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BEFORE THE ARIZONA CORPORATION

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AZ CORP COMMISSION
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TOM FORESE

Arizona Corporation Commission
DOCKETED
AUG 03 2015

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IN THE MATTER OF THE APPLICATION OF SULPHUR SPRINGS VALLEY ELECTRIC COOPERATIVE, INC., FOR APPROVAL TO INCUR DEBT TO FINANCE ITS 2010-2012 CONSTRCUTION WORK PLAN AND FOR RELATED APPROVALS.

DOCKET NO. E-01575A-10-0311

PETITION TO AMEND DECISION 72237 PURSUANT TO A.R.S. § 40-252

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1702 East Highland Avenue, Suite 204
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Sulphur Springs Valley Electric Cooperative, Inc., ("SSVEC" or the "Cooperative") hereby submits this Petition to Amend Decision 72237 Pursuant to A.R.S. § 40-252 ("Petition').[1] In Decision 72237, the Arizona Corporation Commission ("Commission") approved loans totaling $78,676,664 to fund SSVEC's 2010-2012 Construction Work Plan. In this Petition, SSVEC requests that the Commission amend Decision 72237 to (i) extend the authorization deadline to incur debt from December 31, 2016 to December 31, 2020; (ii) retroactively authorize the use of loan proceeds for completed projects that were added to the Cooperative's 2010-2012 Construction Work Plan after the plan was reviewed by the Commission in this docket; and (iii) authorize SSVEC to use $32,097,789 in loans that were approved in Decision 72237 but not spent on the 2010-2012 CWP for projects that remain to be constructed under the Cooperative's 2013-2014 Construction Work Plan and for the 2015-2017 Construction Work Plan, as more fully described herein.

SSVEC further requests that the Commission find that the use of loan proceeds approved in Decision 72237: (i) to fund projects that were completed as part of the 2010-2012 Construction Work Plan but not previously reviewed by the Commission; and (ii) to fund projects that remain to be constructed under the Cooperative's 2013-2014 Construction Work Plan and for the 2015-

[1] Contemporaneous with the filing of this Petition, SSVEC is filing a Petition to Amend Decision 70027 in Docket E-01575A-07-0446. The Cooperative's reasons for requesting an amendment to Decision 70027 are substantially the same as its reasons for requesting an amendment to Decision 72237 in this docket.

2017 Construction Work Plans is for lawful purposes within the Cooperative's corporate powers; is compatible with the public interest, with sound financial practices, and with the proper performance by SSVEC of service as a public service corporation; that it will not impair SSVEC's ability to provide service; that it is reasonably necessary and appropriate for the purposes described in this Petition; and that such purposes are not, wholly or in part, reasonably chargeable to operative expenses or to income.

This Petition is supported by the Construction Work Plan and Loan Packet Update and Reconciliation ("CWP Update and Reconciliation") dated July 1, 2015, which is attached hereto as Attachment 1 and incorporated herein by this reference. In order to ensure that loan funds are available to use as part of SSVEC's ongoing construction work plans, as more fully described herein, the Cooperative requests that the Commission act on this Petition and grant the requested relief as expeditiously as possible, but in no event later than December 31, 2015.

I. BACKGROUND

SSVEC is a member-owned Arizona non-profit cooperative founded in 1938 which provides electric service to approximately 51,000 customers in parts of Cochise, Santa Cruz, Pima and Graham counties under a Certificate of Convenience and Necessity issued by the Commission. SSVEC is governed by a 10-member board of directors elected by the members of SSVEC to oversee all aspects of the Cooperative's operations. SSVEC exists for the sole purpose of providing reliable electric service to its member/owners at the best possible rates. The board unanimously authorized the filing of this Petition in Resolution 2015-05 dated May 20, 2015, a copy of which is attached hereto as Attachment 2.

A. **Decision 72237**. In Decision 72237 issued March 21, 2011, the Commission authorized SSVEC to obtain a credit facility in an amount not to exceed of $78,676,664, including $6,000,000 of Clean Energy Renewable Bonds, to fund the Cooperative's 2010-2012 Construction Work Plan ("2010-2012 CWP"). A worksheet analyzing the Cooperative's budgeted spending versus actual spending on the 2010-2012 CWP is shown in Tab 3 of the CWP Update and Reconciliation, a copy of which is attached hereto as Attachment 1.

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There are 17 projects highlighted in yellow in Tab 3 that were added in a subsequent amendment to the 2010-2012 CWP and completed by SSVEC, but they were not submitted with the original 2010-2012 CWP that was approved for loan proceeds under Decision 72237. However, each of the projects was approved by the Cooperative's Board of Directors and determined to be necessary to provide electric service to the Cooperative's members. In addition, many of the projects qualified for federal matching money under the American Recovery and Reinvestment Act of 2009.[2] Thus, SSVEC submits that construction of the projects was in the public interest. Accordingly, SSVEC requests that the Commission address the Cooperative's oversight and retroactively approve the use of loan funds for the 17 projects highlighted in yellow in Tab 3. A description of each of the projects is attached as Tab 4 to the CWP Update and Reconciliation.

Page 3 of Tab 3 summarizes the total budgeted spending versus actual spending on the 2010-2012 CWP. Including spending on the 17 additional projects discussed above, SSVEC underspent the total budget by $32,097,789. This was due to at least three factors. First, there was a dramatic slowdown in customer growth as a result of the Great Recession that began in 2008 which significantly slowed construction spending. Second, SSVEC received federal reimbursements totaling $19,543,819 under the Smart Grid Investment Grant Program of the American Recovery and Reinvestment Act of 2009 for smart grid improvements totaling $39,087,637 that were completed by the Cooperative. Third, SSVEC received a rate increase in Decision 71274 which increased the Cooperative's revenues beginning in September 2009. As a result of these factors, SSVEC was able to fund significant portions of its 2010-2012 CWP using internally generated cash so that it did not need to draw down all of the loan funds that were approved in Decision 72237.

SSVEC requests that the Commission authorize use of the remaining $32,097,789 that was approved in Decision 72237 but not spent on the 2010-2012 CWP for projects that remain to be constructed under the 2013-2014 Construction Work Plan ("2013-2014 CWP") and for the 2015-2017 Construction Work Plan ("2015-2017 CWP"), as discussed below. In addition,

[2] The ARRA provided federal matching funds in the amount of 50% of qualified costs on qualified projects.

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SSVEC requests that the Commission extend the authorization to incur debt granted in Decision 72237 from December 31, 2016, to December 31, 2020, to provide sufficient time for the Cooperative to complete the projects that will be funded with the loan proceeds.

2013-2014 CWP. A cost summary of the 2013-2014 CWP is included as Tab 5 of the CWP Update and Reconciliation, and narrative descriptions of the various projects included in the 2013-2014 CWP are included as Tab 6. The 2013-2014 CWP was submitted to and approved by SSVEC's Board of Directors on December 19, 2012, as evidenced by Resolution 2012-12 attached hereto as Attachment 3.[3] The board subsequently approved Amendment #1 to the 2013-2014 CWP on August 20, 2014, as evidenced by Resolution 2014-08 attached hereto as Attachment 4. As shown in Tab 5, the budget for the 2013-2014 CWP (as amended) totaled $30,145,000, but actual spending to date has been only $14,399,845. This amount was funded out of the internally generated cash of the Cooperative. The projects that still need to be completed under the 2013-2014 CWP total $1,969,333 and are described on the table attached hereto as Attachment 5. SSVEC expects to complete these projects on or about the end of 2015.

SSVEC requests approval to fund the remaining projects in the 2013-2014 CWP using loans approved in Decision 72237. Initially, these projects will be funded using the Cooperative's internally generated cash and/or its approved lines of credit. Thereafter, SSVEC requests approval to use loan funds to reimburse itself for these projects.

1. **2015-2017 CWP**. A cost summary of the 2015-2017 CWP is included as Tab 7 of the CWP Update and Reconciliation, and narrative descriptions of the various projects included in the 2015-2017 CWP are included as Tab 8. The 2015-2017 CWP was submitted to and approved by SSVEC's Board of Directors on December 18, 2013, as evidenced by Resolution 2013-10 attached hereto as Attachment 6. The board subsequently approved Amendment #1 to the 2015-2017 on May 20, 2015, as evidenced by Resolution 2015-05 attached hereto as Attachment 2. As shown in Tab 7, the total budget for the 2015-2017 CWP (as amended) is $56,680,000. Work has not commenced on any of the projects included in the 2015-2017 CWP.

[3] The inclusion of the word "Amendment" with regard to the 2013-2014 CWP in Resolution 2012-12 appears to be an error. Resolution 2012-12 is the resolution which approved the 2013-2014 CWP.

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SSVEC requests authority to use loan funds approved in Decision 72237 for the 2015-2017 CWP.

B. **Decision 70027**. Prior to Decision 72237, the Commission issued Decision 70027 on December 4, 2007 in Docket E-01575A-07-0446 wherein it authorized SSVEC to incur long term debt in the amount of $70,780,000 to fund the Cooperative's 2008-2009 Construction Work Plan ("2008-2009 CWP"). A worksheet analyzing SSVEC's budgeted spending versus actual spending on the 2008-2009 CWP is shown in Tab 1 of the CWP Update and Reconciliation.[4]

There are two projects highlighted in yellow in Tab 1 that were added in a subsequent amendment to the 2008-2009 CWP and completed by SSVEC, but they were not submitted with the original 2008-2009 CWP that was approved for loan funds in Decision 70027. A description of each of the projects is attached as Tab 2 to the CWP Update and Reconciliation. Both projects were approved by the Cooperative's Board of Directors and determined to be necessary to provide electric service to the Cooperative's members. Thus, SSVEC submits that construction of the projects was in the public interest. In its Petition to Amend Decision 70027 filed contemporaneously herewith in Docket E-01575A-07-0446, SSVEC is requesting that the Commission address the Cooperative's oversight and retroactively approve the use of loan funds for the two additional projects under Decision 70027.

Page 3 of Tab 1 summarizes the total budgeted spending versus actual spending on the 2008-2009 CWP. Including spending on the two additional projects highlighted in yellow in Tab 1, SSVEC underspent the total budget by $25,407,062. Again, this was due to factors discussed above which enabled SSVEC to fund significant portions of its 2008-2009 CWP with internally generated cash so that it did not need to draw down all of the loans that were approved in Decision 70027.

In its Petition to Amend Decision 70027 filed in Docket E-01575A-07-0446, SSVEC has requested that the Commission authorize it to use the remaining $25,407,062 that was approved in Decision 70027 but not spent on the 2008-2009 CWP for projects that remain to be constructed

[4] The borrowing authority approved under Decision 70027 totaled $70,780,000. Tab 1 of the CWP Update and Reconciliation shows budgeted spending of $70,880,000 for the 2008-2009 CWP. This is because the board of directors authorized a budget for the 2008-2009 CWP which was $100,000 larger than the amount of the authorized borrowing.

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under the 2013-2014 CWP and the 2015-2017 CWP. When the unused loan amounts approved in Decisions 70027 and 72237 are combined, they cover all of the remaining 2013-2014 CWP and virtually all of the 2015-2017 CWP. Thus, if the Commission approves the requested amendments to the two decision, SSVEC does not anticipate the need to seek additional borrowing authority for at least another two years.

II. SSVEC'S FINANCIAL STRENGTH

At the time the Commission approved the requested borrowing authority in Decision 72237, it found that SSVEC had the requisite financial wherewithal to undertake the obligations associated with the loans. Attached hereto as Attachment 7 is a portion of SSVEC's Form 7 for the period ending December 31, 2014. Form 7 is a financial statement that SSVEC submits to its lenders. Form 7 shows that the Cooperative continues to possess the requisite financial wherewithal to undertake the obligations associated with the loans approved in Decision 72237.

III. PUBLICATION OF NOTICE

SSVEC will publish such notice of this Petition as the Commission may require pursuant to A.R.S. § 40-302(A). A proposed form of notice is attached hereto as Attachment 8. Proof of publication will be filed with the Commission once the notice has been published.

IV. NOTICES TO SSVEC

Pleadings, communications and correspondence regarding this Petition should be served upon SSVEC as follows:

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With a copy to:

Kirby Chapman, Chief Financial and Administrative Officer
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311 E. Wilcox
Sierra Vista, Arizona 85650
Phone: (520) 515-3457
E-mail: kchapman@ssvec.com

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V. CONCLUSION

SSVEC requests that the Commission grant the relief requested in this Petition in accordance with A.R.S. §§ 40-252, 40-285, 40-301 and 40-302, and issue its order amending Decision 72237 as follows:

1. Extending the authorization deadline to incur debt in from December 31, 2016, to December 31, 2020;

2. Retroactively approving the use of loan funds for completed projects that were added to the Cooperative's 2010-2012 CWP after the plan was approved by the Commission in this docket;

3. Authorizing SSVEC to use $32,097,789 that was approved in Decision 72237 but not spent on the 2010-2012 CWP for the projects which remain to be constructed under the Cooperative's 2013-2014 CWP and for the 2015-2017 CWP;

4. Finding that the use of loan funds approved in Decision 72237: (i) to fund projects that were completed as part of the 2010-2012 Construction Work Plan but not previously reviewed by the Commission; and (ii) to fund projects that remain to be constructed under the Cooperative's 2013-2014 Construction Work Plan and for the 2015-2017 Construction Work Plans is for lawful purposes within the Cooperative's corporate powers; is compatible with the public interest, with sound financial practices, and with the proper performance by SSVEC of service as a public service corporation; and that it will not impair SSVEC's ability to provide service;

5. Finding that the use of loan funds approved in Decision 72237: (i) to fund projects that were completed as part of the 2010-2012 Construction Work Plan but not previously reviewed by the Commission; and (ii) to fund projects that remain to be constructed under the Cooperative's 2013-2014 Construction Work Plan and for the 2015-2017 Construction Work Plans is reasonably necessary and appropriate for the purposes described in this Petition, and that such purposes are not, wholly or in part, reasonably chargeable to operative expenses or to income; and

6. Authorizing SSVEC to engage in transactions and pledge, mortgage, lien and/or encumber its real property and utility plant and assets as security for the loans that will fund the projects that will be constructed under the 2013-2014 CWP and 2015-2017 CWP.

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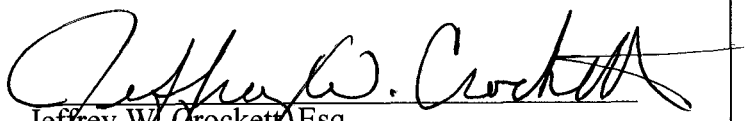
SSVEC further requests that the Commission act on this Petition and grant the requested relief as expeditiously as possible, but in no event later than December 31, 2015.

RESPECTFULLY submitted this 3rd day of August, 2015.

CROCKETT LAW GROUP PLLC



Jeffrey W. Crockett, Esq.
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Attorney for Sulphur Springs Valley Electric Cooperative, Inc.

ORIGINAL plus thirteen (13) copies of the foregoing filed this 3rd day of August, 2015, with:

Docket Control
ARIZONA CORPORATION COMMISSION
1200 West Washington Street
Phoenix, Arizona 85007

COPIES of the foregoing hand-delivered This 3rd day of August, 2015, to:

Dwight Nodes, Chief Administrative Law Judge
Hearing Division
ARIZONA CORPORATION COMMISSION
1200 West Washington Street
Phoenix, Arizona 85007

Janice Alward, Chief Counsel
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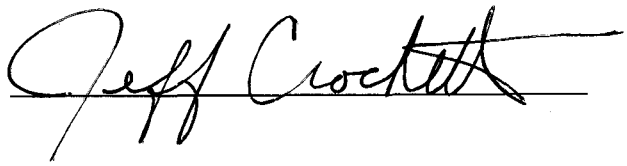

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ATTACHMENT 1

Sulphur Springs Valley Electric Cooperative, Inc.

A Touchstone Energy® Cooperative

Construction Work Plan and Loan Packet Funding Update and Reconciliation

July 1, 2015

Executive Summary

The Arizona Corporation Commission (ACC), via decisions 70027 and 72237, granted authority to Sulphur Springs Valley Electric Cooperative, Inc. (SSVEC) to incur debt for the funding of its electrical distribution plant improvements. The details of the plant improvements were presented as part of the docket which was submitted to the ACC in support of its decision. This detail is referred to as the Construction Work Plan (CWP).

During the course of the plant improvement construction effort, changes were made to the CWP. These changes include addition and deletions of projects. Although these changes were approved by the SSVEC Board of Directors, the changes were not submitted to the ACC.

This report summarizes the spending which occurred on the approved plans and incorporates the new projects which were added. A narrative has been included for each of the added projects. The narrative explains the necessity of each project.

Additionally, this report contains SSVEC's CWP for 2013-2014 and 2015-2017. Since spending under the 2008-2009 and 2010-2012 CWPs were significantly less than the authorized debt to be incurred, SSVEC proposes to use those remaining available funds to fund these new CWPs.

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2013-2014 Construction Work Plan Budget and Spending..... Tab 5

2013-2014 Construction Work Plan Narrative..... Tab 6

2015-2017 Construction Work Plan Budget.....Tab 7

2015-2017 Construction Work Plan Narrative..... Tab 8

2008-2009 CWP Budgeted vs. Actual Spending (Tab1)

ACC Decision 70027 authorized SSVEC to incur debt of $70,880,000 to support construction projects as listed in the first three columns of the spreadsheet. Projects highlighted in yellow are additional projects which were added and not included in the original CWP submission to the ACC. As such, there is no budgeted amount for these projects in column three.

Column four shows actual spending on each of the projects. Column five shows the difference between the authorized amount of spending and the actual amount of spending by category.

Page three of the worksheet summarizes the total budget and spending and calculates an "underspent" amount of $25,407,062. SSVEC proposes these remaining funds be used to fund both the 2013-14 and 2015-2017 CWP as attached in Tabs 5 through 8.

2008-2009 Narrative of Additional Projects (Tab2)

Tab 1 Column 1 highlights two projects which were added to the 2008-2009 CPW. A narrative for each of these project is included in this section. Each project has a description, a justification and explains the result of having each project completed. These projects were all submitted to the SSVEC Board of Directors for their approval before incorporation into the amended CWP and before commencement of the construction project.

2010-2012 CWP Budgeted vs. Actual Spending (Tab 3)

ACC Decision 72237 authorized SSVEC to incur debt of $78,676,665 to support construction projects as listed in the first three columns of the spreadsheet. Projects highlighted in yellow are additional projects which were added and not included in the original CWP submission to the ACC. As such, there is no budgeted amount for these projects in column three.

Column four shows actual spending on each of the projects. Column five shows the difference between the authorized amount of spending and the actual amount of spending by category.

The first section of the spreadsheet is for the 100 series of projects. These projects are done at the request of members and per the approved SSVEC tariff, members are 100% responsible for the costs of these projects. Therefore, no amount of cost was budgeted for these projects. As can be seen, there was actual SSVEC costs for these projects. An analysis of the details of the work performed under these projects indicates a level of miscoding and work should have been coded to the 600 series of projects.

Page three of the worksheet summarizes the total budget and spending and calculates an "underspent" amount of $32,097,789. SSVEC proposes these remaining funds be used to fund both the 2013-14 and 2015-2017 CWP as attached in Tabs 5 through 8.

2010-2012 Narrative of Additional Projects (Tab 4)

Tab 3 Column 1 highlights 17 projects which were added to the 2010-2012 CPW. A narrative for each project is included in this section. Each project has a description, a justification and explains the result of having each project completed. These projects were all submitted to the SSVEC Board of Directors for their approval before

incorporation into the amended CWP and before commencement of the construction project.

Many of the additional projects were added in conjunction with a Smart Grid grant SSVEC received as part of the federal government's American Recovery & Reinvestment Act of 2009. This matching funds grant participated in the building of the infrastructure by contributing 50% of qualified costs on qualified projects. Projects added under the grant can be identified on the individual project description sheet as there is a dollar amount showing for Smart Grid CIAC. On Tab 3 Column 3, the actual spending is shown net of any Smart Grid CIAC reimbursement received.

2013-2014 Construction Work Plan Budget and Spending (Tab 5)

This CWP budget was submitted to and approved by the SSVEC Board of Directors. Estimated spending for these projects was $30,145,000. During the term of this work plan, one amendment was submitted to the board. This amendment did not change the level of spending but rather, reallocated spending amongst projects. The amendment is shown in column 4 with the resultant new budget presented in column 5. Although $30MM was approved by the board, actual spending was $14.4MM. There is approximately $2MM left to spend under this CWP for ongoing/already started projects. These projects are expected to be completed before the end of 2015.

2013-2014 Construction Work Plan Narrative (Tab 6)

The complete narrative for all projects under the 2013-2014 CWP is included. This is the plan which was submitted to and approved by the SSVEC Board of Directors.

2015-2017 Construction Work Plan Budget
(Tab 7)

This CWP budget was submitted to and approved by the SSVEC board of directors. Estimated spending for the original projects was $45,252,000. During the term of this current work plan, one amendment has been submitted to the board. This amendment increased the amount of spending by $11.4MM. The amendment is shown in column 4 with the resultant new budget presented in column 5. This amendment became necessary largely due to a renewable energy project which is requiring the building of a new substation. Additionally, other projects which were originally budgeted in prior work plans, which had not been started, were moved to this work plan in an effort to complete and close prior work plans.

2015-2017 Construction Work Plan Narrative
(Tab 8)

The complete narrative for all projects under the 2015-2017 CWP is included. This is the plan which was submitted to and approved by the SSVEC Board of Directors.

SUMMARY

Prior decisions by the ACC (dockets E-01575A-07-0446 and E-01575A-10-0311) authorized SSVEC to incur debt of $149,456,665 to finance system improvements for its electrical distribution system. Actual spending on the approved projects was $92,051,814.

This spending level leaves a remaining balance of available funds of $57,404,851. SSVEC desires to use these remaining funds to support and help fund the spending required to complete the 2013-2014 and 2015-2017 CPW's as submitted in this document. Additionally, SSVEC requests the time frame to expend these funds be extended until December 31, 2020 to correspond with the estimated completion of all listed projects including any possible unforeseen delays.

With actual spending of $16,399,845 for the 2013-2014 CWP (including an estimated $2MM needed to complete already started projects) and an estimated amount of $56,680,000 needed to complete the 2015-2017 CWP, the remaining available loan funds, along with SSVEC's equity contribution, will be adequate to fund the 2013-2014 and 2015-2017 CWPs as submitted.

Loan Packet Approved - Decision#70027	$	70,780,000
Loan Packet Approved - Decision#72237	$	78,676,665
Total Authorized Debt	$	149,456,665
8-9 CWP Spending	$	45,472,938
10-12 CWP Spending	$	46,578,876
Total CWP Spending	$	92,051,814
Remaining Funds from Approved Loans	$	57,404,851
13-14 Actual Spending (plus $2MM to complete)	$	16,399,845
15-17 Proposed Spending	$	56,680,000
Funds Requested for Current Spending	$	73,079,845

TAB 1

SSVEC CWP ANALYSIS - AZ Corp Comm Approved vs Actual

Codes	Project Description	Approved ACC Construction Work Plan 2008-2009	Actual Spending (as of 4/30/15) 2008-2009	Difference 2008-2009
	Distribution			
100.000	**New Lines Including CIAC Contributions**			
	Underground			
101.001	1-Phase Underground Primary	$ 843,000	$ 496,318	
101.002	3-Phase Underground Primary	$ 448,000	$ 450,734	
101.003	3-Wire Underground Secondary	$ 541,000	$ 871,927	
101.004	4-Wire Underground Secondary	$ 40,000	$ 101,695	
	Overhead			
102.001	1-Phase Overhead Primary	$ 595,000	$ 457,559	
102.002	3-Phase Overhead Primary	$ 305,000	$ 444,394	
102.003	3-Wire Overhead Secondary	$ 172,000	$ 289,237	
102.004	4-Wire Overhead Secondary	$ 111,000	$ 108,164	
103.001	**Major Subdivisions [Over $100,000 each]**	$ 2,300,000	$ 490,321	
100.000	**Subtotal -- New Lines Including CIAC Contributions**	$ 5,355,000	$ 3,710,349	$ 1,644,651
200.000	**New Feeders and Tie Lines**			
200.119	Sonita Substation New Feeders [Carry Over]	$ 900,000	$ 164,119	
200.120	R3 Three Canyons Road	$ 225,000	$ 226,959	
200.130	Cottonwood Feeders	$ 200,000	$ 136,875	
200.131	#4 Along Hwy 80 in Benson	$ 120,000	$ 348,173	
200.132	Hereford Substation New Feeders	$ 1,900,000	$ 510,304	
200.099	Misc Tie Lines [under $25K each]	$ 400,000	$ 281,532	
200.000	**Subtotal -- New Feeders and Tie Lines**	$ 3,745,000	$ 1,667,962	$ 2,077,038
300.000	**Conversions & Line Changes**			
300.005	Z4 Pueblo to Highway 92 Line Change [carryover]	$ 170,000	$ 3,576	
300.006	Z4 Avenida Cochise Line Change [carryover]	$ 300,000	$ 217,301	
300.010	Bella Vista Substation Getaways [carryover]	$ 500,000	$ 472,677	
300.011	Chiricahua three phase to Turkey creek road [carryover]	$ 350,000	$ 872,793	
300.012	T3 7th Street Line Change [carryover]	$ 170,000		
300.013	Y4 Hwy 90 Line Change [carryover]	$ 350,000		
300.015	T2 Riser to Highway 92 Line Change [carryover]	$ 270,000		
300.030	H4 Voltage Conversion	$ 3,000,000		
300.032	Bowie Voltage Conversion	$ 750,000	$ 14,914	
0300-033	Mescal Lakes Conversion		$ 5,971	
0300-034	Three Phase Tie Benson- St David		$ 207,266	
300.096	Copper Replacement	$ 200,000	$ 16,716	
300.097	Cable Injection	$ 880,000	$ 703,209	
300.098	Cable Replacement	$ 600,000	$ 1,316,322	
300.099	Misc Dist Line Changes [under $25K]	$ 200,000	$ 159,693	
300.000	**Subtotal -- Conversions & Line Changes**	$ 7,740,000	$ 3,990,440	$ 3,749,560
400.000	**New Substations**			
400.001	Sonoita Substation ENGINEERING and ROW ONLY	$ 600,000	$ 2,708,755	
400.004	Cottonwood Substation	$ 2,000,000	$ 2,939,751	
400.005	Hereford Substation	$ 2,500,000	$ 2,329,752	
400.024	Engineering & ROW Future Substation			
400.098	Distribution Substation Rights-of-Way	$ 1,000,000	$ 51,327	
400.000	**Subtotal -- New Substations**	$ 6,100,000	$ 8,029,585	$ (1,929,585)
500.000	**Substation Changes**			
500.003	Keating Control House Upgrade	$ 200,000		
500.099	Misc Substation Changes [under $25K]	$ 100,000	$ 323,103	
500.000	**Subtotal -- Substation Changes**	$ 300,000	$ 323,103	$ (23,103)
600.000	**Misc. Distribution Items**			
600.100	Pole Mounted Transformers	$ 2,200,000	$ 665	
600.101	Pad Mounted Transformers	$ 2,500,000	$ -	
600.200	Meters	$ 2,200,000	$ 4,520	

600.201	Metering Transformers & Equipment	$	370,000	$	-		
600.300	Service Upgrades	$	325,000	$	343,129		
600.400	Single Phase ACRs, Sectionalizers, or Fusing	$	500,000	$	38,413		
600.401	Three Phase ACRs or Sectionalizing	$	500,000	$	25,855		
600.402	Switches (ganged or knifeblade)	$	160,000	$	100,287		
600.403	Pad Mounted Sectionalizing Equipment	$	400,000				
600.404	Voltage Regulators	$	1,000,000	$	35,395		
600.500	Capacitors	$	500,000	$	13,844		
600.600	Distribution Pole Replacement	$	3,000,000	$	4,740,565		
600.601	General Replacement -- OH Distribution	$	400,000	$	598,780		
600.602	General Replacement -- UG Distribution	$	400,000	$	207,426		
600.603	Avian Protection Plan	$	200,000	$	59,192		
600.611	Repair Mobile Substation Switcher [carryover]	$	120,000				
600.000	**Subtotal -- Misc. Distribution Items**	**$**	**14,775,000**	**$**	**6,168,072**	**$**	**8,606,928**
700.000	**Other Dist. Items**						
700.002	Security Light Installations	$	140,000	$	46,465		
700.003	Street Light Installations	$	200,000	$	179,636		
700.004	SCADA Field Upgrades	$	50,000	$	43,311		
700.005	AMR Upgrade	$	6,000,000	$	2,328,185		
700.098	Distribution Line Rights-of-Way	$	200,000	$	14,338		
700.000	**Subtotal -- Other Dist. Items**	**$**	**6,590,000**	**$**	**2,611,935**	**$**	**3,978,065**
	Distribution Grand Total	**$**	**44,605,000**	**$**	**26,501,447**	**$**	**18,103,553**
	Transmission						
800.000	**New Transmission Line**						
800.001	Sonoita Transmission Line ENGINEERING and ROW ONLY	$	1,750,000	$	7,053,661		
800.003	St. David to Cottonwood Transmission (carry over)	$	1,500,000				
800.011	Ramsey Substation to Hereford Substation	$	1,500,000	$	7,178,075		
800.013	Stewart Switching to Mortenson Substation	$	2,480,000	$	3,076,556		
800.098	Transmission Line Rights-of-Way	$	1,000,000				
800.000	**Subtotal -- New Transmission Line**	**$**	**8,230,000**	**$**	**17,308,292**	**$**	**(9,078,292)**
900.000	**Subtotoal -- New Transmission Substations & Switching Stations**						
900.001	Sloan Delivery Point 230/69 [ROW only] [Coding of this project per B. Norris]	$	500,000	$	71,231		
900.000	**Subtotoal -- New Transmission Substations & Switching S**	**$**	**500,000**	**$**	**71,231**	**$**	**428,769**
1000.000	**Transmission Line Changes**						
1000.099	Misc Transmission Line Changes	$	200,000	$	6,778		
1000.101	Replace Misc. Transmission Poles	$	1,000,000	$	923,789		
1000.102	General Replacment -- Transmission	$	50,000	$	124,077		
1000.104	Sierra Vista Transmission Line Change [carryover]	$	1,000,000	$	181,588		
1000.105	Transmission Line Upgrades -- Unknown locations	$	8,000,000				
1000.000	**Subtotal -- Transmission Line Changes**	**$**	**10,250,000**	**$**	**1,236,232**	**$**	**9,013,768**
1100.000	**Transmission Substation Changes**						
1100.010	Tombstone Jct. Breakers & Control House	$	1,000,000	$	152,380		
1100.099	Misc. transmission substation changes	$	100,000	$	38,036		
1100.000	**Subtotal -- Transmission Substation Changes**	**$**	**1,100,000**	**$**	**190,416**	**$**	**909,584**
	Transmission Grand Totals	**$**	**20,080,000**	**$**	**18,806,170**	**$**	**1,273,830**
	Other Projects						
1200.000	**Communications**						
1200.107	Mule Mountain Radio Repeater	$	50,000				
1200.108	Backup Radio for CRC	$	25,000				
1200.000	**Subtotal -- Communications**	**$**	**75,000**	**$**	**-**	**$**	**75,000**
1300.000	**Buildings, Land Improvement**						
1300.001	**SV Warehouse Addition**						
1300.010	Generator -- Benson Office	$	100,000	$	114,460		
1300.099	Misc Building, Land Improvement	$	20,000				

1300.000	**Subtotal -- Buildings, Land Improvement**	$ 120,000	$ 114,460	$ 5,540
1400.000	**Distributed Generation**			
1400.001	Distributed Generation	$ 6,000,000	$ 50,860	
1400.000	**Subtotal -- Distributed Generation**	$ 6,000,000	$ 50,860	$ 5,949,140
	Other Projects Grand Totals	$ 6,195,000	$ 165,321	$ 6,029,679
	Maximum Grand Total	$ 70,880,000	$ 45,472,938	$ 25,407,062

TAB 2

Project: O5: Mescal Lakes Voltage Conversion
CWP Item Number: 300.033 **Estimated Cost:** $575,000
Year: 2008, 2009

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace 5.31 miles of 7.2kV underground cable with 14.4kV cable. The work includes replacing padmounted transformers, redoing some secondaries, and adding some new primary line.

