i>)
USFWS	United States Fish and Wildlife Service
WERR	Watercourse Environmental Resource Report
WG	Western groundsnake (<i>Sonora semiannulata</i>)
WYBC	Western Yellow-billed Cuckoo (<i>Coccyzus americanus occidentalis</i>)

SUMMARY

The City of Tucson (City) owns over 21,000 acres of land west of the City limits in the Avra Valley area of Pima County. These former farm lands were purchased in the 1970s and 1980s with City Water Department (Tucson Water) ratepayer bond funds to secure the water rights, preserve the groundwater for urban use, and allow for the future development of water infrastructure supply projects. Over the decades since their purchase, some of these formerly cleared and cultivated lands have recovered to a more naturally vegetated state and now support native plants and animals, including some federally recognized species. As a means to comply with the Endangered Species Act (ESA) in a proactive, comprehensive manner, the City began work on this Avra Valley Habitat Conservation Plan (HCP) in 2004 which covers most of these former farmlands and is referred to hereinafter as the HCP Permit Area. Once approved by the U.S. Fish and Wildlife Service (USFWS) and an associated ESA Section 10 Incidental Take Permit (Permit) is issued, the City will be guided by these documents during the 50-year duration of the Permit.

To develop the HCP, the City regularly engaged the biological input of an ad-hoc Technical Advisory Committee (TAC). Among other tasks, this TAC determined which species to include for coverage by the Permit, helped the City develop habitat models for the species to be addressed or “covered” under the HCP, informed the amount of habitat set-aside that would be sufficient to mitigate for impacts to modeled habitat, and provided guidance on monitoring and management activities. Species proposed for coverage by this HCP include the following seven species:

- Lesser Long-nosed Bat (*Leptonycteris curasoae yerbabuena*; LLNB also used hereinafter);
- Pale Townsend’s Big-eared Bat (*Corynorhinus townsendii pallescens*; PTBB also used hereinafter);
- Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*; WYBC also used hereinafter);
- Cactus Ferruginous Pygmy-owl (*Glaucidium brasilianum cactorum*; CFPO also used hereinafter);
- Western Burrowing Owl (*Athene cunicularia hypogea*; WBO also used hereinafter);
- Desert Tortoise (Sonoran population) (*Gopherus agassizii*; DT also used hereinafter), and;
- Tucson Shovel-nosed Snake (*Chionactis occipitalis klauberi*; TSNS also used hereinafter).

Pursuant to City policies related to wildlife habitat protection, Tucson Water desires to allow these former farm lands to recover to a more naturally vegetated condition in areas where the covered activities – such as additional water supply infrastructure – described below are not planned to occur. Activities that assist in achieving this goal beyond what is described in this HCP for ESA compliance are encouraged even though the City has not explicitly committed to them within this document. Where possible, the City will avoid impacting biological corridors, modeled habitat, and other sensitive areas when planning and implementing covered activities that would directly or indirectly affect covered species.

The activities that may impact these seven species and that are covered by the HCP (“covered activities”) include water infrastructure supply development, operation, and maintenance activities. Other activities that may occur on these lands that are not considered to have a net negative impact to species and require mitigation include: biological research, habitat restoration or enhancement (e.g., burrowing owl management areas), invasive species removal, non-vehicular recreation, educational activities, and others. For quantifying impacts to species, these effects are described in habitat terms, not species terms as allowed by USFWS guidance.

The City is uncertain if, when, and where the covered activities will occur within the HCP Permit Area. Therefore, the HCP is structured to allow Tucson Water the flexibility to develop anywhere within the

HCP Permit Area as long as all applicable federal, state, and local regulations are followed and the City complies with the mitigation, monitoring, and stewardship activities described herein. If a covered activity is planned to occur that will permanently and negatively impact habitat, then the City must permanently set-aside modeled habitat elsewhere to mitigate for these impacts.

The amount of habitat set-aside is determined by mitigation ratios (e.g., 3 acres set-aside for every 1 acre impacted) and the maximum amount of new development within the Permit Area that is allowed by the HCP is 8,000 acres (37% of the 21,740 acre Permit Area). If more land is planned for development, the City must either amend the HCP or comply with the ESA through other means, such as through an individual ESA Section 7 consultation. Table X lists key numbers related to this HCP.

The HCP outlines several ecological effectiveness monitoring activities as well as activities for stewardship, management, stakeholder involvement, and reporting. Cost estimates for these activities as well as a summary table of City’s commitments under the HCP can be found in Chapter 6.

Table X. Key Numbers for the Avra Valley HCP

Item	Number
Length HCP will be in effect	50 years
Permit Area acreage	21,740 acres (8,798 ha)
Percentage of Permit Area within Pima County’s Rural Homestead (RH) Zone	99% (21,580 ac; 8,733 ha)
Maximum amount of additional development allowed under the HCP within the Permit Area	8,000 acres (3,237 ha)
Number of species to be covered by the HCP	7
Number of species to be covered by the HCP that do not have habitat in the Permit Area	1 (Desert Tortoise)
Modeled habitat footprint for the Lesser Long-nosed Bat, Pale Townsend’s Big-eared Bat, Western Yellow-billed Cuckoo, and Cactus Ferruginous Pygmy-owl,	2,197 acres (889 ha)
Modeled habitat footprint for the Western Burrowing Owl	4,532 acres (1,834 ha)
Modeled habitat for the Tucson Shovel-nosed Snake	2,457 acres (994 ha)
Modeled habitat for the Desert Tortoise	0 acres
Footprint of all overlapping modeled habitat	7,752 acres (3,137 ha)
Permit Area not modeled as habitat	13,988 acres (5,660 ha)
Priority Mitigation Area acreage (areas where permanent habitat set-aside is most likely)	3,908 acres (1,523 ha)
Clearwater Complex acreage (areas where future development is most likely)	10,545 acres (4,267 ha)

CHAPTER 1 – OVERVIEW AND BACKGROUND

1.1 City philosophy regarding its Avra Valley Holdings

Since purchasing the Avra Valley farm land in the 1970s and 1980s, the City has engaged in several planning efforts for these lands and has developed City-wide policies applicable to these lands, including the 1981 Alternative Use Plan for City of Tucson Land, Avra Valley, Arizona (University of Arizona 1981), the 1984 Avra Valley Land Use Study (City of Tucson 1984), and the 1996 Avra Valley Land Use Study for City of Tucson Property Holdings (City of Tucson 1996). Goals from the 1996 land use study for these lands include the following:

- 1. To encourage appropriate land uses for the City-owned property in Avra Valley that preserve the water quality and quantity of the underground aquifer and preserve the water rights associated with the acquisition.*
- 2. To encourage land uses and associated management practices which are beneficial to the interests of Tucson Water customers and are cost effective.*
- 3. To assure that the City of Tucson continues to be a good neighbor by considering the compatibility of potential land uses with existing and future land uses under other ownership.*

More recently, the City's voter-approved General Plan of 2001 (City of Tucson 2001) includes several policies directly applicable to these lands. Related to water resources, these policies include:

- *Element 8, Policy 13: Continue to pursue appropriate land uses for City-owned retired farmland in the Avra Valley*
- *Element 8, Policy 14: Pursue water plans and policies that protect and benefit natural ecological systems (City of Tucson 2001).*

Related to environmental planning and conservation, these policies include:

- *Element 14, Policy 1: Continue to identify and protect environmentally sensitive natural areas and encourage the preservation of vegetation and wildlife within these areas.*
- *Element 14, Policy 2: Improve coordination and promote partnerships between City departments, other governmental agencies, neighborhoods, and community organizations that contribute to the management of environmentally sensitive areas.*
- *Element 14, Policy 3: Implement methods to conserve and enhance habitat when development occurs (City of Tucson 2001).*

Based on all of the above policy guidance, Tucson Water desires to balance the community's long-term water supply needs with the needs of native plants and wildlife. Tucson Water has and will continue to do this by allowing, and in appropriate circumstances, actively encouraging, the recovery of its former farm lands in Avra Valley to a more naturally vegetated state, supporting the plants and animals native to the region. In addition, Tucson Water will continue efforts to protect the lands and resources within from unnatural degradation, including vehicular and human trespass, vandalism, illegal activities, spread of

non-native invasive species, and others threats. While doing this, Tucson Water will comply with all applicable federal, state, and local regulations relating to the environment.

1.2 Purpose and Need for the HCP

The Avra Valley HCP has been prepared in support of the City’s application for a Permit in conformance with Section 10 of the ESA. Through this HCP, the City is committing to implement certain actions that will avoid, minimize, and mitigate the impacts of any “incidental take” of covered species that could occur as a result of future Tucson Water projects necessary to meet the community’s water and renewable energy needs. It is anticipated that the Permit will expire 50 years from issuance. The HCP addresses proposed development activities on extraterritorial City-owned lands in unincorporated Pima County, Arizona, west of the City, in the area known as Avra Valley (Figure 1.1-1).

The Avra Valley HCP Permit Area (Figure 1.1-2), which totals approximately 21,740 ac (8,798 ha), includes parcels of land that may be developed for water supply projects. The need for an HCP for this Permit Area is driven by these possible future activities and their potential impacts on federally protected and other non-ESA listed species proposed for coverage. For example, portions of the City-owned lands in Avra Valley support the life cycle needs of the Lesser Long-nosed Bat, a species currently listed as endangered (62 FR 10730 and 58 FR 49875) under the ESA. Chapter 2 includes a list of the seven species proposed for coverage by the Permit along with relevant biological information.

The City’s proposed Avra Valley HCP will mitigate, to the maximum extent practicable, the anticipated effects of covered activities, while striving to balance the protection and conservation of unique natural resources on City of Tucson-owned lands in Avra Valley with the community’s need for a long-term water supply. The City recognizes that the quality of life of its citizens is dependent upon an integrated environment, which balances the needs of vulnerable species and their habitats with human needs.

Figure 1.2-1. Location of the Avra Valley HCP Permit Area in Pima County, Arizona, USA (Please see figures at the end of the document)

Figure 1.2-2. City of Tucson Avra Valley Habitat Conservation Plan Permit Area (Please see figures at the end of the document)

1.3 Regulatory Framework

1.3.1 *Endangered Species Act*

The ESA and its implementing regulations prohibit the take of any fish or wildlife species that are federally listed as threatened or endangered unless evaluated and permitted through the appropriate ESA process, including Section 7 or Section 10(a)(1)(b). The ESA defines take as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Code of Federal Regulations (CFR) 50-17.3 further defines the term harm in the take definition to mean any act that actually kills or injures a federally listed species, including significant habitat modification or degradation.

Section 10(a) of the ESA establishes a process for obtaining a Permit, which authorizes non-Federal entities to incidentally take federally listed wildlife or fish, subject to certain conditions. Incidental take is defined by the ESA as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Preparation of an HCP is required for all Section 10(a) Permit applications. The U.S. Department of the Interior's U.S. Fish and Wildlife Service (USFWS) and the U.S. Department of Commerce's National Oceanographic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) have joint authority under the ESA for administering the incidental take program. For species to be covered under the Avra Valley HCP, the USFWS has authority.

Section 10(a) also was intended by the U.S. Congress to authorize the USFWS to approve HCPs for unlisted as well as listed species. Therefore, if an HCP treats an unlisted species as if it were already listed, additional mitigation will not be required within the area covered by the HCP upon the listing of that species. The "No Surprises" policy, adopted by the U.S. Department of the Interior, provides that landowners who have habitat for listed species on their property and agree to an HCP under the ESA will not be subject to later demands for more land, water, or financial commitment if the HCP is adhered to, even if the needs of the species changes over time (63 FR 8859). Species to be covered under the HCP are not added to the Permit until they are listed under the ESA.

Section 7 of the ESA requires all Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the ESA, or to result in the destruction, or adverse modification, of its habitat. Technically, the issuance of a Permit is an authorization for take by a Federal agency. Consequently, in conjunction with issuing a Permit, USFWS must conduct an internal Section 7 consultation on the proposed HCP. The internal consultation is conducted after an HCP is developed by a non-Federal entity and submitted for formal processing and review. Provisions of Sections 7 and 10 of the ESA are similar, but Section 7 requires consideration of several factors not explicitly required by Section 10. Specifically, Section 7 requires consideration of the indirect effects of a project and effects on federally listed plants. It also requires consideration of effects on Critical Habitat, which the ESA defines as "(i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of this Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of this Act, upon a determination by the Secretary that such areas are essential for the conservation of the species." The ESA requires that the USFWS identify Critical Habitat to the maximum extent that it is prudent and determinable when a species is listed as threatened or endangered. The internal consultation includes preparation of a USFWS Biological Opinion describing whether or not implementation of the HCP will result in jeopardy to any listed species or will adversely modify Critical Habitat.

1.3.2 Permit Area, Holder, and Term

The City-owned land in Avra Valley is located in unincorporated Pima County, between the Tucson Mountains to the east and the Waterman and Roskrige Mountains on the west. The land consists largely of noncontiguous former agricultural parcels stretching for 31 mi (50 km) south to north and 11 mi (17 km) east to west, with large areas of non-City owned land in between. Using Tucson Water ratepayer bonds, the City purchased these lands during the 1970s and 1980s to acquire the water rights as part of future water supply planning efforts.

In determining HCP Permit Area boundaries, the USFWS HCP Handbook states that “Generally, HCP applicants should be encouraged to consider as large and comprehensive a plan area as is feasible and consistent with their land or natural resource use authorities” (USFWS 1996). Given this guidance, the City is choosing to include most of its property within the HCP Permit Area, even if some of the land has already been developed. Of the approximately 22,483 acres (9,099 ha) of former farmland that the City owns within Avra Valley, 21,740 acres will be included in the Avra Valley HCP Permit Area (figure 1.1-2). Lands to be included fall into three categories: 1) fully or partially developed land, 2) land with agreements that limit what can be done, 3) undeveloped land. The fully or partially developed land consists of the Southern Avra Valley Storage and Recovery Project (SAVSARP) and Central Avra Valley Storage and Recovery Project (CAVSARP) water infrastructure sites as well as the solar farm lease projects at the Chu and Lupori Farms. The lands with agreements that limit what can be done currently include the following:

- Lands allowed for Tucson Audubon Society (TAS) habitat restoration observation purposes only. No active restoration will occur there. Lands removed from the HCP Permit Area include areas where TAS habitat restoration is allowed to occur according to a right of entry agreement. To avoid the potential for double counting mitigation credits, these lands were removed from the Permit Area.
- Lands allowed for Tucson International Modelplex Park Association (TIMPA) activities according to right of entry agreements. TIMPA engages in model airplane flight activities.
- Lands protected as permanent open space. Currently, this includes portions of the SAVSARP and CAVSARP parcels as well as portions of the former Buckelew Farm property. Additional lands are currently being identified for permanent protection as well.

The City will be the HCP Permit holder and, unless USFWS-approved cooperative mitigation agreements are made with other local jurisdictions, the City will be solely responsible for ensuring implementation of the measures outlined in the HCP. The HCP addresses proposed Tucson Water water supply projects in the Avra Valley HCP Permit Area. Based on Tucson Water’s proposed timeline of possible projects outlined in the City’s Tucson Water “Water Plan: 2000–2050” (City of Tucson 2004), the permit length will be 50 years from date of Permit issuance.

1.3.3 *Habitat Conservation Plan Required Elements*

The Section 10 process for obtaining a Permit has three primary phases, including HCP development, formal permit processing, and post-issuance. During the HCP development phase, the project applicant prepares a plan that integrates the proposed project or activity with the protection of listed species and, if desired, those species likely to be listed during the term of the Permit. An HCP submitted in support of a Permit application must include the following information as described in 50 CFR 17.32:

- Impacts likely to result from the proposed taking of the species for which permit coverage is requested. (Chapter 3 of this document address these);
- Measures that will be implemented to monitor, minimize, and mitigate impacts; funding that will be made available to undertake such measures; and procedures to deal with unforeseen circumstances (Chapters 4, 5, and 6 of this document address these);
- Alternative actions considered that would not result in take (Chapters 1 of this document and the Environmental Assessment associated with this HCP address these), and;
- Additional measures USFWS may require as necessary or appropriate for purposes of the plan.

The HCP development phase concludes and the Permit-processing phase begins when a complete application package is submitted to the appropriate Permit-issuing office. A complete application package

consists of 1) an HCP draft; 2) a Permit application; and 3) a \$25 fee from the applicant. USFWS must also publish a Notice of Availability of the HCP package in the Federal Register to allow for public comment. An Environmental Assessment (EA) or Environmental Impact Statement (EIS) serves as USFWS's record of compliance with the National Environmental Policy Act (NEPA) after a 60- to 90-day public comment period on the document. No further NEPA review is required. An Implementing Agreement between the USFWS and the Applicant may be developed to support implementation of the HCP. However, based on discussions with local USFWS staff, the optional Implementing Agreement will not be developed for this HCP since there is one landowner involved.

A Section 10 Permit is granted upon a determination by USFWS that all requirements for Permit issuance have been met. Statutory criteria for issuance of the Permit specify that:

- The taking will be incidental;
- The impacts of incidental take will be minimized and mitigated to the maximum extent practicable;
- Adequate funding for the HCP and procedures to handle unforeseen circumstances will be provided;
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild;
- The applicant will provide additional measures that USFWS requires as being necessary or appropriate; and
- USFWS has received assurances, as may be required, that the HCP will be implemented.

During the post-issuance phase, the Permittee and other responsible entities implement the HCP, and the USFWS monitors the Permittee's compliance with the HCP as well as the long-term progress and success of the HCP. The public is notified of Permit issuance by means of the Federal Register.

1.3.4 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 prohibits the take of any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, take is defined as the attempt to "pursue, hunt, shoot, capture, collect, or kill" a protected species. According to the USFWS, "The original 1918 statute implemented the 1916 Convention between the U.S. and Great Britain (for Canada) for the protection of migratory birds. Later amendments implemented treaties between the U.S. and Mexico, the U.S. and Japan, and the U.S. and the Soviet Union (now Russia)" (USFWS 2009). This act applies to all persons or organizations in the United States, including Federal and State agencies. The MBTA is administered by the USFWS, with regulation of ESA-listed migratory birds delegated to the USFWS Endangered Species Division and regulation of unlisted migratory birds delegated to USFWS Migratory Birds Division.

The MBTA provides no process for authorizing incidental take of MBTA-protected birds. All three avian species covered by this HCP – Cactus Ferruginous Pygmy-owl, Western Burrowing Owl, and Western Yellow-billed Cuckoo – are also protected under the MBTA. If 1) the HCP is approved and the USFWS issues an ESA Incidental Take Permit to the City of Tucson and 2) these avian species are listed under the ESA, the terms and conditions of the Permit will also constitute a Special Purpose Permit under 50 CFR 21.27 for the take of the species covered by this HCP. Otherwise, until the species are listed, the HCP does not constitute an MBTA Special Purpose Permit and the City's mitigation measures for those species must be consistent with the MBTA in addition to the HCP.

1.4 National Environmental Policy Act and HCP Alternatives

The issuance of a Permit by the USFWS constitutes a Federal action. Therefore, the National Environmental Policy Act (NEPA) process requires that Federal agencies analyze the environmental impacts of their actions (in this instance, issuance of a Permit) and include public participation in the planning and implementation of their actions. The NEPA process helps Federal agencies make informed decisions with respect to the environmental consequences of their actions and ensures that measures to protect, restore, and enhance the environment are included, as necessary, as a component of their actions. NEPA compliance is obtained through one of three actions: 1) preparation of an EIS; 2) preparation of an EA; or 3) a categorical exclusion (allowed for low-effect HCPs).

For the Avra Valley HCP, Council on Environmental Quality (CEQ) and USFWS documents provided guidance on the appropriate approach to NEPA compliance in terms of whether to pursue an EA or an EIS. According to the CEQ's Regulations for Implementing NEPA (40 CFR 1501), "Agencies shall prepare an environmental assessment (Sec. 1508.9) when necessary under the procedures adopted by individual agencies to supplement these regulations as described in Sec. 1507.3." Furthermore, according to 516 DM 6 Appendix 1, Fish and Wildlife Service (Federal Register Vol. 62, No. 11, pp. 2380-2382):

1.5 Actions Normally Requiring an EA

- A. Proposal to establish most new refuges and fish hatcheries; and most additions and rehabilitations to existing installations.*
- B. Any habitat conservation plan that does not meet the definition of "low effect" in the Section 10(a)(1)(B) Handbook.*
- C. If, for any of the above proposals, the EA determines that the proposal is a major Federal action significantly affecting the quality of the human environment, an EIS will be prepared. The determination to prepare an EIS will be made by a notice of intent in the Federal Register and by other appropriate means to notify the affected public.*

In accordance with the above and based on guidance provided by local USFWS staff, an EA will be developed for the Avra Valley HCP.

The proposed action and alternatives that will be described in the EA will be assessed against the No Action/No Project alternative, which assumes that some or all of the current and future projects proposed by the City would be implemented individually (i.e., one at a time), and be in compliance with the ESA. Other alternatives considered in the EA include issuance of a Permit for some subset of proposed covered species and/or covered activities. Alternatives considered in the EA are briefly summarized below.

1.4.1 Alternative A (HCP Preferred Alternative)

Under Alternative A, which is the preferred alternative and the subject of this HCP, seven species would be covered by the Permit, including the Lesser Long-nosed Bat (LLNB), Pale Townsend's Big-eared Bat (PTBB), Western Yellow-billed Cuckoo (WYBC), Cactus Ferruginous Pygmy-owl (CFPO), Western Burrowing Owl (WBO), Desert Tortoise (DT), and Tucson Shovel-nosed Snake (TSNS). With this Alternative, the City would be taking a proactive, comprehensive, landscape approach to species conservation and ESA compliance. It would also provide the City with a high level of regulatory certainty under the 50-year term of the Permit.

In early stages of the HCP development process, the City considered including the Western Groundsnake (valley form) (*Sonora semiannulata*; WG) as a covered species. However, given its high relative

abundance combined with its current lack of any Federal status, the TAC concluded that it is unlikely that this species will become listed during the 50-year Permit term. By not covering a species that is unlikely to be listed, the City will not engage in potentially costly mitigation, monitoring, and management activities for this species. Within the HCP Permit Area, WG is known to occur primarily along the Blanco Wash in areas with mesic conditions as well as in the south-central area of Avra Valley. For these areas that are also within the HCP Permit Area, they will likely be protected through adherence to floodplain regulations if any development is planned to occur in those areas.

1.4.2 Alternative B (No Action)

Alternative B is the No Action/No Project Alternative, which implies that the impacts from these potential projects on listed species and habitats would be evaluated and mitigated on a project-by-project basis, as is currently the case. For any activities involving take of listed species due to non-Federal projects/actions, individual Section 10(a)(1)(B) Permits would be required if there is a Federal nexus. A coordinated, comprehensive ecosystem-based conservation approach for the region would not be developed to more efficiently address the conservation of listed species, and unlisted candidate and sensitive species would not receive proactive action intended to preclude the need to list them in the future. A landscape level approach to conservation and mitigation would not occur to help Federal and non-Federal agencies work toward recovery of listed species.

1.4.3 Alternative C

Under Alternative C, only those species currently listed or candidate species under the Endangered Species Act would be covered by a Permit. This alternative would cover the following four species: LLNB, WYBC, DT, and TSNS. Under this alternative, the City would be taking a proactive, landscape level approach to species conservation and ESA compliance. However, should species of concern like the WBO become listed under the ESA during the 50-year term of the Permit, the City's Permit would not cover those species. In that case, and at the request of the City to amend their HCP and Permit, the USFWS may determine that current conservation measures outlined in the HCP may adequately protect habitat for this previously uncovered species, and the species could be covered. However, the USFWS may also determine that conservation measures for the covered species would not be adequate to mitigate for impacts to the uncovered species.

Given the habitat requirements of the WBO, it is unlikely that mitigation measures for the four species above would adequately protect its habitat. Thus, the City may choose to amend the HCP and add additional measures, or go through a separate ESA Section 7 consultation with the USFWS where a project involves a Federal nexus. If the WBO and the CFPO are not included as covered species in the Avra HCP and later become listed, the Permit will not serve as a special use permit under the MBTA.

1.4.4 Alternative D

Under Alternative D, eight species would be covered by the Permit, including both listed and non-listed species. These would include the LLNB, PTBB, WYBC, CFPO, WBO, DT, TSNS, and WG. With this alternative, the City would be taking a proactive, comprehensive, landscape approach to species conservation and ESA compliance. For the Covered Activities described in this HCP, this alternative would also provide the City with the greatest ESA regulatory assurances under the 50-year term of the Permit. Should any of the currently unlisted covered species become listed, they will automatically be included in the Permit, which also serves as a special use permit of the MBTA.

1.5 Planning and Public Involvement

To make this proactive and comprehensive effort possible, the City, in partnership with the Arizona Game and Fish Department (AZGFD), has received Federal endangered species planning grant assistance and fulfilled requirements associated with these grants. August 2004 marked the official kickoff for the City's HCP process. At that time, the City-owned lands in Avra Valley composed a sub-area of one HCP document. Since that time, the HCP has been split into two, separate documents and the City has worked on both efforts simultaneously. The Greater Southlands Habitat Conservation Plan is the City's other HCP development effort. In early 2010 through the middle of 2011, HCP development was on hiatus due to staff reductions and changes in priorities resulting from City fiscal deficits.

ADVISORY GROUPS

Since the effort began, both stakeholder and technical committees have been involved in the development of the HCP. In 2006, the ad-hoc Stakeholder Advisory Committee was replaced by the Mayor and Council Resource Planning Advisory Committee (RPAC). However, due to staffing constraints, the RPAC has not met since late 2010. In addition to the stakeholder committee, the ad-hoc Technical Advisory Committee (TAC) has guided the City's Avra Valley HCP process. The TAC is composed of biologists, ecologists, range management experts, and others from various wildlife- or conservation-related agencies and organizations, including the USFWS, the Arizona Game and Fish Department, the University of Arizona, Tucson Water, and non-profit conservation organizations. Two independent, ecological consultants are also on the TAC. The Plan Implementation Chapter (6) provides details on the TAC's role after Permit issuance as well as the City's desire for on-going stakeholder involvement through the City's Citizens' Water Advisory Committee.

PUBLIC OUTREACH

In the spring of 2009, the City worked with the USFWS to inform the public and request comments on the City's Avra Valley HCP efforts to-date. This was accomplished during a 60-day scoping period (March 18 – May 18, 2009) and a public open house. USFWS and City staff developed a list of stakeholders with input from the City's HCP TAC. Information about the HCP, public comment period, and open house was distributed to the stakeholders and the general public through various outreach activities. These outreach activities are listed in Table 2 of the Scoping Report, which is available on the City's HCP web pages at www.tucsonaz.gov/ocsd/HCP. Media outlets were also informed of the scoping period and open house via two media releases. Additional efforts were made to inform residents of Avra Valley by posting flyers in community centers and local library branches as well as through publishing notices in community (e.g., Robles Junction/Three Points Community Newsletter) and utility newsletters (e.g., Trico Electric Cooperative).

The public open house was held on Thursday, April 16, 2009 from 6:30 to 8:00 p.m. at Ryan Airfield in Avra Valley. USFWS and City staff delivered PowerPoint presentations that provided information on the ESA, HCPs in general, the City's Preliminary Draft Avra Valley HCP, and how to comment as part of the NEPA process. USFWS and City staff members also provided informational handouts and maps.

In early 2012, the City requested input on the draft HCP from the Coalition for Sonoran Desert Protection (CSDP). Also, additional outreach is planned for residents in Avra Valley during the summer of 2012.

1.6 Environmental Setting and Biological Resources

1.6.1 Physical Setting

Avra Valley lies in the Sonoran Desert region of the southwestern United States. The area is part of the Basin and Range physiographic province where broad, alluvial basins separate rugged, fault-block, north-south trending mountain ranges (Malcom Pirnie, Inc. 2005). Avra Valley is bordered by the Waterman and Roskrige Mountains to the west and the Tucson Mountains to the east, which are “comprised of metamorphic and intrusive igneous rocks, consisting mostly of rhyolites, andesites and basalts, and sedimentary rocks (Malcolm Pirnie, Inc. 2005). There are a few bedrock outcrops in Avra Valley, although none are located within the Avra Valley HCP Permit Area. Soils are deep alluvial deposits and consist of varying proportions of sand, loam, and gravel (SWCA 2003). Detailed soils information can be found within Natural Resource Conservation Service Soil Surveys, including “Soil Survey of the Tucson-Avra Valley Area, Pima County, AZ” (USNRCS 1972). Elevations within the Avra Valley HCP Permit Area range from approximately 1,884 ft (574 m) at the northern end to 2,655 ft (809 m) at the southern end (Figure 1.5.1-1).

Avra Valley forms a portion of the upper Santa Cruz River Basin, which encompasses approximately 750 sq mi (1,943 sq km). The major drainage through Avra Valley is Brawley Wash, which is a complex braided system with many small tributaries. Brawley Wash is the downstream continuation of Altar Wash, and is a major tributary of the Santa Cruz River. The Brawley Wash system is joined by two major washes: Black Wash from the Snyder Hill region and Blanco Wash from the Roskrige-Waterman mountains region. According to Rosen (2008), who conducted an ecological reconnaissance of Avra Valley, large portions of Brawley Wash are highly degraded barrens with adobe soils and low perennial plant diversity. The Blanco Wash contains a higher proportion of relatively intact natural environments (i.e., more intact soils due to less scour and erosion) than the Brawley Wash (Rosen 2008b). Because it is generally flat, floodwater drainage throughout most of Avra Valley is by sheet flow, which collects in a few tributaries of Brawley Wash, or impounds behind human-made structures, such as roads and berms.

More than 70 percent of the Avra Valley HCP Permit Area is within Federal Emergency Management Agency (FEMA) designated 100-year floodplains (Figure 1.5.1-2). Major flood events occurred in this area in 1983 and 1993, with water remaining for several months on some of the Avra Valley Permit Area parcels. Evidence of flooding in Avra Valley includes areas of bare ground and deep silt deposits within the floodplain. Following the 1993 floods, some impediments to surface flow (i.e. berms) were removed and some drainage ditches were constructed. These actions may help to reduce future flood impacts to these lands.

There is no naturally occurring perennial surface water within the Avra Valley HCP Permit Area or elsewhere within Avra Valley. However, the Central Arizona Project (CAP) canal conveys Colorado River water north-to-south through Avra Valley. CAP water recharge basins have been constructed within the Permit Area in Sections 5 and 8, Township 14 South, Range 11 East. Adjacent to the northernmost lands of the HCP Permit Area is the Santa Cruz River, an effluent-dominated perennial stream.

Within the Permit Area, there are several water catchments (e.g., former stock tanks or impoundments) that hold water for extended periods and provide habitat and resources for a variety of wildlife species.

1.6.2 Climate

While a detailed description of the region’s climate is beyond the scope of this HCP, it can generally be characterized as arid, with high temperature and precipitation variability. Cooler temperatures occur in

November through March and a long, hot season occurs from April to October. According to the National Weather Service (2012), average high temperatures for December in Tucson were 64.8° and for June were 100.3° from 1981 – 2010. Precipitation is generally bi-modal, with winter rainfall resulting from large-scale low pressure systems that draw moisture from the Pacific Coast having a relatively large areal extent and low intensity. In contrast, the summer “monsoon” rains result from convective thunderstorms that have limited areal extent but high intensity. From 1981 – 2010, annual rainfall averaged 11.59” (National Weather Service 2012). Of this, over half (on average) fell in just three months – July, August, and September. Given Avra Valley’s close proximity to Tucson and its similar elevation, the climate is also comparable. A description of Arizona’s climate can be found in Crimmins 2007.

Figure 1.6.1-1. Elevation within the HCP Permit Area. (Please see figures at the end of the document)

Figure 1.6.1-2. Major watercourses and FEMA 100-year floodplains. (Please see figures at the end of the document)

1.6.3 Vegetation

Vegetation communities within the Avra Valley HCP Permit Area include upland and riparian, both of which have been extensively modified by human activities. Upland vegetation communities include semidesert grassland, Sonoran desertscrub, and Sonoran vacant or fallow land. Riparian vegetation communities include Sonoran desertscrub xeroriparian and Sonoran riparian deciduous woodland. General characteristics of these communities are described below while information on the vegetation characteristics from each former farm can be found in SWCA 2003 and Tucson Audubon Society 2006.

Semidesert grassland is present at the south end of the Permit Area (Buckelew Farm and Duval/ Pennzoil Farm parcels) at an elevation range of approximately 2,300 to 2,655 ft (701 to 809 m). The dominant tree in this community is the velvet mesquite (*Prosopis velutina*), and the dominant shrub is creosote bush (*Larrea tridentata*). Additional shrub species include burroweed (*Isocoma tenuisecta*) and snakeweed (*Gutierrezia sarothrae*). Native grass species include, among others, spidergrass (*Aristida ternipes*), purple threeawn (*A. purpurea*), needle grama (*Bouteloua aristidoides*), feather fingergrass (*Chloris crinita*). Non-native grass species that occur in the Permit Area include Lehmann lovegrass (*Eragrostis lehmanniana*), and buffelgrass (*Pennisetum ciliare*).

Sonoran Desertscrub is the most prevalent, natural vegetation community within the Avra Valley Permit Area, occurring on land that has not been used previously for agricultural production. The dominant vegetation in this community is dependent, to a large degree, on slope, soils, and exposure. Creosote bush and triangle-leaf bursage (*Ambrosia deltoidea*) are dominant on lower elevation lands that are flat and generally have very deep, fine alluvial soil. The vast majority of the undisturbed upland vegetation within the Permit Area is dominated by these two species. Foothill palo verde (*Parkinsonia microphyllum*), triangle-leaf bursage, and various cacti dominate the higher elevation rocky slopes located at the edges of Avra Valley. Very few saguaros (*Carnegiea gigantea*) are currently present within the Permit Area (i.e., one is documented on Reeves Farm South and four on the Clearwater Project parcels) (SWCA 2003). However, through natural succession, saguaros may become established in the Permit Area over time.

In terms of acreage, the most extensive vegetation community in the Permit Area is retired agricultural land. Rosen (2005) concluded that many or most former agricultural lands owned by the City are

transitioning toward viable natural habitat conditions supporting diverse plant communities. Plants commonly established here include velvet mesquite, burroweed, desert broom (*Baccharis sarothroides*), desert globe mallow (*Sphaeralcea ambigua*), silverleaf nightshade (*Solanum elaeagnifolium*), western tansymustard (*Descurainia pinnata*), and shaggyfruit pepperweed (*Lepidium lasiocarpum*). Non-native prickly Russian thistle (*Salsola tragus*), or tumbleweed, also occurs. On some of the City-owned lands, non-native grasses such as buffelgrass were planted in the 1980s for erosion control purposes and remain established on several of the Permit Area farms despite various control efforts.

Mapped vegetation communities are shown in figure 1.6.3. Note that this classification is dated and does not reflect development within the Permit Area within the past decade.

Figure 1.6.3. Classified vegetation communities (Please see figures at the end of the document)

1.6.4 Wildlife

Despite a history of extensive modification by ranching, agriculture, floodplain modifications, Off Highway Vehicle (OHV) use, wildcat dumping, and other human activities, the Permit Area supports a wide variety of wildlife. The riparian areas are of particular importance because of the relatively high species and structural vegetation diversity as well as the connectivity that these contiguous, vegetated corridors provide.

There are numerous wildlife species known to occur in the Permit Area. For example, reptile species include Sidewinder (*Crotalus cerastes*), Western Diamondback Rattlesnake (*Crotalus atrox*), Common Gopher Snake (*Pituophis melanoleucus*), Western Whiptail (*Cnemidophorus tigris*), Desert Iguana (*Dipsosaurus dorsalis*), Zebra-tailed Lizard (*Callisaurus draconoides*), and Tree Lizard (*Urosaurus ornatus*). In June 2003, Rosen compiled a comprehensive list of reptiles and amphibians observed on the Avra Valley floor during road-cruising surveys for the Tucson Shovel-nosed Snake, which can be found in Table 2 of Rosen 2003b.

Common breeding bird species include Curve-billed Thrasher (*Toxostoma curvirostre*), Verdin (*Auriparus flaviceps*), Ash-throated Flycatcher (*Myiarchus cinerascens*), Cactus Wren (*Campylorhynchus brunnei-capillus*), Northern Mockingbird (*Mimus polyglottos*), Greater Roadrunner (*Geococcyx californianus*), White-winged Dove (*Zenaida asiatica*), and Mourning Dove (*Zenaida macroura*).

Mammals common to the area include the Round-tailed Ground Squirrel (*Spermophilus tereticaudus*), White-throated Woodrat (*Neotoma albigula*), Kangaroo Rat (*Dipodomys* spp.), Pocket Mouse (*Perognathus* spp.), Desert Cottontail (*Sylvilagus audubonii*), Black-tailed Jackrabbit (*Lepus californicus*), and Coyote (*Canis latrans*). Rosen (2005) found Antelope Jackrabbit (*Lepus alleni*), a southwestern endemic species, to be abundant on City-owned properties south of Ajo Way at Three Points.

CHAPTER 2 – COVERED SPECIES

The City’s HCP TAC recommends coverage of the following seven species for the Avra Valley HCP:

Table 2.1. Species Included in the City’s Avra Valley HCP.

Species	Federal (ESA)	State (AZGFD)	Notes
Lesser Long-nosed Bat (<i>Leptonycteris curasoae yerbabuena</i> ; also referred to as LLNB hereinafter)	Listed, Endangered	WSC	-
Pale Townsend’s Big-eared Bat (<i>Corynorhinus townsendii pallascens</i> ; also referred to as PTBB hereinafter)	Not listed, Species of Concern	-	-
Western Yellow-billed Cuckoo (<i>Coccyzus americanus occidentalis</i> ; also referred to as WYBC hereinafter)	Not listed, Candidate	WSC	Subject to MBTA
Cactus Ferruginous Pygmy-owl (<i>Glaucidium brasilianum cactorum</i> ; also referred to as CFPO hereinafter)	Not listed	WSC	Subject to MBTA
Western Burrowing Owl (<i>Athene cunicularia hypugaea</i> ; also referred to as WBO hereinafter)	Not listed, Bird of Conservation Concern (USFWS 2008)	-	Subject to MBTA
Desert Tortoise (Sonoran Population) (<i>Gopherus Agassizii</i> ; also referred to as DT hereinafter)	Not listed, Candidate	WSC	
Tucson Shovel-nosed Snake (<i>Chionactis occipitalis klauberi</i> ; also referred to as TSNS hereinafter)	Not listed, Candidate	-	

Key: ESA = Endangered Species Act; MBTA = Migratory Bird Treaty Act; WSC = Wildlife of Special Concern

This chapter provides species-specific information regarding these proposed covered species and includes Avra Valley HCP-specific biological goals and objectives for each species. In terms of how biological goals should be characterized, the USFWS suggests that “The biological goals and objectives may be either habitat or species based. Habitat-based goals are expressed in terms of amount and/or quality of habitat. . . Although the goals and objectives may be stated in habitat terms, each covered species that falls under that goal or objective must be accounted for individually as it relates to that habitat” (USFWS 2000).

2.1 Lesser Long-nosed Bat (*Leptonycteris curasoae yerbabuena*; LLNB)

2.1.1 Population Range, Distribution, Status, and Threats

RANGE AND DISTRIBUTION

The range of the LLNB extends from El Salvador, in Central America, through western Mexico, and to southern Arizona and southwestern New Mexico (USFWS 2005). In Arizona, the LLNB is found from the Picacho Mountains in the north to the Agua Dulce Mountains in the southwest and the Galiuro and Chiricahua Mountains in the southeast (Hinman and Snow 2003) .

POPULATION STATUS AND THREATS

Range-wide Population Status and Threats. The LLNB is currently federally listed as endangered and is a species designated as Wildlife of Special Concern in Arizona by the AZGFD. Federal listing in 1988

(USFWS 1998) was based on the reduction of the number of maternity colonies and declines in the size of remaining maternity colonies in Arizona and Sonora as a result of roost exclusion and disturbance (Hinman and Snow 2003). Additionally, it was believed that the LLNB might have been negatively affected over large areas of northern Mexico by reductions in the availability of native agaves from harvesting for local manufacture of mescal and tequila (USFWS 2007). Heavy browsing on newly emergent flower stalks of agaves by both cattle and deer also has been suggested as possibly decreasing foraging opportunities and thus contributing to declines in these bats (USFWS 2007). However, despite the listing of the species, Cockrum and Petryszyn (1991) found little evidence to indicate a long-term decline in *Leptonycteris* populations in Arizona, New Mexico and Sonora. More recent surveys have indicated that population sizes are much larger than those reported in the 1980s (Hinman and Snow 2003). According to the USFWS (2005), “The current population numbers of LLNBs exceed the levels known and recorded at the time of listing in 1988. In general, the trend in overall numbers has been stable or increasing in both the United States and Mexico.”

Arizona Population Status and Threats. Arizona is at the extreme northern edge of the LLNB distribution. Within the state, LLNBs are known to occur from the international border with Mexico north to the Picacho Mountains, and from the Chiricahua Mountains west to the Agua Dulce Mountains (AZGFD 2011). Loss of agaves by grazing, agricultural harvest, and development have reduced foraging habitat for LLNBs in Arizona (USFWS 2007). Loss and disturbance of roost sites also pose a significant threat to LLNBs and can occur through recreational caving and mine exploration, closure of abandoned mines for hazard abatement, renewed mining, vandalism; and exclusion of bats (USFWS 2007). In some locations, efforts are underway to protect known and potential roosts (USFWS 2007).

White-nose Syndrome poses a significant potential threat to the LLNB and is a disease named for the fungus that appears on the muzzle and other body parts of hibernating bats. Since first identified in 2007, White-nose Syndrome has caused the death of more than 5.5 million bats in eastern North America from 20 states and four Canadian provinces (USFWS 2012).

2.1.2 Ecology

LIFE HISTORY

LLNBs are migratory and do not hibernate (AZGFD 2011). According to Hinman and Snow (2003)

They migrate in September /October to Mexico, where they breed and spend the winter. Females arrive in Arizona pregnant and as early as the second week in April. They join other females in maternity colonies late in pregnancy sometime in April or early May. Maternity colonies may number in the hundreds to the thousands and in a few places in the tens of thousands. Males form separate, smaller colonies. One young per female per year is born during May. Young can fly by the end of June. Maternity colonies generally break up by the end of July.

HABITAT REQUIREMENTS

Habitat associations of the LLNB vary seasonally in Arizona. From April to July, the LLNB is known to occupy Semidesert Grasslands and Sonoran Desertscrub at elevations below 3,500 ft (1,067 m) (AZGFD 2011). From July to late September or early October, LLNB migrate to Madrean evergreen woodland (oak transition regions) at elevations up to 5,500 ft (1,676 m) (AZGFD 2011). Within these plant communities, LLNBs require two critical resources: Suitable day roosts and sufficient concentrations of food plants. The distribution of these resources will determine where these bats specifically occur.

In Arizona, LLNB feed on flowers and the fruits of saguaro and organ pipe cactus (*Stenocereus thurberi*) in early summer. Later in the summer and early autumn, the species feeds on agave flowers – Palmer’s agave (*Agave palmeri*), Parry’s agave (*A. parryi*), desert agave (*A. deserti*), and amole (*A. schotti*) (AZGFD 2011; USFWS 2005). Nectar, pollen, and fruit of columnar cacti provide nearly all of the energy and nutrients obtained by pregnant and lactating females roosting in the Sonoran Desert in the spring and early summer (USFWS 1995). A few insects may be eaten incidentally when feeding on nectar (Hinman and Snow 2003). LLNB have been reported to visit hummingbird feeders at night in the Huachuca, Chiricahua, and Santa Rita Mountains (Hinman and Snow 2003), as well as the Greater Tucson metropolitan area (Lowery *et al.* 2009). During winter in Mexico, primary food plants as identified by pollen appear to be *Ceiba*, *Bombax*, and *Ipomoea* (AZGFD 2011). The spring migration of the LLNB from central Mexico northward is thought to follow the sequential south to north blooming of certain flowers (AZGFD 2011).

LLNB leave daytime roosts about an hour after sunset to feed (AZGFD 2011). After feeding, they fly to night roosts, which may be different from day roosts, to rest and groom (AZGFD 2011). As they groom, they remove the pollen sticking to their fur with their claws and then lick it off their claws. This ingested pollen provides proteins and other nutrients not obtainable from nectar (AZGFD 2011). LLNB can travel long distances (up to 40-plus miles each night) to use available forage resources. For day roosts, LLNB use caves and mine tunnels (USFWS 2005). It appears to be the most dependent of the North American bat species on the availability of inactive mines, and most Arizona records are from inactive mines. During their 2006-2008 study, Lowery *et al.* (2009) identified four day roosts within the Tucson basin region, including the Saguaro National Park roost, the Aqua Caliente roost, the Catalina roost, and the Empire roost. No LLNB day roosts were found in the Avra Valley HCP Permit Area or Avra Valley generally. Documented LLNB roosts are found within foraging distance of the Avra Valley, approximately 25 miles to the east and 30-40 miles to the west.

Characteristics that render potential roost sites “suitable” for LLNB are unclear, but maternity roosts tend to be very warm and poorly ventilated, at least where the young are actually raised. These characteristics could reduce the energetic requirements of adult females while they are raising their young (USFWS 1995). Another factor that may influence roost suitability is interactions with other bat species. LLNBs have been documented sharing roost sites with up to four other bat species; however, it typically roosts separately from the other bats, such as by moving deeper into the cave or mine to roost (USFWS 1995). At the Patagonia bat cave, LLNB do not arrive in significant numbers until late July, after a large maternity colony of Cave Myotis (*Myotis velifer*) has moved on from the site (USFWS 1995). Like many other bats, individuals of *Leptonycteris* use night roosts for digesting their meals. According to the USFWS (1995), night roosts can be the same roosts used during the day or bats may use other caves or mines, or even rock crevices, trees and shrubs, and occasionally, abandoned buildings. In their 2006-2008 study, night roosts included a large, non-native tree (Tamarisk), dark carpports, porches, dark portions of a vaulted entrance to a residence, an abandoned house, a barn, and eaves of a church building (Lowery *et al.* 2009).

The choice of roost sites and migration routes are also influenced by proximity to foraging habitat. The availability of any roost site is likely the most critical consideration; however, the suitability of that site and its ability to support bat populations over the long-term depends on the availability and persistence of sufficient foraging habitat nearby (USFWS 2005). During their study of the Greater Tucson region, AZGFD researchers found that, of the LLNB they tracked, movements were between 1.5 to 25 mi (2.4 km to 40 km) each way. However, they note that other studies have shown the species to commute a total of 62 mi (100 km) per night (Lowery *et al.* 2009).

2.1.3 Permit Area Baseline Conditions

PERMIT AREA POPULATION STATUS AND IMPORTANCE TO THE SPECIES

According to the AZGFD Heritage Data Management System (HDMS) (AZGFD 2011), there are no known roost sites within the Avra Valley HCP Permit Area. Moreover, there is very little potential for colonies to occur in the Permit Area given the lack of mines and caves along with a minimal number of structures to serve as roosts. In early 2007, USFWS staff addressed the TAC with regard to the status of LLNB within the Avra Valley HCP Permit Area. Scott Richardson of the USFWS reported that the species does occur within the Permit Area and that there is potential for incidental “take” to occur. He added that in terms of take, the needs of LLNB are: 1) roost sites (maternity, transition, night roosts); 2) foraging resources (pollen, nectar, saguaro fruits, agave nectar and pollen, and hummingbird feeders); and 3) habitat connectivity (ability to move between forage resources and roosts). Mr Richardson said that any disturbance that prevents or inhibits LLNB use of movement corridors, currently the primary use of the Permit Area by LLNB considered in the HCP, such as through fragmentation of washes and drainages, would constitute “take” (City of Tucson 2007). LLNB roosts are located west and east of the Permit Area within foraging distance of the species and forage resources are found in the mountain ranges and bajadas adjacent to the Permit Area. Therefore, it is reasonable to predict that the species will use the Permit Area to access available roost and forage resources.

MODELED HABITAT

The LLNB habitat model for the Avra Valley HCP Permit Area is based on the presence of contiguous xeroriparian vegetation needed for movement between forage and roost resources outside of the Permit Area. As documented by AZGFD (Lowery *et al.* 2009) and according to Scott Richardson, LLNB move through native vegetation within riparian areas (City of Tucson 2007). The Avra Valley HCP habitat model for the LLNB was developed through discussions with TAC members and USFWS personnel. To create this habitat model, detailed aerial orthophoto images were used to identify lands in the HCP Permit Area that provide sufficient riparian corridors for LLNB movement. The LLNB habitat model is the same for three other covered species that use riparian areas and totals 2,197 ac (889 ha).

2.1.4 HCP Biological Goals and Objectives

Implementation of the proposed covered activities could result in the loss of potential LLNB movement habitat in the HCP Permit Area. As there are no known LLNB roosts within the Permit Area, the potential for direct take of LLNB is very low. Take in the form of harm or harassment is anticipated related to the bats having to travel longer distances and the associated increase in energetic demands for bats as they seek alternative foraging sites, or simply through the loss of access to available forage and roost resources. Specifically, the City’s biological goal for LLNB is to contribute to maintaining regional populations. The City’s specific objectives for LLNB are to maintain long-term availability of movement corridors and minimize potential for mortality

2.2 Pale Townsend's Big-Eared Bat (*Corynorhinus townsendii pallescens*; PTBB)

2.2.2 Population Range, Distribution, Status, and Threats

RANGE AND DISTRIBUTION

The range of PTBB includes most of western North America from southern British Columbia south along the Pacific coast to southern California, from the Black Hills of South Dakota to western Texas, and through the Mexican uplands to the Isthmus of Tehuantepec in southern Mexico (Hinman and Snow 2003). However, it is not known to occur within the Baja California Peninsula and isolated occurrences in the southern Great Plains, Ozark Mountains, and Appalachian Mountains are considered to be relict populations (Hinman and Snow 2003).

While the species is widespread throughout Arizona, it is not considered common anywhere (see Arizona Population Status and Threats section below). In Arizona, it is least common in northeastern grasslands and southwestern desert areas (Hinman and Snow 2003). It has been found from 550 to 7,520 ft (168 to 2,294 m) in elevation. Most records, however, come from above 3000 ft (915 m) (Hinman and Snow 2003). In Arizona, PTBB have been reported in Cochise, Coconino, Gila, Graham, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, and Yuma counties (AZGFD 2003).

PTBB is one of five subspecies currently recognized under *C. townsendii* (AZGFD 2003; BISON-M 2009a). Three of the subspecies, *C. t. virginianus* (Virginia Big-eared Bat), *C. t. ingens* (Ozark Big-eared Bat), and *C. t. australis*, do not occur in the western U.S. (BISON-M 2009a; Kunz and Martin 1982). *C. t. townsendii*, known variously as the Pacific Western Big-eared Bat or Western Big-eared Bat, occurs in Washington, Oregon, California, Nevada, Idaho, and possibly northwest Utah and southwest Montana (BISON-M 2009a). *C. t. pallescens* is found in the same states as *C. t. townsendii* and also occurs in Arizona, Colorado, New Mexico, Texas, and Wyoming (BISON-M 2009a). However, taxonomic understanding of this complex is still evolving, and somewhat recent work suggests that *C. t. pallescens* will likely become *C. t. townsendii*. *C. t. pallescens* will be designated as the subspecies restricted to northern New Mexico and Colorado, while *C. t. townsendii* will be the subspecies in Arizona (Piaggio and Perkins 2005).

Although there are areas in which only one of the two western subspecies apparently occurs, the two subspecies intergrade throughout much of their range and, in these intergrade zones, individuals cannot easily be assigned to subspecies (BISON-M 2009a; Pierson and Rainey 1998). As a result, some authors do not distinguish between the two western subspecies, instead choosing to lump them into a single taxon, *C. t. townsendii* or the Townsend's Big-eared Bat (Hutson *et al.* 2001; Pierson and Rainey 1998).

POPULATION STATUS AND THREATS

Range-Wide Population Status and Threats. The two eastern subspecies, *C. t. virginianus* and *C. t. ingens*, were listed as endangered in 1979, primarily as a result of severe population declines and restriction of breeding habitat to only a few caves (USFWS 1979). In 1994, *C. t. pallescens* and *C. t. townsendii* were recognized as Category 2 Federal Candidates, now referred to as Species of Concern (BISON-M 2009a).

The overall population status and trend of the PTBB is uncertain. For the purposes of this HCP, no studies within the last 10 years have been found that document range-wide trends. To estimate population trends for bats, USGS researchers suggest that major improvements are needed (O'Shea *et al.* 2003). They state:

“With the possible exception of certain small colonies in which individual bats can be completely counted, attempts to estimate bat population trends in the United States and territories have relied heavily on use of indices at local sites. The use of indices and “convenience sampling” to estimate population size and trends in animals in general is inferior to more statistically defensible methods and can lead to incorrect inferences (Thompson *et al.* 1998, Anderson 2001). New techniques must be explored and modern statistical designs applied in order to improve the scientific basis for conclusions about future bat population trends.”

The PTBB is threatened by human disturbance at major maternity roosts; mining, closure and sealing of abandoned mines; vandalism at maternity and hibernation sites; loss of foraging habitat; and possibly, exposure to pesticides (AZGFD 2003). PTBB are extremely sensitive to human disturbance, and simple entry into a maternity or hibernation roost can result in the abandonment of the site or increased potential for mortality (Hinman and Snow 2003).