REASON FOR PROPOSED CONSTRUCTION

In the mid 1990's, SSVEC converted the O5 feeder from 12.47kV to 24.9kV. This feeder starts in Benson near the San Pedro Golf Course and goes west to Marsh Station and Happy Valley. The Mescal Lakes subdivision was not converted at that time due to the amount of work involved. Since the conversion, this subdivision has had portions converted to 24.9kV. This is the last remaining portion.

RESULTS OF PROPOSED CONSTRUCTION

An "island" of 12.47kV underground cable and transformers will be replaced and will match the surrounding area's primary voltage. This eliminates the need for step-down transfomers, allows for additional switching options, and eliminates the operational issues.

Work has already started.

Project:: Three Phase Tie Benson-St David-Mescal 12.47
CWP Item Number: 300.034 **Estimated Cost:** $330,000 [excludes $57,000 CIAC from customer]
Year: 2009

DESCRIPTION OF PROPOSED CONSTRUCTION

Upgrade approximately 3.5 miles of existing #4ACSR and #6HD copper single phase line to three-phase, 1/0ACSR. In addition, build a new one-mile, three-phase, 1/0ACSR line.

REASON FOR PROPOSED CONSTRUCTION

A joint use company has requested and paid for replacing poles so that they can attach. This line has been planned to be upgraded to provide a significant tie between the Benson and St. David substations, with the possibility of the Mescal 12.47 substation also being included.

RESULTS OF PROPOSED CONSTRUCTION

The St. David, Mescal 12.47kV and Benson substations will have an additional distribution tie line. In addition, copper wire and older poles will be retired.

TAB 3

SSVEC CWP ANALYSIS - AZ Corp Comm Approved vs Actual

Codes	Project Description	Approved ACC Construction Work Plan Distribution 2010-2012	Actual Spending (as of 4/30/15) 2010-2012	Difference 2010-2012
100.000	**New Lines Including CIAC Contributions**			
	Underground			
101.001	1-Phase Underground Primary		$ 613,824	
101.002	3-Phase Underground Primary		$ 686,667	
101.003	3-Wire Underground Secondary		$ 995,756	
101.004	4-Wire Underground Secondary	see narrative for explanation of no budget	$ 151,225	
	Overhead			
102.001	1-Phase Overhead Primary		$ 720,978	
102.002	3-Phase Overhead Primary		$ 1,359,947	
102.003	3-Wire Overhead Secondary		$ 381,602	
102.004	4-Wire Overhead Secondary		$ 389,888	
103.001	**Major Subdivisions [Over $100,000 each]**		$ 288,696	
CIAC	Aid to Constuction Provided by Members		$ (4,658,541)	
100.000	**Subtotal -- New Lines Including CIAC Contributions**	$ -	$ 930,044	$ (930,044)
200.000	**New Feeders and Tie Lines**			
200.146	Mescal 25 kV O5: Underground Tie-lines	$ 317,000	$ 117,852	
200.147	Engineering & ROW Future Tie Lines and Feeders	$ 377,000		
200.099	Misc Tie Lines [under $25K each]	$ 1,839,000	$ 168,639	
200.000	**Subtotal -- New Feeders and Tie Lines**	$ 2,533,000	$ 286,491	$ 2,246,509
300.000	**Conversions & Line Changes**			
300.050	Wilcox F7 Ungrade	$ 127,000	$ 256,411	
300.051	Mescal 25kV O5 - Salcido Ranch	$ 350,000		
300.053	Mescal 25kV O5 - Ocotillo Road	$ 269,000	$ 109,663	
300.056	Cochise H4 - Finish Conversion	$ 3,957,000	$ 3,341,404	
300.057	Engineering and ROW Future Conversions	$ 325,000		
300.058	Cochise H3 - Convert to 25 kV	$ 1,737,000	$ 1,195,527	
300.059	Hawes X8 - Replace 3 phase	$ 65,000	$ 83,144	
300.096	Copper Replacement	$ 109,000	$ 357,575	
300.097	Cable Injection	$ 1,317,000	$ 597,568	
300.098	Cable Replacement	$ 1,884,000	$ 1,398,374	
300.099	Misc Dist Line Changes [under $25K]	$ 1,620,000	$ 81,696	
300.000	**Subtotal -- Conversions & Line Changes**	$ 11,760,000	$ 7,421,362	$ 4,338,638
400.000	**New Substations**			
400.024	Engineering & ROW Future Substation	$ 377,000		
400.098	Distribution Substation Rights-of-Way	$ 530,000	$ 72,699	
400.000	**Subtotal -- New Substations**	$ 907,000	$ 72,699	$ 834,301
500.000	**Substation Changes**			
500.003	Keating Control House Upgrade			
500.020	Mescal 25 kV SCADA Upgrade	$ 93,000	$ 221,502	
500.021	Ramsey SCADA Upgrade	$ 151,000	$ 199,523	
500.022	Mescal 12KV - Upgrade Conductor	$ 64,000	$ 39,449	
500.023	Cochise Substation Rebuild	$ 850,000	$ 143,359	
500.024	Replace Kansas Settlement Transformer & Regulators	$ 700,000	$ 369,730	
500.025	Tombstone - Radio to Fiber	$ 25,000	$ 17,602	
500.026	Stewart SCADA Upgrade	$ 140,000	$ 166,480	
500.027	Wilcox SCADA Upgrade	$ 140,000	$ 570,139	
500.028	Sierra Vista SCAD Upgrade	$ 140,000	$ 201,786	
500.029	Ramsey GOAB Upgrade	$ 17,500	$ 88,592	
500.030	Motenson GOAB Upgrade	$ 17,500	$ 73,066	
500.031	Ramsey Radio to fiber	$ 25,000	$ 23,607	
500.032	Stewart Radio to Fiber	$ 25,000		
500.033	Bonita Radio to Fiber	$ 25,000	$ 103,893	
500.034	Wilcox Radio to Fiber	$ 25,000		

0500-037	Rugged Com Cybersecurity Device			$	243,439		
0500-038	Hawes Radio to Fiber			$	149,766		
0500-039	Cochise Sub - Install New Control House			$	156,897		
0500-040	Huachuca Sub - Instll New Controll House			$	283,527		
500.099	Misc Substation Changes [under $25K]	$	377,000	$	80,850		
500.000	**Subtotal -- Substation Changes**	$	2,815,000	$	3,133,209	$	(318,209)
600.000	**Misc. Distribution Items**						
600.100	Pole Mounted Transformers	$	5,407,000	$	1,664,399		
600.101	Pad Mounted Transformers	$	5,048,000	$	1,563,097		
600.200	Meters	$	100,000	$	1,149,616		
600.201	Metering Transformers & Equipment	$	75,000	$	110,156		
600.400	Single Phase ACRs, Sectionalizers, or Fusing	$	811,000	$	52,031		
600.401	Three Phase ACRs or Sectionalizing	$	1,098,250	$	830,280		
600.402	Switches (ganged or knifeblade)	$	405,500	$	384,682		
600.403	Pad Mounted Sectionalizing Equipment	$	788,000				
600.404	Voltage Regulators	$	1,077,500	$	620,124		
600.500	Capacitors	$	594,000	$	130,459		
600.600	Distribution Pole Replacement	$	7,988,000	$	12,219,209		
600.601	General Replacement -- OH Distribution	$	999,000	$	918,705		
600.602	General Replacement -- UG Distribution	$	292,000	$	514,554		
600.603	Avian Protection Plan	$	396,000	$	113,664		
600.000	**Subtotal -- Misc. Distribution Items**	$	25,079,250	$	20,270,976	$	4,808,274
700.000	**Other Dist. Items**						
700.004	SCADA Field Upgrades	$	65,172	$	424,181		
700.011	Retire Mercury Vapor Lights	$	232,000	$	123,698		
700.012	SCADA Control Center Upgrade	$	119,518	$	246,878		
700.013	Demand Side Management Including Study	$	4,012,500	$	2,008,269		
700.014	Demand Side Management Home Energy Display	$	284,118	$	129,065		
0700-016	Data Integration			$	54,047		
700.098	Distribution Line Rights-of-Way	$	186,000	$	-		
700.000	**Subtotal -- Other Dist. Items**	$	4,899,308	$	2,986,139	$	1,913,169
	Distribution Grand Total	$	47,993,558	$	35,100,919	$	12,892,639
	Transmission						
800.000	**New Transmission Line**						
800.023	Hereford Sub to APS Tieline	$	836,000	$	13,664		
800.024	69kV GOAB with APS	$	17,500				
800.025	Engineering and ROW future Substation	$	325,000				
800.026	Charleston Tap GOAB Upgrade	$	17,500				
800.027	Bella Vista Juct GOAn Upgrade	$	17,500				
800.028	Sonoita Tap GOAB Upgrade	$	17,500	$	104,007		
800.098	Transmission Line Rights-of-Way	$	220,000				
800.000	**Subtotal -- New Transmission Line**	$	1,451,000	$	117,672	$	1,333,328
900.000	**Subtotoal -- New Transmission Substations & Switching Stations**						
900.001	Sloan Delivery Point 230/69 [ROW only] [Coding of this project per B. Norris]			$	-		
900.000	**Subtotoal -- New Transmission Substations & Switching Stations**			$	-	$	-
1000.000	**Transmission Line Changes**						
1000.099	Misc Transmission Line Changes	$	198,000	$	50,086		
1000.101	Replace Misc. Transmission Poles	$	3,784,000	$	1,008,760		
1000.110	Rebuild St David Tap to St David Sub	$	2,163,000	$	402,805		
1000.111	Engineering and ROW Future Subtransmission	$	334,000				
1000.112	Rebuild Cochise Sub to Benson Sub	$	11,000,000				
1000-117	Huachuca GOAB Upgrade			$	183,325		
1000-118	Wilcox Tap GOAB Upgrade			$	138,321		
1000-119	Keating Junction - GOAB Upgrade			$	106,301		
1000-120	Charleston Tap 69kV GOAB Upgrade			$	32,894		
1000-121	Webb to McNeal			$	489,093		
1000-123	Ramsey:69kv breaker for SSVEC-APS Tieline			$	82,200		
1000-124	Mortenson Tap GOAB			$	39,889		

1000.000 **Subtotal -- Transmission Line Changes**	$ 17,479,000	$ 2,533,671	$ 14,945,329
1100.000 Transmission Substation Changes			
1100.022 McNeal Metering	$ 17,000		
1100.023 Stewart Switching SCADA Upgrade	$ 150,000		
1100-023 Stewart Switching SCADA RTU-Controls Upg		$ 295,565	
.100.099 Misc. transmission substation changes	$ 334,000	$ 319,414	
1100.000 Subtotal -- Transmission Substation Changes	$ 501,000	$ 614,979	$ (113,979)
Transmission Grand Totals	$ 19,431,000	$ 3,266,322	$ 16,164,678
Other Projects			
1200.000 Communications			
1200.107 Mule Mountain Radio Repeater			
1200.108 Backup Radio for CRC			
1200.121 San Rafeal to Ramsey Fiber	$ 167,760	$ 116,242	
1200.122 Kartchner to Huachuca Sub Fiber	$ 215,347	$ 187,341	
1200.123 Sloan to Cootonwoon Fiber	$ 240,000	$ 205,374	
1200.124 Hawes Tap to Hawes Fiber	$ 60,000	$ 51,713	
1200.125 Pueblo Sub to San Rafeal Fiber	$ 60,000	$ 80,636	
1200.126 SVCM to Tombstone Tap Fiber	$ 390,000	$ 134,368	
1200.127 SWTC Redtail to Stewart Fiber	$ 240,000	$ 736,351	
1200.128 Stewart to Wilcox Tap Fiber	$ 240,000	$ 315,211	
1200.129 Wilcox Tap to Wilcox Tech Service Fiber	$ 30,000	$ 30,978	
1200.13 Wilcox Tech Service to Wilcox Main Fiber	$ 120,000	$ 80,374	
1200.131 Wilcox Main to Wilcox Fiber	$ 30,000	$ 76,103	
1200-132 Benson Sub to Mescal Sub Fiber Optics		$ 151,302	
1200-133 Keating Sub to SV Business Office Fiber Optics [distribution]		$ 87,168	
1200-134 Cochise Sub to Kansas Sub Fiber Optics		$ 161,727	
1200.000 Subtotal -- Communications	$ 1,793,107	$ 2,414,887	$ (621,780)
1300.000 Buildings, Land Improvement			
'300.001 **SV Warehouse Addition**	$ 459,000		
1300.000 Subtotal -- Buildings, Land Improvement	$ 459,000	$ -	$ 459,000
1400.000 Distributed Generation			
1400-010 Distributed Generation - CREBS		$ 5,778,278	
1400.011 Distributed generation - energy Supply	$ 9,000,000	$ 2,693	
UNDEFINED		$ 15,776	
1400.000 Subtotal -- Distributed Generation	$ 9,000,000	$ 5,796,747	$ 3,203,253
Other Projects Grand Totals	$ 11,252,107	$ 8,211,634	$ 3,040,473
Maximum Grand Total	$ 78,676,665	$ 46,578,876	$ 32,097,789

TAB 4

Project: Rugged Com© Cybersecurity Devices
CWP Item Number: 500.037 **Estimated Cost:** $456,303
Smart Grid CIAC: $228,152

DESCRIPTION OF PROPOSED CONSTRUCTION

Install up to 15 devices in substations and an access control device on the SSVEC network. These devices, once fiber is available at the substations, will provide secure end to end communications capability from the substation to the SSVEC and SCADA networks and access control to individual devices in those substations.

REASON FOR PROPOSED CONSTRUCTION

This project will provide SSVEC with end to end communications from substations to the SSVEC and SCADA networks using encrypted VPN tunnels and the capability of restricting access to individual pieces of equipment within the substations to only authorized individuals.

An additional advantage to this project is that these devices are DC powered allowing them to be added to the existing battery back-up system in our substations. This means if the substation power goes down, the communications stays up and services dependent on this will remain available such as SCADA. Our existing systems use AC power and inverters which is not optimal.

Project: Huachuca Junction 69kV GOAB Upgrade

CWP Item Number: 1000.117 **Estimated Cost**: $210,768
Smart Grid CIAC: $105,384

DESCRIPTION OF PROPOSED CONSTRUCTION

Install new steel pole, concrete foundation, add motor operator, open/close status contacts, RTU and communications device at 69kV GOAB switch. Reprogram SCADA Control Center. Field commission GOAB.

REASON FOR PROPOSED CONSTRUCTION

The existing GOAB and wood pole are past their expected useful life. Also, this project gives SSVEC the ability to control these devices from a central dispatch.

RESULTS OF PROPOSED CONSTRUCTION

SSVEC will now be able to restore 69kV outages quicker. Using data from relays at delivery points SSVEC will be able to pinpoint outages and use motor operated switches to isolate faulted areas.

Project: Willcox Tap 69kV GOAB Upgrade

CWP Item Number: 1000.118

Estimated Cost: $210,768
Smart Grid CIAC: $105,384

DESCRIPTION OF PROPOSED CONSTRUCTION

Install new steel pole, concrete foundation, add motor operator, open/close status contacts, RTU and communications device at 69kV GOAB switch. Reprogram SCADA Control Center. Field commission GOAB.

REASON FOR PROPOSED CONSTRUCTION

The existing GOAB and wood pole are past their expected useful life. Also, this project gives SSVEC the ability to control these devices from a central dispatch.

RESULTS OF PROPOSED CONSTRUCTION

SSVEC will now be able to restore 69kV outages quicker. Using data from relays at delivery points SSVEC will be able to pinpoint outages and use motor operated switches to isolate faulted areas.

Project: Keating Tap Junction 69kV GOAB Upgrade

CWP Item Number: 1000.119 **Estimated Cost**: $210,768
Smart Grid CIAC: $105,384

DESCRIPTION OF PROPOSED CONSTRUCTION

Install new steel pole, concrete foundation, add motor operator, open/close status contacts, RTU and communications device at 69kV GOAB switch. Reprogram SCADA Control Center. Field commission GOAB.

REASON FOR PROPOSED CONSTRUCTION

The existing GOAB and wood pole are past their expected useful life. Also, this project gives SSVEC the ability to control these devices from a central dispatch.

RESULTS OF PROPOSED CONSTRUCTION

SSVEC will now be able to restore 69kV outages quicker. Using data from relays at delivery points SSVEC will be able to pinpoint outages and use motor operated switches to isolate faulted areas.

800.026 and others was coded wrong by Ron. I had to recode it to 1000.120. djb 6/4/15

Project: Charleston Tap 69kV GOAB Upgrade

CWP Item Number: 800.026 **Estimated Cost:** $35,000
Smart Grid CIAC: $17,500

DESCRIPTION OF PROPOSED CONSTRUCTION

Install new motor operator, open/close status contacts, RTU and communications device at 69kV GOAB switch. Reprogram SCADA Control Center. Field commission GOAB.

REASON FOR PROPOSED CONSTRUCTION

To give SSVEC the ability to control these devices from a central dispatch.

RESULTS OF PROPOSED CONSTRUCTION

SSVEC will now be able to restore 69kV outages quicker. Using data from relays at delivery points SSVEC will be able to pinpoint outages and use motor operated switches to isolate faulted areas.

Project: Stewart Switching SCADA RTU and Controls Upgrade [Transmission]

CWP Item Number: 1100.023 **Estimated Cost:** $300,000
Smart Grid CIAC: $150,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Upgrade transformer relaying and distance relays. Install new SCADA RTU and HMI in substation building. Install new fiber optics communication equipment. Program RTU to communicate with SSVEC and SWTRANSCO Control Center stations. Evaluate battery system for present condition; determine if new system is needed.

REASON FOR PROPOSED CONSTRUCTION

Currently SSVEC does not have any communications with the 69kV equipment in the substation. All control and monitoring is done by SWTRANSCO.

RESULTS OF PROPOSED CONSTRUCTION

SSVEC will be able to monitor and control all breakers from office. Load and fault event data will be available at any time for evaluation for the office.

Project: Benson Substation to Mescal Substation Fiber Optics
CWP Item Number: 1200.132 **Estimated Cost:** $246,286
Smart Grid CIAC: $123,143

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace 4 miles of 69kV sub-transmission line 3/8" static wire with OPGW fiber optic conductor. Upgrade, replace, and/or install new poles and other modifications as necessary.

REASON FOR PROPOSED CONSTRUCTION

These projects will result in additional communications capabilities from the Benson Substation to the Mescal Substations. These communications will be needed to provide AMR and upgraded substation relaying/SCADA connectivity for SSVEC as part of the Smart Grid grant. In addition, this will reduce communications costs by providing an alternative to local telecommunications companies' facilities.

RESULTS OF PROPOSED CONSTRUCTION

Reduced communications cost and a significantly larger communication path.

Project: Keating Substation to SV Business Office Fiber Optics [distribution]
CWP Item Number: 1200.133 **Estimated Cost:** $355,946
Smart Grid CIAC: $177,973

DESCRIPTION OF PROPOSED CONSTRUCTION

Add 1.25 miles of ADSS fiber optic line to 12.47kV distribution line. Upgrade, replace, and/or install new poles and other modifications as necessary.

REASON FOR PROPOSED CONSTRUCTION

These projects will result in additional communications capabilities from the Keating substation to the Sierra Vista Business Office. These communications will be needed to provide AMR and upgraded substation relaying/SCADA connectivity for SSVEC as part of the Smart Grid grant. In addition, this will reduce communications costs by providing an alternative to local telecommunications companies' facilities.

RESULTS OF PROPOSED CONSTRUCTION

Reduced communications cost and a significantly larger communication path.

Project: Hawes Radio to Fiber Optics Communications Conversion
CWP Item Number: 500.038 **Estimated Cost:** $151,000
Smart Grid CIAC: $75,500

DESCRIPTION OF PROPOSED CONSTRUCTION

Convert from radio communications for polling data to fiber optics communications. Reprogram the substation's RTU. Reprogram SCADA Control Center. Purchase and install switching equipment for SCADA Control Center station.

REASON FOR PROPOSED CONSTRUCTION

Utilize the new fiber optics SSVEC is installing.

RESULTS OF PROPOSED CONSTRUCTION

This project will provide engineering with remote access to this substation that are part of the Smart Grid project.

Project: Cochise Substation: Control House
CWP Item Number: 500.039 **Estimated Cost:** $337,500
Smart Grid CIAC: $168,750

DESCRIPTION OF PROPOSED CONSTRUCTION

A full control house will be installed. Originally, a fiber optics splice point was going to be installed as part of the fiber optics. The control house will be fully equipped with protective devices, full communications, batteries and charger, and other typical control house equipment. This will allow full use of the fiber optics for control and monitoring substation.

REASON FOR PROPOSED CONSTRUCTION

Provide full control and monitoring of substation.

Project: Huachuca Substation: Control House
CWP Item Number: 500.040 **Estimated Cost:** $337,500
Smart Grid CIAC: $168,750

DESCRIPTION OF PROPOSED CONSTRUCTION

A full control house will be installed. Originally, a fiber optics splice point was going to be installed as part of the fiber optics. The control house will be fully equipped with protective devices, full communications, batteries and charger, and other typical control house equipment. This will allow full use of the fiber optics for control and monitoring substation.

REASON FOR PROPOSED CONSTRUCTION

Provide full control and monitoring of substation.

Project: Data Integration
CWP Item Number: 700.016 **Estimated Cost:** $250,000
Smart Grid CIAC: $125,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Do the necessary work to consolidate and provide additional access for various data sources around the cooperative.

RESULTS OF PROPOSED CONSTRUCTION

This project will provide SSVEC employees with better data access to various databases around the cooperative.

Project: Webb Substation to McNeal Substation 69kV Rebuild
CWP Item Number: 1000.121 **Estimated Cost:** $2,113,401
Smart Grid CIAC: $520,248

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace bad poles and other infrastructure and add fiber optics communications on 14.11 miles of 69kV line. The project has started.

REASON FOR PROPOSED CONSTRUCTION

The 69kV poles need to be replaced as numerous poles have failed already. The remaining poles have been inspected by Omose and found to be insufficient. In addition, adding fiber optics will provide increased communications.

RESULTS OF PROPOSED CONSTRUCTION

This project will allow SSVEC to continue to serve McNeal substation and have a good tieline to APS for emergency transmission service.

Project: Ramsey: Install 69kV breaker for SSVEC-APS tieline
CWP Item Number: 1000.123 **Estimated Cost:** $550,000
Smart Grid CIAC: $0

DESCRIPTION OF PROPOSED CONSTRUCTION

Install 69kV breaker at Ramsey substation. This project will not start until the APS-SSVEC Palominas tieline is agreed upon and scheduled.

REASON FOR PROPOSED CONSTRUCTION

Should the APS and SSVEC Palominas tieline be constructed, SSVEC will need to install a breaker on its system to protect SSVEC customers. Hereford, Ramsey, Keating and Hawes East & West substations [5 total] could be vulnerable to additional outages if the tieline is closed and there is an outage.

Project: Install 69kV GOAB at Mortenson Tap
CWP Item Number: 1000.124 **Estimated Cost:** $210,768
Smart Grid CIAC: $0

DESCRIPTION OF PROPOSED CONSTRUCTION

Install 69kV GOAB at Mortenson Tap.

REASON FOR PROPOSED CONSTRUCTION

The Stewart substation to Mortenson substation new 69kV line is changing the normal open and close between Graham County EC [GCEC] and SSVEC. The normal open and close will move from Hooker Tap to Mortenson Tap. Installation of remote operated GOAB is needed. Depending on GCEC's cost sharing participation, the GOAB could be 1-way or 3-way.

RESULTS OF PROPOSED CONSTRUCTION

This project will allow SSVEC to more quickly reconfigure the 69kV system during an outage – a savings of 1 hour drive time per outage.

Project: Cochise Substation to Kansas Substation Fiber Optics
CWP Item Number: 1200.134 **Estimated Cost:** $500,000
Smart Grid CIAC: $250,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Add 9 miles of fiber optics to the existing 69kV line to add fiber optics communications. Replace some poles as needed.

RESULTS OF PROPOSED CONSTRUCTION

This project will allow SSVEC to have high speed communications to Cochise, Kansas, Webb, and McNeal substations.

Project: CREBS Distributed Generation
CWP Item Number: 1400.010 **Budget:** $6,000,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Build 750kW solar generation.

REASON FOR PROPOSED CONSTRUCTION

SSVEC is required by the ACC to have a percentage of total requirements provided by renewable energy supply, either by power purchase agreement or local generation. This is known as the Renewable Energy Standard ("RES"). Clean Renewable Energy Bonds ["CREB's"] allow SSVEC to install local renewable generation, either in partnership or alone, with favorable financing.

TAB 5

COST SUMMARY
SSVEC 2013-2014 Construction Work Plan

[redacted]	Project Description	Gross Project Dollars	amend #1 aug2014	new budget	ACTUAL SPENDING	DIFFERENCE
	Distribution					
100.000	**New Lines for New Customers [including CIAC Contributions]**					
	Underground					
0101-001	1-Phase Underground Primary	$ 412,000		$ 412,000	$ 452,253	
0101-002	3-Phase Underground Primary	$ 334,000		$ 334,000	$ 414,934	
0101-003	3-Wire Underground Secondary	$ 650,000		$ 650,000	$ 425,799	
0101-004	4-Wire Underground Secondary	$ 114,000		$ 114,000	$ 101,368	
	Overhead					
0102-001	1-Phase Overhead Primary	$ 396,000		$ 396,000	$ 246,064	
0102-002	3-Phase Overhead Primary	$ 816,000		$ 816,000	$ 381,740	
0102-003	3-Wire Overhead Secondary	$ 128,000		$ 128,000	$ 229,905	
0102-004	4-Wire Overhead Secondary	$ 88,000		$ 88,000	$ 160,370	
0103-001	Subdivisions [Over 5 lots]	$ 246,000		$ 246,000	$ 1,031	
0100-000	CIAC for New Services	$ (3,184,000)		$ (3,184,000)	$ (2,085,235)	
100.000	**Subtotal -- New Lines for New Customers**	**$ -**			**$ 328,228**	**$ (328,228)**
200.000	**New Feeders and Tie Lines**					
0200-099	Misc Tie Lines [under $25K each]	$ 400,000		$ 400,000	$ 58,038	
0200-152	Hereford HF2; Tie Line from Three Canyons Rd to Hereford Rd	$ 73,000	$ (73,000)	$ -	$ 3,340	
0200-153	Benson P5; Tie Line from Serenity Ln to I-10	$ 252,000		$ 252,000	$ -	
200.000	**Subtotal -- New Feeders and Tie Lines**	**$ 725,000**	**$ (73,000)**	**$ 652,000**	**$ 61,379**	**$ 590,621**
300.000	**Conversions & Line Changes**					
0300-057	Engineering & ROW-Conversions/Line Chgs	$ 50,000		$ 50,000	$ -	
0300-065	Pueblo Z4; Upgrade from Substation to Hwy 92	$ 130,000		$ 130,000	$ 13,411	
0300-066	Keating T2; Upgrade from Substation to near Hummingbird Ln	$ 383,000	$ 192,000	$ 575,000	$ 612,690	
0300-067	Keating T2; Upgrade from Hummingbird Ln to Hwy 92	$ 38,000		$ 38,000	$ 9,784	
0300-068	Benson P5; Upgrade near Flying Horseshoe Rd to Red Rock Rd	$ 53,000		$ 53,000	$ -	
0300-069	Webb M5; Upgrade from Substation to near Gleeson Rd	$ 405,000	$ (405,000)	$ -	$ 668	
0300-070	Keating T2; Upgrade from Golf Links Rd to Fry Blvd	$ 394,000	$ 260,000	$ 654,000	$ 701,237	
0[redacted]71	Keating T2; Upgrade UG from Avenida Cochise to Golf Links Rd	$ 575,000		$ 575,000	$ 513,499	
0[redacted]72	Hawes X1; Upgrade UG near Iroquois Dr to Cherokee Ave	$ 305,000		$ 305,000	$ 163,790	
0300-073	Huachuca V7; Upgrade from Substation to Upper Elgin Rd	$ 463,000		$ 463,000	$ -	
0300-096	Copper Replacement	$ 400,000		$ 400,000	$ 43,626	
0300-097	Cable Injection	$ 100,000		$ 100,000	$ -	
0300-098	Cable Replacement	$ 1,800,000		$ 1,800,000	$ 924,087	
0300-099	Misc Dist Line Changes [under $25K]	$ 400,000		$ 400,000	$ 113,237	
300.000	**Subtotal -- Conversions & Line Changes**	**$ 5,496,000**	**$ 47,000**	**$ 5,543,000**	**$ 3,096,029**	**$ 2,446,971**
400.000	**New Distribution Substations**					
0400-024	Engineering & ROW acquisition for Future Substations	$ 100,000		$ 100,000	$ -	
0400-025	Bowie; New Substation	$ 148,000	$ (148,000)	$ -	$ -	
0400-026	Bella Vista; Upgrade Substation	$ 600,000		$ 600,000	$ 2,272	
0400-098	Distribution Substation Rights-of-Way	$ 50,000		$ 50,000	$ -	
400.000	**Subtotal -- New Distribution Substations**	**$ 898,000**	**$ (148,000)**	**$ 750,000**	**$ 2,272**	**$ 747,728**
500.000	**Distribution Substation Changes**					
0500-045	Substation Regulator Upgrades	$ 240,000	$ 30,000	$ 270,000	$ 126,310	
0500-045	Substation Regulator Upgrades CIAC	$ -		$ -	$ (91,712)	
0500-046	Benson; Upgrade Substation	$ 511,000		$ 511,000	$ 642	
0500-047	St David; Mobile Site Development	$ 338,000		$ 338,000	$ 49,489	
0500-047	St David; Mobile Site Development CIAC			$ -	$ (17,879)	
0500-048	Meters - Upgrade AMR Receivers	$ 108,000		$ 108,000	$ 83,509	
0500-049	Keating; Radio to Fiber	$ 92,000		$ 92,000	$ 48,861	
0500-099	Misc Substation Changes	$ 106,000		$ 106,000	$ -	
500.000	**Subtotal -- Distribution Substation Changes**	**$ 1,395,000**	**$ 30,000**	**$ 1,425,000**	**$ 199,219**	**$ 1,225,781**
600.000	**Miscellaneous Distribution Items**					
0600-100	Pole Mounted Transformers	$ 1,400,000		$ 1,400,000	$ 1,069,703	
0600-101	Pad Mounted Transformers	$ 1,400,000		$ 1,400,000	$ 781,477	
0[redacted]00	Meters, Metering Transformers & Equip	$ 1,400,000		$ 1,400,000	$ 1,289,531	
0[redacted]01	Metering Transformers & Equipment			$ -	$ -	
0600-300	Service Upgrades	$ 200,000		$ 200,000	$ 229,559	
0600-300	Service Upgrades CIAC	$ (200,000)		$ (200,000)	$ (227,870)	
0600-400	Single Phase ACRs, Sectionalizers, or Fusing	$ 102,000		$ 102,000	$ 16,058	
0600-401	Three Phase ACRs or Sectionalizing	$ 240,000		$ 240,000	$ 115,931	
0600-402	Switches (ganged or knifeblade)	$ 220,000		$ 220,000	$ 229,375	
0600-403	Pad Mounted Sectionalizing Equipment	$ 200,000		$ 200,000	$ -	
0600-404	Voltage Regulators	$ 400,000		$ 400,000	$ 256,468	
0600-405	Line Regulator Upgrades	$ 120,000		$ 120,000	$ 6,739	