Arizona Population Status and Threats. Population trends for Townsend’s Big-eared Bats in Arizona are unclear, but losses of and reductions in bat numbers at maternity colonies have been reported (Hinman and Snow 2003). Based on historical information, Pierson *et al.* (1999) described 13 maternity roosts in Arizona. These 13 sites represented 10 separate colonies, totaling about 1,000 adult females. More than one-half of the sites were in mines, and only four were known to contain more than 200 individuals (Recon 2002). According to a report from 2002, only five to seven maternity colonies, ranging in size from 100 to several hundred bats, were currently known (Recon 2002). According to the USFWS, a relatively new maternity roost has been discovered within the proposed Rosemont Mine footprint in the northeast corner of the Santa Rita Mountains (Richardson 2012). The largest colony in Arizona, Stanton’s Cave in the Grand Canyon, disappeared in the 1970s shortly after the roost site was gated to protect archaeological and paleontological remains. After the gate was modified in the mid-1980s, several bat species (but not *C. townsendii*) were observed inside the site (Recon 2002). As of 2003, bat use of these sites was not known (AZGFD 2003).

Maternity sites for the species have been found at Agua Caliente Cave, Dixie Mine, Crystal Cave, Stanton’s Cave in Grand Canyon National Park, the Chiricahua Mountains, a cave in Sycamore Canyon, a cave near Union Pass, and a cave in Hereford, although not all these sites remain in use (BISON-M 2009b; Castner *et al.* 1994; Dalton and Dalton 1994). PTBB hibernacula have been located within the Gold Button Mining Claim in Prescott National Forest (one site) and along the Bill Williams River (two sites) (Castner *et al.* 1994; Snow *et al.* 1995).

As with LLNB, White-nose Syndrome could become a significant threat to hibernating PTBB, if it spreads west from eastern North America.

2.2.2 Ecology

LIFE HISTORY

PTBB are active in summer and hibernate in winter (AZGFD 2011). They mate in autumn and winter and sperm is stored in the female’s reproductive tract until spring. Fertilization occurs at the time of ovulation. Males produce few sperm in their first autumn and are considered to be largely sterile and probably non-breeding. In contrast, females breed in their first autumn and bear young the following summer. Gestation varies from 56 to 100 days after fertilization, depending on climatic conditions and the resultant metabolic rates of the females (i.e., development slows when females go into daily torpor) (Hinman and Snow 2003). In summer, females form maternity colonies of 12 to about 200, while male roosting is thought to be solitary (Hinman and Snow 2003).

According to Hinman and Snow (2003), “In Arizona, females are pregnant in April, with maternity colonies reported in late April. Indirect evidence (near term embryos and presence of newborns) indicates the single young is born in June in Arizona. Dates of birth vary considerably throughout the bat’s range, anywhere from late April to mid-July. In Arizona, most young are flying by the end of July. . . Nursery colonies begin to disperse during August.” Banding studies indicate high roost and group fidelity and colonies will, if undisturbed, use the same site indefinitely. Most, if not all, females return to their natal group each breeding season resulting in multi-generational, matrilineal colonies (Pierson and Rainey 1998).

In terms of mortality rates, the average number of yearling females that return to their natal site in the following breeding season is between 38 and 45 percent. In succeeding years, the survival rate rises to around 75 percent (BISON-M 2009b; Pierson and Rainey 1998). Five years is the average age of PTBB within a population. Band recoveries suggest a maximum longevity of 16 years (AZGFD 2011). Little is known about the causes of mortality in PTBB; however, predation of the bats by Domestic Cats (*Felis catus*), Black Rats (*Rattus rattus*), and Ringtails (*Bassariscus astutus*) has been observed. Interspecific competition and disease are not considered to significantly impact populations of this species (BISON-M 2009b). Since PTBB is easily disturbed, arousal during winter hibernation could lead to starvation of a bat from the expenditure of 10 to 30 days of fat reserves (BISON-M 2009b).

The species forages by echolocation, capturing insects in flight and sometimes from leaves along forest edges (BISON-M 2009b; Hinman and Snow 2003). Studies of stomach contents from bats in the Southwest have revealed that their diet consists primarily of Lepidopterans, with small quantities of Coleoptera, Diptera, Hemiptera, Hymenoptera, Homoptera, Neuroptera, Trichoptera, and Plecoptera (BISON-M 2009b). Small moths, 0.12 to 0.39 in (3 to 10 mm) are the primary food of these bats (AZGFD 2003).

The species forages over desertscrub, riparian habitats, wetlands or open water, typically within 15 mi (24 km), and often within 4 to 5 mi (6.5 to 8 km) of the roost sites (AZGFD 2003; Hinman and Snow 2003). However, studies by Rick Sherwin indicate that *C. townsendii* may travel large distances while foraging, including movements of over 93 mi (150 km) during a single evening (Piaggio *et al.* 2009). Following a late-night peak of activity, they usually go to a night roost. They may forage again in the early morning, as they are reported not to return to their daytime roosts until shortly before sunrise (AZGFD 2003).

HABITAT REQUIREMENTS

In Arizona, summer day roosts include caves and mines in areas of desertscrub, oak woodland, oak/pine woodland, piñon/juniper woodland, and coniferous forest (Hinman and Snow 2003). PTBB prefer to hang from open ceilings at roost sites; they do not use cracks or crevices. According to Hinman and Snow (2003), “At maternity roosts, these bats apparently prefer the dim light near the edge of the lighted zone. In Arizona, emergence times and especially return times and patterns probably vary, as they do elsewhere, depending on insect activity and development stage of young.” For PTTB, night roosts are often abandoned buildings (AZGFD 2003) and, more generally, for Townsend’s Big-eared Bats, night roosts occur at a variety of sites, including caves, open buildings, rock shelters, bridges, cement culverts, beneath roads, and mines (Pierson *et al.* 1999).

In winter, big-eared bats hibernate in cold caves, lava tubes, and mines. Of all North American bats, this species seems to be the most dependent on availability of abandoned or inactive mines for roost sites (BISON-M 2009b). In Arizona, hibernation sites are mostly in upland and mountainous areas, from the vicinity of the Grand Canyon to the southeastern part of the state. Winter roosts generally contain fewer individuals than summer roosts (i.e., usually singles or small groups, and in Arizona occasionally as many as 50) (Hinman and Snow 2003). For hibernation, they prefer roost sites where the temperature is 54° F

(12° C) or less and these sites may be near entrances or in well-ventilated areas of the roost (Hinman and Snow 2003). During the winter, the bats may rouse themselves and move to other locations in the roost to be in areas of stable cold temperatures (Hinman and Snow 2003). Roost selection appears to be limited by the temperature within potential sites (BISON-M 2009b).

2.2.3 Permit Area Baseline Conditions

PERMIT AREA POPULATION STATUS AND IMPORTANCE TO THE SPECIES

According to the AZGFD HDMS, there are no known roost sites within the City HCP Permit Area (AZGFD 2003). Given the low elevations and relatively flat topography of the Permit Area, there is also little potential for undocumented roost sites (Scott Richardson, pers. comm.). In Pima County, this species is known to use Colossal Cave Mountain Park, Tucson Mountain Park, Organ Pipe Cactus National Monument, and Saguaro National Park (Pima County 2000). A maternity roost has also been discovered in the Santa Rita Mountains at the proposed Rosemont Mine site (Richardson 2012). The level of use and potential importance to PTBB of habitats in the Avra Valley HCP Permit Area is uncertain. However, given the distances this bat may travel while foraging, the entire Permit Area is within potential foraging distance of several known roosts. Thus, the importance of the Permit Area for the species is as a potential movement and foraging corridor.

MODELED HABITAT

The PTBB habitat model was developed with the input of the City's HCP TAC and their understanding of PTBB foraging needs. Given the species' foraging preference for small moths (some Geometrid moth larvae forage on mesquite, making that resource a valuable source of forage), the TAC recommends that protection of the xeroriparian vegetation and associated watercourse channels. These areas provide a high level of vegetation species diversity as well as ecotones between and adjacent to patches of vegetation within wash corridors. The Avra Valley HCP habitat model for the PTTB was developed through discussions with TAC members and USFWS personnel. To create this habitat model, detailed aerial orthophoto images were used to identify lands in the HCP Permit Area that provide sufficient foraging corridors for the PTBB. Based on this model, 2,197 ac (889 ha) of potential PTBB habitat occurs in the Avra Valley Permit Area. This is the same habitat footprint as that of the LLNB, WYBC, and CFPO.

2.2.4 HCP Biological Goals and Objectives

Implementation of anticipated covered activities may result in the loss of potential PTBB foraging habitat in the HCP Permit Area. Direct take of foraging bats is not likely. Mortality, resulting from impacts of maintenance or treatment activities, may occur when bats are occupying architectural elements of structures (e.g., eaves of a maintenance building) as night roosts. The indirect effects of this development may impact the bat through the reduction in its native prey base, predation by domestic animals, and disturbance by humans. Specifically, the City's biological goal for PTBB is to contribute to maintaining regional populations. The City's specific objectives for PTBB are to maintain potential foraging and movement opportunities and minimize potential for direct take.

2.3 Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*; WYBC)

2.3.1 Population Range, Distribution, Status, and Threats

RANGE AND DISTRIBUTION

Two subspecies of the Yellow-billed Cuckoo are currently recognized in North America by the American Ornithologists' Union (AOU 1957), one in the east and one in the west. WYBC, the only subspecies of Yellow-billed Cuckoo that occurs in Arizona, was formerly widespread and locally common in California and Arizona, locally common in a few river reaches in New Mexico, common very locally in Oregon and Washington, generally local and uncommon in scattered drainages of the arid and semiarid portions of western Colorado, western Wyoming, Idaho, Nevada, and Utah, and probably uncommon and very local in British Columbia (USFWS 2001). Currently, the WYBC is known to breed in California, Arizona, New Mexico, extreme western Texas, Sonora, Chihuahua, and south irregularly to Zacatecas, Mexico (Howell and Webb 1995; Hughes 1999; Russell and Monson 1998). It winters in north and central South America east of the Andes (Hughes 1999).

POPULATION STATUS AND THREATS

Federal Status. The USFWS considers the Western population of Yellow-billed Cuckoo a distinct population segment based on the physical, ecological, and behavioral discreteness of the population segment and determined that listing this distinct population segment as threatened is warranted but precluded by higher-priority listing actions (USFWS 2001). The species is currently a candidate species under the ESA.

Range-Wide Population Status and Threats. Like many riparian obligate species, the breeding distribution and number of WYBC has declined in the past 80 years throughout Western North America (AZGFD 2002). It disappeared from British Columbia in the 1920s, from Washington in the 1930s, from Oregon in the 1940s, and from northernmost California in the 1950s. It is extremely rare in the interior West. The only remaining Western "strongholds" are three small populations in California, scattered populations in Arizona (especially on the San Pedro River) and New Mexico (especially the Gila River), and an unknown number of birds in northern Mexico (BISON-M 2009b). The primary cause of WYBC declines is loss of riparian forest habitat throughout the west (USFWS 2005).

Arizona Population Status and Threats. Arizona probably contains the largest remaining WYBC population among states west of the Rocky Mountains and is therefore considered critically important since breeding populations throughout the West have been extirpated or greatly reduced (Recon 2002; USFWS 2001). In a 1998-1999 study (Corman and Magill 2000), WYBC were detected along 25 main drainages in Arizona, with the major concentrations occurring along the Agua Fria, San Pedro, and Verde Rivers, and the Cienega and Sonoita Creeks. It is considered a Species of Special Concern within the state because it has been extirpated from most Lower Sonoran localities, especially the Colorado River valley, by destruction of riparian gallery forests (AZGFD 2002). Loss of mature cottonwood-willow riparian habitat through degradation, modification, and fragmentation is the primary threat to the remaining populations of WYBC in central and southern Arizona (AZGFD 2002; Recon 2002). Major threats to this habitat include reclamation, flood control, and irrigation projects, urbanization and agricultural activities, and livestock grazing and OHV use within riparian habitats.

2.3.2 Ecology

LIFE HISTORY

The WYBC is a member of the family Cuculidae (cuckoos and roadrunners) in the order Cuculiformes, members of which share the common feature of zygodactyl feet. Of the six species of Cuculidae that breed in the U.S., two species, WYBC and the Greater Roadrunner, breed west of the Continental Divide (USFWS 2001).

The WYBC arrives on the breeding grounds beginning in mid- to late- May, initiating nesting activity in early- to mid-June (southern California), through August, and frequently into September (southeastern Arizona) (Corman and Magill 2000). Nesting peaks in mid-June through August (Johnson *et al.* 2008). Breeding may be triggered by an abundance of insects (caterpillars) or other large prey, which form the bulk of the species' diet (AZGFD 2002; Recon 2002). Populations vary substantially in response to fluctuations in caterpillar abundance (BISON-M 2009b). Prey abundance may lead to the production of excess eggs and thus to brood parasitism, where the WYBC's excess eggs are laid in other birds' nests (Recon 2002).

Both male and female WYBC build the nest, generally from 4 to 30 ft (1.2 to 9.1 m) above the ground, often in willow or mesquite thickets (AZGFD 2002). West of the Continental Divide, nesting occurs almost exclusively close to water, and biologists have hypothesized that the species may be restricted to nesting in moist river bottoms in the West because of humidity requirements for successful hatching and rearing of young (Rosenberg *et al.* 1991). The nest is well concealed by surrounding foliage, and consists of an unkempt stick platform, thinly lined with leaves, mesquite, and cottonwood strips, grass, and catkins, with a depression to hold the eggs (AZGFD 2002; Ehrlich *et al.* 1988). The clutch size is usually two or three eggs, and the development of the young is very rapid, with a breeding cycle of 17 days from egg laying to fledging of young (USFWS 2001). The male feeds the early fledglings, while the female feeds the late fledglings (Ehrlich *et al.* 1988).

Caterpillars form the main component of the diet of WYBC, with cicadas, grasshoppers, birds' eggs, frogs, lizards, ants, beetles, wasps, flies, and fruit being consumed in smaller amounts (Ehrlich *et al.* 1988; Howe 1986; Hughes 1999).

HABITAT REQUIREMENTS

WYBC appears to require large blocks of riparian habitat for nesting (USFWS 2005), particularly woodlands with Fremont cottonwoods and Goodding willows (USFWS 2001). In Arizona, the species occurs from 90 to 6,710 ft (27–2,045 m) above mean sea level, preferring streamside cottonwood/willow groves and larger velvet mesquite bosques for migrating and breeding. It is rarely observed as a transient in xeric desert or urban settings (AZGFD 2002). Rosenberg *et al.* (1991) speculated that in the Lower Colorado River Valley, mature cottonwoods, with willows forming a sub-canopy layer, provide the best shade of any riparian habitat against the extremely high midsummer temperatures. Salt cedar and open mesquite bosques are inadequate in buffering lethal temperatures. In addition, standing water in many cottonwood-willow groves may help to lower air temperature by evaporative cooling. Thus, the decline in WYBC populations may be attributed largely to the removal of necessary thermal cover (Rosenberg *et al.* 1991). This speculated importance of cooler microclimates was supported by a 2007 study of 40 sites along the Lower Colorado River and its tributaries, in which the authors found that “. . . , yellow-billed cuckoos did use habitats that were consistently cooler during the day and more humid at all times compared to unoccupied habitats” (Johnson *et al.* 2008).

WYBC may be found in less than optimal habitat during migration. Even though such habitats do not support breeding, they are still important for survival of the species (Magill and Halterman 1999). Potential migration habitat includes areas of Sonoran Riparian Deciduous Forest, Cottonwood-Willow Series and Sonoran Riparian Scrub with large mesquites that are less well developed than those in breeding habitat. No minimum size for migration habitat has been determined, and it is possible that only a few trees would be sufficient for migrating birds (T. Corman, AZGFD, pers. comm.).

2.3.3 Permit Area Baseline Conditions

PERMIT AREA POPULATION STATUS AND IMPORTANCE TO THE SPECIES

Riparian vegetation associated with the Brawley and Blanco Washes provides potential migratory stopover habitat for WYBC within the Avra Valley HCP Permit Area. Portions of City-owned parcels bisected by the effluent dominated Santa Cruz River have potential breeding habitat, although no breeding has been documented. However, these hydroriparian areas are outside of the Avra Valley HCP Permit Area.

MODELED HABITAT

Based on the current understanding of the WYBC's habitat preferences, there is no potential breeding habitat within the Avra Valley HCP Permit Area. All of the WYBC reported in the Permit Area are assumed to be migratory, using existing riparian patches as stopover habitat as they pass through the area. Natural conditions are not likely to produce any riparian areas of sufficient size and structure to support breeding birds. However, riparian vegetation throughout the Permit Area may be used for WYBC migratory stop-over habitat, which is the basis for the TAC's model. The Avra Valley HCP habitat model for the WYBC was developed through discussions with TAC members and USFWS personnel. To create this habitat model, detailed aerial orthophoto images were used to identify lands in the HCP Permit Area that provide sufficient potential migratory stopover habitat for the species. Based on this habitat model, 2,197 ac (889 ha) of WYBC habitat occur in the Avra Valley HCP Permit Area. This is the same potential habitat footprint as that of the LLNB, PTBB, and CFPO.

2.3.4 HCP Biological Goals and Objectives

As described above, the current level and pattern of use of the Avra Valley Permit Area by WYBC is unclear. A few WYBC have been documented migrating through or near the Permit Area, but specific use of habitats in the Permit Area for migration has not been verified. Based on this information, the City's biological goals and objectives for WYBC in the Permit Area primarily relate to providing conditions to support migration. Specifically, the City's biological goal for the WYBC is to contribute to maintaining local and regional populations. The City's specific objectives for WYBC are to maintain long-term availability of migratory stop-over habitat, and minimize potential for mortality.

2.4 Cactus Ferruginous Pygmy-owl (*Glaucidium brasilianum cactorum*; CFPO)

2.4.1 Population Range, Distribution, Status, and Threats

RANGE AND DISTRIBUTION

The Ferruginous Pygmy-owl (*Glaucidium brasilianum*) has a range that extends from the southern U.S. (Arizona and Texas) south to central Argentina (Cartron *et al.* 2000a). CFPO, a subspecies of *Glaucidium brasilianum*, has a distribution described as “south of central Arizona and southern Texas in the United States, south through the Mexican States of Sonora, Sinaloa, Nayarit, Jalisco, Colima, and Michoacan on the west and Nuevo Leon and Tamaulipas on the east” (USFWS 2011).

Knowledge of the current distribution of CFPO in Arizona is limited. Historically, CFPO occupied areas of south-central Arizona from New River (approximately 35 mi (56 km) north of Phoenix), south to the U.S.–Mexico border, west to southern Yuma County, and east to the San Pedro River and the confluence of the Gila and San Francisco Rivers (approximately 100 mi (161 km) northeast of Tucson) (USFWS 2003a; Cartron *et al.* 2000a). Based on surveys in the 1990s, the Arizona population appeared to have a patchy distribution, with most CFPOs located in one of four general areas: northwest Tucson and southern Pinal County, Organ Pipe Cactus National Monument, the Tohono O’odham Nation, and Altar Valley (Richardson *et al.* 2000). The patchy, dispersed nature of the CFPO population in Arizona suggests that the overall population may function as a metapopulation, with local groups of owls functioning as subpopulations (USFWS 2003a).

POPULATION STATUS AND THREATS

In March 1997, the Arizona population of the CFPO was federally listed as endangered and as a distinct population segment (USFWS 1997). However, on May 15, 2006, the CFPO was delisted as a result of litigation and subsequent USFWS review (USFWS 2006). In 2011, prompted by another petition to list the species, the USFWS determined that listing the species was not warranted because the species is not in danger of extinction now or within the foreseeable future throughout all or a significant portion of its range based on currently available information (USFWS 2011). However, the pygmy-owl remains a species of concern for the USFWS and is listed on the Arizona Game and Fish Department’s list of Wildlife of Special Concern in Arizona (AZGFD 1996).

Losses and fragmentation of upland vegetation from large-scale residential and commercial developments have been identified as an important threat to CFPO in Arizona (USFWS 2003a). Activities that may affect habitat include: clearing vegetation, indirect effects of urbanization, agricultural encroachment, road-building, high-impact recreation, water diversion or impoundment, channelization of drainages, groundwater pumping, livestock grazing, and hydrologic changes resulting from various land use practices (USFWS 2003a).

CFPOs are susceptible to predation from a variety of species that occur in the wild, such as Great Horned Owls (*Bubo virginianus*), Harris’ Hawks (*Parabuteo unicinctus*), Cooper’s Hawks (*Accipiter cooperi*), and Screech Owls (*Otus* sp.). Other potential threats include direct and indirect human-caused mortalities, such as collisions with cars, glass windows, fences, and power lines (USFWS 2003a). The spread of non-native, invasive buffelgrass and the resultant degradation of native vegetation communities and increased risk of wildfire also pose a threat to the species. The USFWS states that: “The impacts of buffelgrass establishment and invasion are substantial for the pygmy-owl in the United States and Sonora because conversion results in the loss of all important habitat elements, particularly columnar cacti and trees that

provide nest sites” (USFWS 2011). Additional natural and human induced factors that could affect the subspecies include low levels of genetic variation, possible contamination from pesticides, potential competition with other birds for nesting cavities, and concentration of recreational birding activities at remaining known locations (USFWS 2002, 2003b). Human activities near nest sites at critical periods of the nesting cycle also can cause CFPOs to abandon their nests (USFWS 2003a), although there is currently no known evidence to support this. Due to the CFPO’s short-distance, low-level flight behavior, habitat also can be compromised by the presence of barriers to movement, including wide, high traffic roads with inadequate cover and perch structure on either side, interstate highways, canals, certain types of fencing, and alterations of functional drainages (Pima County 2001).

2.4.2 Ecology

LIFE HISTORY

CFPOs are primarily diurnal with crepuscular tendencies – most activity occurs during daylight hours, with peaks at dawn and dusk (USFWS 2011). A CFPO typically flies in quick bursts, moving only a short distance from one perch to another (Cartron *et al.* 2000b). The CFPO typically hunts from perches in trees with dense foliage, using a perch-and-wait strategy. The CFPO also hunts by inspecting tree and saguaro cavities for other nesting birds. Its diverse diet includes birds, lizards, insects, and small mammals. However, the owls use different groups of prey species on a seasonal basis (USFWS 2011).

CFPOs are considered non-migratory throughout their range (USFWS 2011). They are highly territorial, with territory sizes between 7.5 and 57 ac (3 and 23 ha) during the breeding season and winter home ranges as large as 279 ac (113 ha) (Pima County 2001; USFWS 2003a). A 280-ac (113-ha) home range is currently considered necessary for CFPOs to meet their life history requirements on an annual basis (USFWS 2003a).

CFPOs have been documented nesting as yearlings, although it is unknown whether or not this is typical. Both sexes breed annually thereafter (USFWS 2011). Territories normally contain several nest-roost cavities from which a responding female selects a nest. Hence, cavity density could be a fundamental criterion for territory selection (USFWS 2011). In the wild, CFPO lifespan has been documented from 7 to 9 years and 10 years in captivity (USFWS 2011).

HABITAT REQUIREMENTS

CFPOs are secondary cavity nesters, mostly using cavities created by woodpeckers in giant cacti, but also in trees (USFWS 2011). Historically, CFPOs in Arizona nested in Fremont cottonwood-mesquite forests and woodland sites (USFWS 2011). More recently (1996 – 2008), all but two known pygmy-owl nest sites were in saguaro cacti (USFWS 2011).

CFPOs require habitat linkages, within and among territories, for movement and dispersal. Habitat linkages consist of continuous cover or patches of trees and large shrubs spaced at regular intervals, to provide concealment and protection from predators and mobbing. These areas also provide shade and cover to moderate temperature extremes (USFWS 2003b).

In their search for mates, food, or territories, dispersing CFPOs may stop temporarily in appropriate over-wintering habitats. For CFPOs, over-wintering habitats are defined as riparian areas that are more extensive in size and support higher vegetation densities – thereby providing greater cover and prey densities – than dispersal habitats. Although saguaros may be present in the vicinity, the presence of saguaros is not a requirement of either over-wintering or dispersal habitats (S. Richardson, USFWS, pers. comm.).

2.4.3 Permit Area Baseline Conditions

PERMIT AREA POPULATION STATUS AND IMPORTANCE TO THE SPECIES

There have been no CFPO breeding or over-wintering territories documented within the Avra Valley HCP Permit Area. The only recorded use of the Permit Area is a 2005 AZGFD record of an unmated dispersing female on the Duval/Pennzoil Farm parcel in the Permit Area. The Duval/Pennzoil and Buckelew Farm properties fall within Unit 1 of what was once considered Critical Habitat for CFPO while it was listed as endangered. Portions of the Central Avra Valley Storage and Recovery Project property (CAVSARP) fall within what was once considered Critical Habitat Unit 2. Currently, the closest documented CFPO nest sites to the Permit Area are approximately seven miles west on the bajada of the Roskrige Mountains. The USFWS recognized that much of this area, including City-owned property, has been heavily impacted by grazing, agriculture, mining, and other uses and does not likely support breeding habitat for the CFPO. Retired agricultural lands in Avra Valley are considered by USFWS as providing habitat connectivity and potential dispersal corridors for CFPOs (USFWS 2002).

MODELED HABITAT

The Avra Valley HCP habitat model for the CFPO was developed through discussions with TAC members and USFWS personnel. To create this habitat model, detailed aerial orthophoto images were used to identify lands in the HCP Permit Area that provide sufficient vegetation density for dispersing and, perhaps, over-wintering CFPOs. Based on the City's habitat model 2,197 ac (889 ha) acres of potential dispersal / over-wintering habitat occur in the Avra Valley HCP Permit Area. This same model is used for the LLNB, PTBB, and WYBC.

2.4.4 HCP Biological Goals and Objectives

The City's biological goal and objectives for the CFPO relate to ensuring that covered activities within the Permit Area do not contribute to the permanent loss of the CFPO in the region. Specifically, the City's biological goal for the CFPO is to: Contribute to maintaining local and regional populations. The City's specific objectives for the CFPO are to maintain long-term availability of potential dispersal / over-wintering habitat, reduce barriers to movement, and minimize potential for mortality.

2.5 Western Burrowing Owl (*Athene cunicularia hypugaea*; WBO)

2.5.1 Population Range, Distribution, Status, and Threats

RANGE AND DISTRIBUTION

The WBO has a breeding range that extends from southern Canada, east to western Minnesota and eastern Texas, and south through Mexico, Central America and over most of non-rain forest South America to Tierra del Fuego (Howard 1996). The breeding range includes 13 of 15 Arizona counties, with no confirmed nesting in Gila and Santa Cruz Counties (Corman and Wise-Gervais 2005). Arizona also supports wintering WBOs, as documented during surveys in 2005 and 2006 (Grandmaison and Urreiztieta 2006). However, little is known about the winter range of the subspecies because of a limited number of banding recoveries.

POPULATION STATUS AND THREATS

Range-Wide Population Status and Threats. Estimates of population trends for many regions are inconclusive as result of high data variability and small sample sizes (Klute *et al.* 2003). Breeding Bird Survey trend estimates have shown population decreases in the northern half of the Great Plains and increasing populations in some southwestern deserts and the northwest interior of the U.S. However, small sample sizes, and inadequate sampling across the species' range limit the reliability of the Breeding Bird Survey data for this species (Klute *et al.* 2003).

Population declines have been associated with habitat loss due to urbanization as well as rodent control programs (Johnsgard 1988). While conversion to agricultural uses has also been associated with habitat loss (Johnsgard 1988), it should be noted that WBO relocation efforts by the non-profit organization, Wild at Heart, indicate that the presence of active agriculture in close proximity to natural or artificial burrows is desirable. According to Wild at Heart, translocated WBO tend to remain at sites near to active agriculture more often than at sites without active agriculture (City of Tucson 2008b). Fragmentation of existing habitat also poses a risk to owl populations. Fragmentation of habitat may result in reduced opportunities for unpaired owls to find mates, increased predator populations and vulnerability to predation, higher mortality rates among dispersing fledglings, and increased home range sizes (Klute *et al.* 2003). Although WBOs are relatively tolerant of human activity, there are human-related impacts, such as shooting and burrow destruction that adversely affect the owls (Haug *et al.* 1993; Zarn 1974). The tendency of these owls to fly low to the ground makes vehicle strikes a significant threat to the species (Klute *et al.* 2003).

Arizona Population Status and Threats. The WBO is widely distributed, but generally uncommon in Arizona (Brown 2001b). Relatively larger breeding populations in Arizona occur in the Tucson and Yuma regions (Estabrook and Mannan 1998), Casa Grande Ruins National Monument, and surrounding agricultural areas support a small population of WBO (Conway and Ellis 2004b). Within southern Arizona, WBO routinely nest in three distinct areas, including on open, flat ground of Davis-Monthan Air Force Base (AFB), within burrows along the banks of the Santa Cruz River, and along edges of agricultural fields near Marana and Coolidge (Conway and Ellis 2004a).

To the City's knowledge, no statewide population status assessment – other than the Breeding Bird Survey (Sauer *et al.* 2011) – has been attempted since the early 2000s and the results of these efforts are inconclusive. Brown and Mannan (2002) found that in the 2001 breeding season survey effort, burrowing owls were not found in 82.3 percent of the locations where they formally nested in Arizona. The authors did not extrapolate these results to be a decline throughout the state since the survey was limited to one year, was not state-wide, and there were limitations with the survey technique given the use of road transects and one-time visits (Brown and Mannan 2002). The 2003 USFWS Status Assessment for the species did not provide any more recent information other than a reference to Breeding Bird Survey results of no significant trends over any survey periods (Klute *et al.* 2003). More recently, Breeding Bird Survey estimated population trends for Arizona indicate a non-significant ($p > 0.1$) decreasing trend of 0.1 percent per year between 1966 and 2009 and a non-significant increasing trend ($p > 0.5$) of 4.5 percent per year between 1999 and 2009 (Sauer *et al.* 2011).

Brown (2001a) identified several threats to WBOs in Arizona, some of which include reduced habitat availability because of prairie dog and ground squirrel control programs, bubonic plague indirectly limiting habitat availability through effects to prairie dogs and ground squirrels, conversion and urban development of natural habitat and agricultural lands, overgrazing of rangelands resulting in a more woody species composition and destruction of burrows, reduction in prey, maintenance programs of agricultural irrigation and water resources canals that destroy burrows, urbanization – which increases

predation by domestic and/or feral animals and the potential for vehicle strike, reduction in prairie dog and ground squirrel populations may increase predation on WBO, and agricultural pesticides.

2.5.2 Ecology

LIFE HISTORY

Breeding and Reproductive Success. The WBO often lives in colonies, with many pairs nesting in close proximity. They are monogamous and generally produce one brood per season. Not all individuals capable of breeding do so every year. Breeding is initiated in early March (Terres 1980), although in California, courtship may begin as early as late December (Thomsen 1971 in Klute *et al.* 2003). Eggs are laid from late March to July (Terres 1980) and clutch size averages 6.5 eggs, with a range of 4 to 12 eggs (Haug *et al.* 1993 in Klute *et al.* 2003). In Tucson, nests on Davis-Monthan AFB had an average clutch size of 7.6 eggs and nests along washes averaged 6.6 eggs. Nests in agricultural areas near Casa Grande and Coolidge had mean clutch sizes of 8.8 eggs (Conway and Ellis 2004a). If a female's first clutch is lost, she may re-nest (Haug *et al.* 1993) as has been documented by AZGFD in 2008 (D. Abbate pers. comm. 2008).

Young are born altricial and fledge in late summer to fall (Coulombe 1971). Young owls are capable of running and foraging at four weeks and can make sustained flights by six weeks of age. Beginning when the chicks are 3 to 4 weeks of age, WBO families often change burrows every 10 to 15 days until the young begin to disperse in early fall, usually moving to nearby burrows (Klute *et al.* 2003). Moving the chicks to satellite burrows and the use of dung, in some areas, to line burrow entrances are both thought to reduce the risk of predation (TNC 1999).

Diet and Foraging. WBO are opportunistic feeders whose diets largely reflect prey availability (CDOW 2003). They primarily eat arthropods, small mammals, birds, amphibians, and reptiles, with seasonal shifts in the relative amounts of each type of item consumed. WBO have been reported foraging in agricultural areas (both active and fallow fields), along roads and ditches, and in native grassland and pastures (CDOW 2003; Gervais *et al.* 2000).

Mortality and Predation. Little is known about the average life span or rates of mortality among WBO. The longest documented life span for a WBO was 8 years, 8 months (Anderson *et al.* 2001 in CDOW 2003). Annual survival rates, calculated based on return rates of adult banded birds to breeding sites, were estimated to be at least 29 to 58 percent (Haug *et al.* 1993). Annual survival rates for a non-migratory population in California were 81 percent for adult owls and 30 percent for juveniles (Thomsen 1971 in CDOW 2003). In Oklahoma, annual mortality rates have been estimated at 62 percent (Butts 1973 in Klute *et al.* 2003). Adult females in Saskatchewan were found to have a higher annual survival rate (62 percent) than adult males and juveniles, 48 and 45 percent, respectively (Clayton and Schmutz 1997 in CDOW 2003). Common predators of WBO are badgers, bobcats, weasels, skunks, coyotes, domestic cats and dogs, snakes, and raptors such as Swainson's (*Buteo swainsoni*), Ferruginous (*Buteo regalis*), Cooper's, and Red-tailed Hawks (*Buteo jamaicensis*), Northern Harriers (*Circus cyaneus*), Merlins (*Falco columbarius*), Prairie (*Falco mexicanus*) and Peregrine Falcons (*Falco peregrinus*), Great Horned Owls, and American Crows (*Corvus brachyrhynchos*) (Haug *et al.* 1993; Leupin and Low 2001 in Klute *et al.* 2003).

Site Fidelity and Juvenile Recruitment. This species exhibits moderate to high levels of site fidelity to 1) general breeding locations, 2) specific nest sites (i.e., a prairie dog colony), and 3) particular nest burrows (Klute *et al.* 2003). In Tucson, Conway and Ellis (2004a) found that 63 percent of banded adult WBO found on Davis-Monthan AFB were re-sighted the next year, and 77 percent of birds that nested along surveyed washes returned in the following year. One hundred percent of the WBO identified in

2002 that returned to Tucson in 2003 returned to the same environment (i.e., Davis-Monthan AFB versus Tucson washes) they had occupied the previous year. Fifty-one percent of those birds returned to the same burrow they had used in the previous year, with burrow fidelity the same at Davis-Monthan AFB (50 percent) and along washes (51 percent) (Conway and Ellis 2004a). Return rates for males was the same for surveyed washes and Davis-Monthan AFB (80 and 81 percent, respectively), but females were much more likely to return for a second year along the washes (73 percent) than to Davis-Monthan AFB (47 percent). They also found that 17 percent of Davis-Monthan AFB juveniles and 28 percent of young from burrows along washes returned in 2003 to the site they had occupied during the previous breeding season (Conway and Ellis 2004a).

HABITAT REQUIREMENTS

Breeding Habitat. WBO inhabit open areas, such as grasslands, pastures, coastal dunes, desert scrub, and the edges of agricultural fields. They also inhabit golf courses, airports, cemeteries, vacant lots, and road embankments (Haug *et al.* 1993). Habitat preferences include soils that are well drained and slightly sloping, a predominance of bare ground or sparse vegetation, and the presence of mammal burrows or natural or man-made cavities (Klute *et al.* 2003). In Arizona, WBO have been documented in Great Basin, Semidesert, and Plains Grasslands; Sonoran and Mojave Desertscrub; piñon and Ponderosa pine habitats; riparian woodlands in the lower Colorado River valley; and urban, agricultural, rangeland, and vacant/barren areas (Klute *et al.* 2003).

Burrows are a habitat requirement for WBO. They use burrows for nesting and also require access to alternate burrows to provide escape cover for adults and fledglings. Because they seldom excavate their own burrows, these owls are dependent on fossorial mammals, such as badgers, ground squirrels, and prairie dogs, to create burrows. Owls have also been reported to use coyote, fox, woodchuck (*Marmota monax*), and tortoise burrows (TNC 1999). In Arizona, WBO often inhabit areas supporting prairie dog and Round-tailed Ground Squirrel populations (Brown 2001b; deVos 1998). WBO on Casa Grande Ruins National Monument mostly nest in old ground squirrel burrows, followed by coyote burrows, badger burrows, and burrows of unknown origin (Conway and Ellis 2004b). These burrowing mammals usually inhabit open environments and create the burrows the owls require (deVos 1998). If the number of natural burrows is limiting, WBO may instead use natural cavities, such as rock and lava cavities (Klute *et al.* 2003), and man-made features, including drainage tiles, culverts, and rock piles.

In the Tucson area, nearly all (97 percent) of the burrows used for breeding were in undeveloped areas that had been cleared of native vegetation (Estabrook and Mannan 1998). Bare ground was the predominant cover type at 87.7 percent of these active burrows. The predominant cover surrounding the remaining burrows was grass (62.5 percent), forbs (20.1 percent), shrubs (11.4 percent), and litter (6.0 percent). Overall, active burrow sites had significantly less visual obstruction by vegetation than nearby inactive burrows that appeared to be potential nest sites (Estabrook and Mannan 1998). In a statewide survey of known WBO locations, Brown and Mannan (2002) identified micro- and macro-habitat features surrounding active nesting sites. Active breeding burrows were predominantly found in agricultural areas, particularly along irrigation canals and among prairie dog towns. In their WBO demography study in Southern Arizona, Conway and Ellis (2004a) found that nesting density of WBO in south-central Tucson was 2.13 nests per square km.

Wintering Habitat. Less is known about the habitats used by WBO for wintering (Klute *et al.* 2003). Some authors have reported that agricultural fields with culverts are used more heavily in some locations (Haug *et al.* 1993). Owls in Louisiana have been found to winter in dunes and beaches, in or near vegetation and woody debris, and in pastures and agricultural fields (Klute *et al.* 2003). In Texas, one study found that 77 percent of winter roosts were road culverts (Woodin *et al.* 2007). In Nevada and Arizona, a large percentage of WBO are non-migratory and use the same sites, and even the same

burrows, in winter that they use during the breeding season (Conway and Ellis 2004a; Hall *et al.* in review in Klute *et al.* 2003). Migratory tendencies by sex and age class were studied in Southern Arizona by Oganowski and Conway (2009). They found that “. . . hatch-year owls were more likely to migrate than adults, the probability of migrating decreased with age in owls of both sexes, and adult males were significantly less migratory than females at all ages.” They also found individual WBO sometimes changed their migratory status, with nearly half of adult owls over-wintering one year and nearly one hundred percent over-wintering the next (Oganowski and Conway 2009).

Little information is available on home range size and foraging distances for these owls. What is known and reviewed for this HCP includes the following information. During the day, WBO typically remain close to their burrows, foraging farther from the nest at night. Wellicome (pers. comm. in Dechant *et al.* 1999) suggests that diurnal ranges can be used to estimate nesting area requirements and nocturnal activity provides a basis for determining foraging activity. Home range and foraging area may overlap between different pairs, with only the burrow being actively defended (Coulombe 1971; Johnsgard 1988). Rosenberg and Haley (2001) found that WBO typically foraged in areas close to burrows, with more than 80 percent of observations within 1,968 ft (600 m) of burrows. This finding is similar to that of Haug and Oliphant (1990), who found that 95 percent of the WBO telemetry coordinates they gathered were within this distance of a burrow. Depending on the method used to estimate home range size, average home range sizes vary from 83 to 595 ac (34 to 241 ha).

2.5.3 Permit Area Baseline Conditions

PERMIT AREA POPULATION STATUS AND IMPORTANCE TO THE SPECIES

In November 2005, AZGFD personnel evaluated 35 City-owned Avra Valley properties of the HCP Permit Area for WBO nesting habitat potential, characterizing each property according to vegetation density, presence of concrete irrigation canals, and availability of usable burrows (Grandmaison and Urreiztieta 2006). During the breeding season, they revisited 292 sites. WBO were present on nine properties, and suitable burrows were detected on 16 of them. Based on their results, Grandmaison and Urreiztieta (2006) concluded that “The City of Tucson’s Avra Valley properties have high burrowing owl wintering and breeding habitat potential given the abundance of burrows and the predominance of short vegetation across many of the parcels.”

MODELED HABITAT

To model habitat, Arizona Game and Fish Department (AZGFD) staff qualitatively evaluated the Permit Area properties for nesting potential. Properties were characterized by the availability of usable burrows, vegetation density, and presence of concrete irrigation canals. Details of the habitat model can be found in Grandmaison and Urreiztieta 2006. Based on AZGFD’s habitat assessment, 4,532 ac (1,834 ha) of WBO habitat were identified in the Permit Area.

2.5.4 HCP Biological Goals and Objectives

Based on AZGFD’s qualitative habitat evaluation and subsequent winter and breeding surveys in the Permit Area, the City’s biological goals and objectives for the WBO relate to providing conditions to support breeding, over-wintering, and migration. Specifically, the City’s biological goal for the WBO is to contribute to maintaining local and regional populations. The City’s specific objectives for WBO are to maintain habitat, consider opportunities to enhance habitat, and minimize potential for mortality.

2.6 Desert Tortoise (Sonoran Population) (*Gopherus agassizii*; DT)

2.6.1 Population Range, Distribution, Status, and Threats

RANGE AND DISTRIBUTION

The distribution of Desert Tortoise covers the broadest range of latitude, climate, habitats, and biotic regions of any North American tortoise (Germano *et al.* 1994 and Berry *et al.* 2002 in AZGFD 2010). The tortoise ranges from northern Sinaloa north to southern Nevada and southwestern Utah, and from south central California east to southeastern Arizona. The Desert Tortoise is divided into two populations for purposes of the ESA: the threatened Mojave population occurs north and west of the Colorado River, and the candidate Sonoran population occurs south and east of the Colorado River (AZGFD 2010).

Within Arizona, the Mojave population includes all tortoises north and west of the Colorado River, west of the Beaver Dam Mountains, north of the Virgin Mountains, and in the Pakoon Basin in extreme northwest Mojave County (AZGFD 2010). The Sonoran population includes those tortoises south and east of the Colorado River, from locations near Pearce Ferry in Mojave County, to the south beyond the International Boundary, and at many scattered locations in between (AIDTT 2000 in AZGFD 2010). The northeastern-most tortoise records in Arizona occur along the Salt River near Roosevelt Lake in Gila County, although populations have not been confirmed with recent observations (AZGFD 2010). The middle San Pedro River drainage in Cochise County harbors the easternmost substantial tortoise populations. Desert tortoise observations have been confirmed in extreme southeastern Cochise County, but probably represent released captives (pets) (AZGFD 2010). Tortoises have been found as far southwest as the Barry M. Goldwater Range, Yuma Proving Ground, and the Cabeza Prieta National Wildlife Refuge (AZGFD 2010).

POPULATION STATUS AND THREATS

Status. The genus *Gopherus* contains four extant species in the southern U.S. and Mexico (Crumly 1994). Although not recognized as being taxonomically distinct, the USFWS has found extensive scientific evidence that the Sonoran Desert Tortoise differs significantly from either the Sinaloan or Mojave populations in terms of behavior, ecology, morphology, and genetics (USFWS 2010a). Therefore, the USFWS recognizes the Sonoran Desert Tortoise as a distinct population segment. Based on numerous ways that the Sonoran Desert Tortoise is negatively impacted by a variety of threats (see below), the USFWS has determined that it is warranted for listing under the ESA. However, since there is currently no evidence that any existing population is threatened with extinction in the near future, listing is precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants (USFWS 2010a). Since the 2010 USFWS determination, researchers have used a suite of characters to diagnose the Mojavian and Sonoran populations. From their findings, they distinguish these populations as separate taxa and name a new species (Murphy *et al.* 2011).

Based on distance-sampling surveys of DT in Saguaro National Park, Tucson Mountain District, density was estimated to be 0.62 tortoises per acre (0.25 per ha). When pooled with survey results from Saguaro National Park, Rincon Mountain District, the estimated density increases to 0.77 tortoises per acre (0.31 per ha) (Zylstra 2008).

Threats. The DT faces various threats, including those related to destruction, modification, and fragmentation of habitat. The spread of non-native invasive plant species is one such threat. In particular, the non-native, invasive perennial buffelgrass outcompetes native vegetation, reducing floral diversity.

The spread of buffelgrass also increases wildfire risk as it fills interspaces between native plants. Buffelgrass is a highly ignitable fuel in ecosystems evolved within fire regimes characterized by long return intervals and patchy burns (USFWS 2010a). Wildfires not only destroy Sonoran desertscrub habitat but can also directly injure or kill DT. In addition to the spread of non-native invasive species and associated increases in wildfire risk, urbanization is also detrimental to habitat. As the human population of Arizona continues to increase, homes, commercial and industrial buildings, roads, and other structures are built to accommodate this growth, resulting in the direct loss and fragmentation of desertscrub habitat. The increased prevalence of barriers to DT movement from human-made structures can lead to problems for genetic exchange (USFWS 2010a). Additional threats to the DT include those from OHVs, cattle grazing, undocumented human immigration, illegal collection, disease (e.g., upper respiratory tract disease), unnatural sources of predation (e.g., from free-roaming dogs), handling by researchers leading to bladder evacuation, vehicle strikes, ingested balloons and trash, and climate change (USFWS 2010a).

2.6.2 Ecology

LIFE HISTORY

DT activity begins in the spring as temperatures warm, decreasing as the season moves into the summer drought in May and June, when DT are inactive in burrows, conserving water and energy (AZGFD 2010). The onset of the summer monsoon season then signals the beginning of peak tortoise activity, which is typically from late June through September (USFWS 2010a). Surface activity decreases as early as late September and ends in mid-December when hibernation is likely cued by photoperiod and temperature (USFWS 2010a). However, some individuals may bask, move, or even forage on warm winter days. Females may then terminate hibernation as early as late February, while some males may remain inactive through the entire spring (AZGFD 2010).

Mating typically occurs during the summer monsoon season (AZGFD 2010). Females begin laying eggs, which are fertilized by sperm stored from the previous summer's mating, just before or during the onset of the summer rains, in late June or early July (AZGFD 2010). They lay only one clutch of about six eggs, but three to 12 eggs in a clutch have been reported. The proportion of females reproducing is related to the amount of recent rainfall and vegetation available for forage. Females usually lay their eggs inside burrows with adequate soil development, and many remain at and defend their nests against predators (AZGFD 2010). Some hatchlings emerge from the nest in late summer, but others may over-winter in the nest before emerging during the following spring. Little information exists on survivorship of young tortoises, but given adult longevity and their capacity to produce more offspring than necessary to replace mortalities in the population, juvenile survivorship is probably very low (AZGFD 2010). Tortoises grow relatively rapidly early in life and reach about half their maximum size at five to 10 years (AZGFD 2010). The growth rate tapers off as individuals slowly approach their maximum size. After 10 to 20 years, tortoises reach sexual maturity at about 8.7 in (22 cm) carapace length. Males reach larger sizes than females in some populations, but not in others (AZGFD 2010).

The adult tortoise carapace provides protection against potential predators, contributing to their high survivorship. Mountain lions (*Puma concolor*) appear to be the primary natural predator on adult tortoises in the Sonoran Desert, but lions usually have not contributed to elevated rates of mortality in studies so far (USFWS 2010a).

The Sonoran Desert Tortoise is an herbivore known to eat 199 species of plants. These include herbs (55.3 percent), grasses (17.6 percent), woody plants (22.1 percent) and succulents (5 percent), with the diet varying among populations based on seasonal availability of plant species (USFWS 2010a).

HABITAT REQUIREMENTS

Adequate shelter is one of the most important habitat features for DT in the Sonoran Desert (USFWS 2010a). DT use burrows for nesting, protection from predators, and thermoregulation as they escape extreme temperatures (USFWS 2010a). DT require loose soil in which to excavate (usually shallow) burrows below rocks and boulders, but they may also use rock crevices. DT occasionally burrow under vegetation; less often, they dig soil burrows on more or less open slopes and also use caliche caves in incised wash banks (especially in the Lower Colorado River Valley subdivision). They will also rest directly under live or dead vegetation without constructing a burrow (AZGFD 2010).

The Sonoran population of the DT occurs primarily on rocky slopes and bajadas of Mojave and Sonoran Desertscrub, but may also use intermountain valleys for dispersal and as part of their home ranges (USFWS 2010a). The species generally occurs at elevations ranging from 510 to 5,300 ft (155 to 1,615 m (USFWS 2010a). The Sonoran population can be found in a variety of biotic communities within or extending from the Sonoran Desert, but most often occurs in paloverde-mixed cacti associations (AZGFD 2010). DT are found in the Arizona Upland and Lower Colorado River Valley subdivision of the Sonoran Desert, desert grassland, and ecotonal areas consisting of Sonoran Desertscrub with elements of Mojave Desertscrub and Juniper Woodland, Interior Chaparral, and Desert Grassland (AZGFD 2010).

Home ranges sizes vary with precipitation levels in response to the availability of forage plants, but can be as small as 6.4 ac (2.6 ha) or as large as 640 ac (258 ha). Riedle *et al.* (2008) estimated mean home range sizes of 82.5 ac (33.4 ha) for males and 44 ac (17.8 ha) for females. For DT in the Tucson region, a mean yearly home range size of 39 ac (15.7 ha) was calculated based on radio telemetry data gathered from 2000 to 2002 for a portion of the Saguaro National Park, Rincon Mountain District (Stitt *et al.* 2003c in Zylstra and Swann 2009).

2.6.3 Permit Area Baseline Conditions

PERMIT AREA POPULATION STATUS AND IMPORTANCE TO THE SPECIES

No surveys have been conducted for this species specific to the HCP Permit Area. However, surveys have been conducted in the Tucson Mountain District of Saguaro National Park (see Zylstra and Swann 2009 and Powell *et al.* 2007) as well as in the Ironwood Forest National Monument (IFNM). In their study of the distribution and density of Desert Tortoises at IFNM – which is west of the Permit Area – the authors developed a habitat categorization and associated map for the species (Averill-Murray and Averill-Murray 2002). The former Trust 205 farm and the Flying E Bar farm are the only Permit Area properties adjacent to IFNM. However, neither is adjacent to modeled habitat. The Flying E Bar property abuts the IFNM along its southern boundary where there is no modeled habitat. The western border is separated by approximately 0.25 – 0.5 mi (0.4 – 0.8 km) of private, residential land. The Trust 205 farm is approximately 2.5 mi (4 km) from category 3 (lowest value of 3 categories) modeled habitat.

Based on current knowledge of the DT and the Permit Area, the TAC advised the City that the Permit Area does not contain the bajada rockslope or incised washes with caliche caves that provide habitat for the species. Although valley bottoms may be used by the species, the degradation of the lands from past agricultural practices make use of the lands by the tortoise marginal, accidental, or infrequent for long-distance movement between populations in adjacent mountain ranges.

2.6.4 HCP Biological Goals and Objectives

The City's biological goal and for the Desert Tortoise is to contribute to maintaining local and regional populations of Desert Tortoise. The City's specific objective for Desert Tortoise is to reduce the potential for direct mortality to Desert Tortoises that may be crossing Avra Valley.

2.7 Tucson Shovel-Nosed Snake (*Chionactis occipitalis klauberi*; TSNS)

2.7.1 Population Range, Distribution, Status, and Threats

RANGE AND DISTRIBUTION

The historical range of the Tucson Shovel-nosed Snake (TSNS), a subspecies of the Western Shovel-nosed Snake (*Chionactis occipitalis*), is believed to have occurred in a narrow band from southeastern Maricopa County through southwestern Pinal County to northern Pima County, inclusive of the City (Recon 2002). According to the USFWS (2010b), "The subspecies was historically known from Pima County in the Avra and Santa Cruz valleys (Rosen 2003, p. 4) and from western Pinal and a portion of eastern Maricopa counties (Klauber 1951, p. 196)." Currently the range is thought to include the area between the Phoenix and Tucson metropolitan area (USFWS 2010b).

POPULATION STATUS AND THREATS

A petition was filed in December 2004, requesting that the TSNS be considered for listing under the ESA (USFWS 2010b). In 2010, the USFWS announced that listing the species is warranted but precluded by higher priority actions, thus putting it on a list of candidate species (USFWS 2010b). Northern Avra Valley, in the vicinity of the Permit Area, is one of the few areas that have been extensively surveyed. As late as the mid-1970s, surveyors were observing TSNS as many as two to three times per night (Rosen 2003b). However, the last verifiable record of the species in Pima County was in 1979 (USFWS 2010b). Rosen (2003b) surveyed for the subspecies in and around the Town of Marana and Avra Valley in 2003 and 2007. He and his team failed to detect any TSNS within the Permit Area, although three were detected in 2007 in Pinal County on the margins of the Santa Cruz Flats (Rosen 2008a). In a 2008 TSNS study, AZGFD deployed trap arrays at the Florence Military Reservation north of Florence in Pinal County. During three 15-day periods, 28 TSNS were documented (Mixan and Lowery 2008).