COST SUMMARY
SSVEC 2013-2014 Construction Work Plan

[redacted]	Project Description	Gross Project Dollars	amend #1 aug2014	new budget	ACTUAL SPENDING	DIFFERENCE
0[redacted]00	Capacitors	$ 150,000		$ 150,000	$ 23,405	
0600-600	Distribution Pole Replacement	$ 7,988,000	$ (1,268,000)	$ 6,720,000	$ 3,964,932	
0600-601	General Replacement -- OH Distribution	$ 400,000		$ 400,000	$ 352,444	
0600-601	General Replacement -- OH Distribution CIAC			$ -	$ (19,791)	
0600-602	General Replacement -- UG Distribution	$ 600,000		$ 600,000	$ 37,086	
0600-603	Wildlife Protection Plan	$ 80,000		$ 80,000	$ -	
0600-710	Distribution Automation	$ 750,000		$ 750,000	$ -	
600.000	**Subtotal -- Miscellaneous Distribution Items**	**$ 15,450,000**	**$ (1,268,000)**	**$ 14,182,000**	**$ 8,125,046**	**$ 6,056,954**
700.000	**Other Dist. Items**					
0700-002	Security Light Installations	$ 50,000		$ 50,000	$ 6,595	
0700-002	Security Light Installations CIAC	$ (50,000)		$ (50,000)	$ (3,191)	
0700-003	Street Light Installations	$ 80,000		$ 80,000	$ 30,691	
0700-003	Street Light Installations CIAC	$ (80,000)		$ (80,000)	$ (28,003)	
0700-004	SCADA Field Upgrades	$ 50,000		$ 50,000	$ -	
0700-012	SCADA Control Center Upgrade	$ 100,000	$ 80,000	$ 180,000	$ -	
0700-020	New Mobile Substation	$ 15,000		$ 15,000	$ -	
0700-098	Distribution Line Rights-of-Way	$ 50,000		$ 50,000	$ -	
700.000	**Subtotal -- Other Dist. Items**	**$ 215,000**	**$ 80,000**	**$ 295,000**	**$ 6,092**	**$ 288,908**
	Distribution Subtotal	**$ 24,179,000**	**$ (1,332,000)**	**$ 22,847,000**	**$ 11,818,265**	**$ 11,028,735**
	Subtransmission					
800.000	**New Subtransmission Lines**					
0800-025	Eng & ROW Acquisitions-Subtransmission Future	$ 80,000		$ 80,000	$ 3,603	
0800-098	Future Transmission Line Rights-of-Way	$ 80,000		$ 80,000	$ -	
800.000	**Subtotal -- New Subtransmission Lines**	**$ 160,000**	**$ -**	**$ 160,000**	**$ 3,603**	**$ 156,397**
1000.000	**Subtransmission Line Changes**					
1000-099	General Replacement & Misc Sub Transmission Line Changes	$ 100,000		$ 100,000	$ 87,244	
1[redacted]01	Replace Misc. Subtransmission Poles	$ 2,000,000		$ 2,000,000	$ 174,186	
10[redacted]11	Eng & ROW Acquisitions for Future Subtransmission Changes	$ 50,000		$ 50,000	$ -	
1000-130	Hawes 69kV; Upgrade from Substation to Cherokee Ave	$ 678,000	$ (172,000)	$ 506,000	$ -	
1000-131	Hawes 69kV; Upgrade from Cherokee Ave to Golflinks Rd	$ 96,000	$ 1,504,000	$ 1,600,000	$ -	
1000-132	Redtail; Fiber Optics from Redtail to Bowie Substation	$ 2,044,000		$ 2,044,000	$ 2,093,027	
1000-132	SG CIAC for Fiber Optics on Redtail to Bowie	$ (1,022,000)		$ (1,022,000)	$ (945,753)	
1000-133	Huachuca 69kV; Replace Poles from sub to In Balance Ranch Rd	$ 1,485,000		$ 1,485,000	$ 1,070,382	
1000-134	Huachuca 69kV; Replace Poles from In Balance Ranch to Fairbank	$ 300,000		$ 300,000	$ -	
1000.000	**Subtotal -- Subtransmission Line Changes**	**$ 5,731,000**	**$ 1,332,000**	**$ 7,063,000**	**$ 2,479,085**	**$ 4,583,915**
1100.000	**Subtransmission Substation Changes**					
1100-099	Misc Subtransmission Substation Changes	$ 50,000		$ 50,000	$ -	
1100.000	**Subtotal -- Subtransmission Substation Changes**	**$ 50,000**	**$ -**	**$ 50,000**	**$ -**	
	Subtransmission Subtotal	**$ 5,941,000**	**$ 1,332,000**	**$ 7,273,000**	**$ 2,482,688**	**$ 4,790,312**
	Other Projects					
1200.000	**Communications**					
1200-140	Keating T3; Fiber Optic Cable from Substation to BST	$ 25,000		$ 25,000	$ 38,494	
1200-140	Keating T3; Fiber Optic Cable from Substation to BST-CIAC			$ -	$ (20,858)	
	UNDEFINED				$ 81,256	
1200.000	**Subtotal -- Communications**	**$ 25,000**	**$ -**	**$ 25,000**	**$ 98,892**	**$ (73,892)**
	Other Projects Subtotal	**$ 25,000**	**$ -**	**$ 25,000**	**$ 98,892**	**$ (73,892)**
	Grand Total	**$ 30,145,000**	**$ -**	**$ 30,145,000**	**$ 14,399,845**	**$ 15,745,155**

TAB 6

Error

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RESOLUTION

The following resolution was adopted at a meeting of the Sulphur Springs Valley Electric Cooperative, Inc., Board of Directors held December 19, 2012:

> BE IT RESOLVED that, upon reviewing the Construction Work Plan 2013-14 Amendment, as presented by the SSVEC Engineering Division, this Plan is hereby accepted and approved by the Board of Directors, for the period from January 2013 through December 2014;
>
> BE IT FURTHER RESOLVED that projects included in this Work Plan Amendment and previously approved projects establish the construction and loan fund requirements for SSVEC for the above-mentioned period. The Board of Directors further recognizes that loan funds presented in the Construction Work Plan Amendment are to be expended for these designated items and projects or as amended by the Board of Directors.
>
> NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors hereby directs Management to use remaining and available loan funds as necessary and implement this Construction Work Plan 2013-14 Amendment as presented herein.

I, Archie J. Smith, do hereby certify that I am the Secretary of Sulphur Springs Valley Electric Cooperative, Inc., and the foregoing is a true and correct copy of a resolution adopted by the SSVEC Board of Directors at a regular meeting held December 19, 2012.

_____

Secretary

(S E A L)

ACKNOWLEDGEMENTS

The 2013-14 Construction Work Plan Amendment contains a description and estimated cost for new construction projects anticipated during two-year period from January 2013 through December 2014. The projects presented herein and previously approved projects are necessary to maintain efficient and reliable service conditions and for the extension of service to new locations.

This study was prepared by the Engineering Division in collaboration with the Operations, Construction, Accounting, and Information & Communications Services personnel. This study could not have been done without input and assistance from all SSVEC departments working together.

I prepared this Work Plan Amendment with other personnel under my direct and indirect supervision. I have personally reviewed each project and associated cost estimate. I am confident of the need and technical viability of each project and the overall Work Plan.

David Bryan

Digitally signed by David Bryan
DN: cn=David Bryan, o=SSVEC, ou=Engineering, email=dbryan@ssvec.com, c=US
Date: 2012.12.03 14:32:27 -07'00'

David J. Bryan, P.E.
Arizona Registration #28292
Expires 9/30/2015
Engineer

We have reviewed the 2010-12 Work Plan Amendment as presented and find it valid, acceptable, and in the best interest of SSVEC and its members:

Ron Orozco, P.E.

Digitally signed by Ron Orozco, P.E.
DN: cn=Ron Orozco, P.E., o=SSVEC, ou=Engineering, email=rronorozco@ssvec.com, c=US
Date: 2012.12.03 15:33:39 -07'00'

Ronald Orozco, P.E., CEM©, PMP©
Engineering Manager

Anselmo Torres

Digitally signed by Anselmo Torres
DN: cn=Anselmo Torres, o=SSVEC, ou=Engineering, email=atorres@ssvec.com, c=US
Date: 2012.12.04 08:23:49 -07'00'

Anselmo Torres
Chief Operations & Engineering Officer

Kirby Chapman

Digitally signed by Kirby Chapman
DN: cn=Kirby Chapman, o=SSVEC, ou=Finance and Administration, email=kchapman@ssvec.com, c=US
Date: 2012.12.06 15:22:29 -07'00'

Kirby Chapman
Chief Financial and Administration Officer

Creden W. Huber

Digitally signed by Creden W. Huber
DN: cn=Creden W. Huber, o=SSVEC, ou=CEO, email=chuber@ssvec.com, c=US
Date: 2012.12.12 10:53:59 -07'00'

Creden W. Huber
Chief Executive Officer

Cost Summary

SSVEC 2013-14 Construction Work Plan Amendment

Codes	Project Description	Gross Project Dollars
	Distribution	
100.000	**New Lines for New Customers [including CIAC Contributions]**	
	Underground	
101.001	1-Phase Underground Primary	$ 412,000
101.002	3-Phase Underground Primary	$ 334,000
101.003	3-Wire Underground Secondary	$ 650,000
101.004	4-Wire Underground Secondary	$ 114,000
	Overhead	
102.001	1-Phase Overhead Primary	$ 396,000
102.002	3-Phase Overhead Primary	$ 816,000
102.003	3-Wire Overhead Secondary	$ 128,000
102.004	4-Wire Overhead Secondary	$ 88,000
	Subtotal	$ 2,938,000
103.001	Subdivisions [Over 5 lots]	$ 246,000
	Subtotal	**$ 3,184,000**
	CIAC for New Lines	**$ (3,184,000)**
100.000	**Subtotal -- New Lines for New Customers**	**$ -**
200.000	**New Feeders and Tie Lines**	
200.152	Hereford HF2; Tie Line from Three Canyons Rd To Hereford Rd**	$ 73,000
200.153	Benson P5; Tie Line from Serenity Ln To Interstate 10	$ 252,000
200.099	Misc Tie Lines [under $100K each]	$ 400,000
200.000	**Subtotal -- New Feeders and Tie Lines**	**$ 725,000**
300.000	**Conversions & Line Changes**	
300.057	Engineering & ROW acquisition for Future Conversions/Line Changes	$ 50,000
300.065	Pueblo Z4; Upgrade from Substation to Hwy 92**	$ 130,000
300.066	Keating T2; Upgrade from Substation to near Hummingbird Ln	$ 383,000
300.067	Keating T2; Upgrade near Hummingbird Ln To Hwy 92**	$ 38,000
300.068	Benson P5; Upgrade near Flying Horseshoe Rd To Red Rock Rd**	$ 53,000
300.069	Webb M5; Upgrade from Substation to near Gleeson Rd	$ 405,000
300.070	Keating T2; Upgrade from Golf Links Rd to Fry Blvd	$ 394,000
300.071	Keating T2; Upgrade UG from Avenida Cochise to Golf Links Rd	$ 575,000
300.072	Hawes X1; Upgrade UG near Iroquois Dr to Cherokee Ave	$ 305,000
300.073	Huachuca V7; Upgrade from Substation to Upper Elgin Rd**	$ 463,000
300.096	Copper Replacement	$ 400,000
300.097	Cable Injection	$ 100,000
300.098	Cable Replacement	$ 1,800,000
300.099	Misc Dist Line Changes [under $100K each]	$ 400,000
300.000	**Subtotal -- Conversions & Line Changes**	**$ 5,496,000**
400.000	**New Distribution Substations**	
400.024	Engineering & ROW acquisition for Future Substations	$ 100,000
400.025	Bowie; New Substation**	$ 148,000
400.026	Bella Vista; Upgrade Substation**	$ 600,000
400.098	Future Distribution Substation Site(s) Acquisition	$ 50,000
400.000	**Subtotal -- New Distribution Substations**	**$ 898,000**

* = Engineering Only

** = Rights-of-Way and Engineering Only

Cost Summary

SSVEC 2013-14 Construction Work Plan Amendment

Codes	Project Description		Gross Project Dollars
	Distribution		
500.000	**Distribution Substation Changes**		
500.045	Substation Regulator Upgrades	$	240,000
	Benson Sub: Upgrade Regs	$	80,000
	Kansas Sub: Upgrade Regs	$	80,000
	Mescal 7.2 Sub: Upgrade Regs	$	80,000
500.046	Benson: Upgrade Substation	$	511,000
500.047	St. David: Mobile Site Development	$	338,000
500.048	Meters - Upgrade AMR Receivers	$	108,000
500.049	Keating: Radio to Fiber	$	92,000
500.099	Miscellaneous Substation Changes [under $50K each]	$	106,000
		$	-
500.000	**Subtotal -- Distribution Substation Changes**	**$**	**1,395,000**
600.000	**Miscellaneous Distribution Items**		
600.100	Pole Mounted Transformers	$	1,400,000
600.101	Pad Mounted Transformers	$	1,400,000
600.200	Meters, Metering Transformers & Equipment	$	1,400,000
600.300	Service Upgrades	$	200,000
	CIAC for Service Upgrades	$	(200,000)
600.400	Single Phase ACR's, Sectionalizers, or Fusing	$	102,000
600.401	Three Phase ACR's or Sectionalizing	$	240,000
600.402	Switches (ganged or knifeblade)	$	220,000
600.403	Pad Mounted Sectionalizing Equipment	$	200,000
600.404	Voltage Regulators	$	400,000
600.405	Line Regulator Upgrades	$	120,000
	Kansas J3: Upgrade Regs		
	Chiricahua K2: Upgrade Regs		
600.500	Capacitors/Inductors	$	150,000
	Benson P5 Dragoon: 300kVAr Capacitor		
600.600	Distribution Pole Replacement	$	7,988,000
600.601	General Replacement -- OH Distribution	$	400,000
600.602	General Replacement -- UG Distribution	$	600,000
600.603	Wildlife Protection Plan	$	80,000
600.710	Distribution automation	$	750,000
600.000	**Subtotal -- Miscellaneous Distribution Items**	**$**	**15,450,000**
700.000	**Other Dist. Items**		
700.002	Security Light Installations	$	50,000
	CIAC for Security Lights	$	(50,000)
700.003	Street Light Installations	$	80,000
	CIAC for Street Lights	$	(80,000)
700.004	SCADA Field Upgrades	$	50,000
700.012	SCADA Control Center Upgrade	$	100,000
700.020	New Mobile Substation*	$	15,000
700.098	Future Distribution Line Rights-of-Way	$	50,000
700.000	**Subtotal -- Other Dist. Items**	**$**	**215,000**
	Distribution Subtotal		**$ 24,179,000**

* = Engineering Only

** = Rights-of-Way and Engineering Only

Cost Summary

SSVEC 2013-14 Construction Work Plan Amendment

Codes	Project Description	Gross Project Dollars
	Subtransmission	
800.000	**New Subtransmission Lines**	
800.025	Engineering & ROW acquisition for New Future Subtransmission	$ 80,000
800.098	New Future Subtransmission Line Rights-of-Way	$ 80,000
800.000	**Subtotal -- New Subtransmission Lines**	**$ 160,000**
900.000	**New Subtransmission Substations & Switching Stations**	
900.000	**Subtotal -- New Subtransmission Substations & Switching Stations**	**$ -**
1000.000	**Subtransmission Line Changes**	
1000.099	General Replacement & Misc Sub Transmission Line Changes	$ 100,000
1000.101	Replace Miscellaneous Subtransmission Poles	$ 2,000,000
1000.111	Engineering & ROW acquisition for Future Subtransmission Changes	$ 50,000
1000.130	Hawes 69kV; Upgrade from Substation to Cherokee Ave	$ 678,000
1000.131	Hawes 69kV; Upgrade from Cherokee Ave to Golf links Rd**	$ 96,000
1000.132	Redtail; Fiber Optics from Redtail to Bowie Substation	$ 2,044,000
1000.132	Smart Grid CIAC for Fiber Optics on Redtail to Bowie	$ (1,022,000)
1000.133	Huachuca 69kV; Replace Poles from sub to In Balance Ranch Rd	$ 1,485,000
1000.134	Huachuca 69kV; Replace Poles from In Balance Ranch to Fairbank	$ 300,000
1000.000	**Subtotal -- Subtransmission Line Changes**	**$ 5,731,000**
1100.000	**Subtransmission Substation Changes**	
1100.099	Miscellaneous Subtransmission Substation Changes	$ 50,000
1100.000	**Subtotal -- Subtransmission Substation Changes**	**$ 50,000**
	Subtransmission Subtotal	**$ 5,941,000**
	Other Projects	
1200.000	**Communications**	
1200.140	Keating T3; Fiber Optic Cable from Substation to Buffalo Soldier Trail	$ 25,000
1200.000	**Subtotal -- Communications**	**$ 25,000**
1300.000	**Buildings, Land Improvement**	
1300.000	**Subtotal -- Buildings, Land Improvement**	**$ -**
1400.000	**Energy Supply**	
1400.000	**Subtotal -- Distributed Generation**	**$ -**
1500.000	**Reserved for Fort projects in Accounting**	
1600.000	**Miscellaneous Projects**	
		$ -
	Other Projects Subtotal	**$ 25,000**
	Grand Total	**$ 30,145,000**

* = Engineering Only

** = Rights-of-Way and Engineering Only

100.000 New Lines for New Customers

These items are for establishing electric service for new customers.

The 2009 rate case requires customers to pay 100% of their line extension costs. Therefore the costs of this section, while shown for workload purposes, have no dollar impact to the workplan's total costs.

Codes	Project Description	2013	2014	Gross Project Dollars
	Distribution			
100.000	**New Lines for New Customers [including CIAC Contributions]**			
	Underground			
101.001	1-Phase Underground Primary	$ 206,000	$ 206,000	$ 412,000
101.002	3-Phase Underground Primary	$ 167,000	$ 167,000	$ 334,000
101.003	3-Wire Underground Secondary	$ 325,000	$ 325,000	$ 650,000
101.004	4-Wire Underground Secondary	$ 57,000	$ 57,000	$ 114,000
	Overhead			
102.001	1-Phase Overhead Primary	$ 198,000	$ 198,000	$ 396,000
102.002	3-Phase Overhead Primary	$ 408,000	$ 408,000	$ 816,000
102.003	3-Wire Overhead Secondary	$ 64,000	$ 64,000	$ 128,000
102.004	4-Wire Overhead Secondary	$ 44,000	$ 44,000	$ 88,000
	Subtotal			$ 2,938,000
103.001	Subdivisions [Over 5 lots]	$ 123,000	$ 123,000	$ 246,000
	Subtotal			**$ 3,184,000**
	CIAC for New Lines			**$ (3,184,000)**
100.000	**Subtotal -- New Lines for New Customers**			**$ -**

200.000 New Feeders & Tielines

Project: Hereford HF2; Tieline from Three Canyons Rd to Hereford Rd [Engr & ROW Only]
CWP Item Number: 200.152 **Estimated Cost:** $73,000 **Project Year**: 2013-14

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends acquiring Rights-of-Way and completing an engineering design for an overhead distribution tieline between the new Hereford Substation and Ramsey Substation.

REASON FOR PROPOSED CONSTRUCTION

This improvement will provide an alternate tie between the new Hereford Substation and Ramsey Substation. Currently, there is only one tieline between Hereford and Ramsey. This tieline is about 10 miles long between substations.

RESULTS OF PROPOSED CONSTRUCTION

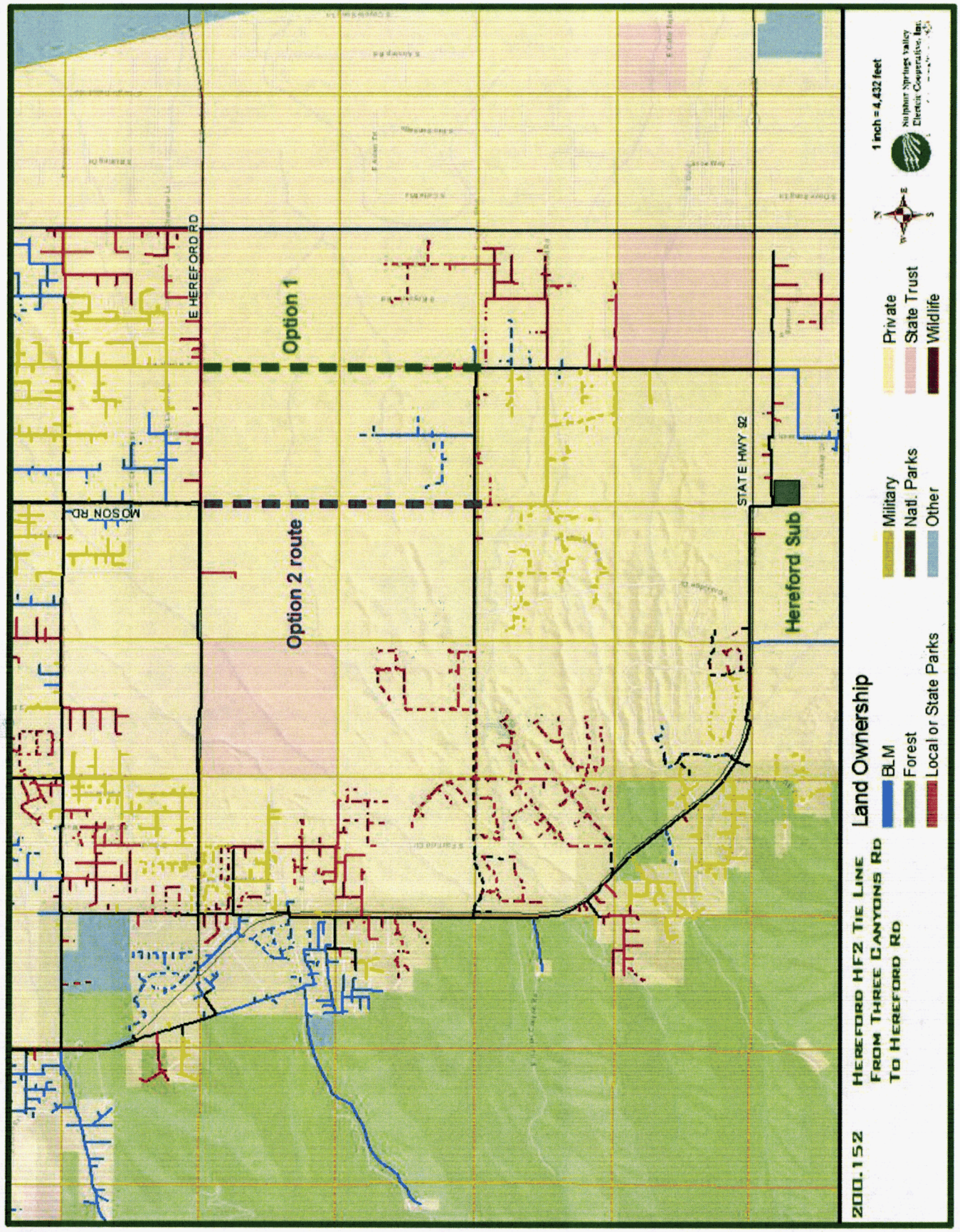
This new tieline will allow for better system reliability and system back-up. Additional tielines allow Ramsey, Hereford, and Hawes Substations to support each other.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Voltage regulators will not contribute to the solution
4. *Conductor upgrade:*
   - Conductor upgrade will not contribute to the solution
5. *New tieline:*
   - This is the recommended solution
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ The new tieline can be delayed but system reliability will not be improved.


Option 1
Option 2 route
E HEREFORD RD
MOSON RD
STATE HWY 92
Hereford Sub
Land Ownership
Private
State Trust
Wildlife
Military
Natl. Parks
Other
BLM
Forest
Local or State Parks
1 inch = 4,432 feet
200.152
Hereford HF2 Tie Line
From Three Canyons Rd
To Hereford Rd

Project: Benson P5; Tieline from Serenity Ln to Interstate 10
CWP Item Number: 200.153 **Estimated Cost:** $252,000 **Project Year**: 2013

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends building about two miles of three-phase overhead 1/0ACSR. Start near pole location 66134 and end near pole location 9547. Engineering and ROW will develop a plan for review prior to construction.

REASON FOR PROPOSED CONSTRUCTION

This improvement is needed to provide an alternate feed into the I-10 Texas Canyon area. The existing feed is inaccessible and has deteriorated poles. Also, there are voltage drop problems at the end of this long feeder that is in excess of 15 miles. Low voltages have been field confirmed at 114V at the end of the feeder. It should be noted that this single-phase radial tap is currently carrying about 50A and is expected to carry a future load of 52A; planning criteria suggests that single-phase lines should not be loaded more than 50A. The single-phase regulator on this line will be 100% loaded in the future.

RESULTS OF PROPOSED CONSTRUCTION

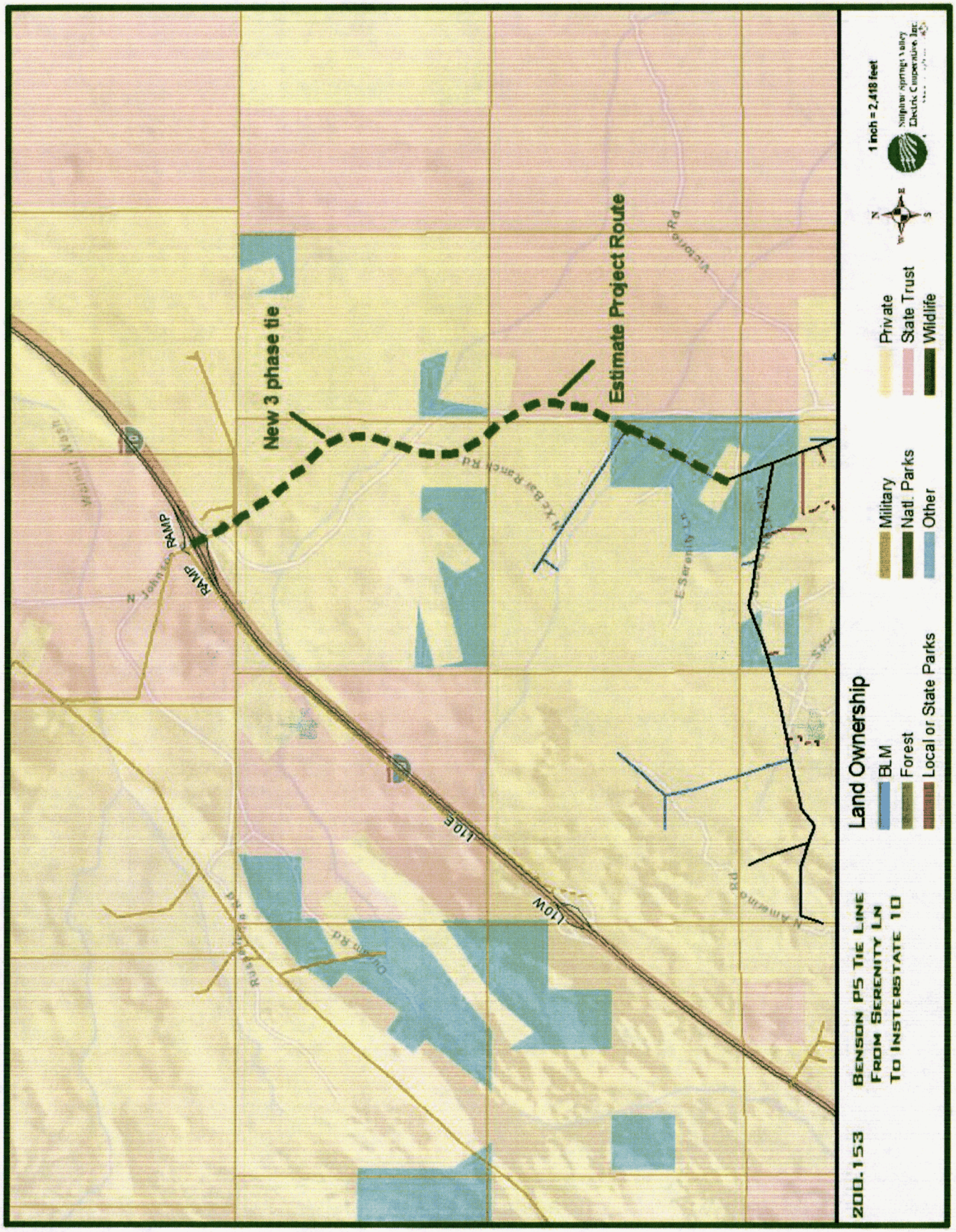
As a result of this project, reliability of service in the I-10 Texas Canyon area will increase. Also by constructing this new tie in conjunction with *CWP#300.068,* the voltage will be raised at the end of the line and the single-phase line will no longer be loaded to 50A and will meet the goal to improve reliability and provide adequate system back feed.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load to
2. *Capacitors:*
   - Adding capacitors will not raise the voltage to acceptable
3. *Voltage Regulators:*
   - Voltage regulators will raise the voltage at the end of the line to acceptable but will not relieve the load from the single-phase line
4. *Conductor upgrade:*
   - Upgrading the existing single-phase conductor will only work if the line is converted to three-phase. The area is not easily accessible
5. *New tieline:*
   - New tieline is the recommended option
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing option is chosen, the voltage will remain low. The single-phase line will remain heavily loaded and system reliability will not be increased. The single-phase regulator will remain at 100% loaded and may have the potential to be overloaded.


New 3 phase tie
Estimate Project Route
RAMP
RAMP
L10E
L10W
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 2,418 feet
200.153
Benson PS Tie Line
From Serenity Ln
To Insterstate 10

Project: Miscellaneous Tielines
CWP Item Number: 200.099 **Estimated Cost:** $400,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Construct short distance and small wire overhead or underground tielines. Each individual project is less than $100,000 total estimated cost.

REASON FOR PROPOSED CONSTRUCTION

During the work plan period, opportunities become available to construct tielines that improve reliability, provide alternative paths, or connect radial distribution lines into a loop. The opportunities are due to line extensions for customers, pole replacement, and other activities.

300.000 Conversions & Line Changes

Project: Engineering and ROW Acquisition for Future Line Changes/Conversions
CWP Item Number: 300.057 **Estimated Cost:** $50,000

DESCRIPTION OF PROPOSED PROJECT

This project recommends to acquire Rights-of-Way and perform initial engineering design for currently unknown projects that will likely be constructed in the next future work plans.

REASON FOR PROPOSED PROJECT

Opportunities for acquiring Rights-of-Way for currently unknown projects related to future line changes and conversions may arise. Having funds available will allow starting engineering and ROW acquisitions for likely work plan projects.

ALTERNATES TO PROPOSED PROJECT

The alternative is not to do any engineering and ROW acquisition for any currently unknown projects and restrict the opportunity to identify and pursue options as they arise.

Project: Pueblo Z4; Upgrade from Substation to Hwy 92
[Engr & ROW only]
CWP Item Number: 300.065 **Estimated Cost:** $130,000 **Project Year**: 2013

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends acquiring Rights-of-Way and completing an engineering design for about one mile upgrade of overhead 4/0ACSR to 477ACSR double circuit, or add 1000kCMIL underground along route. Start near location K07068749 and end near location K06018949. For this work plan, this project will only be ROW and engineering design.