The primary threat to the TSNS, and likely cause of the subspecies' presumed decline, is the loss of habitat through agricultural and urban development (USFWS 2010b) as well as due to habitat destruction or range curtailment due to road construction, solar power facilities and transmission corridors, and wildfires (USFWS 2010b). Grading and farming of former habitat alters soil conditions and removes native vegetation, thereby eliminating essential habitat components for this species. Specifically in the Avra Valley Permit Area, Rosen (2008b) states, "Entrenchment of the Brawley Wash system has apparently led to massive erosion and export of sandy-silty soil components in many areas, leaving behind hard abode soils poorly suited to sand-adapted snakes and largely unsuitable for most other species of many ecological types."

Another potential factor in the decline of TSNS populations may be competition from the morphologically, ecologically, and behaviorally similar Banded Sand Snake (*Chilomeniscus cintus*) (Rosen 2003b). Drawing an analogy from the relationship between Desert Horned Lizards (*Phrynosoma platyrhinos*) and Regal Horned Lizards (*Phrynosoma solare*), Rosen suggests (2003b and 2008b) that the Banded Sand Snake population and distribution may be expanding at the expense of shovel-nosed snakes. The Banded Sand Snake was not recorded on the floor of Avra Valley until 1983, after which it appears to have increased in abundance. This time frame coincides with the marked decline in TSNS, from reasonably abundant during the 1970s to undocumented after 1979. Whether the Banded Sand Snake is contributing to the decline of the TSNS or simply invading altered habitat following extirpation of the TSNS is uncertain.

2.7.2 Ecology

LIFE HISTORY

The Western Shovel-nosed Snake is adapted to moving quickly through loose sand and loamy soils. This movement has been described as sand swimming (Stebbins 2003; Rosen 2003b). This small 9.8 to 16.7 in (25 to 42.5 cm) Coral Snake mimic uses venom to subdue its prey, which includes insects, scorpions, spiders and centipedes (Stebbins 2003; Rosen 2003b). The shovel-nosed snake feeds frequently and, as a result, is thought to actively forage from at least April through October (Rosen *et al.* 1996 in USFWS 2010b). The shovel-nosed snake is thought to breed in May and June. Only a quarter of females surveyed during the breeding season were found to be reproductively active, indicating that all females do not breed each year (Goldberg 1997). The species is oviparous and has a clutch of two to four eggs in the summer (Stebbins 2003). Western shovel-nosed snakes are primarily nocturnal (Stebbins 2003), although on cool days they may also be active in the late and early evening (Warren 1953 in Recon 2002) and recent reports indicate that morning activity can be more common than previously recognized (Rorabaugh 2007). Rosen (2003b) researched the seasonal activity cycle of the TSNS and discovered that observed activity peaks during May and decreases rapidly through late June. There is residual observed activity in early July and almost no observed activity after that. Shovel-nosed snakes also appear to be more active after warm summer or hot spring days and on days with higher relative humidity (Rosen *et al.* 1996). Daily observed activities appear to occur both above and below the surface. According to Norris and Kavanau (1966), “Surface activity in the species apparently is confined to a relatively small fraction of the day, in aggregate probably no more than a total of four or five hours, and may be dependent upon available thermal conditions.”

HABITAT REQUIREMENTS

The Western Shovel-nosed Snake is known from the Lower Sonoran life zone, primarily on valley bottoms and gently sloping bajadas, usually in areas with sand dunes or soft sandy loams. For the TSNS, Rosen (2003b) suggests that populations in Avra Valley centered on the valley floor, with only fringes of the distribution extending into adjacent bajadas. He also notes that the species appears to prefer creosote bush-mesquite floodplains, but also may occur in areas of open upland creosote (Rosen 2003b). The species prefers soils containing little or no gravel (Rosen 2003a).

2.7.3 Permit Area Baseline Conditions

PERMIT AREA POPULATION STATUS AND IMPORTANCE TO THE SPECIES

The last known record of the TSNS in the vicinity of the Permit Area was at Sanders Road and Avra Valley Road in 1979 (Rosen 2003b, USFWS 2010b). It is unknown whether the species persists within the Avra Valley HCP Permit Area. It was not observed during species-specific surveys conducted in and

around Marana in 2003 and 2007. The previously mentioned records of TSNS observed in Pinal County near the Santa Cruz Flats demonstrate that the species is not regionally extinct, and may still inhabit the Avra Valley (Rosen 2008a).

The range of the subspecies under consideration here extends from southeastern Maricopa County through southwestern Pinal County to northern Pima County, inclusive of a portion of the Avra Valley Permit Area. It is possible that the TSNS genotype might only be available for long-term conservation in the area of Mobile, Arizona (Rosen 2003b).

MODELED HABITAT

When developing the TSNS habitat model for the Town of Marana HCP, Dr. Rosen concluded that elevation and soil taxonomy and condition provide the best overall predictors of potential habitat for this species. Elevations greater than 2,300 ft (700 m) were eliminated because existing records do not include observations of the species above that elevational limit in the HCP Permit Area. Active agricultural lands and developed areas were eliminated as potential habitat because soils in these areas are no longer suitable for use by this species. Lands classified as either high or moderate habitat potential were combined to determine the amount of habitat within the Permit Area, which total 2,240 ac (906 ha). However, because these lands were retired from farming 20 to 30 years ago, they cannot be ruled out as future snake habitat as long as they have appropriate soil types and occur within the elevational range of the species. Due to the potential recovery of snake habitat in these areas, these former farmlands are considered as possible restoration areas for the species in the City's TSNS habitat model.

2.7.4 HCP Biological Goals and Objectives

Although the current TSNS population status within the Avra Valley HCP Permit Area is unknown, the Permit Area contains approximately 2,457 ac (994 ha) of potential TSNS habitat. Implementation of the proposed covered activities will result in the loss of potential habitat in the HCP Permit Area. Direct take of Shovel-nosed Snake individuals may occur as a consequence of development-associated ground disturbance activities. Long-term indirect effects may include fragmentation of habitat and isolation of habitat patches. For these reasons, the City's biological goal for the TSNS is to contribute to maintaining local and regional populations. The City's specific objectives for TSNS are to maintain long-term availability of habitat and minimize loss of individuals.

CHAPTER 3 – IMPACTS OF THE HABITAT CONSERVATION PLAN

3.1 Activities Proposed for Coverage under Permit

In determining which activities should be covered by the Permit, according to the USFWS HCP Handbook guidance, “The applicant should be encouraged to include in the HCP a description of all actions within the Permit Area that: (1) are likely to result in incidental take; (2) are reasonably certain to occur over the life of the permit; and (3) for which the applicant or landowner has some form of control” (USFWS 1996). In addition, City staff considered the following guidance when determining which projects to include for Permit coverage. According to the HCP Handbook (USFWS 1996) “Generally, applicants should be encouraged to include as comprehensive a set of activities in the HCP as is practicable. This will maximize the permittee's long-term planning assurances, broaden legal coverage, and minimize the possibility that some future activity will not be covered by an issued permit.”

Activities to be covered by the City’s Avra Valley HCP and Permit include any activities carried out or authorized (i.e., allowed by contract or agreement) by the City within the HCP Permit Area that may result in take of covered species. Described below, these activities can be grouped into four categories, consisting of 1) Tucson Water development activities related to governmental uses of the land (e.g., public water supply infrastructure development), 2) operation, maintenance and repair of these facilities, 3) land management, stewardship, and restoration activities, and 4) minimal impact activities that might occur on the lands. Only those activities that permanently and negatively impact species habitat will be mitigated with permanent actions as described in Chapter 4. Such activities are described below under water supply infrastructure development.

3.1.1 Water Supply Infrastructure Development

The development of public water infrastructure within the HCP Permit Area may occur over the next 50 years. In 2004, Tucson Water completed a 50-year water resources plan, entitled *Water Plan 2000-2050* (City of Tucson 2004) as well as an update to this plan in 2008 (City of Tucson 2008a). Many of the future activities in Avra Valley are dependent on decisions still to be made by the community and the City’s Mayor and Council regarding enhanced treatment for mineral content (salinity control) and the utilization of effluent. While the individual projects that will be required to implement these future decisions are not specifically known, the listed activities below encompass the range of potential projects that may be required to meet the community’s future water needs. These include, but are not limited to:

- Recharge basins for CAP groundwater percolation
- Water treatment plants
- Reservoirs for water storage
- Boosters for water transmission
- Transmission main pipelines and other pipelines for water transmission
- Wells for groundwater extraction, water testing, or research
- Evaporation ponds and brine disposal
- Gas pipes and electrical lines for energy distribution
- Wetlands for tertiary treatment of effluent
- Flood-control projects such as berms and basins
- Administrative buildings and facilities
- Maintenance yards for project-related equipment and vehicles
- Roads to access all facilities
- Energy generation facilities (e.g., gas engines,

landfills for water quality enhancement

solar photovoltaic panels) to provide power to water supply infrastructure projects

Based on long-range planning documents such as the “Water Plan 2000 – 2005” (Water Plan) and the 2008 update, an estimate was made of the maximum areal footprint required should all of these activities be necessary. This would include up to 5,600 ac (2,266 ha) for brine disposal, 1000 ac (405 ha) for the expansion of water recharge facilities, and 700 ac (283 ha) for a treatment plant and well-field. Additional recovery wells associated with recharge facilities may be required and would be anticipated to encompass up to 100 by 100 ft (30.5 by 30.5 m) sites. Pipelines conveying recovered, treated, or brine water may be required, with determination of location and length dependent on future decisions of the community and the City’s Mayor and Council. However, given uncertainty about the specific technologies that will be used and the water quality standards that will be determined by the community throughout the duration of the Permit, the areal extent of each project component will be determined as they occur, during construction planning phases. Given this uncertainty, the City is proposing a maximum additional disturbance footprint of 8,000 ac (3,237 ha) for all covered activities in this category, regardless of the specific acreages per project element. These 8,000 acres are in addition to the acreage that has already been developed within the Avra Valley HCP Permit Area.

3.1.2 Operation, Maintenance, and Repair Activities

Operation of facilities can involve a diverse range of tasks including, but not limited to, driving to and from facilities, using heavy machinery within the vicinity of the project, walking on the land to inspect facilities, and others. Maintenance can also include a diverse range of tasks. For example, this may include activities associated with pipelines and valves such as valve exercising, marking blue-stakes for main locations, routine hydrant and main flushing, chlorine residual and bacteriological testing, and routine inspections to ensure that the existing facilities are in good repair and in working condition. One or two person crews with light trucks, one ton or less, generally perform these activities quarterly. Pipeline and valve repairs include repairing mainline breaks and the replacement of leaking and/or failing valves. The ground disturbance associated with these activities generally is limited by easement width or within public rights of way. These activities are not regularly scheduled and typically are performed on an emergency basis. Construction crews usually consist of two to ten people. Project duration typically is less than one week but can be much longer in extreme cases. Repair or replacement can include aboveground installation of temporary pipelines to maintain service. Other maintenance and repair activities, beyond pipeline and valve repairs, would likely be required at sites with other covered activities.

3.1.3 Land Management, Stewardship, and Restoration Activities

The spread of non-native invasive species, trespassing, illegal dumping, vandalism, and flooding are all examples of threats that impact land within the HCP Permit Area. To address these threats, the City or its contractors will need to continue to undertake land management and stewardship activities, such as: fence installation and fence repair, invasive species removal, maintenance or drainage repair, garbage removal, property monitoring, and other miscellaneous land management activities. The City may also engage in efforts to restore or enhance habitat values of these lands. This may include, but is not limited to:

- Planting and irrigating of native seeds and nursery stock
- Contouring of the landscape to slow, sink, and spread rainwater and runoff to irrigate native plants
- Installation of artificial burrow clusters for burrowing owls

3.1.4 Minimal Impact Activities

This category is meant to capture all activities that might occur within the Permit Area that would have minimal, if any, impact to the land. These activities could include all non-vehicular based passive recreation (e.g., bird watching) or biological studies, educational programs, and tours. Hunting may be allowed within the Permit Area as required by State law. However, to comply with Federal regulations related to the ESA, hunting should be heavily regulated on these lands to avoid directly or indirectly impacting covered species. Regulations should prohibit the following: Vehicular access, camping, fires, nighttime hunting, playback of recorded game calls, and use of firearms within habitat set-aside areas.

It is also possible that the City may designate lands for permanent habitat protection apart from the requirements of the Avra Valley HCP. This may occur if the City is asked to provide mitigation land for another entity. Since these activities would not negatively impact habitat, they would not require mitigation.

3.2 Activities Not Covered by the Permit

Activities authorized by public or private parties other than the City are not covered by the Avra Valley HCP and Permit unless identified above.

3.3 Direct Effects on Covered Species

Guidance provided by the USFWS informs the City's approach to determining direct effects on covered species and anticipated incidental take levels. Section 3.14 of the USFWS HCP Handbook (USFWS 1996) states:

d. Determining Anticipated Incidental Take Levels. In determining the amount of incidental take that will be authorized during the life of the permit, three things must be determined: (1) how incidental take will be calculated; (2) the level of incidental take and related impacts expected to result from proposed project activities; and (3) the level of incidental take that the section 10 permit will actually authorize.

The first depends on the ability of HCP participants to determine, to the extent possible, the number of individual animals of a covered species occupying the project or land use area or the number of habitat acres to be affected. Depending on this information, proposed incidental take levels can be expressed in the HCP in one of two ways: (1) in terms of the number of animals to be "killed, harmed, or harassed" if those numbers are known or can be determined; or (2) in terms of habitat acres or other appropriate habitat units (e.g., acre-feet of water) to be affected generally or because of a specified activity, in cases where the specific number of individuals is unknown or indeterminable. The latter is typically expressed as all individuals occupying a given area of habitat, in whatever habitat unit is being used.

While determining that amount of incidental take that will occur, the Avra Valley HCP emphasizes habitat and corresponding mitigation actions. Thus, take is described in habitat terms, not species terms. Mitigation will be based only on habitat impacts, not on species-specific impacts, but will adequately cover take of each individual species proposed for coverage under the HCP.

3.3.1 Habitat Take

The location of the potential covered activities listed above will be determined on a project-by-project basis and the maximum acreage that the City is seeking HCP Permit coverage for is 8,000 ac (3,237 ha) of additional land disturbance over the 50-year duration of the Permit. Effects of habitat take for each species are described below. Actions to avoid, minimize, and mitigate impacts to habitat are described in Chapter 4. The habitat models developed for each species and reviewed by the TAC will inform both where impact is planned to occur as well as where habitat should be permanently protected to mitigate for these impacts. Generally, impacts to modeled habitat can only be mitigated with set-aside of modeled habitat elsewhere in the Permit Area. It is assumed that all of the modeled habitat is considered important for the species and is worthy of permanent protection. However, prior to mitigation, the City will request concurrence from the USFWS about the habitat value of the proposed permanent set-aside.

LESSER LONG-NOSED BAT

The loss of potential movement habitat for LLNB in the Avra Valley HCP Permit Area due to impacts from covered activities has the potential to result in take of LLNB. Construction of these projects will create long-term disturbance to habitat from operation of these facilities and the covered activities may, depending on their location and configuration, result in fragmentation of the remaining LLNB movement habitat within these properties.

PALE TOWNSEND'S BIG-EARED BAT

Impacts to PTBB foraging habitat from covered activities has the potential to result in take through long-term disturbance as well as through potential fragmentation of the modeled habitat in the Permit Area.

WESTERN YELLOW-BILLED CUCKOO

The loss of potential migratory stop-over habitat for Western Yellow-billed Cuckoo (WYBC) in the Avra Valley HCP Permit Area due to impacts from covered activities has the potential to result in take. Construction of these projects will create long-term disturbance to habitat from operation of these facilities and the covered activities may, depending on their location and configuration, result in fragmentation of the remaining potential migratory stop-over habitat within these properties.

CACTUS FERRUGINOUS PYGMY-OWL

The loss of potential dispersal / over-wintering habitat for CFPO in the Avra Valley HCP Permit Area due to impacts from covered activities has the potential to result in take. Construction of these projects will create long-term disturbance to habitat from operation of these facilities and the covered activities may, depending on their location and configuration, result in fragmentation of the remaining habitat within these properties.

WESTERN BURROWING OWL

Construction related to the covered activities described above has the potential to permanently alter WBO habitat. In addition, facility operation and maintain has the potential to cause long-term habitat disturbance.

DESERT TORTOISE

There is no modeled habitat for this species within the Permit Area and, therefore, no habitat take is anticipated.

TUCSON SHOVEL-NOSED SNAKE

Once habitat with relatively undisturbed soil conditions is graded for development, its potential value to this species is lost. Construction of the covered activities described above could permanently impact potential TSNS habitat in the Avra Valley Permit Area due to grading and clearing as well as the long-term operation of the facilities. These impacts could also result in habitat fragmentation.

3.3.2 *Lethal Take*

For all the covered species, a biological objective is to minimize direct mortality so that few or no individuals are killed during the 50-year term of the HCP. However, given the characteristics of some of the species proposed for coverage under the HCP, implementing the covered activities does have the potential to result in lethal take. For example, construction activities could cause lethal take of WBO or TSNS that are below the ground surface during excavation. Or, these same species may be struck by vehicles during construction or maintenance activities. Initially, the City developed a table of estimated lethal take of individuals. However, based on guidance provided to the City by the USFWS in October 2011, the lethal take table has been removed. This guidance is as follows:

1) We do not need a lethal take table for covered actions for which we are using habitat-based take as a surrogate for all take. In other words, any direct or indirect take that is incidental to the proposed action is covered by the ITP for acres disturbed. Our BO will discuss actual numbers of covered species we expect to be killed, harmed, or harassed.

2) Lethal take that is direct (intentional) through monitoring and surveying activities can either be covered by research permit [10(a)(1)(A)] or under your HCP. In the latter example, a lethal take table would be appropriate and that lethal take would be considered additive to that anticipated under the surrogate in Item 1 (Jeff Servoss 2011)

Since no intentional direct take is planned or requested for coverage, no estimate of individual lethal take is necessary. This HCP uses habitat impacts as a surrogate for all take anticipated as a result of implementation of covered activities. Therefore, as confirmed by the TAC, the avoidance, minimization, and mitigation measures – particularly the permanent protection of habitat – described in Chapter 4 are adequate to cover all anticipated take, including lethal take. Anticipated lethal take will be quantified and evaluated in the context of the USFWS's Intra-Service ESA Section 7 consultation on the issuance of the Permit. That evaluation will consider the anticipated take in relation to jeopardizing listed species and whether recovery of listed species would be precluded.

LESSER LONG-NOSED BAT

The most likely cause of lethal take would be roost disturbance. Since there are no roosts within the Permit Area, no take of LLNB at roosts is anticipated. However, given that nectar feeding bats are less agile than insectivorous species, collisions with high fences or suspended wires are another potential form of lethal take within the Permit Area. Suspended wires (e.g., electrical wires) or high security fences may be installed as part of the covered activities and could potential result in take of a small number of individual bats over the 50-year term of the Permit.

PALE TOWNSEND'S BIG-EARED BAT

This species uses structures for establishing roosts and roost disturbance or destruction is the most likely form of take. However, given that the Permit Area is primarily vacant, former farmland, chances of removing a structure that has a bat roost are minimal.

WESTERN YELLOW-BILLED CUCKOO

In the Avra Valley HCP Permit Area, lethal take of WYBC would likely be due to collision with power lines or tall structures since no breeding habitat occurs.

CACTUS FERRUGINOUS PYGMY-OWL

Lethal take within the HCP Permit Area would most likely be due to a collision with a City or City-authorized vehicle on a private road within the Permit Area. While no breeding habitat currently exists, the retired farmlands and riparian areas may recover to a level that provides breeding habitat. In that case, nest disturbance or destruction could cause lethal take.

WESTERN BURROWING OWL

Construction activities related to the covered activities have the potential to directly kill or injure WBO by filling in or collapsing burrows. Given the friable nature of the soils in Avra Valley, areas of high burrow density should be avoided by heavy machinery that has the potential to collapse burrows. Pre-construction clearance surveys must be performed in areas of modeled habitat or in areas with burrows. The City will follow the guidelines established in the Burrowing Owl Project Clearance Protocol (Burrowing Owl Working Group 2009) or more recent guidelines published around the time pre-construction clearance surveys are needed. The 2009 protocol calls for up to two surveys (depending on the time of year) prior to construction activities, and potentially involves relocating owls and collapsing burrows within the construction area to prevent WBO from returning prior to completion of construction as part of a covered activity.

Vehicle strikes are another potential cause of direct mortality to WBO. Only facility driveways and maintenance roads will be constructed and, therefore, vehicles will travel slowly. Also, since only City employees or those authorized to enter the property may use roads, the volume of traffic will be very low.

DESERT TORTOISE

While there is no modeled DT habitat within the Permit Area, it is possible that DT may make long-distance movements between mountain ranges. Therefore, construction, operation and maintenance activities related to the covered activities have the potential to directly kill or injure DT by vehicles inadvertently striking them.

TUCSON SHOVEL-NOSED SNAKE

Ground disturbance activities and road mortality are the most likely causes of lethal take of this species within the Avra Valley HCP Permit Area. Given how small and secretive this species is, lethal take may not be detectable as part of ground disturbance activities. However, impacts from maintenance vehicles on private roads within the Permit Area would be detectable. Only facility driveways and maintenance roads will be constructed and, therefore, vehicles will travel slowly. Also, since only City employees or those authorized to enter the property may use roads, the volume of traffic will be very low.

3.4 Indirect Effects on Covered Species

LESSER LONG-NOSED BAT

LLNB can be adversely affected indirectly by land development. Since the Permit Area does not support roost sites for the species, potential indirect effects would be limited to LLNB movement. Noise and artificial light associated with covered activities could cause individual LLNB to alter movement patterns, potentially increasing energetic demands or blocking access to available roost and forage resources. Application of pesticides to control non-native invasive species should not adversely affect any LLNB using the Permit Area to move across the landscape unless such activities inadvertently decrease the health of native vegetation within riparian corridors.

PALE TOWNSEND'S BIG-EARED BAT

Indirect effects from covered activities include noise and artificial lighting as well as construction-related disturbance that could cause individual PTBB to move to other foraging areas, potentially increasing the energetic demands of bats or blocking access to available roost and foraging resources. However, since these bats forage at night or at dawn when construction activities typically are not being conducted, there is little potential for these types of effects. Application of pesticides to control non-native invasive species should not adversely affect any PTBB foraging in the Permit Area unless such activities inadvertently decrease the health of native vegetation within riparian corridors.

WESTERN YELLOW-BILLED CUCKOO

Short-term construction disturbances as well as long-term operations, should they occur within WYBC habitat, would include noise, dust, traffic, and other human activities that could result in deterring WYBC from using the area. Habitat impacts also could affect future use of the area by the WYBC. The level of use of habitat in the Permit Area by migratory WYBC is unclear. If the Permit Area is used by WYBC during migration from within and outside of Arizona, then reductions and/or modifications of habitat could contribute to reductions in cuckoo populations elsewhere. However, the number of cuckoos affected and the impact on local and regional populations is unclear. Application of pesticides to control non-native invasive species should not adversely affect WYBC using the Permit Area unless such activities inadvertently decrease the health of native vegetation within riparian corridors.

CACTUS FERRUGINOUS PYGMY-OWL

In Arizona, CFPOs have rarely been documented making flights greater than 100 ft (30.5 m) and they appear to avoid large open areas such as golf courses (USFWS 2003b). Therefore, any vegetation clearing and construction related to covered activities that is greater than 100 ft (30.5 m) can act as impediments to CFPO movement (USFWS 2003b). Wide roadways can also result in CFPO flying directly into the path of oncoming vehicles. However, no wide, public roads are included as covered activities in this HCP.

The potential loss of modeled habitat within the Permit Area could reduce the maximum number of breeding pairs in southern Arizona primarily through fragmentation of potential dispersal / over-wintering habitat. Habitat on lands in the Avra Valley Permit Area provides connectivity between breeding areas. There is evidence, though limited, that CFPO periodically move through Avra Valley, though not necessarily within the Permit Area. However, given that there are known nesting pairs of CFPO to the west of the Permit Area, and there has been historical occupancy by CFPO to the east, it is not unreasonable to anticipate that there will be CFPO use of the Permit Area.

Application of pesticides to control non-native invasive species should not adversely affect CFPO using the Permit Area unless such activities inadvertently decrease the health of native vegetation within riparian corridors.

WESTERN BURROWING OWL

The WBO population could be adversely affected through indirect mechanisms facilitated by or resulting from land development associated with the covered activities. Potential indirect adverse effects to WBO from land development include increased disturbance from maintenance activities associated with water infrastructure projects. Any tall structures, poles, electrical lines, etc. that are installed could provide perching structures for WBO predators. Vehicle strikes also can cause owl mortality.

There are also potential indirect effects that could result from non-native, invasive plant species management, with pesticide spraying a particular concern. For WBO in the Avra Valley HCP Permit Area, the potential indirect threat of glyphosate bioaccumulation has been researched as part of a City commissioned study (Garcia and Conway 2007). This research suggests that the use of products that include glyphosate should not cause significant adverse effects for the WBO in the Avra Valley Permit Area. However, since the researchers had a small sample size, more research is desirable to confirm this conclusion. Buffelgrass management efforts, such as the spraying the plant with pesticide, may decrease cover in the short-term, which could lead to changes in the prey base available for the WBO.

DESERT TORTOISE

As there is no modeled DT habitat within the Permit Area, indirect effects on the Desert Tortoise would be minimal. Should any DT make rare, long-distance movements between mountain ranges any additional human-made structures such as roads, fences, and facilities could add additional barriers to movement to those that already exist throughout Avra Valley.

TUCSON SHOVEL-NOSED SNAKE

TSNS that are displaced by construction activities could experience higher mortality while searching for unoccupied habitat. Roads and increased traffic on roads can increase mortality of snakes from vehicle strikes. Because it is not known whether this species persists in the HCP Permit Area, the population effects of the City's proposed covered activities are unknown.

3.5 Effects on Critical Habitat

No Critical Habitat has been designated for any of the proposed covered species and, therefore, no effects on Critical Habitat (as currently designated) are anticipated.

CHAPTER 4 – ACTIONS TO AVOID, MINIMIZE, AND MITIGATE IMPACTS

This chapter of the City’s Avra Valley HCP outlines species-specific conservation strategies designed to: 1) avoid, minimize and mitigate the potential impact of the proposed covered activities to the maximum extent practicable as required by Section 10 of the ESA, and 2) contribute to the long-term persistence of these species on a regional and/or local level.

4.1 Avoidance and Minimization

4.1.1 *Pre-construction clearance surveys*

The HCP TAC, with input from outside experts, has determined that pre-construction clearance surveys would not be effective for all covered species. According to Dr. Phil Rosen (2008), due to the difficulty in detecting the TSNS, species-specific surveys will have little value. Where construction is planned to occur, attempts to save individual animals remain infeasible for such secretive, small animals (2008). Moreover, due to the difficulty in tracking foraging bats or bats using the Permit Area for movement between foraging and roosting habitats, pre-construction clearance surveys have not been recommended by the TAC for the LLNB or PTBB. The transitory use of movement and foraging habitat within the Permit Area reduces the likelihood of direct injury or mortality.