REASON FOR PROPOSED CONSTRUCTION

The 4/0ACSR conductor on Z4 has been overloaded under normal load serving configuration in the past summer years. During the summer months, load has to be switched from Z4 to other neighboring feeders. This feeder is also a major tieline to the surrounding substations: Bella Vista, Hawes, and Keating.

RESULTS OF PROPOSED CONSTRUCTION

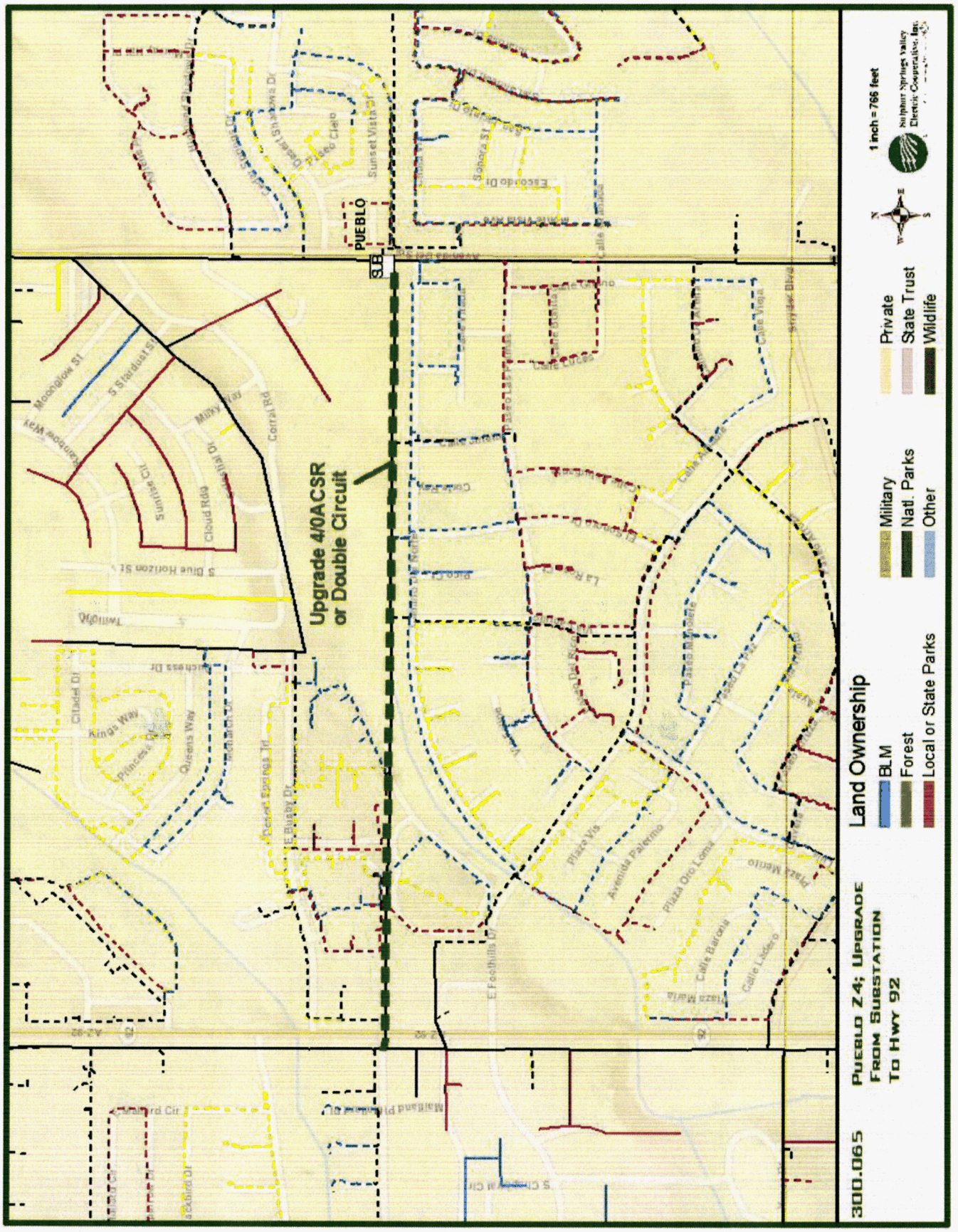
The new rating of the line segment will provide adequate capacity under normal load serving configuration. This will provide reliable back-up to the neighboring substations.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load to
2. *Capacitors:*
   - Adding capacitors will not relieve the load from the conductor
3. *Voltage Regulators:*
   - Voltage regulators will not relieve the load from conductor
4. *Conductor upgrade:*
   - Upgrading the conductor is the recommended option
5. *New tieline:*
   - At this time, there is no option for a new tieline
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ Loads will continue to grow and if "do nothing" is chosen, the conductor will become overloaded and the possibility of an outage will occur.


Upgrade 4/0ACSR
or Double Circuit
PUEBLO
SUB
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 766 feet
300.065
PUEBLO Z4; UPGRADE
FROM SUBSTATION
TO HWY 92

Project: Keating T2; Upgrade from Substation to near Hummingbird Ln
CWP Item Number: 300.066 **Estimated Cost:** $383,000 **Project Year**: 2013-14

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about one mile of three-phase overhead 4/0ACSR to 477ACSR. Start near location K06021210 and end near location K06011190.

REASON FOR PROPOSED CONSTRUCTION

This improvement is needed because this portion of line has physically deteriorated significantly as shown by pole inspections by third parties and by field review of SSVEC personnel. This portion of line is also a major tie between Keating, Pueblo, and Bella Vista Substations; this project is part of an ongoing effort to strengthen the feeder ties between these substations. This improvement is in conjunction with *CWP#300.067* and *CWP#300.070.* Because Bella Vista Sub is forecasted to reach rated capacity, load will more than likely need to be switched to Keating Substation; this tie will be needed to support the load shift.

RESULTS OF PROPOSED CONSTRUCTION

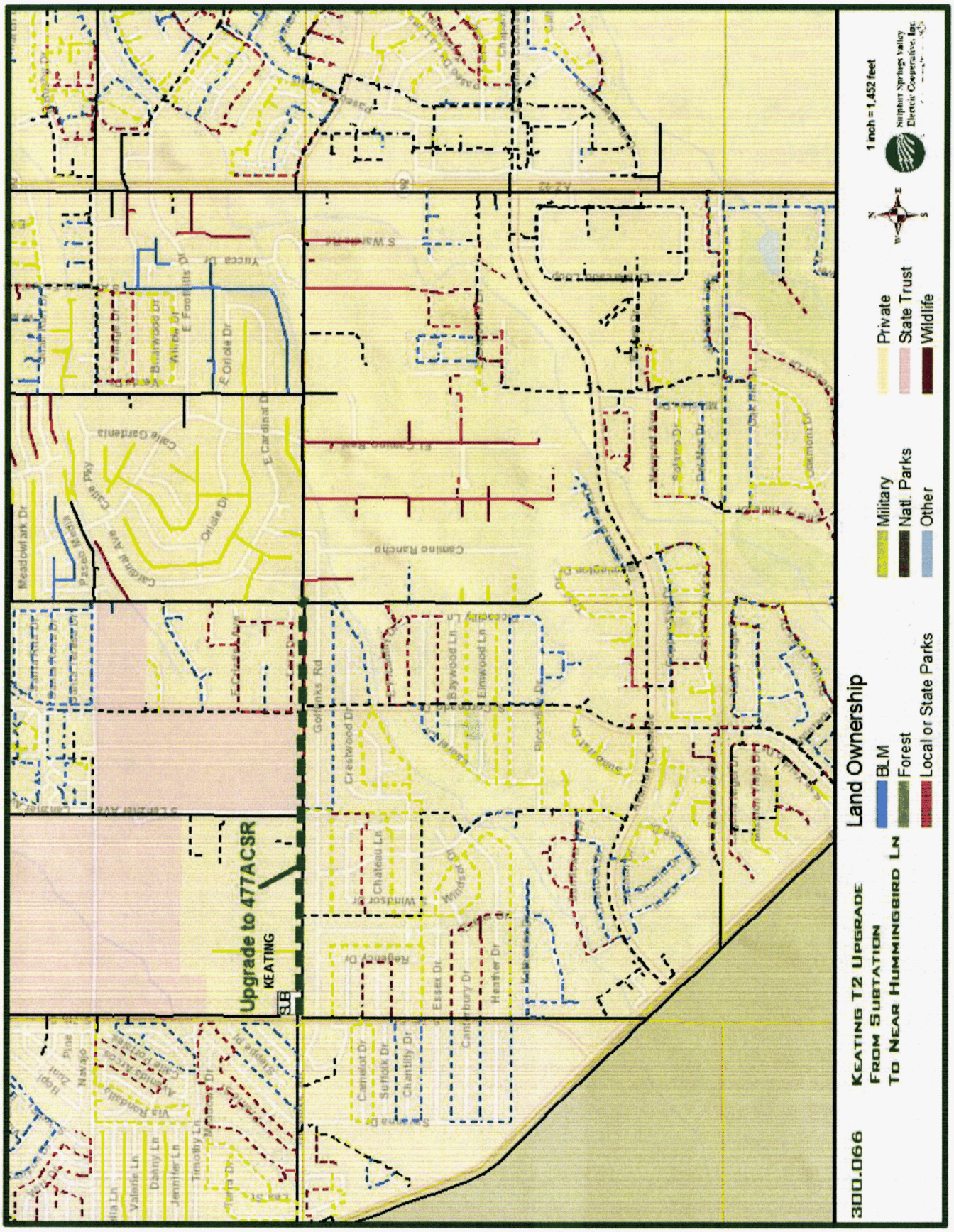
The recommended project will replace the deteriorated line and provide better reliability and system backfeed among three substations. System losses will also be reduced.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - Load can be shifted to nearby feeders, but does not solve the line deterioration problem. Shifting load to other feeders might cause problems to that feeder
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Voltage regulators will not solve problem
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline is not feasible
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ If this option is chosen, the line will become more deteriorated as the years pass and the reliability will not be increased. System back-up will be limited by the conductor size.


Upgrade to 477ACSR
KEATING
SUB
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 1,452 feet
Sulphur Springs Valley Electric Cooperative, Inc.
300.066
KEATING T2 UPGRADE
FROM SUBSTATION
TO NEAR HUMMINGBIRD LN

Project: Keating T2; Upgrade near Hummingbird Ln to Hwy 92 [Engr & ROW only]
CWP Item Number: 300.067 **Estimated Cost:** $38,000 **Project Year**: 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends acquiring Rights-of-Way and completing engineering design for an overhead upgrade of about one mile of three-phase 4/0ACSR to 477ACSR. Start near location K06011190 and end near location K06018590.

REASON FOR PROPOSED CONSTRUCTION

This improvement is needed because this portion of line has physically deteriorated significantly as shown by pole inspections by third parties and by field review of SSVEC personnel. This portion of line is also a major tie between Keating, Pueblo, and Bella Vista Substations; this project is part of an ongoing effort to strengthen the feeder ties between these substations.

RESULTS OF PROPOSED CONSTRUCTION

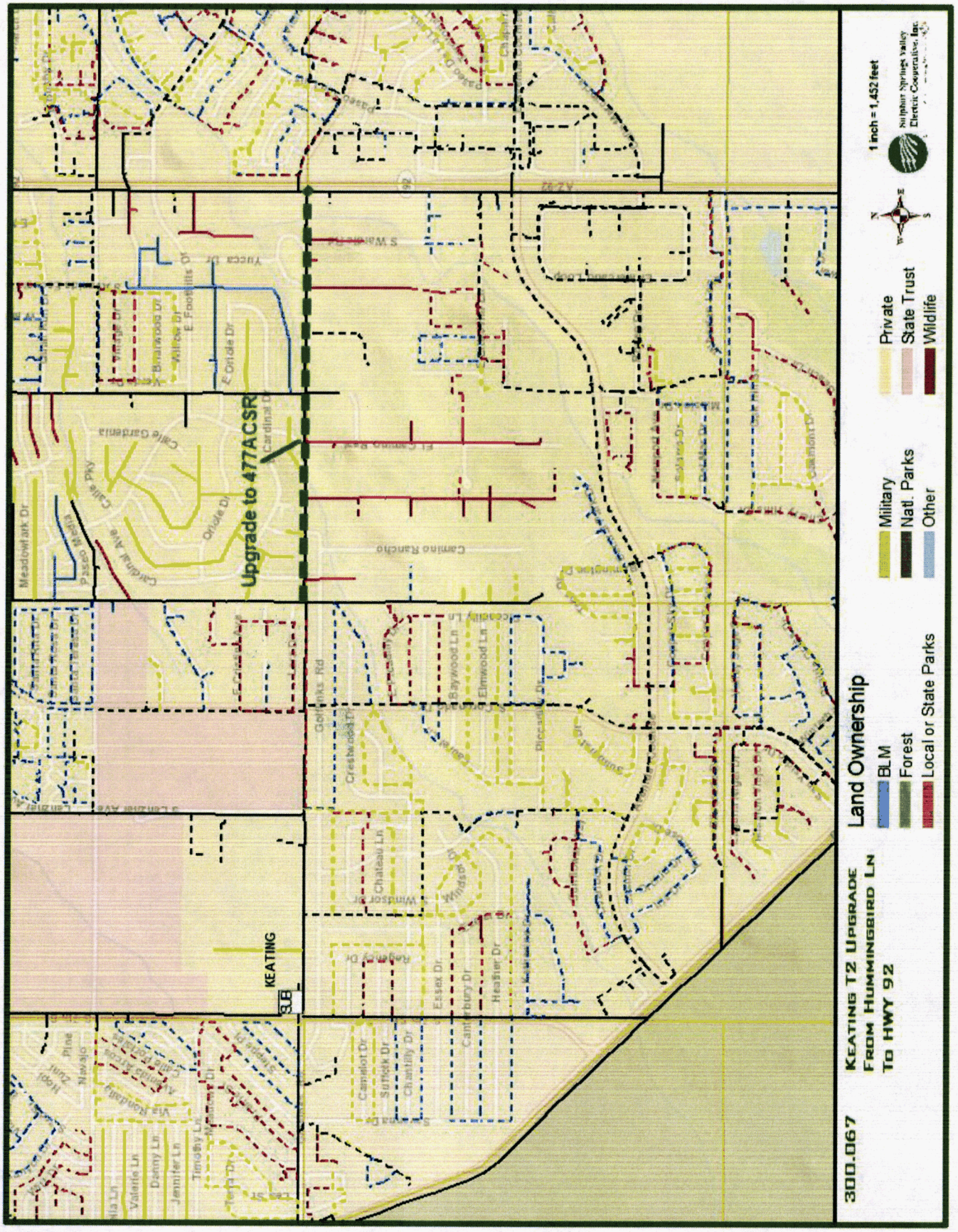
The recommended project will replace the deteriorated line and provide better reliability and system backfeed among three substations. System losses will also be reduced.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - Load can be shifted to nearby feeders, but does not solve the line deterioration problem. Shifting load to other feeders might cause problems to that feeder
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Voltage regulators will not solve problem
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline is not feasible
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ If this option is chosen, the line will become more deteriorated as the years pass and the reliability will not be increased. System back-up will be limited by the conductor size.


Upgrade to 477ACSR
KEATING
Land Ownership
Private
State Trust
Wildlife
Military
Natl. Parks
Other
BLM
Forest
Local or State Parks
1 inch = 1,452 feet
300.067
KEATING T2 UPGRADE
FROM HUMMINGBIRD LN
TO HWY 92

Project: Benson P5; Upgrade near Flying Horse Shoe Rd to Red Rock Rd [Engr & ROW only]
CWP Item Number: 300.068 **Estimated Cost:** $53,000 **Project Year**: 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends acquiring Rights-of-Way and completing an engineering design for an upgrade of 0.75 miles of single-phase overhead #4ACSR to three-phase 1/0ACSR, and re-conductor 0.5 miles of three-phase #4ACSR to 1/0ACSR. This project is part of *CWP#200.153*. Start near location E09196490 and end near pole location 66203. Field review will be done to verify the voltages and actual load in this area.

REASON FOR PROPOSED CONSTRUCTION

This improvement is part of the new three-phase tie for facilities in the I-10 Texas Canyon area. This three-phase upgrade will provide better area phase balance and reliability.

RESULTS OF PROPOSED CONSTRUCTION

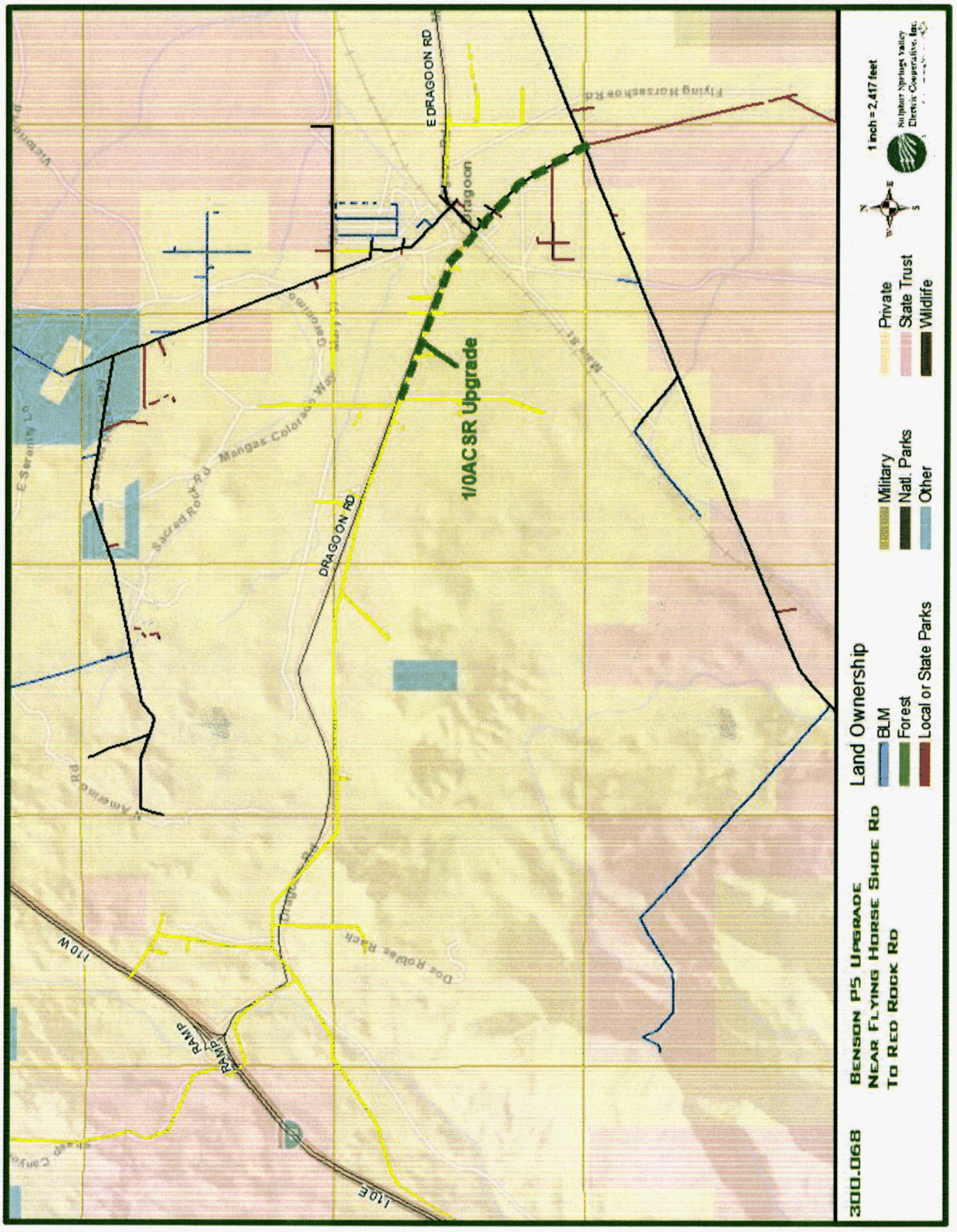
By upgrading this area to three-phase, the end of the line voltage will be acceptable and the load on the single-phase line that currently has 50A will be reduced. System losses will also be reduced by implementing the phase balancing plan.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load to
2. *Capacitors:*
   - It is recommended to add a three-phase 300kVAr bank, see CWP 600.500. Adding this bank is not sufficient to raise the voltage on its own
3. *Voltage Regulators:*
   - Voltage regulators will raise the voltage at the end of the line to acceptable but will not relieve the load from the single-phase line
4. *Conductor upgrade:*
   - Conductor upgrade and three-phase upgrade is the recommended solution.
5. *New tieline:*
   - New tieline is in conjunction with this project
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ If this option is chosen, the voltage will remain unacceptable. The single-phase line will remain heavily loaded and system reliability will not be increased. The single-phase regulator will remain at 100% loaded and may have the potential to be overloaded.


E DRAGOON RD
1/0ACSR Upgrade
DRAGOON RD
Sacred Rock Rd
Mangas Colorado Way
E Serenity Ln
N Amerind Rd
Doe Rabbit Ranch
110W
110E
RAMP
RAMP
Flying Horseshoe Rd
Main St
1 inch = 2,417 feet
Private
State Trust
Wildlife
Military
Natl. Parks
Other
Land Ownership
BLM
Forest
Local or State Parks
300.068
BENSON P5 UPGRADE
NEAR FLYING HORSE SHOE RD
TO RED ROCK RD

Project: Webb M5; Upgrade from Substation to near Gleeson Rd
CWP Item Number: 300.069 **Estimated Cost:** $405,000 **Project Year**: 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends building about two miles of three-phase overhead 4/0ACSR and upgrading 1.5 miles of #4ACSR to 1/0ACSR. New 4/0ACSR: Start near location H12331088 and end near location H11369090. 1/0ACSR upgrade: Start near location H12313090 and end near location I12072058.

REASON FOR PROPOSED CONSTRUCTION

This improvement is needed due to the voltage drop problems. Low voltages have been field confirmed and are about 111V. In addition, the existing #4ACSR conductor is near capacity.

RESULTS OF PROPOSED CONSTRUCTION

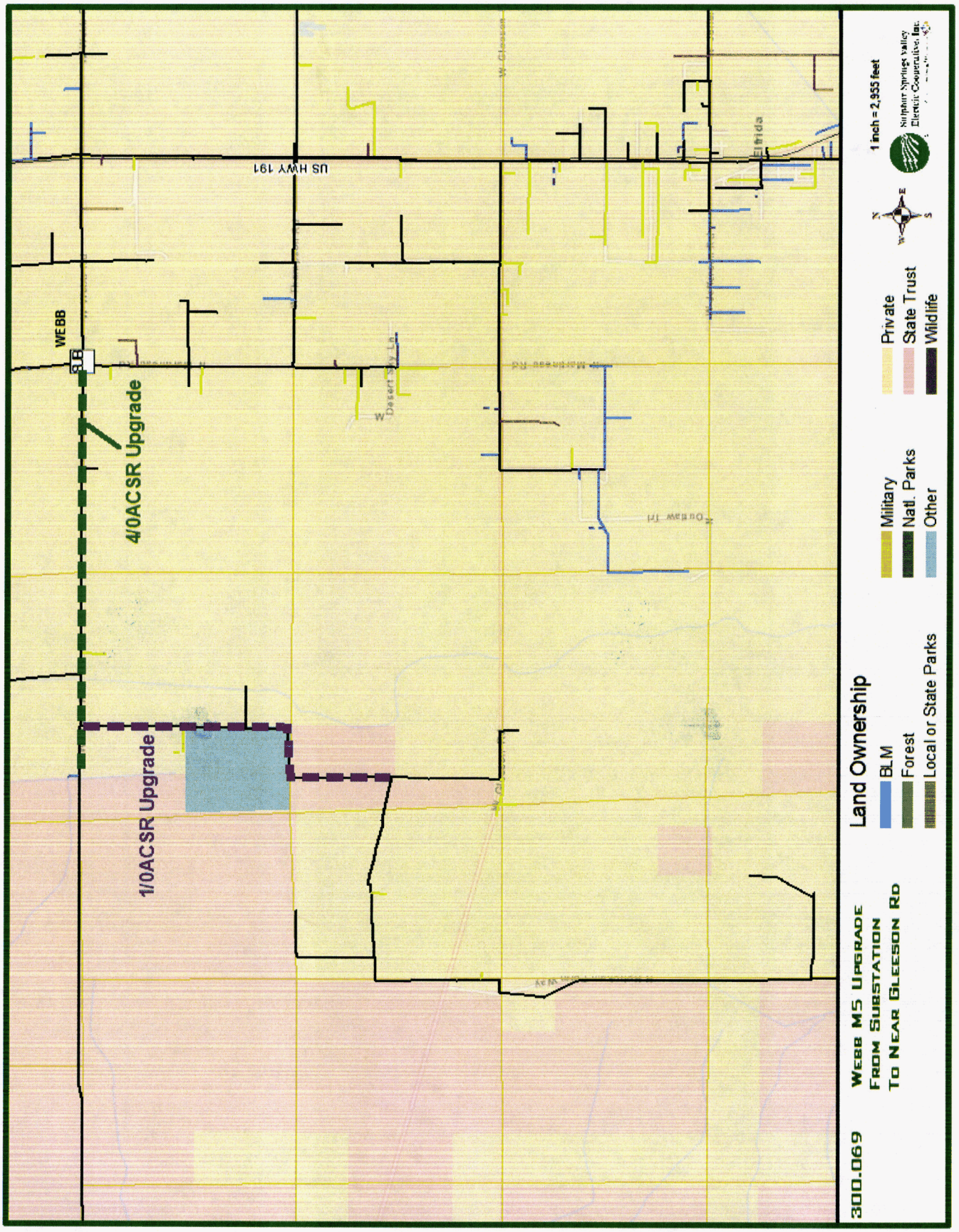
By building the new 4/0ACSR and upgrading to 1/0ACSR, the voltages will be acceptable.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load. A new tieline would need to be constructed and switching load to another feeder would cause issues for that feeder
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Voltage regulators may solve the problem but there already exists a set of regulators on this line. It would take another set of three-phase regulators and one-phase regulator to boost the voltage to acceptable, making it three regulators in-line in a short distance
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline is not feasible
6. *Voltage Conversion:*
   - Changing the voltage was analyzed but is not a feasible option

⇨ *Do Nothing/No alternatives:*

↳ If this option is chosen, the voltages will remain unacceptable.


WEBB
US HWY 191
4/0ACSR Upgrade
1/0ACSR Upgrade
300.069
Webb MS Upgrade
From Substation
To Near Gleeson Rd
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 2,955 feet
Sulphur Springs Valley Electric Cooperative, Inc.

Project: Keating T2; Upgrade from Golf Links Rd to Fry Blvd
CWP Item Number: 300.070 **Estimated Cost:** $394,000 **Project Year**: 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about one mile of three-phase overhead 4/0ACSR and 1/0ACSR to 477ACSR. Start near location K06011088 and end near location J06361088.

REASON FOR PROPOSED CONSTRUCTION

This improvement is part of an ongoing effort to strengthen the feeder ties between Keating Substation, Bella Vista and Pueblo. The Bella Vista and Pueblo Substations are forecasted to reach rated capacity in 2015.

RESULTS OF PROPOSED CONSTRUCTION

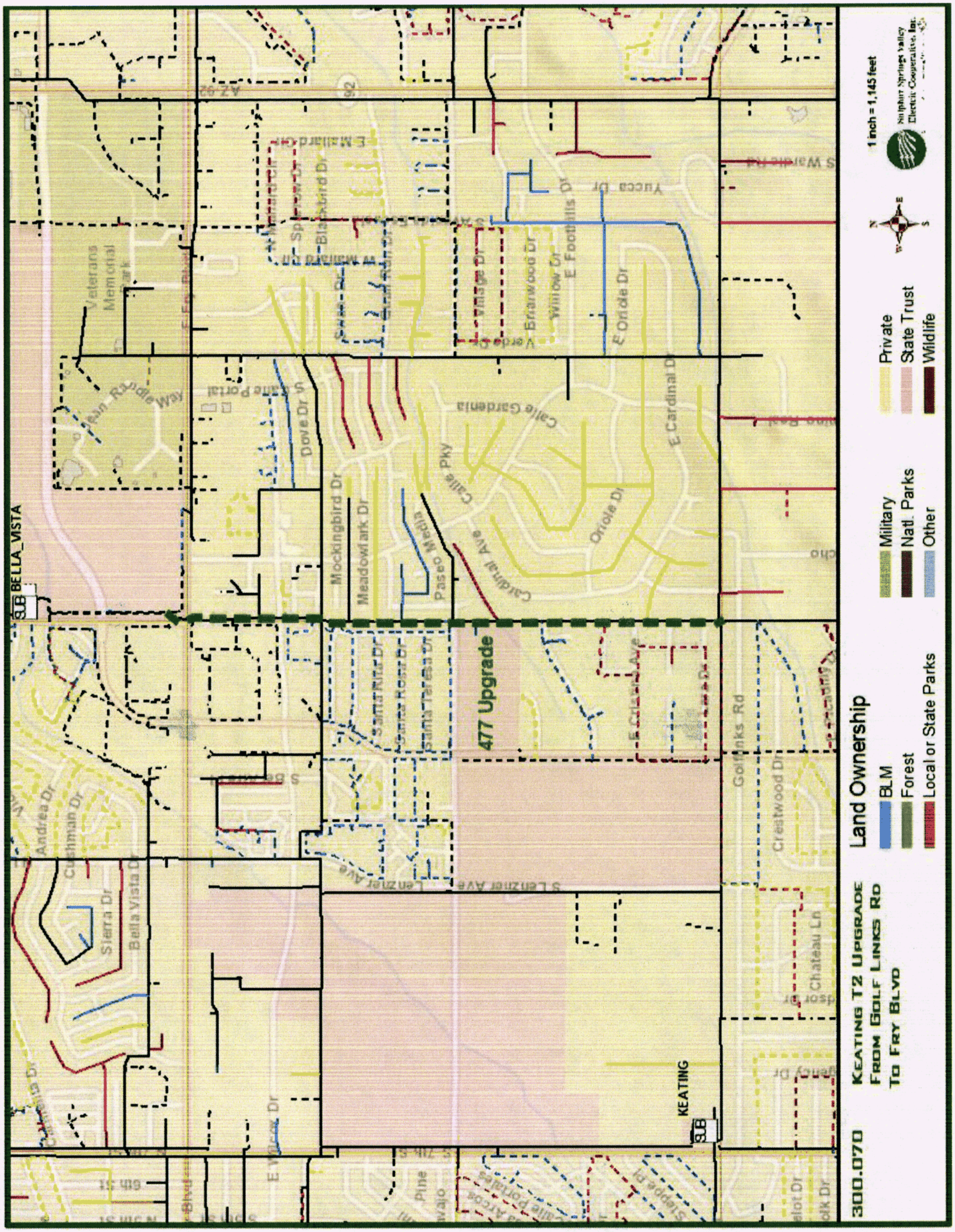
Having a stronger tie will provide better reliability and system backfeed among the neighboring substations. Keating Substation has available capacity to help in emergency situations.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - Bella Vista Sub is forecasted to reach rated capacity, load will more than likely need to be switched to Keating Substation; this tie will be needed to support the load shift
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Adding voltage regulators will not solve the problem
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline is not feasible
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing option is chosen, the amount of load that can be switched between Keating and Bella Vista Substations will be limited. This tieline will facilitate the future construction of additional capacity at the Bella Vista or Pueblo Substations. If the ability to shift load is limited, the Bella Vista transformer runs the risk of being overloaded.