Pre-construction clearance surveys will be conducted for the three avian species as part of MBTA compliance. Since the Permit Area is not known to provide breeding habitat for the CFPO or the WYBC, the TAC has advised the City that surveys will have little biological value since the animals will simply fly away once construction begins. Therefore, if these two species become listed and are added to the Permit, pre-construction clearance surveys will no longer be conducted as the ESA Section 10 Incidental Take Permit will become a special purpose permit for MBTA compliance (see Chapter 1 for further explanation). In the event that these two species are found to breed within the Permit Area as determined by the USFWS, the City will continue to conduct pre-construction clearance surveys.

Due to the more intensive use of the Permit Area by WBO, including potential breeding activity, pre-construction clearance surveys will always be conducted for this species, regardless of whether or not the species is listed. The pre-construction clearance survey protocols that will be used for each of the three bird species will be the latest protocols recommended by the USFWS. For example, the document entitled “Burrowing Owl Project Clearance Guidance for Landowners” (Burrowing Owl Working Group 2009) is, as of this writing, the latest pre-construction clearance guidance recommended by the USFWS.

Pre-construction clearance surveys will also be conducted for the DT according to the latest USFWS recommended protocols.

4.1.2 *Regulations other than the ESA*

For the covered activities described in Chapter 3, the City will comply with other regulations applicable to these extra-territorial City-owned lands, including those of the City, Pima County, the State of Arizona, and the U.S. Government. In addition to local land use regulations, several sets of regulations will have the effect of minimizing impacts to covered species and their habitat. These include regulations related to the following topic areas and are described below:

- Native Plant Preservation
- Landscaping and Screening
- Floodplain and Erosion Hazard Areas
- Air Quality
- Water Quality
- Outdoor Lighting
- Cultural Resources
- Noise

If such regulations are revised by the applicable governmental agency during the term of the Permit, the City will comply with the officially adopted regulations at the appropriate time in the project planning process.

LAND USE REGULATIONS

Although the HCP Permit Area lies within unincorporated Pima County, the fact that the land is owned by the City makes jurisdiction unclear in some situations. This is because governmental uses on government land are often exempted from another jurisdiction's regulations. According to Arizona Revised Statute 9-401:

Acquisition of land by city; extent and notice of city jurisdiction

A. A city or town may purchase, lease or rent land, whether contiguous or noncontiguous, lying outside its corporate limits, for its purposes and uses, and any violation of an ordinance of the city or town occurring within the territorial limits of the land may be punished by the city or town having control thereof to the same extent and with like effect as if the violation occurred within the corporate limits.

Therefore, determination as to whether or not a proposed use is subject to either City or Pima County land use regulations must be conducted on a case-by-case basis. Nevertheless, 99 percent of the land is currently within Pima County's Rural Homestead (RH) Zoning Code, which allows governmental uses. In addition, the Pima County Zoning Code includes land use exceptions for public utilities per section 18.07.040. For example, the Code states that "B.1. Nothing in this code shall prevent the location, erection, alteration, or maintenance of pipes, poles, wires, and similar installations necessary to distribute public facilities; B.2. In addition to other provisions of this code, the uses of this subsection shall be permitted in any zone and shall not be subject to the minimum lot area requirements." Therefore, depending on the situation and the applicable jurisdiction, the City may comply with its own regulations or voluntarily comply with Pima County regulations. For example, in the draft EA for the SAVSARP Recovered Water Pipeline, the City complied with its Native Plant Preservation Ordinance (NPPO) on the City-owned portions of the project (SWCA 2008). For SAVSARP, the City also complied with the City's NPPO by contracting for the completion of an Environmental Resources Report, which is a requirement of the City's NPPO (SWCA 2007).

NATIVE PLANT PRESERVATION

The City's NPPO (City Land Use Code, Division III, Division 8) – to which Pima County has an analog – is intended to encourage preservation-in-place of healthy native plants. This is through sensitive site design which minimizes the disruption of areas within the site containing native plants, while allowing for salvage and transplanting plants on the site that are likely to survive. These regulations apply to all new development and the expansions of existing development. Plants currently protected under these

regulations include: Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*), needle-spined pineapple cactus (*Echinomastus erectocentrus* var. *erectocentrus*), saguaros, and all other cacti; blue and foothill paloverde, Fremont cottonwood and Goodding willow, desert ironwood (*Olneya tesota*), velvet and screwbean mesquite (*Prosopis pubescens*), and other native tree species; and catclaw and whitethorn acacia (*Acacia constricta*), desert hackberry (*Celtis spinosa*), and other native shrubs; and ocotillo (*Fouquieria splendens*) and soaptree yucca (*Yucca elata*). Plant preservation requirements can be determined using one of four approved methodologies, including 1) Plant Inventory, 2) Plant Appraisal, 3) Set Aside, and 4) a combination approach.

Under the Plant Inventory Methodology, all native plants on site must be inventoried and preservation must meet specified minimum percent protections for these plants. A minimum of 100 percent of endangered species and “crested saguaros,” 50 percent of saguaros and ironwoods, and 30 percent of all other protected native plant species must be preserved-in-place or salvaged and transplanted on-site. Any plants that are removed from the site or salvaged and transplanted on-site must be mitigated at ratios ranging from 1 to 3 additional plants for each individual removed or transplanted. A credit towards this mitigation requirement is provided for preservation-on-site of plants at a ratio of 1 to 4 credits for every individual preserved in place. In the Plant Appraisal Methodology, the monetary replacement value for each individual of the protected species that are removed from the site is calculated to purchase an equal value of native plants of the same species to be planted on site. The Set Aside Methodology allows provisions of the NPPO to be met through permanent protection of at least 30 percent of the site as undisturbed open space. This set aside should consist of the area(s) on site with the highest resource value. In addition, 100 percent protection of all federally endangered plant species, saguaros, and ironwoods is required through preservation-in-place or salvage and transplantation on-site.

LANDSCAPING AND SCREENING

The City’s landscaping and screening requirements (City Land Use Code, Article III, Division 7) are intended to help conserve energy, water, and other natural resources through the use of xeriscape landscaping principles, to promote air quality, to improve community aesthetics, and to protect the public health, safety, and welfare. Compliance with the requirements should:

1. Help achieve City water conservation goals through the use of drought-tolerant plantings and xeriscape principles in landscape design.
2. Reduce air pollution and dust by encouraging the use of vegetation for air filtration and absorption of carbon dioxide and production of oxygen.
3. Reduce the heat and glare radiated by the built environment.
4. Reduce soil erosion by slowing stormwater runoff.
5. Assist in ground water recharge.
6. Limit the use of allergenic, pollen-producing plants.

For projects required to comply with these regulations, water harvesting principles are often incorporated such that 1) stormwater detention/retention basins are landscaped to enhance the natural configuration of the basin, and 2) grading, hydrology, and landscape structural plans are integrated to make maximum use of site stormwater runoff for supplemental on-site irrigation purposes. The landscape plan shall indicate use of all runoff, from individual catch basins around single trees to basins accepting flow from an entire vehicular use area or roof area. Since on-site runoff is directed to native plant vegetated detention/retention basins and/or landscaping areas, the additional water can establish and maintain relatively dense pockets of native vegetation providing wildlife habitat.

FLOODPLAINS AND EROSION HAZARD AREAS

The City is under State and Federal mandates to regulate stormwater and floodplain development and has a long-standing commitment to preserving watercourses in their natural state. Watercourses left in their natural state support plants and wildlife, help safely convey stormwater through the landscape, improve stormwater quality, and promote groundwater recharge. The City has codes, ordinances, development standards, and policies that apply to floodplains and riparian habitat.

The City's Floodplain and Erosion Hazard Area Regulations (City Code, Chapter 26, Article 1, Division 1) provide for the management of uses and development in floodplains to protect the public from flooding and to protect riparian habitats. All proposed developments within the 100-year floodplain must be reviewed for compliance with these regulations. Any development in the 100-year floodplain requires a Floodplain Use Permit that must be approved by the City Engineer. All watercourses with a 100-year discharge of 100 cubic feet per second or more are regulated under the Floodplain and Erosion Hazard Management Code (Chapter 26). The Floodplain and Erosion Hazard Area Regulations address the requirements for setbacks to structures and reference the City's 1998 Standards Manual for Drainage Design and Floodplain Management in Tucson, Arizona for determining how to calculate setback distances.

Per the provisions of City Development Standard 9-06, properties on which there is a regulated watercourse may be required to complete a Watercourse Environmental Resources Report (WERR) if the developer proposes to encroach within the regulated area of the watercourse. In the WERR, the developer – in this case, the City – must detail the location and composition of, and impacts to, any riparian vegetation that is present within the regulated area. This riparian vegetation is known as the Protected Riparian Area (PRA). Additional site-specific information including wildlife detected in and near the site is also required in the WERR. Utilities may be considered necessary development that may cross PRA. Other encroachments into the PRA may be allowed if necessary to accomplish site development. A Mitigation Plan must be submitted to address any proposed impacts within the PRA. A Development Standard Modification Request must be submitted requesting permission to undertake the proposed encroachment. Voluntary revegetation, restoration, or enhancement of habitat inside the PRA is not considered encroachment and is allowed, with submittal of a Restoration Plan.

AIR QUALITY

For any covered activity, the City must comply with Title 17 of Pima County Code of Ordinances related to the Pima County Air Quality Control District. The Pima County Air Quality Control District was created in accordance with ARS 49-474B, 49-474, and 49-475 and applies to all “types, kinds, and sizes of air pollutant emission sources in Pima County pursuant to ARS 49-402” (Pima County Code, Title 17). For example, Pima County Code states that:

The owner or operator of any stationary or portable source of air pollution which burns any material, except natural gas, shall keep complete records of the materials used as fuel. The owner or operator of any stationary or portable source of air pollution which incinerates any material shall keep complete records of all materials incinerated.

and

Any facility described in Section 17.16.010C utilizing any fuel source or incinerating any material which the operator has any cause to believe may be a hazardous waste shall test such material to determine if the material is a hazardous waste prior to burning or

incinerating the material. If the material is a hazardous waste, the facility shall comply with Section 17.16.150.

In addition, rule 202 of the State Implementation Plan states that:

A person who plans to erect, install, or replace an emission source which may cause, emit, contribute to, or control air pollution; or who plans to expand or modify any source in such a manner that the potential or actual emission rate would increase or decrease by virtue of the expansion or modification; or who plans to engage in an activity which may cause or contribute to air pollution – except as specifically exempted herein–shall obtain an Installation Permit from the Control Officer. The permit shall be obtained prior to beginning construction or modification of the source, commencement of the activity, or before entering into a binding agreement related to construction of the planned emission operation or activity which cannot be cancelled or modified without substantial loss to the person, whichever occurs first in time. (Pima County, undated)

WATER QUALITY

To protect surface water quality as part of any construction projects, the City requires that a grading permit be obtained from the Planning and Development Services Department prior to any grading or grubbing per Development Standard 11-01.0. In addition, the City has a Municipal Stormwater Permit as authorized Federal and State regulations (40 CFR 122.26 and ARS Title 49, Ch. 2, Article 3.1) that enables the City “to comply with all applicable stormwater quality provisions of Federal, State, and local laws and regulations to ensure the future health, safety, and general welfare of the citizens of Tucson, as well as the protection and preservation of the local environment.” (City Code, Chapter 26, Article II). This City code also describes prohibited and non-prohibited discharges and requirements such as a surface water pollution prevention plan.

OUTDOOR LIGHTING

The City and Pima County have enacted an outdoor lighting code (City ordinance 10135, Attachment A) with the purpose of preserving the relationship of the residents of Tucson and Pima County to their unique desert environment through protection of access to the dark night sky. According to the ordinance, intended outcomes include:

Continuing support of astronomical activity and minimizing wasted energy, while not compromising the safety, security, and well being of persons engaged in outdoor night time activities. It is the intent of this Code to control the obtrusive aspects of excessive and careless outdoor lighting usage while preserving, protecting, and enhancing the lawful nighttime use and enjoyment of any and all property. It is recognized that portions of properties may be required to be unlit, covered, or have reduced lighting levels in order to allow enough lumens in the lighted areas to achieve light levels in accordance with nationally recognized recommended practices.

Most of the HCP Permit Area is within the restrictive “Lighting Area E1c,” which includes a circular area thirty-five miles in radius, the center of which is the Kitt Peak National Observatory. Given the potential sensitivity of LLNB to light pollution (Lowery *et al.* 2009) as well as the proximity of Avra Valley to National parks, monuments, and observatories, more restrictive lighting area requirements (e.g., E1a) may be considered if compatible with the overall purpose of the covered activity. Table 5.1.1 of the City’s outdoor lighting code indicates the lumen maxima per lighting area designation (e.g., E1c) in mean lumen

per net acre. This information will be referenced and used when complying with the outdoor lighting code.

CULTURAL RESOURCES

Representing approximately 12,000 years of human settlement, Pima County has a wealth of cultural resources (Pima County 2001). Just within the Avra Valley HCP Permit Area, significant archaeological sites have been documented. For example, in her archaeological survey of the City's Simpson Farm property, Stevens (2001) states that:

AZ AA:11:12 (ASM), also known as the Pig Farm, Five Bridges, and Silverbell site, lies on an elevated area between the floodplains of the Santa Cruz River and the Los Robles Wash. The site consists of several areas of very high artifact density surrounded by a low-to-medium artifact density scatter. Central portions of the site are heavily potted, revealing adobe structures and burials, both inhumations and cremations. Surface features include several deflected trash mounds. Based on ceramic identification, the site dates to the Rillito, Rincon, and Tanque Verde phases. An early ceramic component may also be present.

Ruble (2005), in her assessment of the City's Santa Cruz Farm, recorded a total of 20 features, five of which were prehistoric in age and the remaining 14 were historic-period in age.

To protect and enhance this cultural heritage, City staff is directed to comply with all applicable laws and regulations governing protection of historical and archaeological resources (City Administrative Directive 1.07-7 Protection of Archaeological and Historical Resources in City Projects). These include:

1. National Historic Preservation Act
2. State Historic Preservation Act
3. Arizona Antiquities Act
4. State Laws – Human Burials – ARS 41-844 and ARS 41-865
5. City of Tucson Resolutions No. 12443 and 16548

Furthermore, “departments shall ensure that no land leveling, grading or excavation occurs on City projects, and no designated historic structures or potentially historic structures are altered or demolished, without first receiving clearance for such activities in accordance with the provisions of the directive. Departments shall seek this clearance during the earliest stages of project planning, so that any potential impacts can be identified and resolved without causing project delays or unplanned increases in project budgets” (City Administrative Directive 1.07-7). Thus, for any covered activities planned to occur as part of this HCP, compliance with all applicable cultural resource regulations and policies will occur.

NOISE

Although activities or operations of governmental units or agencies are exempted from noise restrictions, to the extent practicable, covered activities will comply with the City's excessive noise ordinance (Tucson Code, Chapter 16, Article IV, Section 16-31 – Excessive Noise). The ordinance establishes maximum permissible sound levels (Table 4.1.2) so that no person shall conduct or permit any activity that produces A-weighted decibels (dB(A)) beyond that person's property line exceeding the levels specified in the table below.

Table 4.1.2. City noise ordinance maximum sound levels (in dB(A))

Use of Property Receiving the Sound	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
Residential	70	62
Commercial	72	65
Industrial	85	70

4.2 HCP Permit Area Mitigation

4.2.1 *Permanent Protection of Existing Modeled Habitat within the HCP Permit Area*

The majority of land within the HCP Permit Area consists of former agricultural fields that were purchased by the City in the 1970s and 1980s. As a result, habitat quality is highly variable within the Permit Area. For example, while there are undisturbed riparian corridors, there are also many uncultivated and formerly cultivated lands that have been impacted in varying degrees by agricultural practices, livestock grazing, the proliferation of invasive species, off highway vehicle use, and human pedestrian traffic. The rate of recovery of the former farmland depends on various factors, such as intensity of farming efforts, soil type, and proximity to watercourses. For species such as the TSNS, it is unknown at which point farm fields made unsuitable by native species removal and soil compaction will have recovered sufficiently to become habitat.

The primary strategy for conservation of the covered species in this HCP is the protection of existing habitat (Figure 4.2.2). Table 4.2.2-1 lists the amount of modeled habitat for each species within the HCP Permit Area, except the Desert Tortoise which does not have modeled habitat within the Permit Area. The total footprint of modeled habitat is 7,752 ac (3,137 ha), leaving 13,998 ac (5,660 ha) of the Permit Area as non-modeled habitat. Because of the Permit Area's history of intensive agricultural use prior to the City's purchase of these lands, only 40 percent of the Permit Area currently provides potential habitat for the covered species.

The seven covered species use the Permit Area in different ways. The focus of this measure is to preserve those species-specific habitat functions that currently exist within the Permit Area, specifically to:

- Maintain existing LLNB movement habitat;
- Maintain existing PTBB foraging/movement habitat;
- Maintain existing WYBC migratory stop-over habitat;
- Maintain existing CFPO potential dispersal / over-wintering habitat;
- Maintain existing WBO breeding, migrating, and over-wintering habitat,
- Prevent direct mortality of any DT making long-distance, inter-mountain movements, and;
- Maintain existing TSNS year-round habitat.

Figure 4.2.2. Avra Valley HCP modeled habitat for the six covered species. (Please see figures at the end of the document)

Table 4.2.2-1. Covered species modeled habitat within the HCP Permit Area

Species	Modeled habitat in HCP Permit Area
Lesser Long-nosed Bat ¹	2,197 ac (889 ha) ¹
Pale Townsend's Big-eared Bat ¹	
Western Yellow-billed Cuckoo ¹	
Cactus Ferruginous Pygmy-owl ¹	
Western Burrowing Owl	4,532 ac (1,834 ha)
Desert Tortoise	None
Tucson Shovel-nosed Snake	2,457 ac (994 ha)
<i>Total habitat footprint (overlapping habitat merged)</i>	<i>7,752 ac (3,137 ha)</i>
<i>Remaining Permit Area with no modeled habitat</i>	<i>13,998 ac (5,660 ha)</i>

¹The footprint of modeled habitat is the same for Lesser Long-nosed Bat, Pale Townsend's Big-eared Bat, Western Yellow-billed Cuckoo, and Cactus Ferruginous Pygmy-owl

MITIGATION RATIOS

Given the variability of the HCP Permit Area's importance for each of the covered species, the City proposes to set-aside habitat at different ratios for each species. These ratios indicate the amount of habitat set-aside for every acre that is proposed for impact. For example, a 3:1 mitigation ratio requires that 3 acres are set-aside for every 1 acre that is developed. Given that the "currency" for mitigation is not species, but habitat, the mitigation ratios are not additive (i.e., that several species have the same modeled habitat does not require summing the ratios for all the species). Thus, while the first four species listed in table 4.2.2-2 below share the same habitat footprint (although they use these areas differently), encroachment into that habitat requires mitigating at 3:1 elsewhere within the Avra Valley HCP Permit Area. This 3:1 ratio for four species incorporates the overlapping and, therefore, higher biodiversity of the modeled habitat, but also reflects the relatively low importance of the Permit Area for all four species. If the modeled habitat were not to overlap, a lower mitigation ratio would be appropriate given the factors described above. The rationale for each of these mitigation ratios is described below for each species.

Table 4.2.2-2. Mitigation ratios for covered species

Species ²	Mitigation Ratio (Protected habitat: Developed habitat)
Lesser Long-nosed Bat ¹	3:1 ¹
Pale Townsend's Big-eared Bat ¹	
Western Yellow-billed Cuckoo ¹	
Cactus Ferruginous Pygmy-owl ¹	
Western Burrowing Owl	1:1

¹The footprint of modeled habitat is the same for Lesser Long-nosed Bat, Pale Townsend's Big-eared Bat, Western Yellow-billed Cuckoo, and Cactus Ferruginous Pygmy-owl

²The Desert Tortoise is excluded from this table as there is no modeled habitat for the species within the Permit Area.

Lesser Long-Nosed Bat

The LLNB is listed as a federally endangered species and is anticipated to use the Permit Area to travel between foraging resources and roosting habitats. Although there is no known breeding habitat within the Permit Area, the conservation strategy focuses on preservation of the potential movement corridors. Given that the species shares modeled habitat that has the same areal extent as three other species, a combined mitigation ratio of 3:1 is appropriate for not only the movement habitat of this species, but also CFPO over-wintering/dispersal habitat, WYBC dispersal and possible breeding habitat, and PTBB foraging habitat.

Pale Townsend's Big-Eared Bat

This species is not currently listed under the ESA. The primary threat to the PTBB relates to availability of breeding and wintering roosts. While there are no potential roost sites within the Permit Area, the bat may use the HCP Permit Area as foraging habitat. Since the species typically forages within 15 mi (24 km) of roost sites, use of the HCP Permit Area by this species is likely to be low. However, given that the species shares modeled habitat that has the same areal extent as three other species, a combined mitigation ratio of 3:1 is appropriate for the movement habitat of this species as well as the CFPO over-wintering/dispersal habitat, WYBC migratory stopover habitat, and LLNB movement habitat.

Western Yellow-Billed Cuckoo

The WYBC is designated by the USFWS as a candidate species for listing under the ESA. It may use the riparian corridors in the HCP Permit Area as migratory stopover habitat. The only nearby potential breeding habitat occurs adjacent to the Santa Cruz River at the City's Simpson North farm, Santa Cruz farm, and Martin farm properties, which are primarily outside of the Permit Area. Given that the species shares modeled habitat that has the same areal extent as that of three other species, a combined mitigation ratio of 3:1 is appropriate for this species as well as the CFPO, PTTB, and LLNB.

Cactus Ferruginous Pygmy-Owl

This species is not currently listed under the ESA. There is no breeding habitat for this species within the Avra Valley HCP Permit Area, only potential over-wintering and dispersal habitat. There have also been few recorded instances of CFPO dispersing through Avra Valley and no records of over-wintering. Based on these factors, the TAC recommends a 3:1 mitigation ratio for the areal footprint that includes the modeled dispersal/potential over-wintering habitat for the species.

Western Burrowing Owl

WBOs are not currently a federally or State-listed species. However, population numbers may be declining within their range, and it is clear that large areas of WBO habitat are being converted for urban development, particularly in the Phoenix area. There are a number of known populations in the Tucson basin; however, the population size and trend are not known. WBO do use the HCP Permit Area. A survey completed in 2006 (Grandmaison and Urreiztieta 2006) found 34 owls in the wintering season and four apparently unpaired owls in the breeding season. In addition, that survey found 1,836 suitable

burrows within the Permit Area, but only 292 (16 percent) showed any signs of recent or past use, and 40 percent of those were destroyed by flooding between the winter and spring surveys. More recently as part of WBO surveys conducted on the Chu Farm in 2011 and 2012, 11 burrows were observed with appropriate entrance dimensions, but no sign of WBO or WBO use of the burrows was observed (Westland Resources 2012a). On the Lupori Farm, WBO surveys were conducted in 2011 and 2012 as well, with 16 burrows of appropriate entrance dimensions found (Westland Resources 2012b). Initially, no sign of WBO or their use of these burrows was observed. However, in a follow-up survey on this property in October 2011, a WBO was observed flying away from a burrow. These results confirm the low, variable use of these lands by this species since the entire Chu Farm was modeled as WBO habitat while the Lupori Farm was not.

The current, relatively low numbers of WBO may be a result of several factors, including a limited prey base due to extensive pesticide use on these former agricultural lands and adjacent, active agricultural fields. Another potential factor may include a lack of suitable, stable burrows. Given these factors, a mitigation ratio of 1:1 is proposed for this species.

Tucson Shovel-Nosed Snake

The TSNS is a candidate for Federal listing under the ESA. This species occupies a fairly restricted range in south-central Arizona, including into northern Pima County. However, no TSNS have been observed within Pima County since 1979. Given these factors, a mitigation ratio of 2:1 will be followed for this species.

4.2.2 Phasing and Set-aside Site Determination

Implementation of any of the covered activities is uncertain both in scope and in timing. To address this uncertainty, mitigation will be contingent on planned implementation of individual projects. Since the scope and location of proposed covered activities are not yet known, more detailed requirements will be determined at the time that individual projects are implemented.

Once a project is planned that will impact covered species habitat, the City will make a preliminary determination of where habitat will be permanently set-aside as mitigation. For example, when determining optimal locations for WBO habitat set-aside, one characteristic to consider is proximity to perch structures for raptors, which prey on the species. This determination will include a map with an aerial orthoimage and digitized proposed boundary line along with the Geographic Information System (GIS) polygon layer of the species modeled habitat from the HCP. The City will share this map with the USFWS and request informal review and concurrence with the proposed set-aside location. Once the USFWS has provided comment, the City will proceed with the legal requirements for setting aside the land.

The City has the option of permanently setting-aside land prior to any planned impacts to species habitat and receiving HCP mitigation credit to be banked and applied for future use when needed. This may be desirable if the City anticipates that impacts may occur in the future and that it would be cost effective to set-aside additional land earlier in the process, such as when required mitigation set-asides are being legally protected. This may also be advantageous for other reasons, such as for boundary marking and fencing, signage posting, and habitat monitoring.

4.2.4 Maximum Impact Permitted and Associated Habitat Protection / Enhancement

Based on the area of modeled habitat and the TAC’s recommended mitigation ratios, table 4.2.4-1 indicates the total amount of modeled habitat that could be impacted in the Permit Area. For example, regarding the combined LLNB, PTBB, WYBC, and CFPO habitat model footprint and the mitigation ratio of 3:1, a maximum of 549 acres of the 2,197 modeled habitat acres can be impacted, while the other 1,648 acres of habitat is permanently set-aside as mitigation (1,648 acres set-aside: 549 acres impacted). Yet, since 13,988 ac (5,660 ha) of the 21,740 ac (8,798 ha) HCP Permit Area do not contain any covered species modeled habitat, it is possible that if the City needs to implement all covered activities, all of the 8,000 ac (3,237 ha) of additional disturbance could occur without impacting any modeled habitat. While avoiding modeled habitat would be ideal from the perspective of this HCP, other factors, such as proximity to current water infrastructure, environmental conditions, land use restrictions, and adjacent uses will also inform the most appropriate locations for the covered activities.

Table 4.2.4. Given mitigation ratios, maximum modeled habitat allowed for impact and corresponding set-aside

Species	A	B	C (B / (A + 1))	D (B - C)
	Mitigation Ratio (Acres of habitat protected for every acre impacted)	Modeled habitat in HCP Permit Area	Maximum modeled habitat permitted for impact	Maximum set-aside given maximum impact to modeled habitat
Lesser Long-nosed Bat ¹				
Pale Townsend's Big-eared Bat ¹	3:1	2,197 ac.	549 ac.	1,648 ac.
Western Yellow-billed Cuckoo ¹				
Cactus Ferruginous Pygmy-owl ¹				
Western Burrowing Owl	1:1	4,532 ac.	2,266 ac.	2,266 ac.
Desert Tortoise	N/A	N/A	N/A	N/A
Tucson Shovel-nosed Snake	2:1	2,457 ac.	819 ac.	1,638 ac.