300.070
Keating T2 Upgrade From Golf Links Rd To Fry Blvd
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 1,145 feet
477 Upgrade
BELLA_VISTA
KEATING
Golf Links Rd
S Lenzner Ave
Veterans Memorial Park
Calle Gardenia
Cardinal Ave
E Cardinal Dr
Oriole Dr
Mockingbird Dr
Meadowlark Dr
Paseo Media
Dove Dr
Crestwood Dr
Chateau Ln
Bella Vista Dr
Sierra Dr
Cushman Dr
Andrea Dr
Yucca Dr
E Foothills Dr
Willow Dr
Briarwood Dr
Village Dr
E Mallard Dr
AZ 92

Project: Keating T2; Upgrade UG from Avenida Cochise to Golf Links Rd
CWP Item Number: 300.071 **Estimated Cost:** $575,000 **Project Year**: 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends to replace about one mile of underground direct buried three-phase 4/0Al. Install conduit system with new 4/0Al cable. Start near location K06117191 and end near location K06116476.

REASON FOR PROPOSED CONSTRUCTION

The existing underground cable is direct buried and in bad shape. This cable has failed at least 5 times.

RESULTS OF PROPOSED CONSTRUCTION

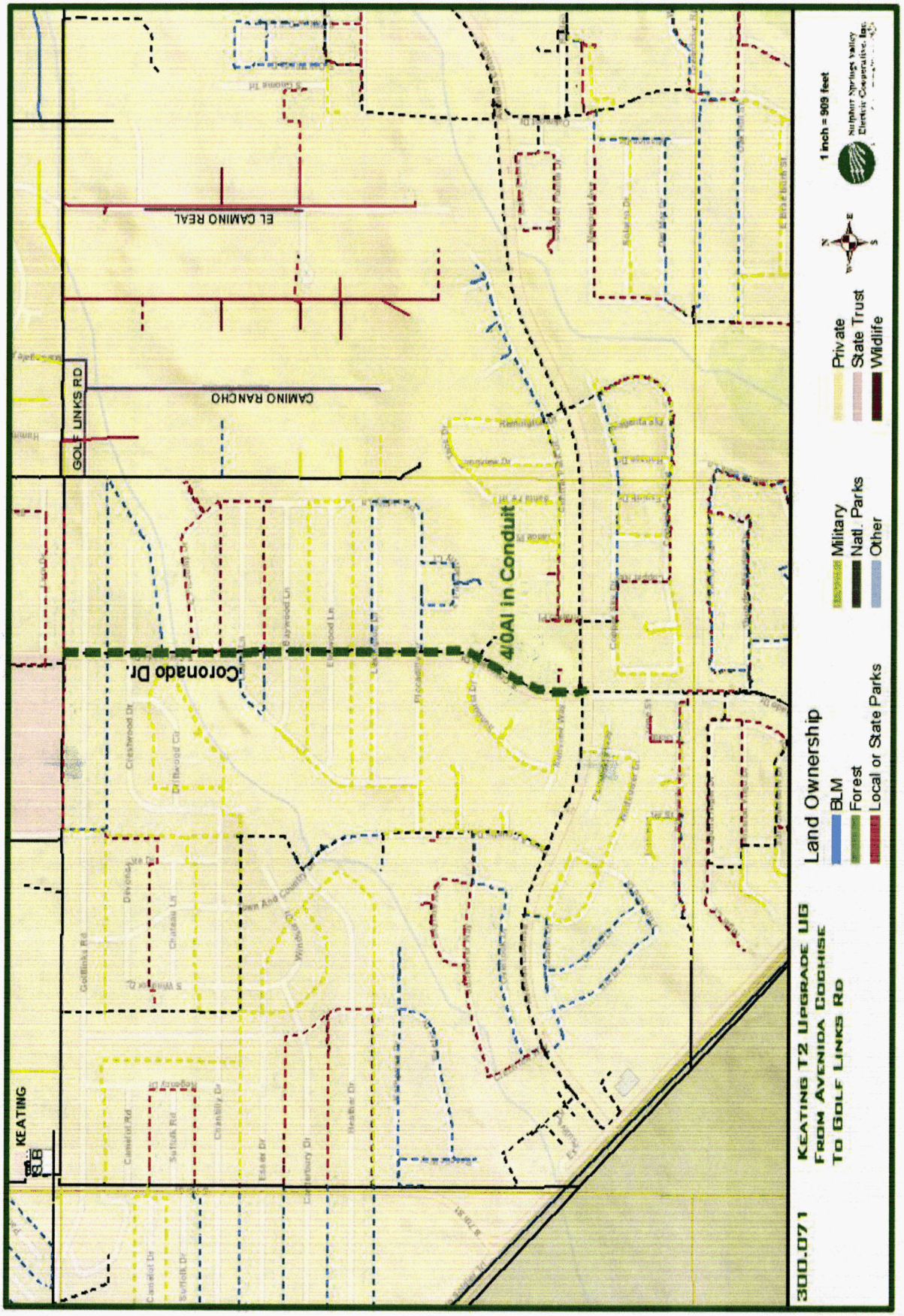
Replacing this conductor in a conduit system will provide better reliability to this area. This section of line is also a main feeder tie to Hawes X8.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders with available capacity to switch load.
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Adding voltage regulators will not solve the problem
4. *Conductor Replacement:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline is not feasible
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing option is chosen, the underground conductor will continue to fail and customer outages will continue.


KEATING
EL CAMINO REAL
CAMINO RANCHO
GOLF LINKS RD
Coronado Dr.
4/0Al in Conduit
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 909 feet
300.071
KEATING T2 UPGRADE UG
FROM AVENIDA COCHISE
TO GOLF LINKS RD

Project: Hawes X1; Upgrade UG near Iroquois Dr. to Cherokee Ave
CWP Item Number: 300.072 **Estimated Cost:** $305,000 **Project Year**: 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about half a mile of three-phase 4/0Al underground to 500kCMIL underground conductor. Start near location K06269019 and end near location K06243990.

REASON FOR PROPOSED CONSTRUCTION

This section of line is the only tie between Hawes X1 feeder and Hawes X3 feeder. All feeder facilities around this section are already 600amp; this section is 200amp. This capacity limitation affects switching options.

RESULTS OF PROPOSED CONSTRUCTION

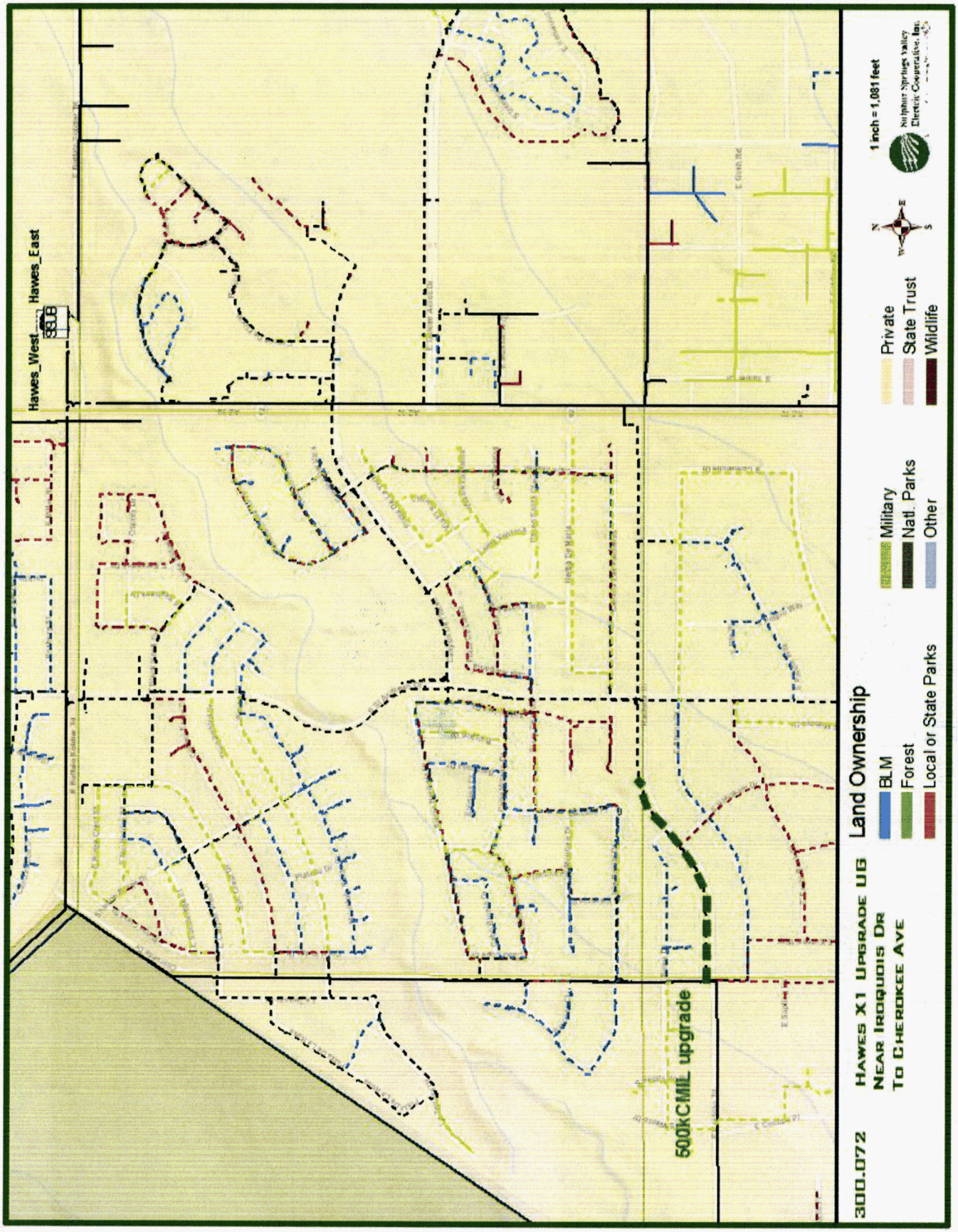
Upgrading this conductor will complete a robust tie between these feeders.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load to
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Adding voltage regulators will not solve the problem
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline is not feasible
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing option is chosen, this portion of line will continue to be a weak link between X1 and X3 feeders.


Hawes_West
Hawes_East
500kCMIL upgrade
300.072
HAWES X1 UPGRADE UG
NEAR IROQUOIS DR
TO CHEROKEE AVE
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 1,081 feet
Sulphur Springs Valley Electric Cooperative, Inc.

Project: Huachuca V7; Upgrade from Substation to Upper Elgin Rd [Engr & ROW Only]
CWP Item Number: 300.073 **Estimated Cost:** $463,000 **Project Year**: 2013-14

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends acquiring Rights-of-Way and completing an engineering design for an upgrade of 10.5 miles of three-phase overhead 1/0ACSR to 4/0ACSR. Start near location I05136052 and end near location I04056954.

REASON FOR PROPOSED CONSTRUCTION

This improvement is also needed because the distribution poles have deteriorated beyond repair. Poles are likely to fail, causing outages. This area has been noted by SSVEC personnel as a top priority for pole replacement. This work was postponed until the Sonoita sub-transmission line and Alamo Substation were constructed, to allow for an alternate feed and lower cost construction by de-energizing sections. The existing distribution facilities are mostly on private land that has a high acreage cost. Having a stronger tie will provide better reliability and system back-feed between Alamo and Huachuca Substation. This project is long overdue as a result of delays in the Sonoita line project.

RESULTS OF PROPOSED CONSTRUCTION

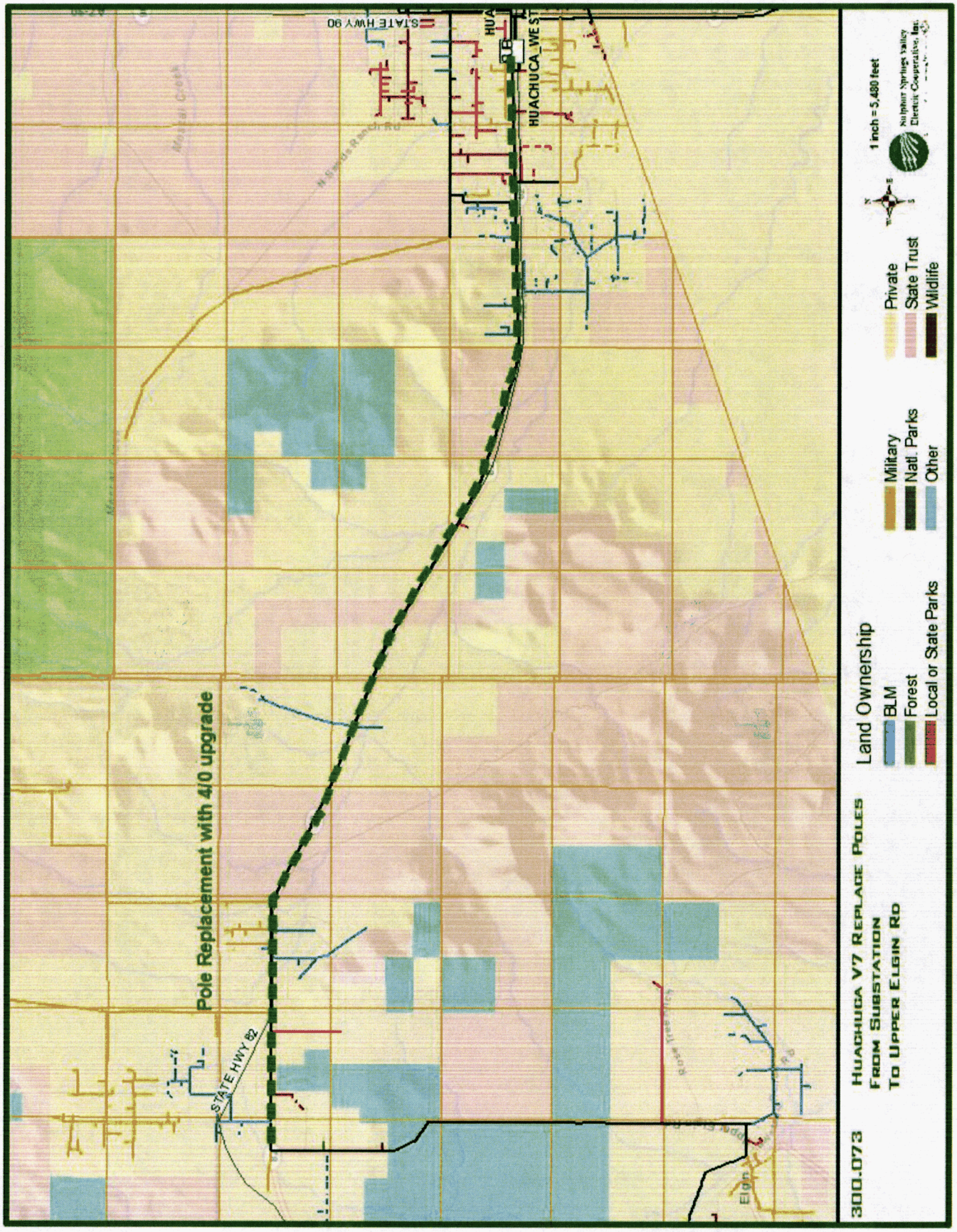
This improvement will decrease the possibilities of an outage due to pole failure. The upgraded conductor will provide back-up between Alamo and Huachuca West Substations.

ALTERNATES TO PROPOSED CONSTRUCTION

7. *Switching:*
   - There are no nearby feeders to switch load
8. *Capacitors:*
   - Adding capacitors will not solve problem
9. *Voltage Regulators:*
   - Adding voltage regulators will not solve problem
10. *Conductor upgrade:*
    - This is part of the recommended solution along with pole replacement
11. *New tieline:*
    - New tieline is not feasible
12. *Voltage Conversion:*
    - Voltage is already 24.9kV

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing option is chosen, poles are more likely to fail and cause outages. Back-up reliability will not be increased.


Pole Replacement with 4/0 upgrade
STATE HWY 82
STATE HWY 90
HUACHUCA WEST
Elgin
300.073
HUACHUCA V7 REPLACE POLES
FROM SUBSTATION
TO UPPER ELGIN RD
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 5,480 feet
Sulphur Springs Valley Electric Cooperative, Inc.

Project: Copper Replacement
CWP Item Number: 300.096 **Estimated Cost:** $400,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Copper lines built many years ago will be re-conductored, normally with #4 or 1/0 ACSR. This funding can provide for re-conductoring seven miles of three-phase line.

REASON FOR PROPOSED CONSTRUCTION

The copper lines are beyond their useful life – many of them have multiple splices and are very brittle. In many locations, the wood distribution poles need to be replaced also. Segments of lines are re-conductored as SSVEC engineering and construction labor are available, rights-of-way are acceptable, field inspections and situations deem necessary. There are approximately 37miles of three-phase and 21 miles single-phase lines with copper conductor remaining.

ALTERNATES TO PROPOSED CONSTRUCTION

The alternative is to replace the conductor as it fails, which costs more than an orderly replacement.

Project: Cable Injection
CWP Item Number: 300.097 **Estimated Cost:** $100,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Existing direct-buried underground cable that has deteriorated significantly is injected with Cablecure© or similar products. All of the cable injections will be done in existing rights-of-way.

REASON FOR PROPOSED CONSTRUCTION

The underground cables are at the end of their useful life, and the cables need to be injected or replaced. Almost all cable that can be injected has been done so in previous work plans. This is a minimum budgeted amount for injecting cables that have not been injected.

RESULTS OF PROPOSED CONSTRUCTION

Underground cable that is likely to fail is rejuvenated and is usable for ten or more years. Ultimately, the cable has to be replaced.

ALTERNATES TO PROPOSED CONSTRUCTION

The alternative is to replace the cable as it fails, which will cost more than the cable injection.

Project: Cable Replacement
CWP Item Number: 300.098 **Estimated Cost:** $1,800,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace existing underground cables as necessary.

REASON FOR PROPOSED CONSTRUCTION

The replacements are direct-buried underground cables that were injected with Cablecure© years ago and are now failing, or other underground cables in conduit systems that have deteriorated or failed.

If the replacement is direct buried cable, a conduit system and new cable are installed. This work almost always occurs in fully developed residential developments with mature landscaping, resulting in significant costs. If the cable was injected, Cablecure© will reimburse a prorated amount of the injection costs.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: Miscellaneous Distribution Changes
CWP Item Number: 300.099 **Estimated Cost:** $400,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Upgrade conductor or number of phases, retire without replacement, add crossarms, add a sectionalizing cabinet, or other minor modifications for short segments of overhead or underground lines. Each individual project is less than $100,000 total estimated cost.

REASON FOR PROPOSED CONSTRUCTION

During the work plan period, opportunities become available to modify distribution lines that improve reliability, provide alternative paths, or solve a system issue. The opportunities are due to line extensions for customers, pole replacement, and other activities.

400.000 New Substations

Project: Engineering & ROW acquisition for Future Substations
CWP Item Number: 400.024 **Estimated Cost:** $100,000

DESCRIPTION OF PROPOSED CONSTRUCTION

This project recommends to acquire Rights-of-Way and perform initial engineering design for currently unknown projects that will likely be constructed in the next future work plans.

REASON FOR PROPOSED CONSTRUCTION

Opportunities for acquiring Rights-of-Way for currently unknown projects related to future substations may arise. Having funds available will allow starting engineering and ROW acquisitions for likely work plan projects.

ALTERNATES TO PROPOSED PROJECT

The alternative is not to do any engineering and ROW acquisition for any currently unknown projects and restrict the opportunity to identify and pursue options as they arise.

Project: Bowie; New Substation
[Engr & ROW only]
CWP Item Number: 400.025 **Estimated Cost:** $148,000 **Project Year:** 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This project will be preliminary engineering design and other ROW as needed for a new Bowie Substation. Additional engineering including SCADA, protection details, and construction will be recommended in the next CWP. The substation would be 69/25kV with a minimum 14MVA capacity. The new substation site has already been acquired. This project would be in conjunction with Bowie Area Voltage Conversion.

SSVEC Senior Management will approve the start of construction for this project.

REASON FOR PROPOSED CONSTRUCTION

The substation has little to no available capacity for new load. Past customer requests have pushed the load to near capacity. There has been an increase in orchard development and other farms that need new power from Bowie Substation. This project will increase load serving capacity in the Bowie area. In addition, a 25kV tieline was built a few years ago to allow San Simon and Bowie Substations to back each other up. The Bowie are has had significant voltage conversion to 25kV already, and the remaining area must be converted to 25kV.

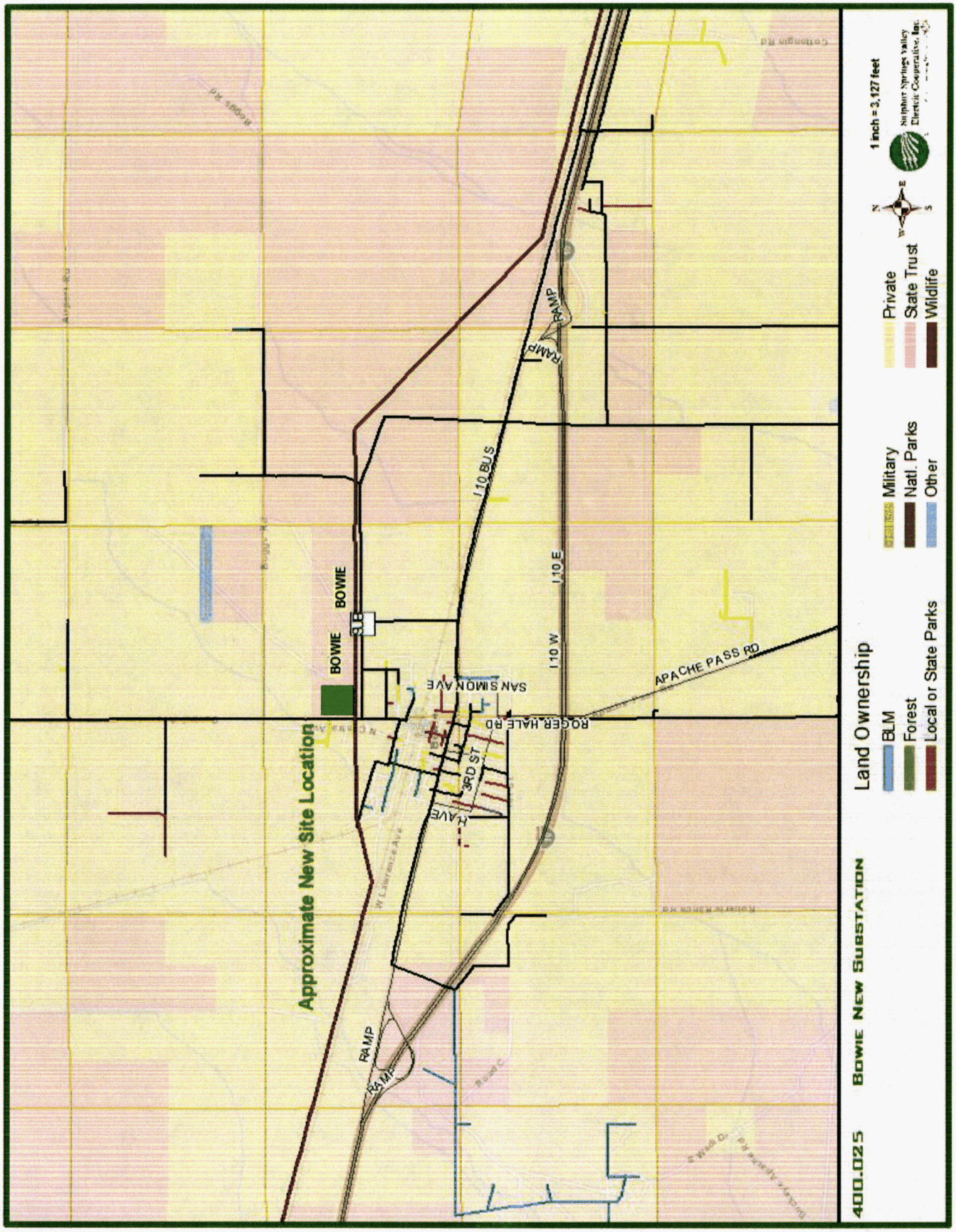
The project is dependent on irrigation load continuing to increase and a known revenue stream/source to pay for the improvements.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Upgrade the existing substation:*
   - The site is not large enough nor does it have good access
2. *Build the new substation at 12.47kV*
   - Significant re-conductoring, new regulators, and new capacitor banks to serve the load would be required
   - San Simon and Bowie service areas would not have a robust tieline

⇨ *Do Nothing/No alternatives:*

↪ If the load continues to grow, the existing substation and facilities cannot adequately support the load. A moratorium on new and upgraded loads would be imposed.


Approximate New Site Location
BOWIE
BOWIE
SUB
I10 BUS
I10 E
I10 W
SAN SIMON AVE
ROGER HALE RD
APACHE PASS RD
3RD ST
H AVE
RAMP
RAMP
RAMP
RAMP
400.025
BOWIE NEW SUBSTATION
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 3,127 feet

Project: Bella Vista; Upgrade Substation
[Engr & ROW only]
CWP Item Number: 400.026 **Estimated Cost:** $600,000 **Project Year:** 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This engineering and ROW only project will study options for adding a second substation at Bella Vista or if a new substation site must be chosen. Other options include a second substation at Pueblo or building Charleston Substation. Preliminary engineering and Rights-of-Way will be done in 2013-2014 and additional engineering including SCADA, protection and construction will begin in the next work plan.

REASON FOR PROPOSED CONSTRUCTION

The loads at Bella Vista and Pueblo Substations are predicted to be 20MW each in the year 2015. The capacity of the both substation transformers is 20MVA base rating and 22MVA emergency rating. Engineering will determine whether to upgrade either Bella Vista or Pueblo Substation, or to build Charleston Junction Substation. Upgrading the existing substations will be challenging to engineer and Rights-of-Way difficult to obtain, but these substations are in the center of their load areas.

RESULTS OF PROPOSED CONSTRUCTION

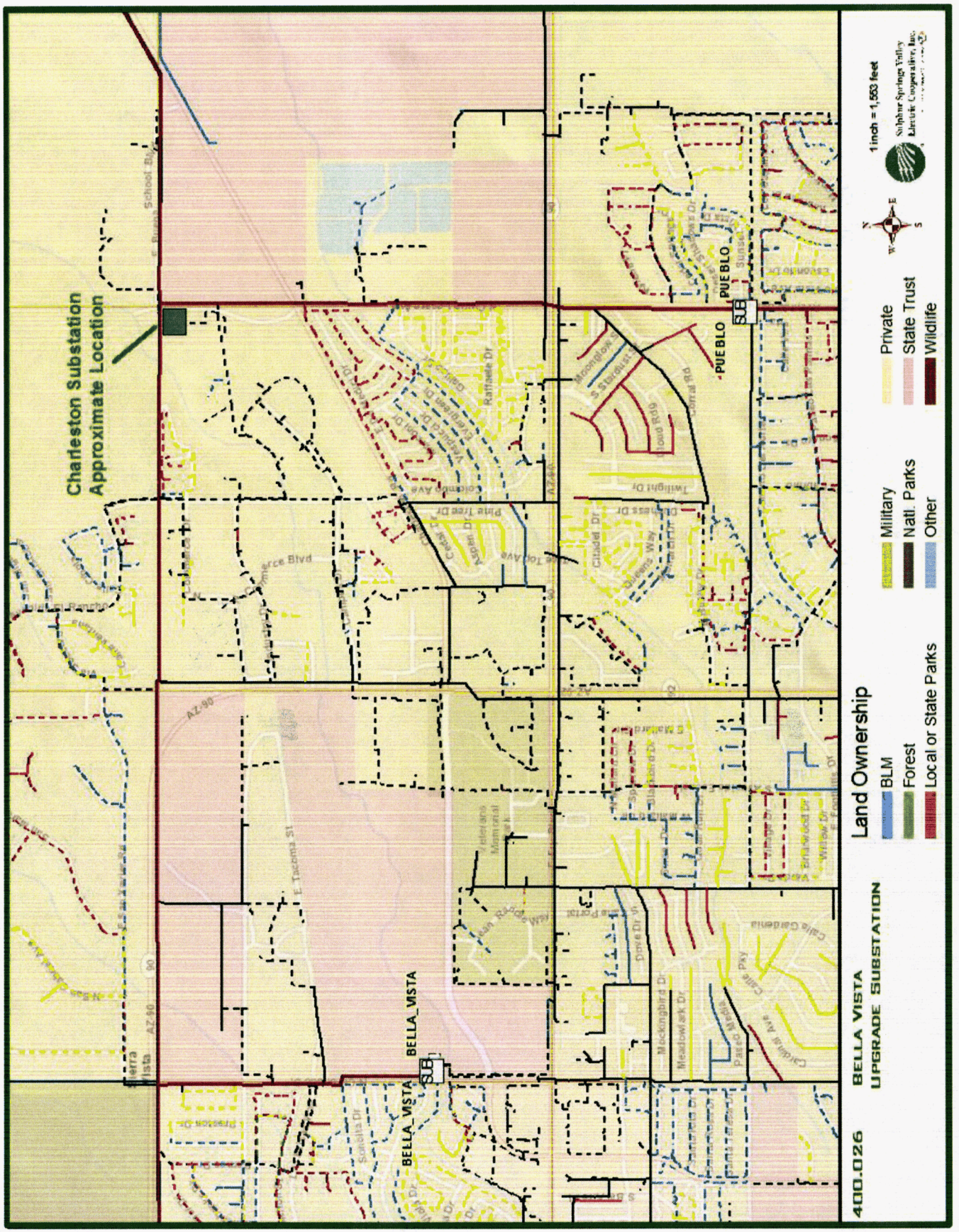
This improvement is needed due to the continued growth in customers and demand around the area. The second substation and its feeders will provide adequate electric service. Since both substations are nearing capacity, upgrading one substation can delay the upgrade of the other [either Pueblo or Bella Vista].

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - Switching load to nearby feeders will cause issues to the substation being switched
2. *Capacitors, Voltage Regulators, Conductor upgrade, New tieline:*
   - N/A
3. *Voltage Conversion:*
   - Converting the voltage is not a feasible option
4. *Substation:*
   - An Alternative is to add a second substation at Pueblo. This is a second alternative because getting new feeders out of Pueblo would be more difficult than Bella Vista

⇨ *Do Nothing/No alternatives:*

↪ Loads will continue to grow and if do nothing is chosen, the transformer might become overloaded and cause an outage at the substation causing thousands of consumers to be without electricity


Charleston Substation
Approximate Location
BELLA_VISTA
SUB
PUEBLO
SUB
AZ-90
E Tacoma St
Citadel Dr
Mockingbird Dr
Meadowlark Dr
Land Ownership
Private
State Trust
Military
Natl. Parks
Wildlife
BLM
Forest
Local or State Parks
Other
1 inch = 1,583 feet
400.026
BELLA VISTA
UPGRADE SUBSTATION

Project: Future Distribution Substation Site(s) Acquisition
CWP Item Number: 400.098 **Estimated Cost:** $50,000

DESCRIPTION OF PROPOSED PROJECT

Acquire property for future substation sites.

REASON FOR PROPOSED PROJECT

Opportunities for acquiring Rights-of-Way for currently unknown projects related to future substations may arise. Having funds available will allow starting ROW acquisitions for likely work plan projects.

ALTERNATES TO PROPOSED PROJECT

The alternative is not to do any ROW acquisition for any currently unknown projects and restrict the opportunity to identify and pursue options as they arise.

500.000 Substation Changes

Project: Substation Regulator Upgrades
CWP Item Number: 500.045 **Estimated Cost:** $240,000

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading the regulators at Benson, Kansas, and Mescal 7.2kV Substations to match transformer capacity.

REASON FOR PROPOSED CONSTRUCTION

The regulators have reached rated capacity at Benson and Kansas Subs. These regulators were sized to match the load at that time and are now in need of increased size due to load growth. The current regulator size is now limiting our switching capabilities between substations.

RESULTS OF PROPOSED CONSTRUCTION

Upgrading the regulators will allow for full capacity output at the substation and allow for system back-up among the neighboring substation.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - N/A
2. *Capacitors:*
   - N/A
3. *Voltage Regulators:*
   - Upgrade substation regulators is the recommended solution
4. *Conductor upgrade:*
   - N/A
5. *New tieline:*
   - N/A
6. *Voltage Conversion:*
   - N/A

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing option is chosen, the regulators might overload and cause an outage on the entire substation. The regulators will continue to be the limiting factor when providing back-up to neighboring substations.

Project: Benson; Upgrade Substation
CWP Item Number: 500.046 **Estimated Cost:** $511,000 **Project Year**: 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading all low-side main bus jumpers with 1000kCMIL XHHW and replacing main bus with 1000kCMIL bare copper.

REASON FOR PROPOSED CONSTRUCTION

The substation transformer has a maximum rating of 14MVA which equals 650A per phase. The existing main bus is 4/0Cu which has a maximum rating of 480A. The bus needs to match the transformer's maximum rating to get the full output load from the transformer. These are standard conductors. This improvement is in conjunction with *CWP#500.045, Substation Regulator Upgrades*.

RESULTS OF PROPOSED CONSTRUCTION

Upgrading the bus conductor and jumpers will allow the substation transformer to reach its maximum rating without overloading the bus. This upgrade will allow for adequate back-up for Mescal 7.2 and St. David Substations.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - Switching load to another substation can reduce the load on the substation bus, but will cause issues to the switched substation
2. *Capacitors:*
   - Adding Capacitors will not relieve load form the substation bus
3. *Voltage Regulators:*
   - Upgrade substation regulators is part of the recommended solution
4. *Conductor upgrade:*
   - Upgrading the substation conductor bus is the recommended solution
5. *New tieline:*
   - Does not contribute to the solution
6. *Voltage Conversion:*
   - Converting the voltage can contribute to the solution, but it is not feasible and not part of the long range plan

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing option is chosen, the bus might overload and cause an outage on the entire substation. The bus will continue to be the limiting factor when providing back-up to neighboring substations.

Project: St. David; Mobile Site Development
CWP Item Number: 500.047 **Estimated Cost:** $338,000 **Project Year**: 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This project is to improve a future substation site so that a mobile substation can easily be connected. The improvements include grading, soil compaction, ready to use distribution system connections, provisions for connection to 69kV, fencing, and ground grid specifically for mobile use. An alternative to this project that will be studied is to make these improvements to the existing substation.

REASON FOR PROPOSED CONSTRUCTION

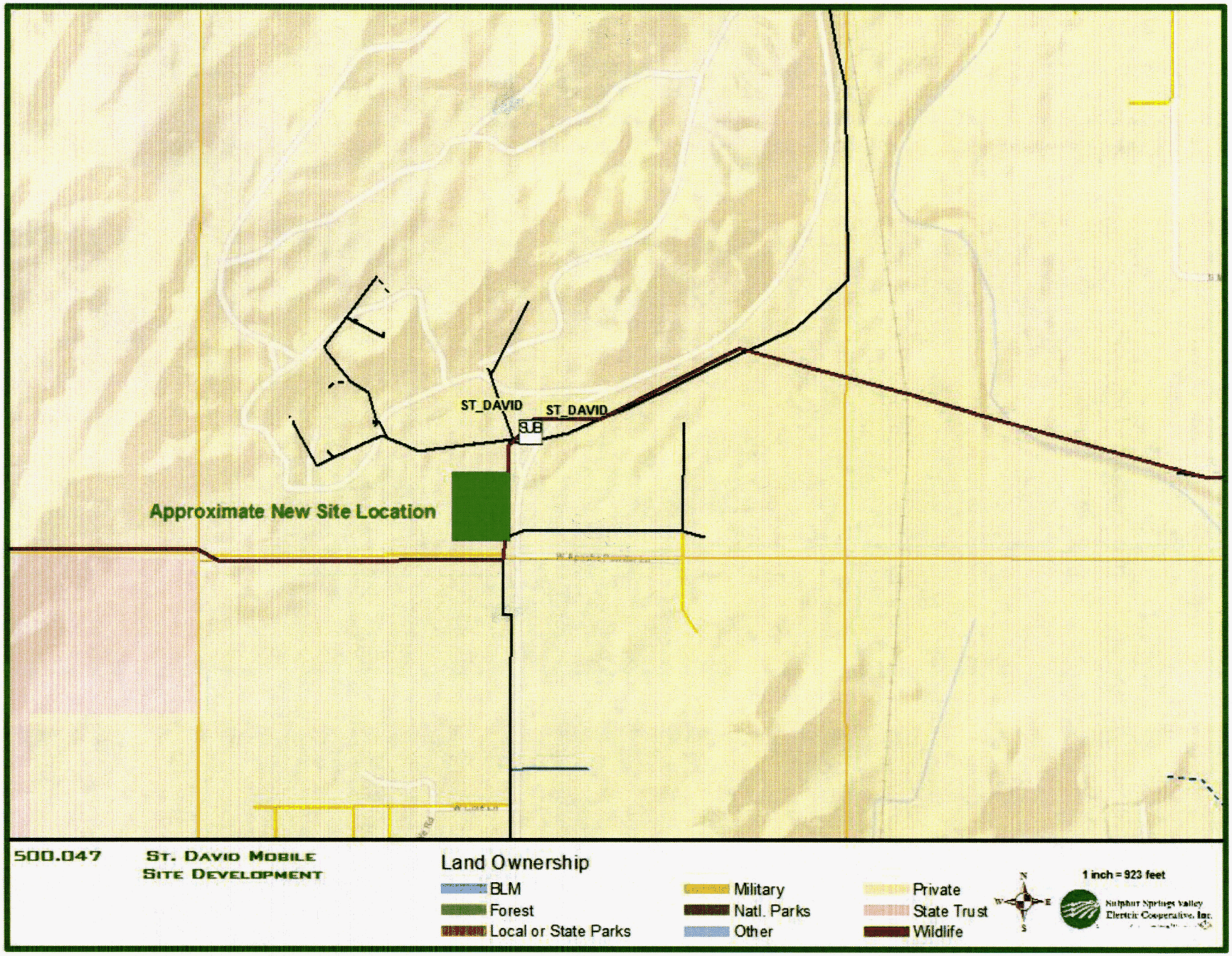
The St. David Substation is a wood pole substation that has significant deterioration. A large commercial customer is served by the substation, and has indicated they will need significant capacity additions in the near future. Rather than spend significant dollars and time to rebuild or rehabilitate the substation at this time, the mobile site will allow a delay in rebuilding the substation.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Upgrade the existing substation:*
    - The site is not large enough for the needed improvements
    - The large commercial customer
        i. would not participate in the project
        ii. may require additional, unknown facilities due to unknown load requirements and or possible local generation
2. *Build the new substation*
    - The large commercial customer
        i. would not participate in the project
        ii. may require additional, unknown facilities due to unknown load requirements and or possible local generation

⇨ *Do Nothing/No alternatives:*

↪ The St. David Substation is at an elevated risk for failure but not imminent. Should a component fail in the St. David Substation, the outage would be significantly longer [10 or more hours longer]. This outage would affect a large commercial customer, who would endure significant dollar loss.


ST_DAVID
ST_DAVID
SUB
Approximate New Site Location
500.047
St. David Mobile
Site Development
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
N
W
E
S
1 inch = 923 feet
Sulphur Springs Valley
Electric Cooperative, Inc.

Project: Meters - Upgrade AMR Receivers
CWP Item Number: 500.048 **Estimated Cost:** $108,000

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading the automatic meter reading ["AMR"] substation receivers at Bowie, Chiricahua, McNeal, Mortenson, San Simon, St. David, Stewart, Tombstone and Webb Substations.

REASON FOR PROPOSED CONSTRUCTION

The existing AMR receivers at these substations are the old style and limit the ability to switch load between substations without losing the meter readings. The existing AMR receivers do not allow the downline meters to automatically connect; each meter must be programmed to communicate to a certain AMR receiver. It also increases the number of meters that can be communicated to the substation.

RESULTS OF PROPOSED CONSTRUCTION

Upgrading the receivers will facilitate more effective switching in the TS1 substations as they emulate TS2 meter movement and the meters can be moved to other substations automatically when needed.

ALTERNATES TO PROPOSED CONSTRUCTION

- *Do Nothing/No alternatives:*
  - If this option is chosen, switching will be more costly and require more time.

Project: Keating; Radio to Fiber
CWP Item Number: 500.049 **Estimated Cost:** $92,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Convert from radio communications for polling data to using fiber optic communications infrastructure. Reprogram the substation's RTU. Reprogram SCADA Control Center. Purchase and install switching equipment for SCADA Control Center station.

REASON FOR PROPOSED CONSTRUCTION

Utilize the new fiber optic cable SSVEC is installing from other parts of the smart grid project.

RESULTS OF PROPOSED CONSTRUCTION

This project will provide engineering with remote access to the substations sites.

ALTERNATES TO PROPOSED CONSTRUCTION

A reasonable alternative is to do nothing. Without this access, SSVEC Engineering will need to drive to each site to get the data needed.

Project: Miscellaneous Substation Replacement
CWP Item Number: 500.099 **Estimated Cost:** $106,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Repair equipment jumpers, failed relays, broken insulators, and other equipment inside substations as needed. Install fencing around existing but un-built substation sites.

REASON FOR PROPOSED CONSTRUCTION

Equipment fails due to lightning strikes, fault current, and deterioration. Fencing around existing but un-built substation sites is to establish property boundaries.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

600.000 Miscellaneous Distribution Items

CWP Item Numbers:

600.100	Pole Mounted Transformers
600.101	Pad Mounted Transformers
600.200	Meters, Metering Transformers & Equipment

Description

These items are used for material purchases.

Codes	Project Description	2013	2014	Gross Project Dollars
600.100	Pole Mounted Transformers	$ 700,000	$ 700,000	$ 1,400,000
600.101	Pad Mounted Transformers	$ 700,000	$ 700,000	$ 1,400,000
600.200	Meters, Metering Transformers & Equipment	$ 700,000	$ 700,000	$ 1,400,000

Project: Service Upgrades
CWP Item Number: 600.300

Estimated Cost: $200,000
CIAC: $200,000

Service upgrades occur when a customer requests an upgrade of his service wires and/or distribution transformer due to increased load. The 2009 rate increase requires customers to pay 100% of the costs.

CWP Item Numbers:

600.400	Single-Phase ACR's, Sectionalizers, or Fusing
600.401	Three-Phase ACR's or Sectionalizing
600.402	Switches [Ganged or Knifeblade]
600.403	Pad Mounted Sectionalizing Equipment
600.404	Voltage Regulators
600.500	Capacitor/Inductors

These items are used to provide better service to SSVEC customers by minimizing the outages to a more local area [600.400 to 600.403] or to maintain the voltage within acceptable ranges [600.404 & 600.500]. There are no specific locations except for voltage regulators and capacitors/inductors. Locations are determined throughout the work plan period.

Code	Project Description	2013	2014	Gross Project Dollars
600.400	Single Phase ACR's, Sectionalizers, or Fusing	$ 51,000	$ 51,000	$ 102,000
600.401	Three Phase ACR's or Sectionalizing	$ 120,000	$ 120,000	$ 240,000
600.402	Switches (ganged or knifeblade)	$ 110,000	$ 110,000	$ 220,000
600.403	Pad Mounted Sectionalizing Equipment	$ 100,000	$ 100,000	$ 200,000
600.404	Voltage Regulators	$ 200,000	$ 200,000	$ 400,000
600.500	Capacitors/Inductors	$ 35,000	$ 115,000	$ 150,000

Project: Distribution Pole Replacement
CWP Item Number: 600.600 **Estimated Cost:** $7,988,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace distribution poles that have deteriorated beyond repair, or have failed resulting in an outage.

REASON FOR PROPOSED CONSTRUCTION

Poles have failed or are likely to fail during the construction work plan period, causing an outage.

As of July 2012, SSVEC GIS calculates

Subtransmission and Distribution Wood Poles

Decade Installed	Count of Poles	Age Range
1950 .. 1960	2,536	62-52
1960 .. 1970	7,288	52-42
1970 .. 1980	21,255	42-32
1980 .. 1990	16,175	32-22
1990 .. 2000	17,383	22-12
2000 .. 2012	19,802	
Total # of Poles	**84,439**	

Over 31,000 poles are 32 years old or more

RESULTS OF PROPOSED CONSTRUCTION

Replacement of poles prior to failure results in fewer outages to the customers. In addition, the cost of replacing a pole after normal work hours is much more expensive than a planned replacement.

SSVEC's decreased outage hours show the pole replacement program is successful. SSVEC's decreased outage hours show the pole replacement program is successful. As of July 2012, below is the number of poles SSVEC has added, replaced, or retired without replacement.

Work Order Completed Year	Add	Replace	Retire
2012	288	751	320
2011	451	1382	549
2010	443	1079	381
2009	672	1176	436
2008	979	756	470
2007	1376	713	606

ALTERNATES TO PROPOSED CONSTRUCTION

An alternative is to allow the poles to fail and then replace them. This causes disruptions in service to the customers, disrupts planned work by crews, and increases overall costs.

CWP Item Number:

600.601	General Replacement – OH Distribution
600.602	General Replacement – UG Distribution

Estimated Cost:

600.601	$400,000
600.602	$600,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace crossarms, insulators, UG elbows, sectionalizing cabinets, and other miscellaneous equipment that fails due to vehicle accidents, lightning strikes, equipment failure and other reasons.

REASON FOR PROPOSED CONSTRUCTION

Facilities fail unexpectedly for various reasons, causing an outage.

RESULTS OF PROPOSED CONSTRUCTION

Facilities are repaired.

ALTERNATES TO PROPOSED CONSTRUCTION

No reasonable alternatives.

Project: Wildlife Protection Plan
CWP Item Number: 600.603 **Estimated Cost:** $80,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Install cover-up on existing overhead and other facilities to decrease avian and other wildlife contacts.

REASON FOR PROPOSED CONSTRUCTION

Current SSVEC construction standards for new and modified power lines minimize wildlife contacts on power lines using insulated wire covers, phase cover-ups, perch deterrents, bushing covers, and other equipment. Older standards for power lines were not designed with phase to phase clearances and insulated equipment with the intention of preventing avian fatalities must be retrofitted.

RESULTS OF PROPOSED CONSTRUCTION

A decrease in avian and other wildlife contacts will occur which will result in fewer outages, fewer momentary outages, and decreased wildlife fatalities. In addition, Federal laws associated with the Migratory Bird Treaty Act prohibit the "take" (killing or collection) of migratory birds throughout the United States. Power companies are not exempt from these laws and must show they are doing their part in proactively preventing future avian fatalities on their facilities. By installing avian protection on older poles, SSVEC is complying with this federal law. By not installing avian protection, SSVEC is held liable for avian deaths on unprotected structures and could be fined by the United States Fish and Wildlife Service.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: Distribution Automation
CWP Item Number: 600.710 **Estimated Cost:** $750,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Install communication and controls on equipment to allow for control and data acquisition. This equipment will be installed on reclosers, capacitors, regulators, distribution switches and 69 kV GOAB switches.

REASON FOR PROPOSED CONSTRUCTION

To allow control and data acquisition of key devices on the system.

RESULTS OF PROPOSED CONSTRUCTION

- SSVEC will be able to restore distribution outages quicker. Using SCADA, SSVEC will be able to view what is occurring on the distribution and help in switching to restore power in locations with Distribution Automation.
- SSVEC will operate the distribution system more efficiently. Use SCADA accessible equipment to isolate or reconfigure distribution system remotely. Currently line crews have to drive to each equipment location to operate the equipment.
- SSVEC has implemented new switching order procedures that provide and require more SCADA Center involvement.

ALTERNATES TO PROPOSED CONSTRUCTION

The alternate to this construction is to continue with line crews field switching to reroute power in outage situations.

700.000 Other Distribution Items

CWP Item Numbers:	700.002	Security Light Installations
	700.003	Street Light Installations
Estimated Cost:	700.002	$50,000
		CIAC: $50,000
	700.003	$80,000
		CIAC: $80,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Install security lights and street lights at the request of customers, developers and/or cities. The 2009 rate case requires customers to pay 100% of the cost.

REASON FOR PROPOSED CONSTRUCTION

Install lights at customers' and developers' requests.

Project: SCADA Field Upgrades
CWP Item Number: 700.004 **Estimated Cost:** $50,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Install SCADA field equipment expansion or upgrades such as firmware upgrades, new radios, new locations, and other. Demand side management equipment is not part of this project.

REASON FOR PROPOSED CONSTRUCTION

SCADA field equipment expansion or upgrades needed to keep equipment working or to expand the use of SCADA.

RESULTS OF PROPOSED CONSTRUCTION

Better and enhanced use of SCADA system.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: SCADA Control Center Upgrade
CWP Item Number: 700.012 **Estimated Cost:** $100,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Install computer and software upgrades, system view upgrades, software addition, and radio upgrades for the SCADA Control Center.

REASON FOR PROPOSED CONSTRUCTION

As substations and other new field SCADA points are added, SCADA Control Center stations have to be upgraded for the increased volume of data. Regularly scheduled replacement of SCADA computers occurs.

RESULTS OF PROPOSED CONSTRUCTION

There will be an enhanced and continued use of SCADA system.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: New Mobile Substation
CWP Item Number: 700.020 **Estimated Cost:** $15,000 **Project Year**: 2014
[Engineering Only]

DESCRIPTION OF PROPOSED CONSTRUCTION

This project will be developing an initial engineering concept for SSVEC's next mobile substation. The concept will include what is available, what SSVEC's needs are, and ranges of cost. The mobile would be 10 to 20MVA, 69kV to 12.47/24.9kV and have 69kV protection. Options such as distribution voltage regulation and protection, SCADA, AMI, physical size and weight of trailer, new versus re-built equipment, and other will be considered. The next work plan may or may not continue this project.

REASON FOR PROPOSED CONSTRUCTION

The current mobile transformer was manufactured in the 1970's and has 10.5MVA capacity. This mobile is being used consistently throughout the year for construction and maintenance projects. Should the mobile be in use and an outage occurred elsewhere, the outage would require the facilities to be repaired. An alternative would be to move the mobile, but this would take 2 or more days as the mobile is de-energized and the existing facilities are put back into operating condition.

Several of SSVEC substations were constructed 30 years ago, and several other substation transformers are the same age. By delaying rebuilding substations, SSVEC incurs a significant cost benefit but at the risk of an outage.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Use TRICO's or APS's mobile transformers*
   - Both entities have mobile transformers
   - These entities may not be able or willingly to rent the mobile transformers
   - Rent charges would be fairly large
   - Time spent getting mobile here would take long
2. *Rent a Mobile from unknown commercial entity*
   - Companies do have mobiles available for rent
   - Rent charges would be fairly large
   - Time spent getting mobile here would take long
3. *Don't Allow the Mobile to be used other than emergencies*
   - The capacity of the mobile is limited
   - This would require significant changes and costs in operations and maintenance of the system

⇨ *Do Nothing/No alternatives:*

↪ If the existing mobile is in use at a location and another issue requires the use of a mobile, there will be extended outage and costs. If the mobile's capacity is not sufficient, significant costs and the possibility of outages will occur.

Project: Future Distribution Line Rights-of-Way
CWP Item Number: 700.098 **Estimated Cost:** $50,000

DESCRIPTION OF PROPOSED PROJECT

Acquire easements for future distribution lines.

REASON FOR PROPOSED PROJECT

Opportunities for acquiring Rights-of-Way for currently unknown projects related to future distribution lines may arise. Having funds available will allow starting ROW acquisitions for likely work plan projects.

ALTERNATES TO PROPOSED PROJECT

The alternative is not to do any ROW acquisition for any currently unknown projects and restrict the opportunity to identify and pursue options as they arise.

800.000 New Subtransmission Lines

Project: Engineering & ROW Acquisition for New Future Subtransmission
CWP Item Number: 800.025 **Estimated Cost:** $80,000

DESCRIPTION OF PROPOSED PROJECT

This project recommends to acquire Rights-of-Way and perform initial engineering design for currently unknown projects that will likely be constructed in the next future work plans.

REASON FOR PROPOSED PROJECT

Opportunities for acquiring Rights-of-Way for currently unknown projects related to new future sub-transmission lines may arise. Having funds available will allow starting engineering and ROW acquisitions for likely work plan projects.

ALTERNATES TO PROPOSED PROJECT

The alternative is not to do any engineering and ROW acquisition for any currently unknown projects and restrict the opportunity to identify and pursue options as they arise.

Project: Future Subtransmission Line Rights-of-Way
CWP Item Number: 800.098 **Estimated Cost:** $80,000

DESCRIPTION OF PROPOSED PROJECT

Acquire easements for future subtransmission lines.

REASON FOR PROPOSED PROJECT

Opportunities for acquiring Rights-of-Way for currently unknown projects related to future subtransmission lines may arise. Having funds available will allow starting ROW acquisitions for likely work plan projects.

ALTERNATES TO PROPOSED PROJECT

The alternative is not to do any ROW acquisition for any currently unknown projects and restrict the opportunity to identify and pursue options as they arise.

900.000 New Subtransmission Substations & Switching Stations

None planned

1000.000 Subtransmission Line Changes

Project: General Replacement & Miscellaneous Subtransmission Line Changes
CWP Item Number: 1000.099 **Estimated Cost:** $100,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace wishbone arms, insulators, guying, pole grounds, and other items due to equipment failure. Minor upgrades as needed. This project doesn't include poles.

REASON FOR PROPOSED CONSTRUCTION

Equipment fails to deterioration, lightning strikes, material degradation, and other reasons.

RESULTS OF PROPOSED CONSTRUCTION

Subtransmission equipment is repaired.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: Engineering & ROW Acquisition for Future Subtransmission Changes
CWP Item Number: 1000.111 **Estimated Cost:** $50,000

DESCRIPTION OF PROPOSED PROJECT

This project recommends to acquire Rights-of-Way and perform initial engineering design for currently unknown projects that will likely be constructed in the next future work plans.

REASON FOR PROPOSED PROJECT

Opportunities for acquiring Rights-of-Way for currently unknown projects related to future sub-transmission changes may arise. Having funds available will allow starting engineering and ROW acquisitions for likely work plan projects.

ALTERNATES TO PROPOSED PROJECT

The alternative is not to do any engineering and ROW acquisition for any currently unknown projects and restrict the opportunity to identify and pursue options as they arise.

Project: Replace Subtransmission Poles
CWP Item Number: 1000.101 **Estimated Cost:** $2,000,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace subtransmission poles that have deteriorated beyond repair, or have failed resulting in an outage.

REASON FOR PROPOSED CONSTRUCTION

Poles have failed or are likely to fail during the construction work plan period, causing an outage.

As of July 2012, SSVEC GIS calculates

Subtransmission and Distribution Wood Poles

Decade Installed	Count of Poles	Age Range
1950 .. 1960	2,536	62-52
1960 .. 1970	7,288	52-42
1970 .. 1980	21,255	42-32
1980 .. 1990	16,175	32-22
1990 .. 2000	17,383	22-12
2000 .. 2012	19,802	
Total # of Poles	84,439	

Over 31,000 poles are 32 years old or more

RESULTS OF PROPOSED CONSTRUCTION

Replacement of poles prior to failure results in fewer outages to the customers. In addition, the cost of replacing a pole after normal work hours is much more expensive than a planned replacement.

SSVEC's decreased outage hours show the pole replacement program is successful. As of July 2012, below is the number of poles SSVEC has added, replaced, or retire without replacement.

Work Order Completed Year	Add	Replace	Retire
2012	288	751	320
2011	451	1382	549
2010	443	1079	381
2009	672	1176	436
2008	979	756	470
2007	1376	713	606

ALTERNATES TO PROPOSED CONSTRUCTION

An alternative is to allow the poles to fail and then replace them. This causes disruptions in service to the customers, disrupts planned work by crews, and increases overall costs.

Project: Hawes 69kV; Upgrade from Substation to Cherokee Ave
CWP Item Number: 1000.130 **Estimated Cost:** $678,006 **Project Year**: 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about one mile of 336ACSR to 795ACSR and upgrade the underbuild from 4/0ACSR to 477ACSR. Start near location K06139289 and end near location K06131787. This project will be the first of two improvements to provide a more robust distribution tieline between Hawes and Keating Substations. Also, the project will provide a second robust 69kV tieline between SWTC Kartchner and San Rafael delivery points. ROW might be difficult for this project because the existing facilities are in residential back yards. This project includes adding fiber optic cable to provide a communications loop around Sierra Vista.

REASON FOR PROPOSED CONSTRUCTION

This improvement is needed because the X1 feeder 4/0ACSR conductor has been overloaded in the past years. Also, this conductor becomes a weak link when trying to back-up neighboring substations. This recommended improvement in conjunction with *CWP#1000.131* will work towards completing a 795ACSR transmission circuit between San Rafael and Kartchner sub-transmission substations.

RESULTS OF PROPOSED CONSTRUCTION

This improvement will serve two purposes:

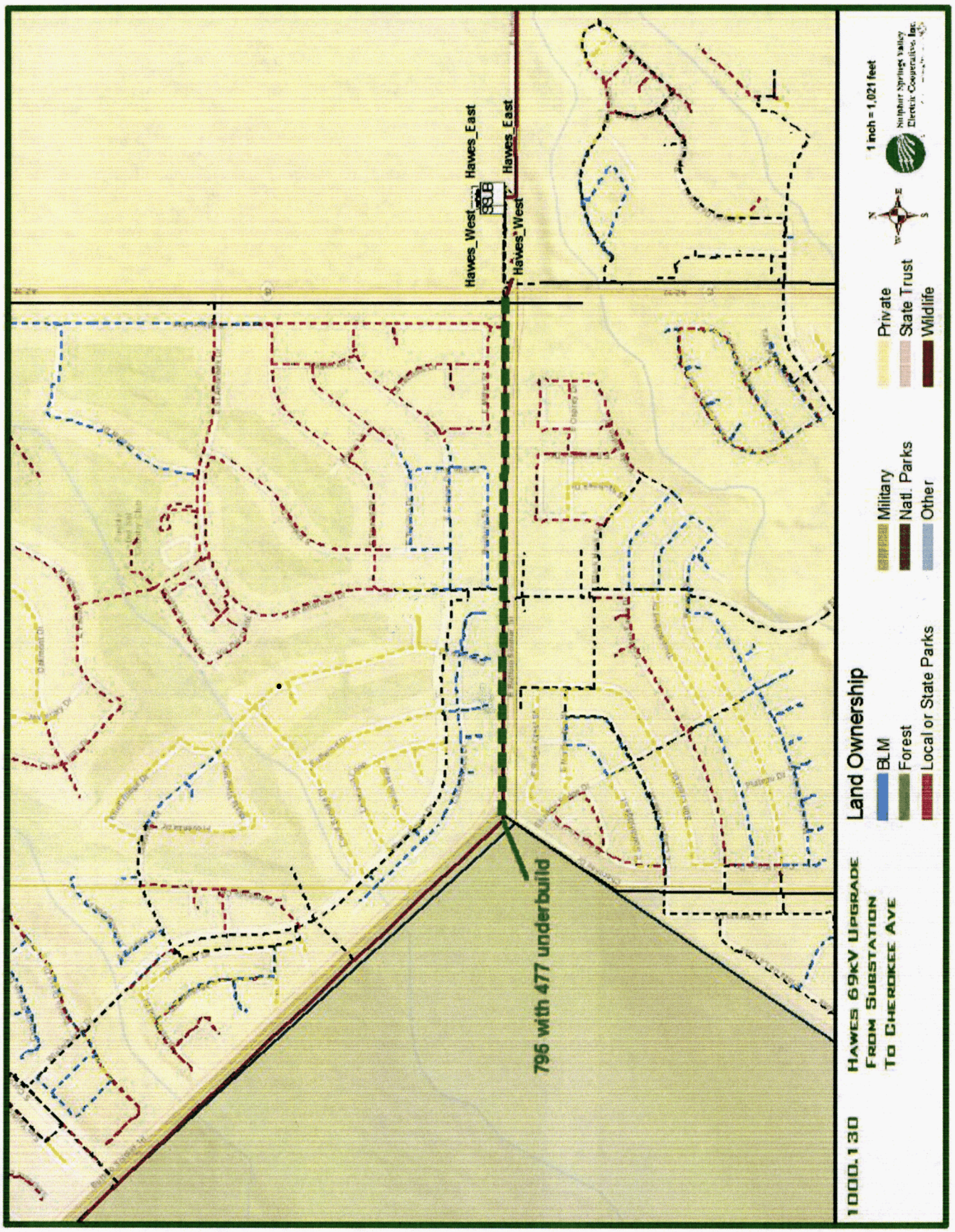
i. The upgrade in transmission conductor will provide better back-up support to the outages on SWTC delivery points
ii. Upgrading the 4/0ACSR conductor will reduce the risk of overload and possible outage. The upgraded conductor will also provide adequate back-up for neighboring Ramsey and Keating Substations

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - Load can be switched to X8 feeder, but it will not be enough to relieve the 4/0ACSR conductor
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Voltage regulators will not contribute to the solution
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline will not contribute to the solution

⇨ *Do Nothing/No alternatives:*

↪ Delaying the upgraded conductor will overload the 4/0ACSR conductor, likely causing outages.


Hawes_West
Hawes_East
Hawes_East
Hawes_West
795 with 477 underbuild
1000.130
Hawes 69kV Upgrade
From Substation
To Cherokee Ave
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 1,021 feet
Sulphur Springs Valley Electric Cooperative, Inc.

Project: Hawes 69kV; Upgrade from Cherokee Ave to Golf links Rd [Engr & ROW only]
CWP Item Number: 1000.131 **Estimated Cost:** $96,000 **Project Year**: 2013

DESCRIPTION OF PROPOSED CONSTRUCTION

This project will be ROW acquisition and engineering design only. This improvement recommends upgrading about 2.5 miles of 336ACSR to 795ACSR and upgrade the underbuild from 4/0ACSR to 477ACSR. Start near location K06131787 and end near location K06104816. This project includes adding fiber optic cable to provide a communications loop around Sierra Vista.