¹The modeled habitat footprint is the same for these species

4.2.5 Preferred Impact and Mitigation Location – an Example Scenario

PRIORITY MITIGATION AREAS

As discussed in Chapter 3, the uncertain scope, location, and timing of City projects within the HCP Permit Area over the 50-year life of the Incidental Take Permit necessitate a flexible approach to maintaining habitat. The range of potential impacts will depend on community needs for water supply infrastructure. On one extreme, few new projects would occur within the Permit Area while on the other extreme, it is possible that all the covered activities will occur.

Although a flexible conservation program is necessary to preserve options for maintaining vital water and energy infrastructure for the community, City staff, in discussion with the TAC, has identified lands that would be most suitable for habitat set-aside. These Priority Mitigation Areas have been identified not only for their potential habitat value for the covered species, but also for other biological values. Factors used to identify Priority Mitigation Areas include:

- Proximity to landscape level biological corridors;
- Adjacency to a Federal preserve (i.e., Ironwood Forest National Monument) for increased habitat contiguity;
- Proximity or adjacency to Pima County open space acquisition priority lands;
- Proximity to riparian habitat;
- Proximity to lands being restored as wildlife habitat (e.g., Simpson Farm North and the Martin Farm), or;
- Proximity to lands previously used successfully as relocation sites for WBO (e.g., Simpson Farm South).

Because of these additional biological factors, the Priority Mitigation Areas also help meet regional goals for open space protection, habitat preservation, habitat connectivity, and the protection of sensitive species. Lands that are part of the Priority Mitigation Areas (Figure 4.2.5) include some of the modeled riparian habitat within the HCP Permit Area. Priority Mitigation Areas also include the Trust 205 Farm, the uncultivated portion of Buckalew Farm, and the northernmost lands within the Permit Area, including the Hurst, Martin, Santa Cruz, and Simpson South Farms). The Priority Mitigation Areas include modeled habitat for all of the covered species with modeled habitat in the Permit Area (i.e., all but the Desert Tortoise).

“CLEARWATER COMPLEX”

While there is no certainty about where impacts will occur within the HCP Permit Area throughout the life of the Permit, the lands near the Central Avra Valley Storage and Recovery Project (CAVSARP) and Southern Avra Valley Storage and Recovery Project (SAVSARP) that compose Tucson Water’s Clearwater Project facilities are most likely to be impacted by covered activities. This “Clearwater Complex” of lands (Figure 4.2.5) consists of 10,545 ac (4,267 ha). Proximity to 1) CAVSARP and SAVSARP, 2) natural gas distribution lines, 3) electrical transmission lines, and 4) the City limits, elevate the value of these lands above others in the Permit Area for future development.

Figure 4.2.5. Priority Mitigation Areas and the CAVSARP complex of Permit Area lands (This map has not yet been revised)

4.3 Mitigation outside of the Permit Area but within Avra Valley

While all mitigation is planned to occur within the HCP Permit Area, it is desirable to leave open the option to allow credit for off-site mitigation in unique circumstances. Therefore, on a case-by-case basis and with the written approval from a USFWS field or regional office, permanent protection of covered species habitat within Avra Valley but outside of the HCP Permit Area may be considered. Such special circumstances may occur, for example, as part of a cooperative open space purchase of lands that contain species habitat. In such cases, a biological evaluation provided by an environmental consulting firm will be required to delimit the boundaries of covered species habitat within the off-site property. Based on the amount of habitat, the mitigation ratios within this HCP, and the City’s role in the permanent protection

of the land, the USFWS will determine how much mitigation credit can be applied. There are no guarantees of USFWS approval and/or agreement of the details described in the biological evaluation, nor are there any guarantees that the USFWS will provide any mitigation credit in such circumstances. Therefore, prior to agreeing to any transactions, the City or its partner in the open space protection should first fund a biological evaluation to map the species habitat and then submit the evaluation to the USFWS with a letter describing the proposed ownership, management and monitoring, and legal protection arrangement. Only after a written determination from the USFWS has been received describing the amount of mitigation that will be granted should the City agree to any off-site habitat protection efforts for HCP mitigation credit.

4.4. Allowing wildlife movement within impact areas

As part of the City's CAVSARP site, open space corridors between recharge basins have been protected to provide for wildlife movement across the site. For covered activities that result in permanent land disturbance, the City should consider wildlife movement in site planning. While permanent protection of wildlife corridors may not satisfy ESA requirements if not within modeled habitat, such protection may help satisfy other regulatory requirements such as those related to native plant protection, landscaping, and floodplains. Since the Avra Valley and portions of the City's HCP Permit Area therein bisect the large protected natural areas of IFNM, Saguaro National Park, and Tucson Mountain Park, protection of corridors will help wildlife move across Avra Valley to these natural areas.

CHAPTER 5 – MONITORING AND STEWARDSHIP

Monitoring the effectiveness of the avoidance, minimization, and mitigation measures and ensuring compliance with the terms of the conservation program are mandatory elements of an HCP (50 CFR 17.22, 17.32, and 222.307). The USFWS elaborates on monitoring and adaptive management requirements for HCPs in its 5-Point Policy Guidance (64 FR 11485). The USFWS identifies two types of monitoring required for HCPs:

- *Compliance monitoring* – Monitoring and reporting requirements necessary to demonstrate that HCP requirements are being carried out.
- *Effectiveness monitoring* – Monitoring and reporting requirements necessary to evaluate whether the HCP measures are achieving the biological goals and objectives. Effectiveness monitoring also provides information to support adaptive management decisions.

The following describes the City’s commitments related to monitoring and stewardship activities triggered both by the issuance of the Permit, as well as any covered activities that occur in modeled habitat, requiring mitigation actions. Certain monitoring and stewardship activities will occur annually and will be documented for inclusion in annual reports regardless of whether or not mitigation is required. Once impacts to modeled habitat are planned to occur, this will trigger the need for mitigation in the form of permanent habitat set-aside. As a result of this set-aside designation, a higher level of monitoring and stewardship will be conducted in these areas.

5.1 Compliance Monitoring

If covered activities summarized in Chapter 3 are implemented, then compliance monitoring and reporting will be accomplished through the following:

- The City will submit annual reports to the USFWS documenting progress toward, and completion of the conservation commitments.
- The City will require that all City development plans within the Avra Valley HCP Permit Area contain a narrative description documenting compliance with the avoidance, minimization, and mitigation measures outlined in this HCP. This statement shall include maps and other graphics and analyses necessary to document this compliance.

5.2 Ecological Effectiveness Monitoring

As recommended by the City’s HCP TAC, the ecological effectiveness monitoring program for the Avra Valley HCP should:

- Inform progress toward meeting biological goals and objectives for each covered species.
- Be commensurate with the level of impacts (i.e., covered activities that occur within covered species modeled habitat). This acknowledges the uncertainty over whether or not any of the covered activities will actually occur during the term of the HCP. This is also consistent with the USFWS 5-points policy which states that “the scope of the monitoring program should be commensurate with the scope and duration of the operating conservation program and the project impacts” (USFWS 2000).

- Work towards consistency of monitoring efforts with other local agencies and jurisdictions as possible, practical, and cost-effective.

In determining whether or not species-specific or habitat-based indicators would be used for ecological effectiveness monitoring, the USFWS states that the “monitoring program should reflect the measurable biological goals and objectives” (USFWS 2000). In TAC discussions regarding the biological goals and objectives as well as the monitoring program, all agreed that habitat-based measures would be more effective for the covered species. Several factors influenced this decision-making process and are listed in table 5.2. Only the WBO met all three criteria. Yet, given that translocation of WBO to Pima County occurs from other parts of Arizona, species-specific measures may not accurately reflect habitat conditions of the Permit Area if confounded by an artificial influx of WBO to the region. Therefore, species-specific monitoring for the WBO is not recommended as a method to measure the efficacy of the City’s habitat protection efforts.

Table 5.2. Examples of TAC criteria influencing whether or not species-specific surveys should be considered for long-term ecological effectiveness monitoring.

Species	Permit Area provides year-round or breeding habitat (i.e., the species is not just passing through)	Within Permit Area, species is relatively easy to detect via survey	Documented occurrence in Permit Area within past 5 years
Lesser Long-nosed Bat	No	No	No
Pale Townsend's Big-eared Bat	No	No	No
Western Yellow-billed Cuckoo	No	No	Yes
Cactus Ferruginous Pygmy-owl	No	No	No
Western Burrowing Owl	Yes	Yes	Yes
Tucson Shovel-nosed Snake	Yes	No	No
Desert Tortoise	N/A	N/A	N/A

5.2.2 Habitat and Threats Monitoring

RIPARIAN VEGETATION

For several of the HCP covered species, the xeroriparian areas of the watercourses within the Avra Valley HCP Permit Area serves as the modeled habitat. In contrast to terrestrial uplands where precipitation is the primary source of water for plants, riparian areas have higher vegetation diversity and density resulting from the multiple water inputs of precipitation, overland flow, subsurface flow, and groundwater recharge (Zaimes *et al.* 2007). With regard to habitat, riparian areas are subject to a high degree of variability. According to Green (2007):

Riparian habitats often experience significant change over time resulting in a large number of habitat patches of differing ages in a small spatial area. Variation of habitat over time is high due to the random nature of two abiotic drivers: floods and drought.

To determine whether or not this riparian vegetation is adequately protected as habitat, TAC members initially recommended that vegetation structure be used as an indicator. However, based on further

discussion and closer review of the protocol in the context of the HCP, TAC members expressed concern about the ability to meaningfully detect any changes in vegetation structure due to 1) climate variability, 2) limitations of the protocol, 3) the low likelihood that vegetation structure will change during the term of the 50 years, and 4) whether or not a decrease in structure indicates declining habitat quality or simply that the canopy is maturing. Given this, the TAC recommended that the City use aerial orthoimagery in a GIS to calculate the areal footprint acreage of xeroriparian habitat and compare those values over time. Since vegetation change will occur slowly, the TAC has recommended that the data are gathered every five years. Steps in the data collection and analysis will involve the following:

- 1) Obtain the latest aerial orthoimagery that covers the entire Avra Valley HCP Permit Area. Source data may include the Pima Association of Governments triennial orthoimagery collection, USDA National Agriculture Imagery Program orthoimagery, private satellite orthoimagery, or others.
- 2) Overlay the latest 100-year floodplain polygon and wash line GIS layers. Classify the vegetation as either riparian or upland. Do this by digitally outlining (digitizing) the footprint of the riparian vegetation within the floodplains and adjacent to wash channels with characteristics of riparian vegetation. On the orthoimagery, riparian vegetation is noticeably darker and denser than upland vegetation.
- 3) Use on-the-ground data collection to test the accuracy of the riparian vegetation delineation. Randomly select (e.g., use the random tool in ArcGIS) 10 sites (i.e., the riparian vegetation on a selected parcel) in the HCP Permit Area. Drive and walk to these sites with a GPS unit to collect 30 georeferenced points at each site. Fifteen should be within riparian vegetation and 15 should be outside of the riparian vegetation, but within approximately 10 meters of the riparian vegetation boundary in the uplands (not unvegetated areas of the floodplain). A total of 300 points will be collected throughout the HCP Permit Area.
- 4) At the GIS-enabled computer, load the points onto the map file with the orthoimagery and habitat delineation. Use the appropriate tools to determine whether or not the on-the-ground points agree with the orthoimagery classification. Create an error matrix (example below) to determine the overall accuracy of the classification. If accuracy of less than 75% is obtained, repeat the process.

		True value as determined by on-the-ground GPS point collection		Sum
		Riparian	Non-riparian upland	
Classification (digitization) based on orthoimagery	Riparian	13	1	14
	Non-riparian upland	2	14	16
Sum		15	15	27

Overall accuracy = sum of diagonal/total number of points = 27/30 = **90%**

Figure 5.2.2. Example of error matrix for determining GIS classification accuracy.

As the hypothetical example in figure 5.2.2 shows, 13 points were correctly classified as riparian and 2 were incorrectly classified as riparian. Fourteen points were correctly classified as non-riparian upland and one was incorrectly classified as non-riparian upland for an overall accuracy of 90%.

BURROWING OWL HABITAT

Within set-aside areas, habitat will be evaluated every five years using photo points to document the conditions of the property and whether or not they are being properly managed for the species. In addition, surveys will be conducted in these set-aside areas to georeference burrow locations. Attributes should be included with the data to record characteristics of the burrow that indicate whether or not there is evidence of use by WBO.

TUCSON SHOVEL-NOSED SNAKE HABITAT

TSNS habitat will be monitored using photopoints collected every 5 years to document that the conditions of the land have not degraded as a result of City negligence in protecting the biological values. In addition, optional arthropod surveys may be conducted every five years within habitat set-aside areas to assess prey abundance and diversity.

WEATHER DATA GATHERING AND COMPILATION

Weather data will play an important role in the ecological effectiveness monitoring for the Avra Valley HCP. These data will help explain observed vegetation responses to climate patterns. In particular, the TAC has suggested that two years of above average rainfall will likely trigger an increased fire threat to xeroriparian communities posed by extensive germination of annuals, such as red brome (*Bromus rubens*), London rocket (*Sisymbrium irio*), and common Mediterranean grass (*Schismus barbatus*). Therefore, the City will compile local climate data for inclusion in annual reports. This will include temperature highs, lows, and averages, precipitation event highs per month and year, and stream gage data. A weather station has been installed on City-owned land as part of the SAVSARP. Data from that station will be collected from this or other Permit Area locations throughout the 50-year duration of the Permit. Data will also be collected from other local weather stations such as Tucson International Airport, Ryan Airfield, and/or Marana Airport.

5.3 Stewardship

SITE SECURITY AND WILDLIFE FRIENDLY FENCING

The City will erect (where not already present) and maintain wildlife-friendly fences around all Avra Valley HCP Permit Area properties that contain modeled, covered species habitat to prevent unauthorized entry onto the properties by foot, vehicle, or grazing animals. This will help minimize 1) damage to existing vegetation, 2) the potential for wash degradation (e.g., headcutting, scour and erosion), 3) potential disturbance to covered species due to noise and proximity of humans, and 4) the potential for introduction of toxic materials, fire, or trash. Fence lines will be posted with appropriate signs (e.g., no firearms), depending on the activities allowed on the properties.

The City will monitor the fence lines of the Permit Area properties at least once per month, but more likely, once a week. This will help forestall illegal dumping, vandalism, and trespassing, all of which could degrade habitat or increase the potential for direct take, such as OHV-related mortalities to the TSNS or WBO.

INVASIVE SPECIES MANAGEMENT WITHIN HABITAT SET-ASIDES

Non-native invasive species, such as the African grass known as buffelgrass, may pose significant threats to habitat in the HCP Permit Area. According to Williams and Baruch (2000), “African grasses [including buffelgrass] have the potential to affect ecosystem function by 1) altering productivity or trophic structure, 2) altering microclimate and shifting the rates of consumption and supply of light, water and mineral nutrients, 3) increasing the frequency and intensity of fire, 4) altering competitive interactions, and 5) compromising ecosystem stability.” Areas of dense buffelgrass or non-native annuals pose a fire hazard that is not typical of the normal fire regime of the Avra Valley HCP Permit Area. If any habitat set-asides are established for mitigation purposes, these areas will be actively targeted for invasive species control efforts, such as through hand-pulling or herbicide spraying of buffelgrass. Invasive species management and control efforts are expected to occur throughout the Permit Area and not just within the set-aside lands. However, this additional effort is not an HCP-related commitment.

OPTIONAL HABITAT RESTORATION AND ENHANCEMENT

Despite two or more decades that lands within the Permit Area have no longer been cleared, leveled, and tilled for agricultural purposes, only some of the lands have begun to return to a more naturally vegetated condition. These unrecovered areas include lands as part of the Altar/Brawley Wash system, which have been a concern to local resource managers for several decades. In 1992, the Soil Conservation Service (now NRCS), in cooperation with the Pima Natural Resource Conservation District, published a natural resource restoration plan for the Brawley Watershed. This report identified several issues of concern within the watershed including: 1) stream bank erosion and associated loss of riparian and range habitat along the Brawley Wash; 2) sheet, rill, and gully erosion and associated damages to rangeland and improvements; 3) sedimentation effects on downstream water quality, farmland, and county and state road crossings; 4) flash flooding and associated damages to roads, farmland, and local communities; and 5) loss of groundwater recharge due to accelerated flows within the incised wash (USDA 1992).

Prior to extensive cattle grazing in the late 1800s and early 1900s that stripped the watershed bare of protective cover, no gullies were evident in the valley floor. According to the USDA (1992), the axial stream was, over one hundred years ago, a floodplain covered with tall grass and one quarter to one half mile wide. A comparison of photos of Boundary Monument 144 from 1893 and 1983 show how grassland has given way to shrubs and small trees (USDA 1992).

In the mid-2000s, Dr. Phil Rosen of the University of Arizona was contracted by the City to assess the level of degradation to City-owned lands within the HCP Permit Area occurring due to past agricultural uses. He was also asked to evaluate the potential for natural recovery or restoration of these properties to a more natural and better functioning state. Dr. Rosen stated that:

Large portions of Brawley Wash...are highly degraded barrens with adobe soils and low perennial plant diversity...Restoration of the Brawley Flats that would be valuable enough to justify the effort and costs that would be likely should, in my evaluation, include especially the partial elimination of enhanced drainage of the flats, and the partial increase of "overbank flood storage" – the restoration of sheet flow and short-duration standing water on broad areas of the Brawley Floodplain (Rosen 2008b).

To the extent that activities are cost effective, low risk to adjacent properties, and practical, the City desires to manage former agricultural lands and lands degraded by severe erosion so that they return to a more naturally vegetated state similar to adjacent or nearby undisturbed lands. Restoring the land has the potential to provide numerous benefits, including:

- Increased abundance of wildlife habitat,
- Decreased watercourse degradation,
- Increased flood control,
- Decreased spread of non-native, invasive plants, and,
- Decreased need to actively manage lands to control spread of non-native, invasive plants.

In 2001 and 2006, Tucson Audubon Society signed Right of Entry agreements with the City, allowing the organization to restore City-owned acreage immediately adjacent to the Santa Cruz River. This portion of the Santa Cruz River currently has perennial flow due to discharge of treated effluent that occurs upstream from the City's Simpson and Martin Farm properties. Since restoration is funded with Clean Water Act Section 404 in-lieu mitigation fees, these lands have been excluded from the City's HCP Permit Area to avoid double-counting mitigation. Tucson Audubon Society's work has not only involved installing container plants, but also experimenting with various seeding and passive rainwater techniques. These efforts will serve as small-scale trials and potential models, which the City can follow on degraded lands within the HCP Permit Area if restoration activities are planned. For summary information on this work, see Tucson Audubon Society 2007a and 2007b.

Input from other restoration studies could also inform any future habitat restoration efforts. For example, Bean *et al.* (2004) have specific recommendations for revegetating retired farmland in southern Arizona. They state:

We have found that the most effective way to revegetate retired cropland in southern Arizona is to transplant native species of at least a 3.8-l (1-gal) container size (6 to 9 mo old) at appropriate densities (250 plants/ha [100 plants/ac] in our situation) into fields that are drip irrigated for the first year following planting, while minimizing soil disturbance as much as possible. This technique virtually guarantees success by mitigating two of the most important constraints to vegetation recovery in arid lands: low and variable precipitation and limited propagule availability (Bean et al. 2004).

All of the HCP covered species may benefit from these restoration efforts. The potential employment of land management strategies will be determined on a site-by-site basis according to planned land use and existing site conditions. Other areas could be restored to provide habitat, migration corridors, and an open space network (City of Tucson 1996). While habitat restoration efforts may continue to occur throughout

the Permit Area, the City is not committing to restore habitat as part of this HCP. As indicated in the Changed Circumstances table in Chapter 6, should the lands recover to a more naturally vegetated state within the term of the Permit such that additional habitat exists, the City may consult with the USFWS about the potential to allow mitigation credit for such lands. It will be at the discretion of the USFWS to determine whether or not mitigation credit would be allowed and at what level. Species-specific restoration considerations are described below.

Lesser Long-Nosed Bat

For this species, USFWS staff recommends that restoration activities focus on lands immediately adjacent to or within the foothills of the Tucson, Roskrige, or Silverbell Mountains. These lands serve as a foraging habitat for the LLNB and would be particularly important areas for the natural establishment of saguaros where conditions are suitable. Also, off-site salvage and HCP Permit Area transplant of saguaros may be appropriate to consider as long as in compliance with all applicable regulations.

Pale Townsend's Big-Eared Bat

Restoration of lands should emphasize the importance of water to the species for both drinking and enhancing foraging resources. As the species is primarily a moth specialist, it feeds in the open along edge habitats such as streams and intermittent streams as well as along pastures, crops, and native vegetation (Pierson *et al.* 1999). Therefore, restoration and enhancement should focus on mimicking the foraging habitat characteristics described above. This may include installation of riparian plant species that can be supported by the site's depth to groundwater and surface flow regime. Prior to restoration or enhancement, such sites may not currently support native vegetation due to competition from exotic invasive species, lack of seed sources because of prior land uses, and other factors.

Western Yellow Billed Cuckoo

Restoration of WYBC migration habitat should focus on tall canopy cover. In the Permit Area, this is likely to consist primarily of mesquite bosques, given the limited amount of available water. Restoration of breeding habitat is already occurring passively on City-owned lands within the Permit Area and actively adjacent to the Permit Area as part of Tucson Audubon Society's work on the City's North Simpson, Santa Cruz, and Martin Farm properties.

Cactus Ferruginous Pygmy-Owl

USFWS personnel recommend that CFPO habitat restoration efforts involve mimicking the vegetation composition and structure in nearby areas of intact CFPO potential dispersal / overwintering habitat, such as mesquite bosques. As with LLNB, establishing saguaros on Permit Area lands within the foothills that contain suitable soils could eventually help support CFPO breeding opportunities.

Western Burrowing Owl

To provide guidance to the City's HCP development efforts for the WBO, a Burrowing Owl Working Group composed of AZGFD, USFWS, and Wild at Heart personnel gathered in 2007 to develop guidelines. This document entitled, "Burrowing Owl Management Guidelines for Municipalities" (Burrowing Owl Working Group 2007) provides specific recommendations that will be used by the City if Burrowing Owl Management Areas (BOMA) are established and managed within the Permit Area.

Desert Tortoise

While there is no modeled habitat within the HCP Permit Area, any efforts that return the degraded former farmlands adjacent to the mountain bajadas to a natural state with a diversity of native herbs, grasses, woody plants, and succulents, may provide additional potential foraging habitat for the species.

Tucson Shovel-Nosed Snake

According to Dr. Phil Rosen:

Although we lack a full, clear understanding of its habitat requirements in its range on the transition of Arizona Upland to Lower Colorado Valley Sonoran Desertscrub from Florence to Casa Grande to Marana, there is enough evidence to indicate that productive, mesquite-, catclaw acacia-, blue paloverde-, and creosotebush-dominated areas with sandy loam to very sandy soils are optimal. Productive swales and stabilized former dunes or sand lenses are characteristic formations that appear to enhance habitat suitability for the Tucson Shovel-nosed Snake (2008).

Thus, habitat restoration and enhancement should focus on recovery of native woody vegetation, as described by Rosen above, on sandy and sandy loam soils. For the Brawley Wash system, this could also, in appropriate situations, involve removal of drainage / channelization structures that preclude sheet-flow, braiding, and sediment deposition (sand and fine sandy loam) (Rosen 2008b). In addition, Dr. Rosen (2008) recommends that:

- *Processes that enhance the accumulation of patches of sand and soft soil should be favored.*
- *Creosotebush, mesquite-shrub complexes, and other shrubs that trap accumulations of wind-blow sand around themselves should be encouraged, and seeding of creosotebush in suitable areas of re-vegetating farmland could be considered.*
- *Digging animals that have significant effects on soil should be conserved, particularly large ones like the Bannertail Kangaroo Rat (which apparently occurs on Cactus Avra Farm), Merriam's Kangaroo Rat, and several smaller species of pocket mice in the kangaroo rat family (Heteromyidae).*

CHAPTER 6 – PLAN IMPLEMENTATION

6.1 Changed and Unforeseen Circumstances

Application requirements for Incidental Take Permits include assurances provided in case what are referred to by the USFWS as changed or unforeseen circumstances should occur (50 CFR 17.22). The USFWS describes “changed circumstances” as changes in circumstances affecting a species or geographic area covered by a conservation plan or agreement that can reasonably be anticipated by plan or agreement developers and the Service and that can be planned for (e.g., the listing of new species, or a fire or other natural catastrophic event in areas prone to such events) (50 CFR 17.3). According to 50 CFR 17.22:

If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and were provided for in the plan's operating conservation program, the permittee will implement the measures specified in the plan. If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan's operating conservation program, the Director will not require any conservation and mitigation measures in addition to those provided for in the plan without the consent of the permittee, provided the plan is being properly implemented.

Given the dynamic nature of ecosystem processes and human activities that could impact the Permit Area, the TAC developed a table of potential changed circumstances that may occur during the 50-year term of the Permit. Should any of those changed circumstances occur, the City's proposed responses to the circumstance are included as part of the table (Table 6.1).

In contrast to changed circumstances, the USFWS defines unforeseen circumstances as changes in circumstances affecting a species or geographic area covered by a conservation plan or agreement that could not reasonably have been anticipated by plan or agreement developers and the Service at the time of the conservation plan's or agreement's negotiation and development, and that result in a substantial and adverse change in the status of the covered species. The responsibility for addressing unforeseen circumstances lies with the USFWS. According to 50 CFR 17.22:

In negotiating unforeseen circumstances, the Director will not require the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed upon for the species covered by the conservation plan without the consent of the permittee. If additional conservation and mitigation measures are deemed necessary to respond to unforeseen circumstances, the Director may require additional measures of the permittee where the conservation plan is being properly implemented, but only if such measures are limited to modifications within conserved habitat areas, if any, or to the conservation plan's operating conservation program for the affected species, and maintain the original terms of the conservation plan to the maximum extent possible. Additional conservation and mitigation measures will not involve the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water, or other natural resources otherwise available for development or use under the original terms of the conservation plan without the consent of the permittee.