REASON FOR PROPOSED CONSTRUCTION

This project is the second of two improvements which is in conjunction with the project *Hawes 69kV; Upgrade from Substation to Cherokee Ave*. This conductor becomes a weak link when trying to back-up neighboring substations. The recommended improvement will also complete a 795ACSR subtransmission circuit between SWTC San Rafael and Kartchner sub-transmission substations

RESULTS OF PROPOSED CONSTRUCTION

This improvement will serve two purposes:

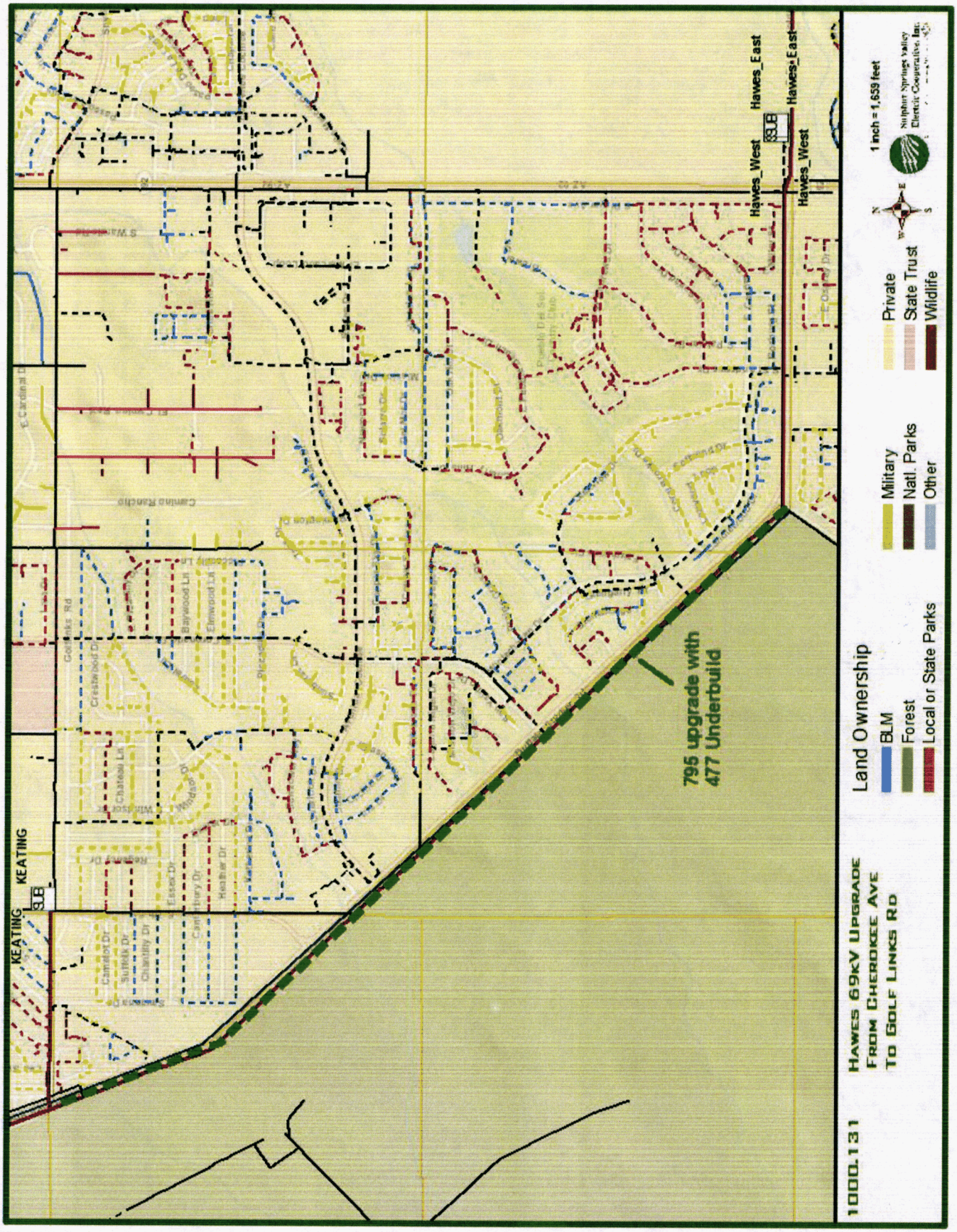
i. The upgrade in transmission conductor will provide better back-up support to the outages on SWTC delivery points
ii. Upgrading the 4/0ACSR conductor will reduce the risk of overload and possible outage. The upgraded conductor will also provide adequate back-up for neighboring Ramsey and Keating Substations

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Voltage regulators will not contribute to the solution
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline will not contribute to the solution

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing is chosen, the distribution line will remain as a weak tie between Keating and Hawes Substations. Additionally the 795ACSR 69kV sub-transmission line will not be completed between San Rafael and Kartchner sub-transmission substations.


KEATING
KEATING
Hawes_West
Hawes_East
Hawes_West
Hawes_East
795 upgrade with
477 Underbuild
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 1,659 feet
1000.131
HAWES 69kV UPGRADE
FROM CHEROKEE AVE
TO GOLF LINKS RD

Project: Redtail; Fiber Optic Cable from Redtail to Bowie Substation
CWP Item Number: 1000.132 **Estimated Cost:** $2,044,000 **Project Year**: 2013-14
Smart Grid CIAC: $1,022,000

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends adding fiber optic cable (ADSS) to the 17 miles of transmission line from Redtail to Bowie Substation. Approximately 95% of the 17 miles of transmission poles need to be replaced. Start near pole location 11724 and end near pole location 11923.

REASON FOR PROPOSED CONSTRUCTION

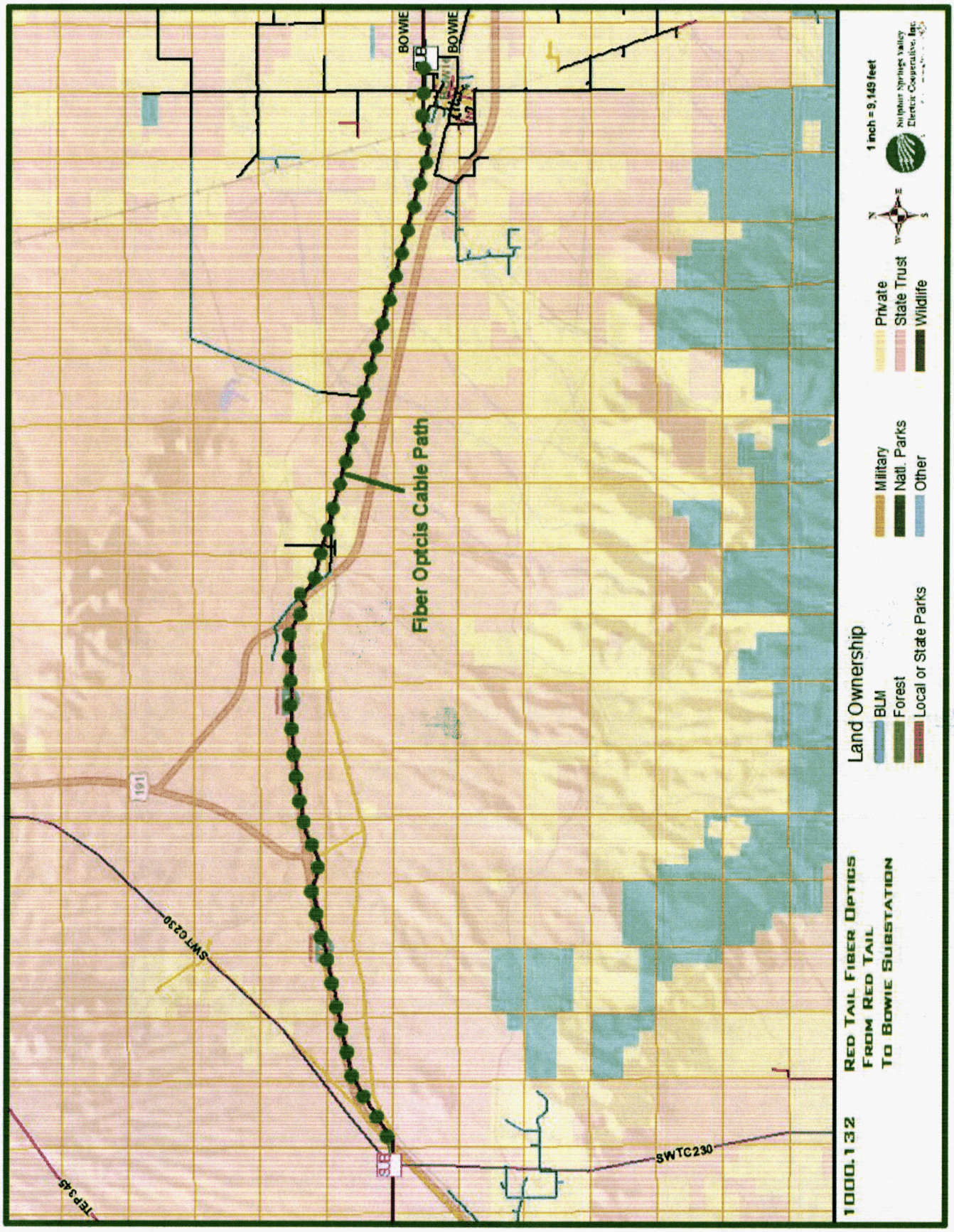
This project will result in additional communications capabilities from Redtail delivery point to Bowie and ultimately to San Simon Substations. These communications will be needed to provide AMR and upgraded substation relaying/SCADA connectivity for SSVEC as part of the Smart Grid grant. In addition, this will reduce communications costs and by providing an alternative to local telecommunications companies' facilities.

RESULTS OF PROPOSED CONSTRUCTION

Reduced communications cost and a significantly larger communication path.

ALTERNATES TO PROPOSED CONSTRUCTION

An alternative is not to include this project. This would impede SSVEC's AMR project and any future relay/SCADA upgrades to Bowie and San Simon Substations. In addition, poles are likely to fall and cause disruptions in service to customers, disrupt planned work by crews, and increases overall costs.


BOWIE
BOWIE
Fiber Optcis Cable Path
101
SWT0230
SWTC230
TEP345
1000.132
Red Tail Fiber Optics
From Red Tail
To Bowie Substation
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 9,149 feet

Project: Huachuca 69kV; Replace Poles from sub to In Balance Ranch Rd
CWP Item Number: 1000.133 **Estimated Cost:** $1,485,000 **Project Year**: 2013-14

DESCRIPTION OF PROPOSED CONSTRUCTION

This project is to replace about 9 miles of the 69kV poles from Huachuca Junction east to In Balance Ranch Road including adding fiber optic cable and conversion of the distribution underbuild to 25kV. Conductor upgrade is not part of this project. Start near location I06181255 and end near location I07043055.

REASON FOR PROPOSED CONSTRUCTION

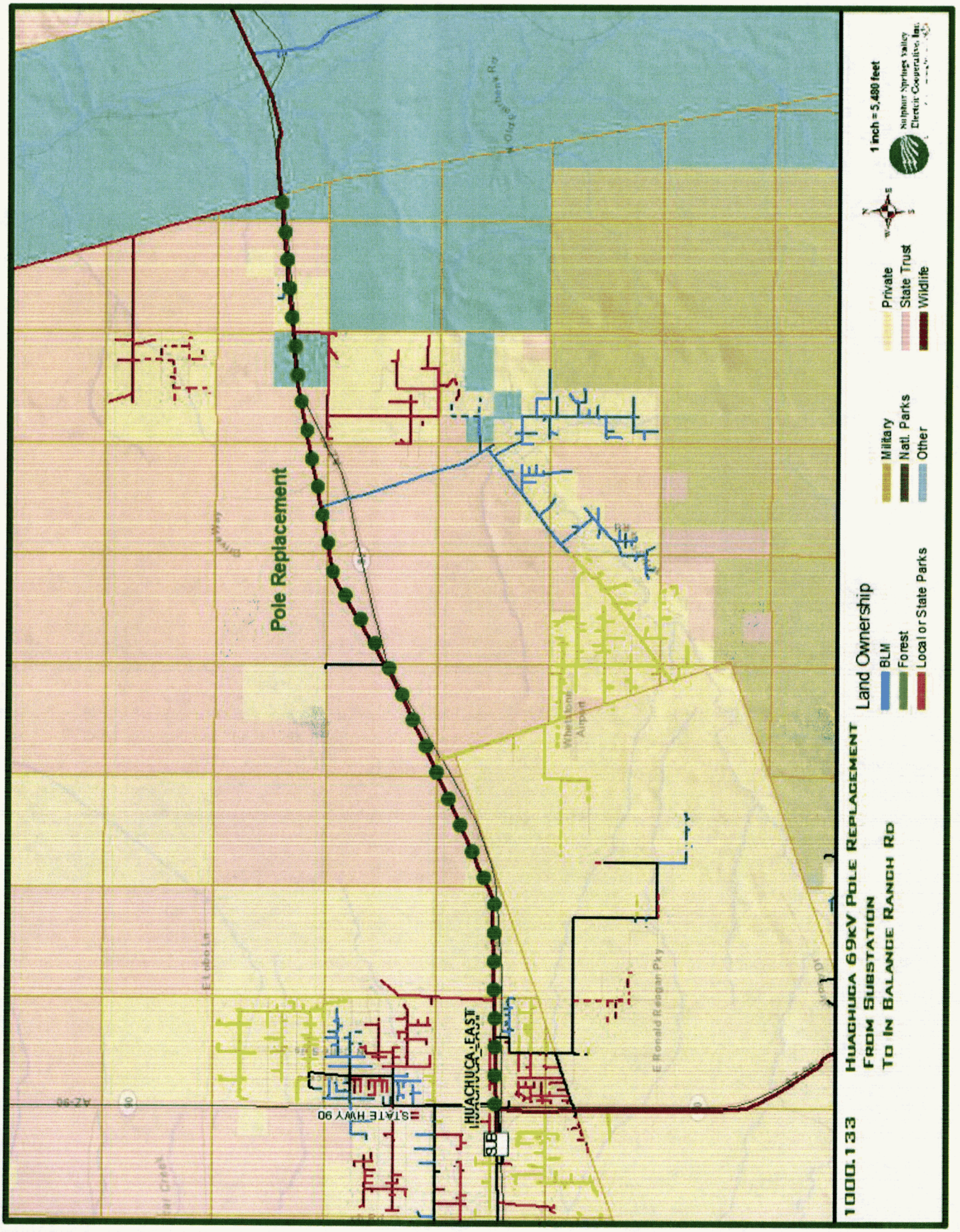
Many of the poles in this pole line were installed in the 1950's, and many have failed and have been replaced already. This project will replace the remaining old poles and prepare the area for 25kV conversion. Additionally, fiber optic cable will be installed. This project is in companion with CWP#1000.134.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Rebuild the transmission line:*
   - This alternative would be to rebuild the transmission line with larger 69kV conductor along with adding fiber optic cable.
   - Rights-of-Way acquisition for the entire route [Huachuca to Tombstone] is difficult due to riparian area along San Pedro River owned by BLM.

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing is chosen, there would be elevated risk of outages due to pole failures.


Pole Replacement
HUACHUCA_EAST
SUB
STATE HWY 90
AZ-90
E Ronald Reagan Pky
Wheelon Airport
1000.133
Huachuca 69kV Pole Replacement
From Substation
To In Balange Ranch Rd
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 5,480 feet
Sulphur Springs Valley Electric Cooperative Inc.

Project: Huachuca 69kV; Replace Poles from In Balance Ranch to Fairbank
CWP Item Number: 1000.134 **Estimated Cost:** $300,000 **Project Year**: 2013-14

DESCRIPTION OF PROPOSED PROJECT

This project is to replace about two miles of the 69kV poles from In Balance Ranch Rd to about one mile East of San Pedro River. Start near location I07043055 and end near pole number 10651. This project includes adding fiber optic cable.

REASON FOR PROPOSED PROJECT

Poles have significantly deteriorated in this area and need to be replaced. This is a conservation area and construction time window is limited from October to March, which is migratory season.

ALTERNATES TO PROPOSED PROJECT

- If Do Nothing is chosen, there would be elevated risk of outages due to pole failures.

Error

An error occurred while processing this page. See the system log for more details.

1100.000 Subtransmission Substation Changes

Project: Miscellaneous Subtransmission Substation Changes
CWP Item Number: 1100.099 **Estimated Cost:** $50,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Repair equipment jumpers, failed relays, broken insulators, and other equipment inside the substation. Upgrade equipment as needed.

REASON FOR PROPOSED CONSTRUCTION

Equipment fails due to lightning strikes, fault current, and deterioration.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

1200.000 Communications

Project: Keating T3; Fiber Optic Cable from Substation to Buffalo Soldier Trail Rd
CWP Item Number: 1200.140 **Estimated Cost:** $25,000 **Project Year**: 2014

DESCRIPTION OF PROPOSED CONSTRUCTION

Add about one mile of ADSS fiber optic cable to the distribution network. Start near location K06021388 and end near location K06111176.

REASON FOR PROPOSED CONSTRUCTION

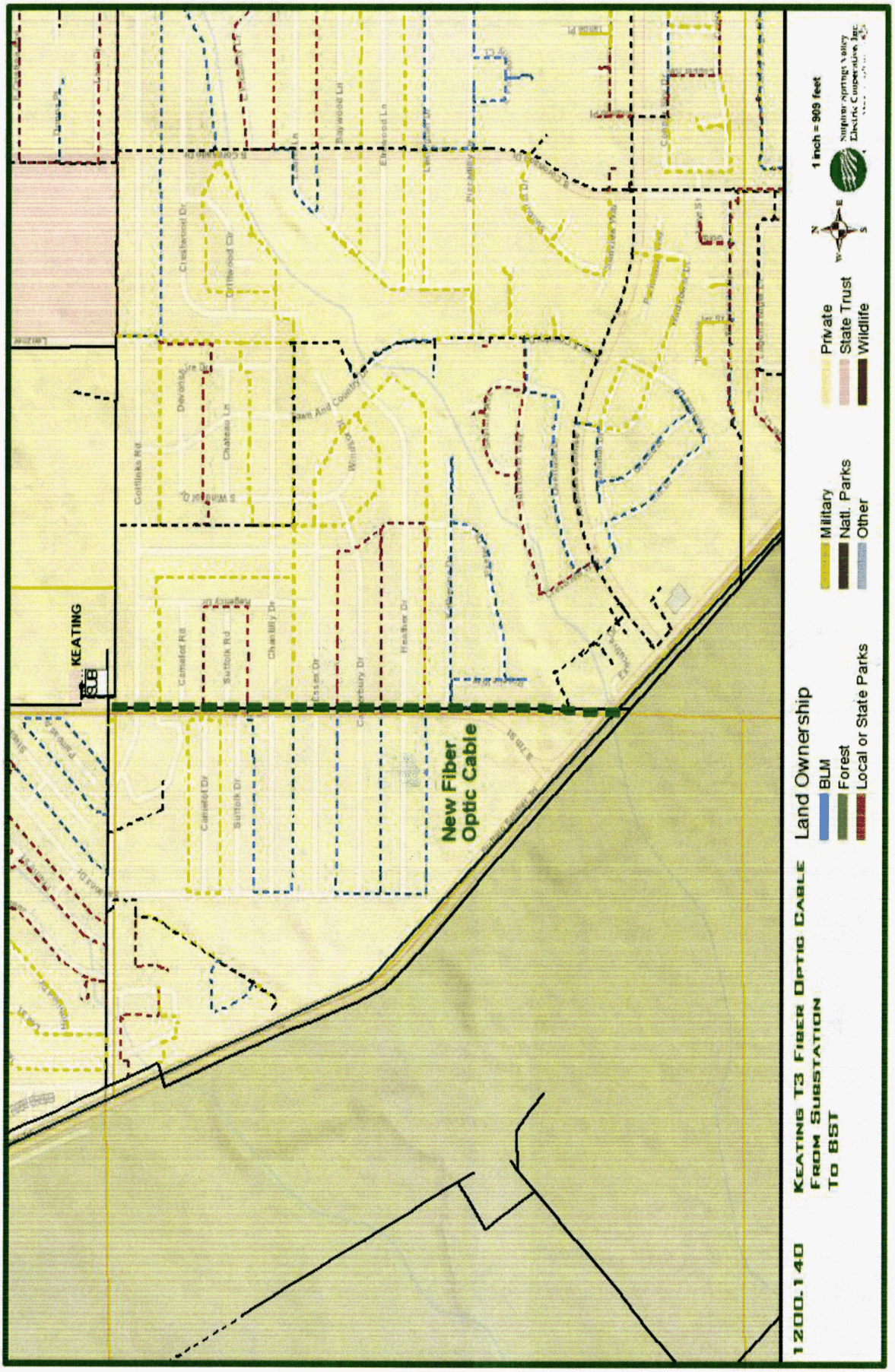
Augment planned fiber optics communications infrastructure from Hawes Substation with a low cost and high value segment from Buffalo Soldier Trail to Keating Substation.

RESULTS OF PROPOSED CONSTRUCTION

Adding the segment from Buffalo Soldier Trail to Keating Substation creates a loop between substations in the Sierra Vista area. This loop provides redundancy in the event of a break in the fiber optic cables. Without the loop, one break results in communications loss. With the loop, one break does not cause communications loss. Two breaks will cause a loss of communications. This is a best-case scenario in terms of fiber optics redundancy.

ALTERNATES TO PROPOSED CONSTRUCTION

- If Do Nothing option is chosen, there would be no fiber optic communications redundancy in the event of a break; the risk of losing communications would increase.


KEATING
New Fiber Optic Cable
1200.140
Keating T3 Fiber Optic Cable
From Substation
To BST
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 909 feet

Sulphur Springs Valley Electric Cooperative, Inc.
A Touchstone Energy® Cooperative

311 E Wilcox Drive
Sierra Vista, AZ 85635
Phone (520)384-2221 Fax (520)384-5223

INVOICE # 2079
DATE: June 5, 2015

Employee Information:
Matt Riesgo
Employee Number: 206

For:
Employee Purchases

DESCRIPTION	AMOUNT
PO 51684	75.47
PO 51565	141.16
TOTAL	216.63

The total amount above will be deducted from your pay check(s) beginning with **June 19th, 2015** as provided in Procedure 2.7. If you have any questions concerning this invoice, contact Agueda in the Sierra Vista office at 515-3485.

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TAB 7

Cost Summary
SSVEC 2015-17 Construction Work Plan

[redacted]des	Project Description	Gross Project Dollars	Amendment 1 Dollars Change	Amendment 1 Net Project
	Distribution			
100.000	**New Lines for New Customers [including CIAC Contributions]**			
	Designates construction of new line to serve new consumers (overhead and/or underground) where no lines presently exist. This includes the installation of poles, pole top assemblies guy and anchor assemblies, primary, secondary, and service conductor, and miscellaneous associated equipment such as lightning arrestors, grounding conductor and electrode, fused disconnect switches, etc. required for safe, dependable delivery of electrical power to new consumers. this 100 series also provides for separate code numbers (code 103+) for "major developments" exceeding investment of $100,000 (code 100 type expenditures) in accordance with 7 CFR 1721.			
	Underground			
101.001	1-Phase Underground Primary	$ 200,000		
101.002	3-Phase Underground Primary	$ 240,000		
101.003	3-Wire Underground Secondary	$ 300,000		
101.004	4-Wire Underground Secondary	$ 80,000		
	Overhead			
102.001	1-Phase Overhead Primary	$ 125,000		
102.002	3-Phase Overhead Primary	$ 350,000		
102.003	3-Wire Overhead Secondary	$ 100,000		
102.004	4-Wire Overhead Secondary	$ 80,000		
103.001	Subdivisions [Over 5 lots]	$ 180,000		
	Subtotal	**$ 1,655,000**	**$ -**	**$ -**
	CIAC for New Lines	**$ (1,655,000)**	**$ -**	**$ -**
100.000	**Subtotal -- New Lines for New Customers**	**$ -**	**$ -**	**$ -**
[redacted].000	**New Feeders and Tie Lines**			
	De[redacted]es construction of new line (overhead and/or underground) for the purpose of connection two or more existing circuits or substations buses. It includes similar material and equipment required in Code 100 for the purpose of transferring load, reducing voltage drop or conductor loading, and provides alternate feeds for construction purposes and increased system reliability.			
200.153	Benson P5; Tie Line from Serenity Ln To Interstate 10			$ 252,000
200.155	Hereford HF2; Tie Line from Three Canyons Rd To Hereford Rd	$ 865,000	$ (865,000)	$ -
200.160	Pueblo; New Z6 feeder from Substation to Hwy 90	$ 663,000		
200.161	Mesquite; MQ3 and MQ4 Feeders		$ 1,500,000	$ 1,500,000
200.162	Mesquite; MQ2 Feeder		$ 421,000	$ 421,000
200.099	Misc Tie Lines [under $100K each]	$ 600,000		
200.000	**Subtotal -- New Feeders and Tie Lines**	**$ 2,128,000**	**$ 1,056,000**	**$ 3,184,000**
300.000	**Conversions & Line Changes**			
	Designates any conversion or line change of and existing primary circuit to improve the quality or quantity of service to more than one existing consumer. This generally involves replacing conductor, adding conductors (single phase to three phase, etc.), replacing direct buried UG with conduit system, or changing system voltage to increase capacity and reduce voltage drop. Specifically. this construction includes changing conductor, adding conductors, changing insulators, changing pole top assemblies, changing guys and anchors and replacing poles.			
300.068	Benson P5; Upgrade near Flying Horseshoe Rd To Red Rock Rd			$ 53,000
300.075	Pueblo Z4; Upgrade from Substation to Hwy 92	$ 1,149,000		
300.076	Keating T2; Upgrade near Hummingbird Ln To Hwy 92	$ 337,000		
300.077	Benson P5; Upgrade near Flying Horseshoe Rd To Red Rock Rd	$ 154,000		
300.078	Huachuca V7; Upgrade from Substation to Upper Elgin Rd	$ 1,732,000		
300.079	Hereford HF2; Upgrade from Substation to Kings Ranch Rd	$ 171,000	$ (171,000)	$ -
300.080	Hamilton Feeders; Upgrade from Marguerite Rd to Fort Grant Rd.aspx	$ 407,000	$ (407,000)	$ -
[redacted].081	Willcox F3; Upgrade from Taylor Rd to Bisbee Ave	$ 416,000	$ (416,000)	$ -
[redacted].082	Webb M5; Upgrade from Webb Rd to Near Gleeson RD	$ 252,000		
300.084	Mesquite; 25kV Conversion Apache Power Plant		$ 200,000	$ 200,000
300.096	Copper Replacement	$ 600,000		
300.097	Cable Injection	$ 150,000		
300.098	Cable Replacement	$ 1,800,000		
300.099	Misc Dist Line Changes [under $100K each]	$ 600,000		

Cost Summary
SSVEC 2015-17 Construction Work Plan

[redacted]des	Project Description	Gross Project Dollars	Amendment 1 Dollars Change	Amendment 1 Net Project
300.000	**Subtotal -- Conversions & Line Changes**	**$ 7,768,000**	**$ (794,000)**	**$ 6,974,000**
400.000	**New Distribution Substations**			
	Building a new distribution [output voltage is 24.9kV or 12.47kV] substation, or retiring an existing distribution substation and building a new substation to replace it. Substation is defined as everything within the substation fence, access roads, and first distribution line segment from inside substation fence to outside substation			
400.026	Pueblo; Upgrade Substation	$ 2,399,000		
400.027	Mesquite; New Substation		$ 3,500,000	$ 3,500,000
400.028	St David; New Substation		$ 5,000,000	$ 5,000,000
400.098	Future Distribution Substation Site(s) Acquisition	$ 75,000		
400.000	**Subtotal -- New Distribution Substations**	**$ 2,474,000**	**$ 8,500,000**	**$ 10,974,000**
500.000	**Distribution Substation Changes**			
	Modifying equipment, access road, and/or anything else within an existing substation. Substation is defined as everything within the substation fence, access roads, and first distribution line segment from inside substation fence to outside substation			
500.050	Tombstone; Upgrade Protection		$ 100,000	$ 100,000
500.051	Cottonwood; Upgrade Protection		$ 120,000	$ 120,000
500.052	Cochise Substation; Retire		$ 200,000	$ 200,000
500.099	Miscellaneous Substation Changes [under $100K each]	$ 300,000		
500.000	**Subtotal -- Distribution Substation Changes**	**$ 300,000**	**$ 420,000**	**$ 720,000**
600.000	**Miscellaneous Distribution Items**			
600.100	Pole Mounted Transformers	$ 700,000		
[redacted].101	Pad Mounted Transformers	$ 700,000		
600.200	Meters, Metering Transformers & Equipment	$ 400,000		
600.300	Service Upgrades	$ 100,000		
	CIAC for Service Upgrades	$ (100,000)		
600.400	Single Phase ACR's, Sectionalizers, or Fusing	$ 153,000		
600.401	Three Phase ACR's or Sectionalizing	$ 360,000		
600.402	Switches (ganged or knifeblade)	$ 330,000		
600.403	Pad Mounted Sectionalizing Equipment	$ 300,000		
600.404	Voltage Regulators	$ 600,000		
600.405	Line Regulator Upgrades	$ 300,000		
600.500	Capacitors/Inductors	$ 300,000		
600.600	Distribution Pole Replacement	$ 9,500,000		
600.601	General Replacement -- OH Distribution	$ 900,000		
600.602	General Replacement -- UG Distribution	$ 525,000		
600.603	Wildlife Protection Plan	$ 228,000		
600.701	Retirement of Distribution Facilities	$ 75,000		
600.710	Distribution automation	$ 500,000		
600.000	**Subtotal -- Miscellaneous Distribution Items**	**$ 15,871,000**	**$ -**	**$ -**
700.000	**Other Dist. Items**			
700.002	Security Light Installations	$ 25,000		
	CIAC for Security Lights	$ (25,000)		
700.003	Street Light Installations	$ 60,000		
	CIAC for Street Lights	$ (60,000)		
700.004	SCADA Field Upgrades	$ 75,000		
700.012	SCADA Control Center Upgrade	$ 150,000		
700.025	New Mobile Substation	$ 2,311,000		
[redacted].026	TS1 AMI Replacement Phase 1	$ 3,000,000		
[redacted].098	Future Distribution Line Rights-of-Way	$ 75,000		
700.000	**Subtotal -- Other Dist. Items**	**$ 5,611,000**		
	Distribution Subtotal	**$ 34,152,000**	**$ 9,182,000**	**$ 43,334,000**

Cost Summary
SSVEC 2015-17 Construction Work Plan

Codes	Project Description	Gross Project Dollars	Amendment 1 Dollars Change	Amendment 1 Net Project
	Subtransmission			
800.000	**New Subtransmission Lines**			
800.098	New Future Subtransmission Line Rights-of-Way	$ 120,000		
800.000	**Subtotal -- New Subtransmission Lines**	**$ 120,000**	**$ -**	**$ -**
900.000	**New Subtransmission Substations & Switching Stations**			
900.020	69kV Switching Station; At or Near Webb Substation	$ 1,384,000	$ (1,384,000)	$ -
900.000	**Subtotal -- New Subtransmission Substations & Switching Stations**	**$ 1,384,000**	**$ (1,384,000)**	**$ -**
1000.000	**Subtransmission Line Changes**			
1000.110	Rebuild St. David Tap to St. David Substation			$ 1,900,000
1000.040	Bowie 69kV; Replace Poles from Bowie to San Simon	$ 2,716,000		
1000.041	Webb 69kV; Upgrade from Substation to W Gleeson Rd	$ 2,208,000		
1000.042	Tombstone Jct to San Pedro; Pole Replacement	$ 1,298,000		
1000.099	General Replacement & Misc Sub Transmission Line Changes	$ 75,000		
1000.101	Replace Miscellaneous Subtransmission Poles	$ 2,250,000		
1000.130	Hawes 69kV; Upgrade from Substation to Cherokee Ave	$ 974,000		$ 1,480,000
1000.131	Hawes 69kV; Upgrade from Cherokee Ave to Golf links Rd			$ 1,600,000
1000.134	Huachuca 69kV; Replace Poles from In Balance Ranch to Fairbank			$ 300,000
1000.135	Tombstone Jct to Charleston Jct; Rebuild		$ 3,630,000	$ 3,630,000
1000.000	**Subtotal -- Subtransmission Line Changes**	**$ 9,521,000**	**$ 3,630,000**	**$ 13,151,000**
1100.000	**Subtransmission Substation Changes**			
1100.030	Webb; Replace 69kV Switches		$ 100,000	$ 100,000
1100.099	Miscellaneous Subtransmission Substation Changes	$ 75,000		
1100.000	**Subtotal -- Subtransmission Substation Changes**	**$ 75,000**	**$ -**	**$ -**
	Subtransmission Subtotal	**$ 11,100,000**	**$ 2,246,000**	**$ 13,346,000**
	Other Projects			
1200.000	**Communications**			
1200.000	**Subtotal -- Communications**	**$ -**	**$ -**	**$ -**
1300.000	**Not used**			
1300.000	**Subtotal -- not used**	**$ -**	**$ -**	**$ -**
1400.000	**Energy Supply**			
1400.000	**Subtotal -- Distributed Generation**	**$ -**	**$ -**	**$ -**
1500.000	**Reserved for Fort projects in Accounting**			
1600.000	**Miscellaneous Projects**			
		$ -	**$ -**	**$ -**
	Other Projects Subtotal	**$ -**	**$ -**	**$ -**
	Grand Total	**$ 45,252,000**	**$ 11,428,000**	**$ 56,680,000**

TAB 8

2015-2017
Construction Work Plan

Sulphur Springs Valley
Electric Cooperative, Inc.
A Touchstone Energy® Cooperative

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RESOLUTION

The following resolution was adopted at a meeting of the Sulphur Springs Valley Electric Cooperative, Inc., Board of Directors held December 18, 2013:

BE IT RESOLVED that, upon reviewing the Construction Work Plan 2015-17, as presented by the SSVEC Engineering Division, this Plan is hereby accepted and approved by the Board of Directors, for the period from January 2015 through December 2017;

BE IT FURTHER RESOLVED that projects included in this Work Plan and previously approved projects establish the construction and loan fund requirements for SSVEC for the above-mentioned period. The Board of Directors further recognizes that loan funds presented in the Construction Work Plan are to be expended for those designated items and projects or as amended by the Board of Directors.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors hereby directs Management to seek loan funds as necessary and implement this Construction Work Plan 2015-17 as presented herein.