Examples of unforeseen circumstances for the Avra Valley HCP include, but are not limited to, the following:

- Famine,
- Pandemic disease,
- War or large scale/widespread acts of terrorism occurring within the U.S.,
- State secession from the U.S. or formation of a new state that includes the Permit Area,
- Natural catastrophe, such as an earthquake, volcanic eruption, or meteoroid impact as well as flooding and tornado damage,
- Effects of climate change beyond those foreseen as changed circumstances,
- New, exotic game animals released in Southern Arizona,
- Widespread planting of non-native, invasive plant species (for grazing, perhaps) on lands near the Permit Area.

Effects on the HCP Permit Area related to these unforeseen circumstances could also include widescale poaching, cutting of trees for firewood, squatting, and population shifts. According to 50 CFR 1, Sect. 17.22, the Director of the USFWS has the burden of demonstrating that an unforeseen circumstance exists.

Table 6.1. Potential changed circumstances and the City's response

#	Circumstance	City response
1	De-listing of a covered species (e.g., the LLNB is removed from the list of endangered species).	Work with the USFWS to determine if and how this changes the HCP conservation program.
2	Covered species that was not listed at time of Permit issuance becomes listed under the ESA.	No response necessary. The USFWS will add the newly listed species to the City's Permit. As described earlier, for avian covered species, this listing may change survey requirements since the listing would make the Permit a special purpose permit under the MBTA.
3	New species listed (not a covered species) that occurs within HCP Permit Area.	Work with the USFWS, and possibly the TAC as well, to determine the habitat needs of this species and whether or not the currently modeled habitat for the Permit Area corresponds with that of any covered species. As necessary, mitigate appropriately.
4	Loss of known population of covered species that uses the Permit Area.	Work with the USFWS to determine if and how this changes the HCP conservation program.
5	New disease affecting a covered species occurs in Southern Arizona. An example of this could be the spread of White-nose Syndrome (WNS) from eastern North America. WNS affects hibernating bats.	Work with the USFWS, and possibly the TAC as well, to determine possible, voluntary course of action.
6	New Critical Habitat and/or Recovery Areas designated for covered species.	Work with the USFWS, and possibly the TAC as well, to determine any voluntary conservation actions or modifications to the HCP conservation program.

7	USFWS species recovery efforts change and may include release of experimental, captive-bred population of covered species (e.g., CFPO) within dispersal distance of the HCP Permit Area.	Work with the USFWS to determine if and how this changes the HCP conservation program. If habitat use of HCP Permit Area changes because of population augmentation (e.g., CFPO are found to nest), additional, voluntary conservation measures may be recommended by the USFWS. If nesting sites occur within the HCP Permit Area because of augmentation, the USFWS or AZGFD will notify the City of the location of this site to ensure that precautions can be taken to avoid take.
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Table 6.1. Potential changed circumstances and the City's response (continued)

#	Circumstance (cont.)	City response (cont.)
8	CFPO and/or WYBC are found to nest within Avra Valley HCP Permit Area as determined by the USFWS. As of the drafting of the HCP, no breeding habitat exists.	Preconstruction clearance surveys will be required to avoid direct take. Work with the USFWS and TAC to determine other possible, voluntary conservation actions.
9	New invasive plant species occurs within HCP Permit Area.	Work with the USFWS, and possibly the TAC as well, to determine the threat posed to Covered Species habitat and possible eradication methods.
10	Severe freeze damages or destroys vegetation included within the footprint of modeled habitat for HCP covered species.	Photo document extent of freeze impacts. Work with the USFWS, and possibly the TAC as well, to determine what, if any, restoration should occur. Voluntary restoration activities are encouraged.
11	Severe drought persists over a period of years, stressing or killing vegetation as part of covered species habitat.	Work with the USFWS, and possibly the TAC as well, to determine any voluntary conservation actions or modifications to the HCP conservation program.
12	Fire damages or destroys modeled habitat for covered species.	Photo document extent of fire disturbance. Work with USFWS, and possibly the TAC as well, to determine what, if any, restoration should occur. Voluntary restoration activities are encouraged.
13	Flood damages or destroys vegetation within the footprint of modeled habitat for covered species.	Many acres of modeled habitat are within floodplains and, therefore, flooding is a natural process likely to impact vegetation within the Permit Area. Events considered 100-year floods or greater should be photo documented within modeled habitat areas.
14	Spread of non-native, invasive species is uncontrollable to the extent prescribed in the monitoring program.	Work with the USFWS, and possibly the TAC as well, to determine possible voluntary course of action, such as a limited, strategic grazing operation or mowing followed by herbicide spraying.
15	Major new or widened roadway proposed for Avra Valley HCP lands <i>with</i> covered species modeled habitat. (This is not a planned covered activity).	Impacts must comply with mitigation standards of the HCP. It will also be recommended that the lead agency (e.g., ADOT) work with the USFWS, and possibly the TAC as well, to determine any additional mitigation requirements, such as crossing structures.
16	Major new or widened roadway proposed for Avra Valley HCP lands <i>without</i> covered species modeled habitat. (This is not a planned covered activity).	Recommend lead agency consider mitigation for impacts to HCP covered species and other wildlife impacted.
17	Major new or widened roadway proposed for Avra Valley, although not within the HCP Permit Area. (This is not a planned covered activity).	Recommend lead agency consider mitigation for impacts to HCP Covered Species and other wildlife impacted.
18	Toxic spill into watercourses within or adjacent to Avra Valley HCP Permit Area causes die-off of vegetation as part of modeled habitat.	Work with the USFWS, and possibly the TAC as well, to determine any voluntary conservation actions or modifications to the HCP conservation program.
19	Increased trespass within HCP Permit Area is found to damage areas of modeled habitat	Increase patrols of problem areas. Repair damaged fence(s) and increase signage. Incorporate recommendations from USFWS or other agencies.

20	Increased residential development in Avra Valley results in high numbers of feral cats being detected in modeled habitat areas. High numbers detected on multiple visits suggests that coyotes and other predators are not keeping population in check.	Work with the USFWS, and possibly the TAC as well, to review proposed control effort that may involve coordination with Pima County Animal Control.
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Table 6.1. Potential changed circumstances and the City's response (*continued*)

#	Circumstance (cont.)	City response (cont.)
21	Tucson Audubon Society proposes to expand habitat restoration work into the Avra Valley HCP Permit Area as part of its right of entry agreement for City-owned land.	Work with the USFWS, and possibly the TAC as well, to review proposed expansion and determine if this would result in a conflict of mitigation credits. Consider revising HCP Permit Area boundary if there is no conflict. Note that current Tucson Audubon Society restoration on City-owned land cannot be counted as HCP mitigation credit because these restoration efforts satisfy Clean Water Act Section 404 mitigation.
22	Boundary surveys result in minor changes to parcel boundaries and, therefore, changes to the HCP Permit Area boundary.	If 50 m (164 ft) or less of lateral boundary shift, City staff can make necessary adjustments to HCP Permit Area and modeled habitat boundaries. If greater than 50 m (164 ft), discuss proposed adjustments with the USFWS, and possibly the TAC as well, prior to making them.
23	City acquires, or agrees to manage and monitor, lands with covered species modeled habitat adjacent to or in close proximity to the Avra Valley HCP Permit Area.	Discuss mitigation credit amounts with the USFWS, and possibly the TAC as well.
24	City proposes to sell or lease lands <i>without</i> Covered Species modeled habitat.	No response necessary.
25	City proposes to sell or lease lands <i>with</i> Covered Species modeled habitat.	Contract must stipulate that new owner or lease holder must comply with terms of the HCP.
26	Changes to the type or total footprint of Covered Activities are proposed.	Work with the USFWS to determine what is allowable and/or required (e.g., amendment to HCP).
27	A large amount of data used for ecological monitoring trend analysis are found to be missing.	Consider repeating monitoring effort to replace lost data.
28	A small amount of data used for ecological monitoring trend analysis are found to be missing.	Use objective guidance from statistical references and document the justification and methods used (e.g., replace with mean).
29	A large shrub or tree along a vegetation monitoring transect is cut down by trespassers for fire wood.	Photo document vandalism and note as part of annual report to the USFWS as well as ecological effectiveness monitoring report. Consider replanting cut vegetation, increasing security patrols, or re-locating transect based on discussions with USFWS staff and possibly the TAC as well.
30	City voluntary habitat restoration or enhancement efforts (e.g., dryland seeding, invasive species removal, etc.) within HCP Permit Area increases amount of habitat for covered species.	Work with the USFWS, and possibly the TAC as well, to determine if restored farmlands could provide mitigation credit.
31	The TAC Operating Principles and Responsibilities are found to be flawed.	The USFWS Tucson field office staff lead may approve changes in writing, based on her or his discretion, without requiring an amendment to the HCP.
32	Monitoring program is considered to be faulty (e.g., ineffective, inefficient, and/or inconsistent with other jurisdictions) and in need of modification.	Work with the USFWS, and possibly the TAC as well, to review the rationale for modifying the monitoring program, seek approval for these changes, and incorporate these changes into the HCP.

<p>33 Hunting law changes call in question the ability of the City of Tucson to restrict hunting on HCP Permit Area lands, especially the habitat set-aside lands.</p>	<p>The City does not know all of the potential ramifications of opening these areas to hunting. Allowing for flexibility to make management changes and close or open areas based on early outcomes will be an important component for multiple uses. If hunting is to occur, it must be highly regulated to prevent direct and indirect effects on covered species. At least initially, the following should be prohibited: Vehicular access, camping, fires, nighttime hunting, playback of recorded game calls, and use of firearms within habitat set-aside areas.</p>
<p>34 Cooperative conservation efforts are discussed that involve the potential for shared mitigation credit.</p>	<p>Discuss this with the USFWS before proceeding and request written concurrence from the USFWS describing how mitigation credits would be shared.</p>

6.2 Costs and Funding

Regarding Permit application requirements and in accordance with 50 CFR 17.22, the USFWS requires the applicant to include a description of the funding that will be available to implement steps to monitor, minimize, and mitigate impacts for which a Permit is being sought. The sections below list the estimated costs associated with such measures as well as the funding sources for these activities. Other than monitoring and stewardship activities as well as annual reporting that will occur throughout the duration of the Permit, costs will be commensurate with the level of impacts to covered species.

6.2.1 Avoidance, Minimization, and Mitigation Measures

HCP-related costs estimated for avoidance, minimization, and mitigation measures do not include activities that would otherwise be required in the regulatory compliance process for development (e.g., compliance with cultural resource regulations) as part of the covered activities. Costs are limited to activities related to permanent habitat set-aside as well as pre-construction clearance surveys. These estimated costs are incurred only if a covered activity is planned to impact modeled habitat and, therefore, all of the costs estimated below (Table 6.2.1) would be new costs not already budgeted and funded by Tucson Water, which operates as an enterprise fund (i.e., fee-based, self supporting) of the City.

Table 6.2.1. Estimated costs for permanent habitat protection and pre-construction clearance surveys

Activity/Item	Estimated cost per covered activity requiring habitat set-aside	Low total estimate (3 set-asides during 50 years)	Medium total estimate (8 set-asides during 50 years)	High total estimate (13 set-asides during 50 years)	Assumptions/notes
Legal fees (e.g., draft and record deed restriction or other protection mechanism)	\$4,000	\$12,000	\$32,000	\$52,000	Rough estimate per Tucson Water staff
Deed restriction set aside boundary survey and permanent marking	\$8,000	\$24,000	\$64,000	\$104,000	\$5,000 - \$8,000 estimated for each survey per Tucson Water staff.
Annual deed restriction compliance reporting	\$980	\$2,940	\$7,840	\$12,740	This would be conducted internally, but report will be included with annual report to USFWS. Includes costs for photographing all easement properties and drafting and submitting a report. Personnel costs = 3 days x \$40 per hour Travel = 40 miles x \$0.50 per mile.
Pre-construction clearance surveys for MBTA compliance	\$1,800	\$5,400	\$14,400	\$23,400	Highly variable depending on size of area, consultants used, and the number of species being surveyed. WBO clearance surveys would be required regardless of whether or not listed. CFPO and WYBC surveys would no longer occur if listed. A rough estimate is \$90 per hour x 2.5 days = \$1,800 per survey.
Subtotal	\$14,780	\$44,340	\$118,240	\$192,140	
Contingency (20%)	\$2,956	\$8,868	\$23,648	\$38,428	
TOTAL	\$17,736	\$53,208	\$141,888	\$230,568	
Annual total if spreading costs over 50 years		\$1,064	\$2,838	\$4,611	

6.2.2 Monitoring, Stewardship, and Changed Circumstances

In recent years, the City funded at least two positions with one hundred percent of time dedicated to tasks related to land management activities for the City's Avra Valley holdings, including a Water Operations Superintendent position and an Environmental Inspector position. While these positions may become contract positions, the duties will be similar. As part of these positions, the City continues to budget for on-going inspections of all the properties to document any illegal activity such as trespassing, vandalism, and dumping. Funding for repair, replacement, or installation of fencing along the perimeter of each property is also budgeted annually. Funding commitments to address changed circumstances will be limited to \$25,000 (in 2012 dollars). Additional funds may be expended, but are not required for this HCP. Throughout the term of the Permit, the City will continue to fund these activities through the annual budget process.

Several additional costs related to monitoring, stewardship, and changed circumstances will be incurred as a result of this HCP. These activities are listed in table 6.2.2 along with estimated costs. Funding for these activities will be included in Tucson Water budgets. Based on preliminary estimates, the costs for these activities will be nearly \$164,000 per year. To cover these costs, the budgets for covered activities (e.g., expansion of groundwater recharge facilities) will be crafted so that these HCP-related expenses are built-in as part of regulatory compliance costs. Also, lease payments, such as those from the large solar farm installations at the Chu and Lupori Farms, may be used to help offset these HCP-related estimated expenses.

Table 6.2.2. Estimated monitoring, stewardship, and reporting costs¹ not currently budgeted by the City

Activity/Item	Estimated annual cost (rounded)	Estimated cost over 50-year term of Permit (50 x annual cost)	Assumptions/notes
Riparian vegetation GIS classification and GPS data collection (ground-truthing) every 5 years	\$473	\$23,650	GIS classification, comparison with field data, and reporting is estimated to take 3 days. Field data collection at ten randomly selected sites estimated to take up to 5 days. Personnel costs = eight days (64 hours) x \$35 per hour = \$2,240. Travel at 0.50 per mile x 50 miles per day = \$125. Total = \$2,365 every 5 years or \$473 per year. Cost does not include costs of GIS software, computer, or GPS unit.
Photopoint gathering within habitat set-asides every 5 years	\$585	\$29,250	This will vary widely as determined by the number of set-asides that are established. For each set-aside, one field day and 1 office day (for reporting) are estimated (16 * \$35 per hour = \$560). Vehicle costs estimated at \$25 (50 miles x \$0.5 per mile). Total = \$585 per set-aside every 5 years. Estimate does not include equipment costs (e.g., camera). For 5 set-asides over 50 years, the total cost would be \$29,250
Burrowing owl burrow assessment on habitat set-asides every 5 years	\$672	\$33,600	This will vary widely as determined by the number of set-asides that are established. For each set-aside, one field day and 3 office days (for reporting) are estimated (Personnel = 32 * \$35 per hour = \$1,120). Vehicle costs estimated at \$25 (50 miles x \$0.5 per mile). Total = \$1,145 per set-aside every 5 years. Estimate does not include equipment costs (e.g., probing camera). For 3 set-asides over 50 years (3 of 5 total set-asides), the total cost would be \$33,600.
Invasive species management within habitat set-asides	\$108,000	\$5,400,000	This will vary widely as determined by the number and size of set-asides that are established. The annual per acre cost estimate for buffelgrass eradication with backpack sprayer at Saguaro National Park is \$200 - \$600. Assume three consecutive treatments every 15 years or 9 treatments over 50 years. For 1,500 acres of set-asides at \$400 per acre = \$5,400,000.
Data analysis, reporting, GIS	\$8,400	\$420,000	Project Manager, Hydrologist, or Environmental Planner (0.1 FTE est. at \$40 per hour with ERE).
Technical Advisory Committee meeting: Member honoraria	\$1,700	\$85,000	At most, meet annually. Optional honoraria at \$100 per hour and meet for 3 hours. Additional \$150 of travel time paid for those living an hour or more away from Tucson. Honoraria currently paid to 5 members.
Technical Advisory Committee meeting City staff time: Preparation, materials, attendance	\$8,400	\$420,000	Project Manager, Hydrologist, or Environmental Planner (Personnel = 0.1 FTE est. at \$40 per hour with ERE).
Stakeholder engagement (e.g., CWAC) and USFWS report development	\$8,400	\$420,000	Project Manager, Hydrologist, or Environmental Planner (Personnel = 0.1 FTE est. at \$40 per hour with ERE).
Subtotal	\$136,630	\$6,831,500	
Contingency (20%)	\$27,326	\$1,366,300	
TOTAL	\$163,956	\$8,197,800	

¹These are preliminary cost estimates in 2012 dollars for discussion purposes only.

6.3 Summary of City commitments under the HCP

As described in Chapter 1, the City desires to allow the lands within the HCP Permit Area to return from retired agricultural uses to a more naturally vegetated state. Therefore, the City may engage in activities, such as habitat restoration, that are beyond the requirements of the HCP. To clarify the distinction between commitments that the City will make to fulfill requirements of the HCP and additional, non-HCP required activities, the commitments that the City will make as part of this HCP are summarized in table X below.

Table 6.3. Summary of City commitments under the HCP

Activity/Item	Location(s)	Frequency/Trigger
Avoidance/Minimization		
Whenever possible, avoid permanent impacts to modeled habitat from covered activities.	Entire HCP Permit Area	In the early planning stages for new facilities
Comply with all current, applicable environmental and cultural resource regulations, such as those related to floodplains and native plants (see Chapter 4 for a more complete list).	Extent of any construction activities	Throughout the planning and development processes, as required.
Preconstruction clearance surveys for Migratory Bird Treaty Act compliance (applies to CFPO and WYBC only when not listed by the ESA).	Extent of any construction activities	Prior to ground-disturbance according to USFWS/AZGFD clearance survey protocols
Preconstruction clearance surveys for the WBO.	Extent of any construction activities	Prior to ground-disturbance according to USFWS/AZGFD clearance survey protocols
Preconstruction clearance surveys for the DT.	Extent of any construction activities	Prior to ground-disturbance according to USFWS/AZGFD clearance survey protocols
Mitigation		
Permanently set-aside modeled habitat according to the mitigation ratios herein. Includes 1) boundary survey and 2) drafting and recording of legal documents.	Based on extent of proposed impact to modeled habitat	Early planning stages for new facilities
Set-aside site selection concurrence from the USFWS. As described in this HCP, it is assumed that the modeled habitat areas would be good candidates for set-aside. However, over time, site-specific factors (e.g., adjacent, non-City land uses) may make some modeled habitat areas better than others for set-aside.	Based on extent of proposed impact to modeled habitat	Early planning stages for new facilities
Ecological effectiveness monitoring		
Riparian vegetation classification and field verification.	All modeled riparian habitat within the HCP Planning Area	Every 5 years
Photopoint monitoring of set-asides.	All HCP habitat set-asides in HCP Planning Area	Every 5 years
Burrowing owl burrow assessments	All HCP burrowing owl habitat set-asides in HCP Planning Area	Every 5 years
Arthropod surveys on Tucson shovel-nosed snake habitat (optional)	All HCP habitat Tucson shovel-nosed snake habitat set-asides in HCP Planning Area	(Optional) Every 5 years
Land management and stewardship		
Property boundary inspections	Entire HCP Permit Area	Monthly (weekly is preferred)

Install or repair fencing, remove trash, address vandalism, repair perimeter roads and drainages, etc.	Entire HCP Permit Area	As needed
Invasive species management	All HCP habitat set-asides in HCP Planning Area	As needed based on annual field reconnaissance and photo monitoring results
Stakeholder involvement and compliance reporting		
Report on HCP status as part of Citizens' Water Advisory Committee or subcommittee	N/A	Annually
Report to the USFWS on HCP compliance	N/A	Annually (Submit report by March 31 for activities that occurred in prior year)

Activities that the City may undertake in addition to these commitments, but not as an HCP requirement include the following:

- Habitat restoration or enhancement
- Species surveys and studies
- Collaborative wildlife management efforts
- Installation of wildlife watering areas
- Permit Area-wide invasive species management and control efforts

6.4 Permit Amendments

Amendments to the Permit will occur in accordance with 50 CFR 13.23, which is referenced in the HCP Handbook (USFWS 1996). It states:

For FWS, amendment of existing permits may be requested by a dated letter signed by the applicant and referencing the permit number. The \$25 application fee is required unless the applicant is fee exempt (see Appendix 10). Procedurally, a permit amendment application is treated in the same way as the original permit application. However, documentation needed in support of a permit amendment will vary depending on the nature of the amendment and the content of the original HCP. If the amendment involves an action that was not addressed in the original HCP, Implementing Agreement, or NEPA analysis, these documents may need to be revised or new versions prepared addressing the amendment submitted. If the circumstances necessitating the amendment were addressed in the original documents (e.g., a previously unlisted species adequately addressed in the HCP is subsequently listed), then only amendment of the permit itself is generally needed.

6.5 Permit Revocation/Suspension

Once issued, a Permit may be revoked or suspended. Federal criteria for revocation are described in 50 CFR 13.28 and include reasons such as willful violation of laws, conditions of the Permit, or regulations governing the permitted activity. Other examples include a change in statute or regulation that prohibits the continuation of the Permit or that species covered under the Permit decline such that population recovery or maintenance would be hindered by the Permitted activity(ies). Thus, it is in the City's best interests to create a conservation program under the HCP that adequately protects each covered species so that the Permit is not revoked as a result of impacts to covered species from covered activities. It is understood that Permit revocation will be subject to the Code of Federal Regulations as written at the time

of Permit issuance and the revocation procedures (e.g., written notification by certified or registered mail) will also follow those outlined in 50 CFR 13.28.

A Permit may be suspended for reasons listed in 50 CFR 13.27 that include lack of compliance with conditions of the Permit or with regulations or laws governing the conduct of the Permitted activity. A Permit may also be suspended for failure to pay costs, fees, or penalties owed to the Federal government. Procedures for suspension of a Permit are also described in 50 CFR 13.27.

6.6 Permit Renewal

As the 50-year term of the Permit nears expiration, the City may apply for a renewal of the Permit, an application for which must be submitted at least 30 days prior to its expiration as described in 50 CFR 13.22. In determining whether or not to reissue the Permit, the USFWS will consider several factors, including whether or not renewal of the Permit threatens a wildlife or plant population and whether or not the City has failed to provide timely, accurate, and valid reports. Other factors considered include whether or not any laws were broken, false statements were made, fines or fees were not paid, and other such factors listed in 50 CFR 13.21 and 50 CFR 13.22.

6.7 Permit Transfer

Permit transfer is only allowed according to criteria described in 50 CFR 13.25 through a joint submission by the permittee and the proposed transferee, such as in the case of a transfer of lands subject to a Permit. These include the requirement that the transferee provide written assurances that it will implement conditions of the Permit such as minimization and mitigation measures, and that it will provide sufficient funding for these and any other measures described in the HCP.

6.8 Reporting

To document the City's compliance with the HCP and Permit, the City will submit annual reports to the USFWS. The reports will focus on two aspects of monitoring: compliance and ecological effectiveness. For compliance monitoring, the City will quantify and describe any planned covered activities and their estimated amounts of take (e.g., acres of covered species modeled habitat) as well as the minimization and mitigation measures that will offset these impacts. For lands permanently set-aside, documentation of an annual site visit will be included in the report. To ensure that the terms of the permanent legal protection mechanism (e.g., deed restriction) have not been violated, the site visit report will include photos of the land, the date(s) the site was visited and inspected, and the signature and date of the person completing the report.

For ecological effectiveness monitoring, reports will include relevant items suggested in the USFWS 5-Point Policy (USFWS 2000). Reports will be filed by March 31 for the preceeding calendar year per 50 CFR 13.45. One City of Tucson staff person will be the designee responsible for ensuring compliance with the terms of the HCP, including completion of annual reports.

6.9 Technical Advisory Committee (TAC)

Throughout the development of the Avra Valley HCP, the purpose of the TAC has been to provide the City with the best available science related to all biological and ecological aspects of the document. After Permit issuance, the TAC may be reconvened to provide guidance in several areas, including changed circumstances, ecological effectiveness monitoring, or any aspect of the HCP that would benefit from

technical assistance. Unless an HCP amendment would be required or Permit revocation would be imminent, the TAC will be reconvened at the discretion of the City or recommendation of the USFWS. The following operating principles and responsibilities, which are based on the original charter, will apply to future TAC meetings.

6.9.1 Operating Principles and Responsibilities

- 1) The TAC shall be composed of between five and ten full members and must include one staff member from the USFWS and one from AZGFD. Other members may include experts from higher education institutions, non-profit environmental organizations, environmental consultants, or others considered experts by the TAC or USFWS local office staff lead (e.g., assistant field supervisor). *Ex-officio* members may include additional USFWS or AZGFD staff members.
- 2) Meetings will be open to the general public. Public comment will be accepted at the end of each meeting as part of the “Call to the Audience” portion of the agenda. Otherwise, only members, including *ex-officio* members and City staff may speak unless called upon.
- 3) An agenda will be distributed at least 24 hours in advance of the meeting to the TAC and interested parties. Meeting notes will be prepared to highlight decision points and any differences among committee members identified.
- 4) The TAC will be self-policing. TAC participants will be expected to be objective, constructive, solution-oriented, fair, and respectful. The TAC is authorized by majority vote to ask a participant to remove her or himself from the TAC if at any time these expectations are not met.
- 5) TAC members are appointed by City staff. Alternates must be approved by a majority vote prior to the date of the meeting.
- 6) The TAC can invite other experts to assist them in their work provided that they have clear areas of expertise relevant to the committee’s work.
- 7) The TAC will fill any vacancies that may occur throughout the planning period. The City may also work with the USFWS to fill any vacancies.
- 8) Honoraria may be provided as allowable by the recipient’s employer. Amounts may be based on 2012 hourly rates. If a TAC member lives more than 60 miles from Tucson, an additional amount for travel may be negotiated not to exceed one-and-a-half times the meeting time hourly rate. TAC members are responsible for completing any City Procurement Department requirements, such as registering as a vendor. Invoices must be sent by the TAC member to the appropriate City department within 90-days after the TAC meeting.

6.10 Stakeholder Involvement

The City desires to include the input of stakeholders in the implementation of the HCP to allow the City a forum to share information related to the implementation of the HCP as well as provide a forum for stakeholders to 1) communicate any concerns or suggestions and 2) maintain awareness of how the HCP is being implemented. The Mayor and Council Citizens’ Water Advisory Committee (CWAC) has been suggested as an appropriate venue for stakeholder involvement. This could occur through a subcommittee with the appropriate scope, such as a conservation subcommittee.

CHAPTER 7 – REFERENCES

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CHAPTER 8 – CONTRIBUTORS

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