I, Harold L. Hinkley, do hereby certify that I am the Secretary of Sulphur Springs Valley Electric Cooperative, Inc., and the foregoing is a true and correct copy of a resolution adopted by the SSVEC Board of Directors at a regular meeting held December 18, 2013.

_____

Secretary

(S E A L)

ACKNOWLEDGEMENTS

The 2015-17 Construction Work Plan contains a description and estimated cost for new construction projects anticipated during two-year period from January 2015 through December 2017. The projects presented herein and previously approved projects are necessary to maintain efficient and reliable service conditions and for the extension of service to new locations.

This study was prepared by the Engineering Division in collaboration with the Operations, Construction, Accounting, and Information & Communications Services personnel. This study could not have been done without input and assistance from all SSVEC departments working together.

We prepared this Work Plan with other personnel under our direct and indirect supervision. We have personally reviewed each project and associated cost estimate. We are confident of the need and technical viability of each project and the overall Work Plan.

David Bryan
Digitally signed by David Bryan
DN: cn=David Bryan, o=SSVEC, ou=Engineering, email=dbryan@ssvec.com, c=US
Date: 2013.12.06 13:03:54 -07'00'

David J. Bryan, P.E.
Arizona Registration #28292
Expires 9/30/2015
Engineer

Guillermo Batt
Digitally signed by Guillermo Batt
DN: cn=Guillermo Batt, o=SSVEC, ou, email=gbatt@ssvec.com, c=US
Date: 2013.12.06 12:57:25 -07'00'

Guillermo Batt, P.E.
Arizona Registration #52830
Expires 12/31/2014
Engineer

Cost Summary
SSVEC 2015-17 Construction Work Plan

Codes	Project Description		Gross Project Dollars
500.000	**Distribution Substation Changes**		
500.099	Miscellaneous Substation Changes [under $100K each]	$	300,000
500.000	**Subtotal -- Distribution Substation Changes**	**$**	**300,000**
600.000	**Miscellaneous Distribution Items**		
600.100	Pole Mounted Transformers	$	700,000
600.101	Pad Mounted Transformers	$	700,000
600.200	Meters, Metering Transformers & Equipment	$	400,000
600.300	Service Upgrades	$	100,000
	CIAC for Service Upgrades	$	(100,000)
600.400	Single Phase ACR's, Sectionalizers, or Fusing	$	153,000
600.401	Three Phase ACR's or Sectionalizing	$	360,000
600.402	Switches (ganged or knifeblade)	$	330,000
600.403	Pad Mounted Sectionalizing Equipment	$	300,000
600.404	Voltage Regulators	$	600,000
600.405	Line Regulator Upgrades	$	300,000
600.500	Capacitors/Inductors	$	300,000
600.600	Distribution Pole Replacement	$	9,500,000
600.601	General Replacement -- OH Distribution	$	900,000
600.602	General Replacement -- UG Distribution	$	525,000
600.603	Wildlife Protection Plan	$	228,000
600.701	Retirement of Distribution Facilities	$	75,000
600.710	Distribution automation	$	500,000
600.000	**Subtotal -- Miscellaneous Distribution Items**	**$**	**15,871,000**
700.000	**Other Dist. Items**		
700.002	Security Light Installations	$	25,000
	CIAC for Security Lights	$	(25,000)
700.003	Street Light Installations	$	60,000
	CIAC for Street Lights	$	(60,000)
700.004	SCADA Field Upgrades	$	75,000
700.012	SCADA Control Center Upgrade	$	150,000
700.025	New Mobile Substation	$	2,311,000
700.026	TS1 AMI Replacement Phase 1	$	3,000,000
700.098	Future Distribution Line Rights-of-Way	$	75,000
700.000	**Subtotal -- Other Dist. Items**	**$**	**5,611,000**
	Distribution Subtotal	**$**	**34,152,000**

Cost Summary
SSVEC 2015-17 Construction Work Plan

Codes	Project Description	Gross Project Dollars
	Subtransmission	
800.000	**New Subtransmission Lines**	
800.098	New Future Subtransmission Line Rights-of-Way	$ 120,000
800.000	**Subtotal -- New Subtransmission Lines**	**$ 120,000**
900.000	**New Subtransmission Substations & Switching Stations**	
900.020	69kV Switching Station; At or Near Webb Substation	$ 1,384,000
900.000	**Subtotal -- New Subtransmission Substations & Switching Stations**	**$ 1,384,000**
1000.000	**Subtransmission Line Changes**	
1000.040	Bowie 69kV; Replace Poles from Bowie to San Simon	$ 2,716,000
1000.041	Webb 69kV; Upgrade from Substation to W Gleeson Rd	$ 2,208,000
1000.042	Tombstone Jct to San Pedro; Pole Replacement	$ 1,298,000
1000.099	General Replacement & Misc Sub Transmission Line Changes	$ 75,000
1000.101	Replace Miscellaneous Subtransmission Poles	$ 2,250,000
1000.130	Hawes 69kV; Upgrade from Substation to Cherokee Ave	$ 974,000
1000.000	**Subtotal -- Subtransmission Line Changes**	**$ 9,521,000**
1100.000	**Subtransmission Substation Changes**	
1100.099	Miscellaneous Subtransmission Substation Changes	$ 75,000
1100.000	**Subtotal -- Subtransmission Substation Changes**	**$ 75,000**
	Subtransmission Subtotal	**$ 11,100,000**
	Other Projects	
1200.000	**Communications**	
1200.000	**Subtotal -- Communications**	**$ -**
1300.000	**Not used**	
1300.000	**Subtotal -- not used**	**$ -**
1400.000	**Energy Supply**	
1400.000	**Subtotal -- Distributed Generation**	**$ -**
1500.000	**Reserved for Fort projects in Accounting**	
1600.000	**Miscellaneous Projects**	
		$ -
	Other Projects Subtotal	**$ -**
	Grand Total	**$ 45,252,000**

100.000 New Lines for New Customers

These items are for establishing electric service for new customers.

Codes	Project Description		Gross Project Dollars
	Distribution		
100.000	**New Lines for New Customers [including CIAC Contributions]**		
	Designates construction of new line to serve new consumers (overhead and/or underground) w here no		
	Underground		
101.001	1-Phase Underground Primary	$	200,000
101.002	3-Phase Underground Primary	$	240,000
101.003	3-Wire Underground Secondary	$	300,000
101.004	4-Wire Underground Secondary	$	80,000
	Overhead		
102.001	1-Phase Overhead Primary	$	125,000
102.002	3-Phase Overhead Primary	$	350,000
102.003	3-Wire Overhead Secondary	$	100,000
102.004	4-Wire Overhead Secondary	$	80,000
	Subtotal	$	1,475,000
103.001	Subdivisions [Over 5 lots]	$	180,000
	Subtotal	**$**	**1,655,000**
	CIAC for New Lines	**$**	**(1,655,000)**
100.000	**Subtotal -- New Lines for New Customers**	**$**	**-**

200.000 New Feeders & Tielines

Project: Hereford HF2; Tieline from Three Canyons Rd to Hereford Rd
CWP Item Number: 200.155 **Estimated Cost:** $865,000 **Project Year**: 2016-17

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends building about two miles of three-phase overhead 477ACSR distribution tieline between the new Hereford Substation and Ramsey Substation. Start near location L07238988 and end near location L07118989.

REASON FOR PROPOSED CONSTRUCTION

This improvement will provide an alternate tie between the new Hereford, Ramsey, and Hawes East Substations. Currently, there is only one tieline between Hereford and Ramsey and Hawes East X5 feeder with Ramsey. This tieline between Ramsey and Hereford is about 10 miles long between substations.

RESULTS OF PROPOSED CONSTRUCTION

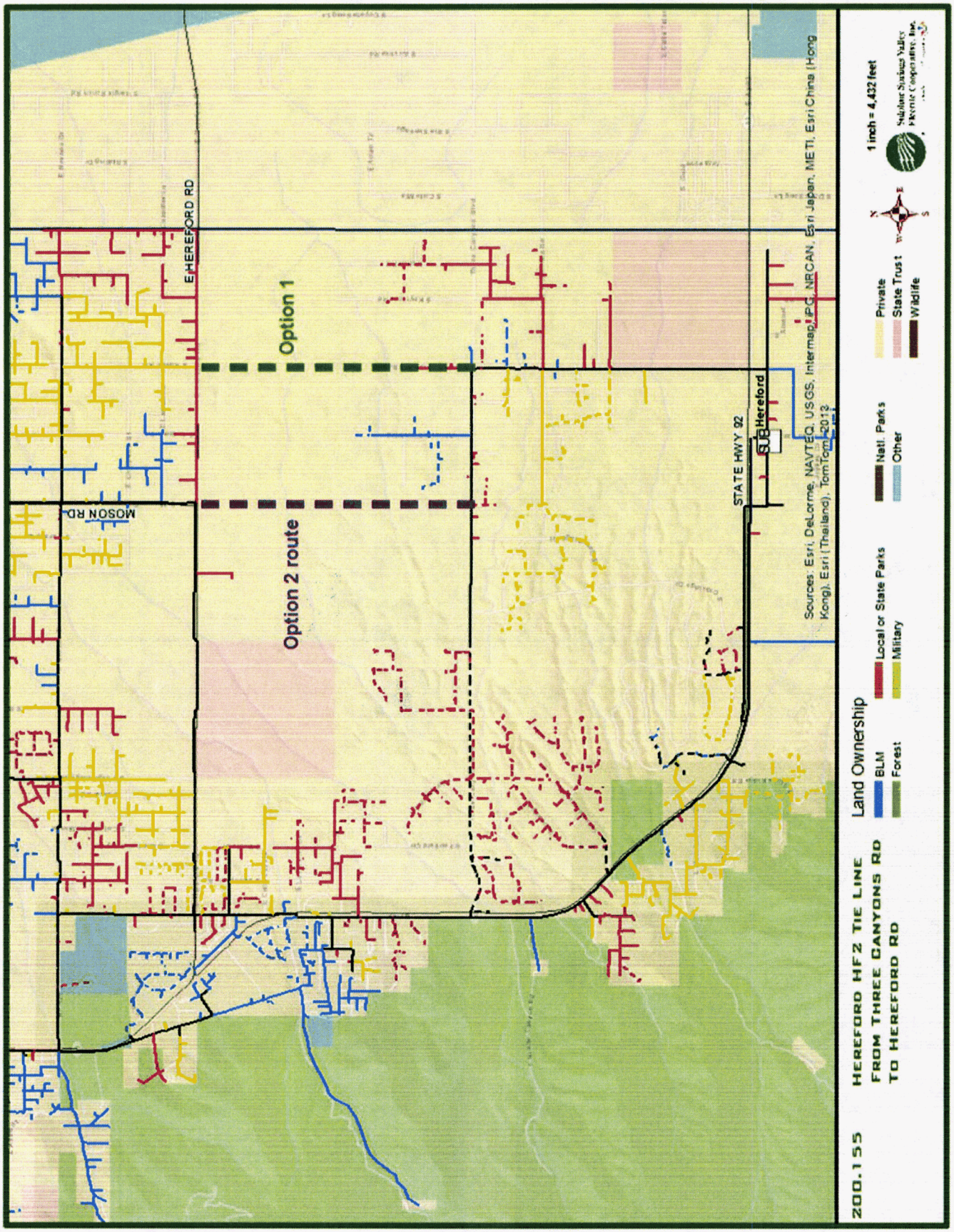
This new tieline will allow for better system reliability and system back-up. Additional tielines allow Ramsey, Hereford, and Hawes Substations to support each other.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Voltage regulators will not contribute to the solution
4. *Conductor upgrade:*
   - Conductor upgrade will not contribute to the solution
5. *New tieline:*
   - This is the recommended solution
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ The new tieline can be delayed but system reliability will not be improved.


E HEREFORD RD
MOSON RD
Option 1
Option 2 route
STATE HWY 92
SUB Hereford
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
1 inch = 4,432 feet
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
200.155
HEREFORD HF2 TIE LINE
FROM THREE CANYONS RD
TO HEREFORD RD

Project: Pueblo; New Z6 feeder from Substation to HWY 90
CWP Item Number: 200.160 **Estimated Cost:** $663,000 **Project Year**: 2015-16

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends adding about one mile of 1000kcmil underground or 477ACSR overhead conductor from Pueblo Substation north to Hwy 90. Start at Pueblo Sub and end at HWY 90.

REASON FOR PROPOSED CONSTRUCTION

The 2012 forecast has the Pueblo Substation overloaded in the year 2015, including the new Sierra Vista hospital. A second substation will be built at Pueblo and new feeders are needed to help relieve the load from an overloaded substation. This improvement is linked to CWP#400.026, new Pueblo Substation.

RESULTS OF PROPOSED CONSTRUCTION

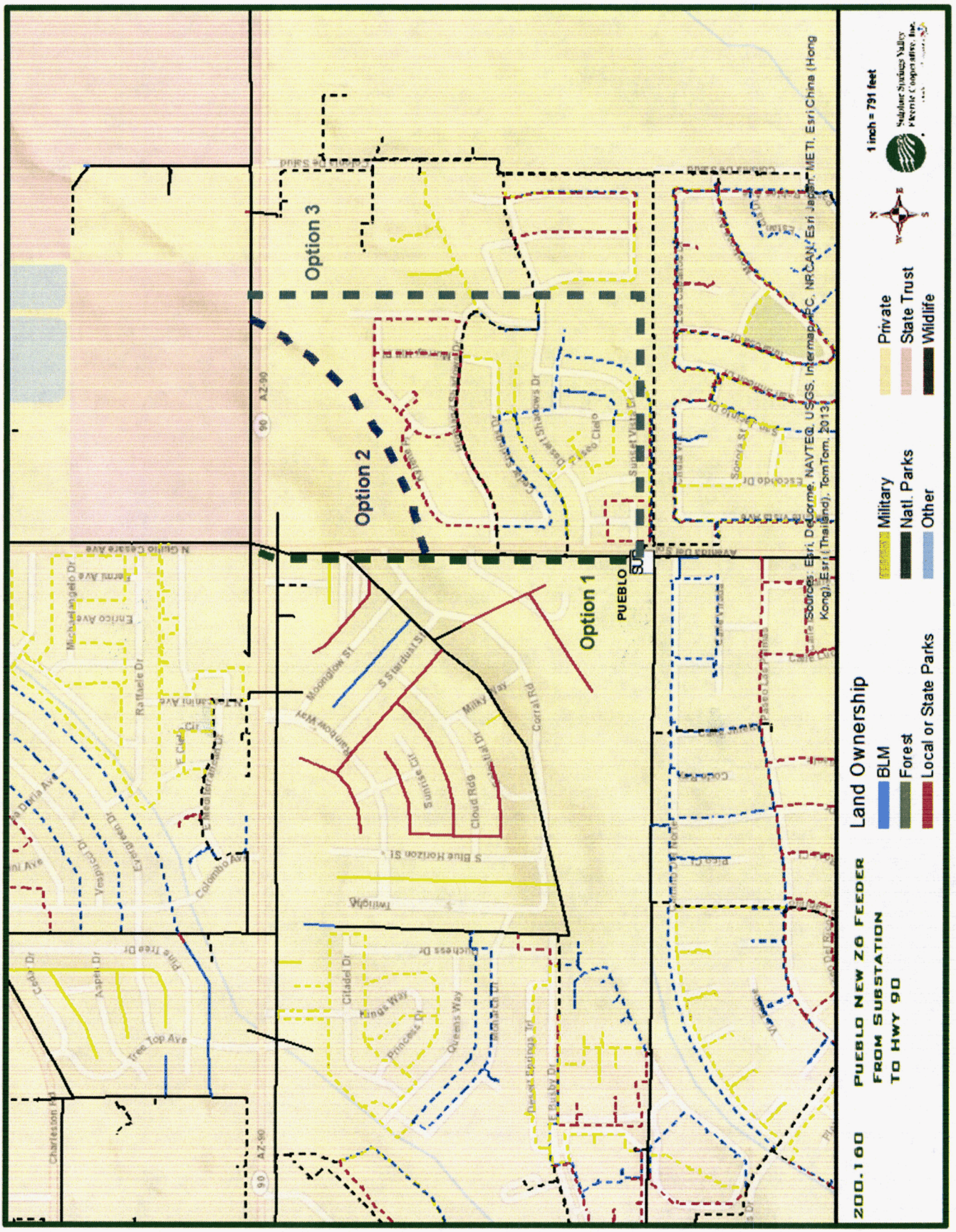
The new feeder will use the second substation at Pueblo to serve part of the load north of HWY 90 and east along HWY 90. This feeder will also help balance the load between the old Pueblo and new Pueblo Substations and will provide additional alternative feeds.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - Part of the load from Pueblo Sub Z3 feeder will be switched to the new Z6 feeder
2. *Capacitors:*
   - Adding capacitors will not relieve the load from the substation
3. *Voltage Regulators:*
   - Voltage regulators will not relieve the load from the substation
4. *Conductor upgrade:*
   - There are no conductors to upgrade, this is a new feeder
5. *New tieline:*
   - A new tieline is part of the recommended solution
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↳ Loads will continue to grow and if "do nothing" is chosen, the transformer at Pueblo will become overloaded and the possibility of an outage will occur.


Option 1
Option 2
Option 3
PUEBLO
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 791 feet
200.160
PUEBLO NEW 26 FEEDER
FROM SUBSTATION
TO HWY 90
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, FC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

Project: Miscellaneous Tielines
CWP Item Number: 200.099 **Estimated Cost:** $600,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Construct short distance and small wire overhead or underground tielines. Each individual project is less than $100,000 total estimated cost.

REASON FOR PROPOSED CONSTRUCTION

During the work plan period, opportunities become available to construct tielines that improve reliability, provide alternative paths, or connect radial distribution lines into a loop. The opportunities are due to line extensions for customers, pole replacement, and other activities.

300.000 Conversions & Line Changes

Project: Pueblo Z4; Upgrade from Substation to Hwy 92
CWP Item Number: 300.075 **Estimated Cost:** $1,149,000 **Project Year**: 2015-16

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends adding about one mile of 1000kcmil underground conductor parallel to Z4 4/0ACSR. Start near location K07068749 and end near location K06018949.

REASON FOR PROPOSED CONSTRUCTION

The 4/0ACSR conductor on Z4 has been overloaded under normal load serving configuration in the past summer years. During the summer months, load has to be switched from Z4 to other neighboring feeders. This feeder is also a major tieline to the surrounding substations: Bella Vista, Hawes, and Keating. The engineering design and Rights-of-Way have been started in the 2013-14 CWP.

RESULTS OF PROPOSED CONSTRUCTION

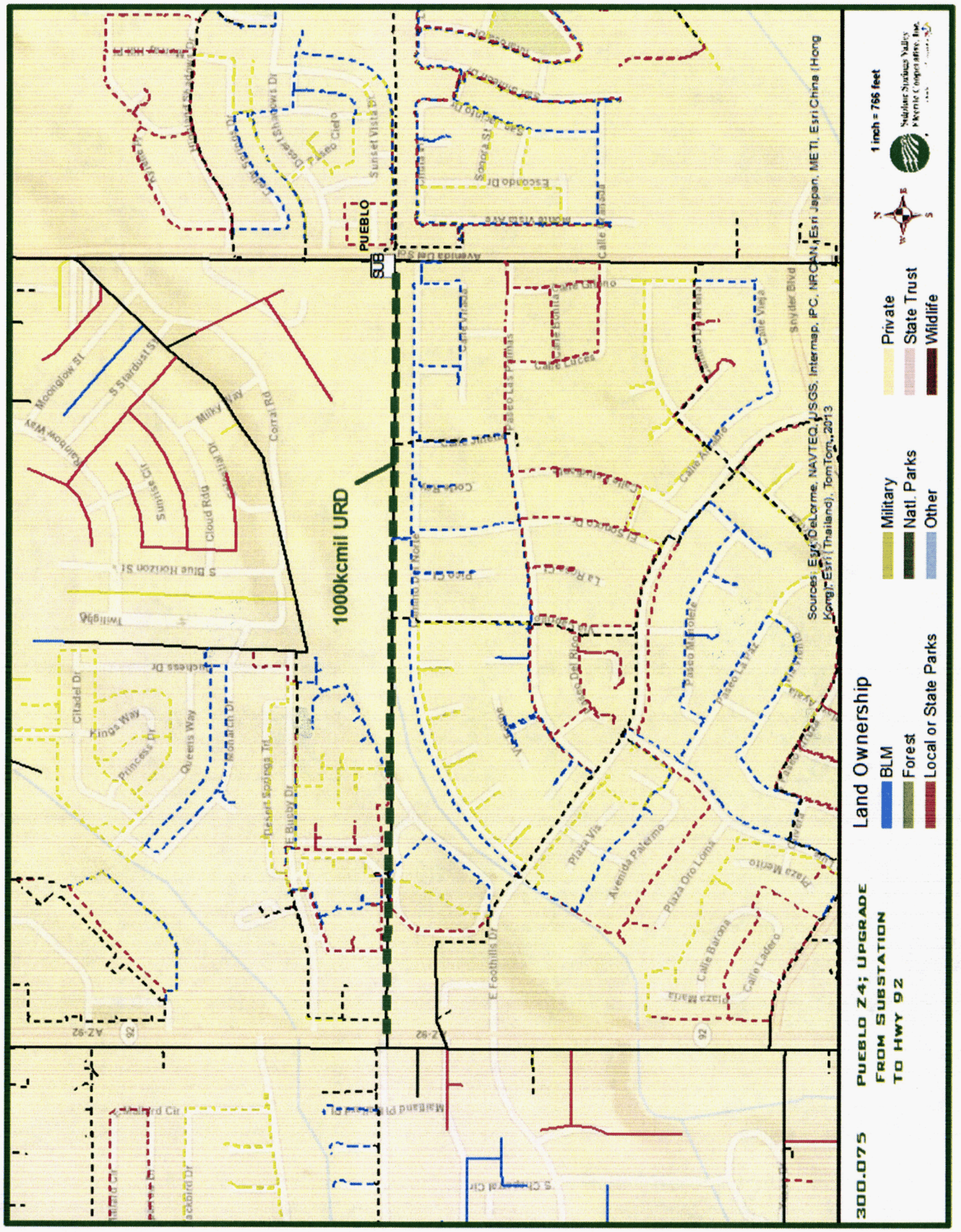
This new underground feeder will be used for the new second substation at Pueblo. The new rating of the line segment will provide adequate capacity under normal load serving configuration. This will provide reliable back-up to the neighboring substations.

ALTERNATES TO PROPOSED CONSTRUCTION

7. *Switching:*
   - There are no nearby feeders to switch load to
8. *Capacitors:*
   - Adding capacitors will not relieve the load from the conductor
9. *Voltage Regulators:*
   - Voltage regulators will not relieve the load from conductor
10. *Conductor upgrade:*
    - Upgrading the conductor is the recommended option
11. *New tieline:*
    - At this time, there is no option for a new tieline
12. *Voltage Conversion:*
    - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↳ Loads will continue to grow and if "do nothing" is chosen, the conductor will become overloaded and the possibility of an outage will occur.


300.075
PUEBLO Z4; UPGRADE
FROM SUBSTATION
TO HWY 92
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 766 feet
1000kcmil URD
PUEBLO SUB
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

Project: Keating T2; Upgrade near Hummingbird Ln to Hwy 92
CWP Item Number: 300.076 **Estimated Cost:** $337,000 **Project Year**: 2015

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about one mile of three-phase overhead 4/0ACSR to 477ACSR. Start near location K06011190 and end near location K06018590.

REASON FOR PROPOSED CONSTRUCTION

This improvement is needed because this portion of line has physically deteriorated significantly as shown by pole inspections by third parties and by field review of SSVEC personnel. This portion of line is also a major tie between Keating, Pueblo, and Bella Vista Substations; this project is part of an ongoing effort to strengthen the feeder ties between these substations. This improvement project is the continuation of 2013-14 CWP# 300.067, Rights-of-Way and engineering design.

RESULTS OF PROPOSED CONSTRUCTION

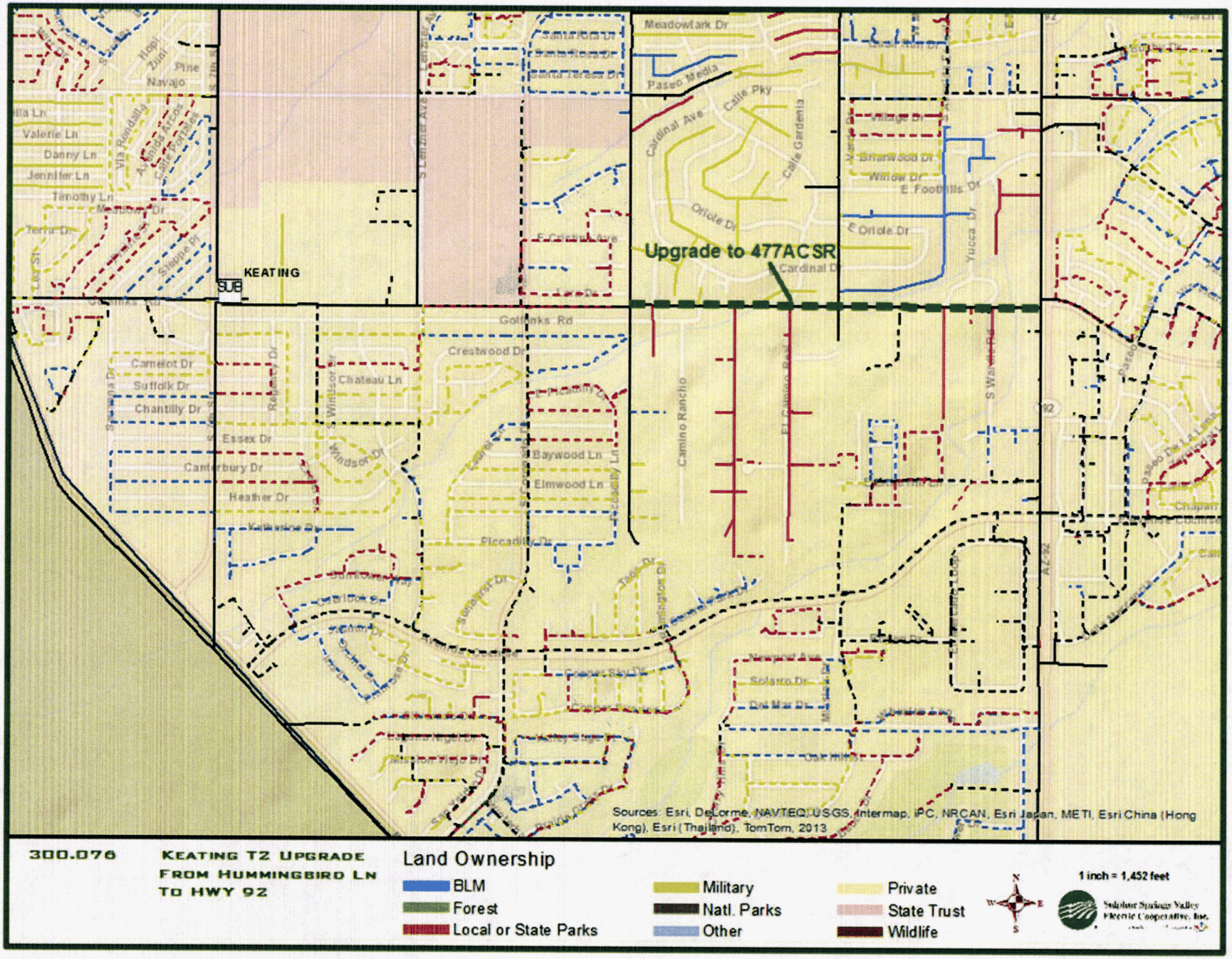
The recommended project will replace the deteriorated line and provide better reliability and system backfeed among three substations. System losses will also be reduced.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - Load can be shifted to nearby feeders, but does not solve the line deterioration problem. Shifting load to other feeders might cause problems to that feeder
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Voltage regulators will not solve problem
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline is not feasible
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ If this option is chosen, the line will become more deteriorated as the years pass and the reliability will not be increased. System back-up will be limited by the conductor size.


KEATING
SUB
Upgrade to 477ACSR
Meadowlark Dr
Pasea Media
Calle Pky
Cardinal Ave
Calle Gardenia
Oriole Dr
E Foothills Dr
Yucca Dr
Gotelinks Rd
Creatwood Dr
Camelot Dr
Suffolk Dr
Chantilly Dr
Essex Dr
Canterbury Dr
Heather Dr
Chateau Ln
Windsor Dr
Baywood Ln
Elmwood Ln
Piccadilly Dr
Camino Rancho
El Camino Real
S Waverly Rd
Solano Dr
Del Mar Dr
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
300.076
KEATING TZ UPGRADE
FROM HUMMINGBIRD LN
TO HWY 92
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
N
W
E
S
1 inch = 1,452 feet
Sulphur Springs Valley Electric Cooperative, Inc.

Project: Benson P5; Upgrade near Flying Horse Shoe Rd to Red Rock Rd
CWP Item Number: 300.077 **Estimated Cost:** $154,000 **Project Year**: 2015

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading and constructing about 0.75 miles of single-phase overhead #4ACSR to three-phase 1/0ACSR, and re-conductor 0.5 miles of three-phase #4ACSR to 1/0ACSR. This project is part of 2013-14 *CWP#200.153*. Start near location E09196490 and end near pole location 66203.

REASON FOR PROPOSED CONSTRUCTION

This improvement is part of the new three-phase tie for facilities in the I-10 Texas Canyon area. This three-phase upgrade will provide better area phase balance and reliability. In addition, the existing three-phase feed into the area is not accessible by vehicles and has deteriorated significantly. This areas load has been field verified with end of the line volt meters and amp recorders.

RESULTS OF PROPOSED CONSTRUCTION

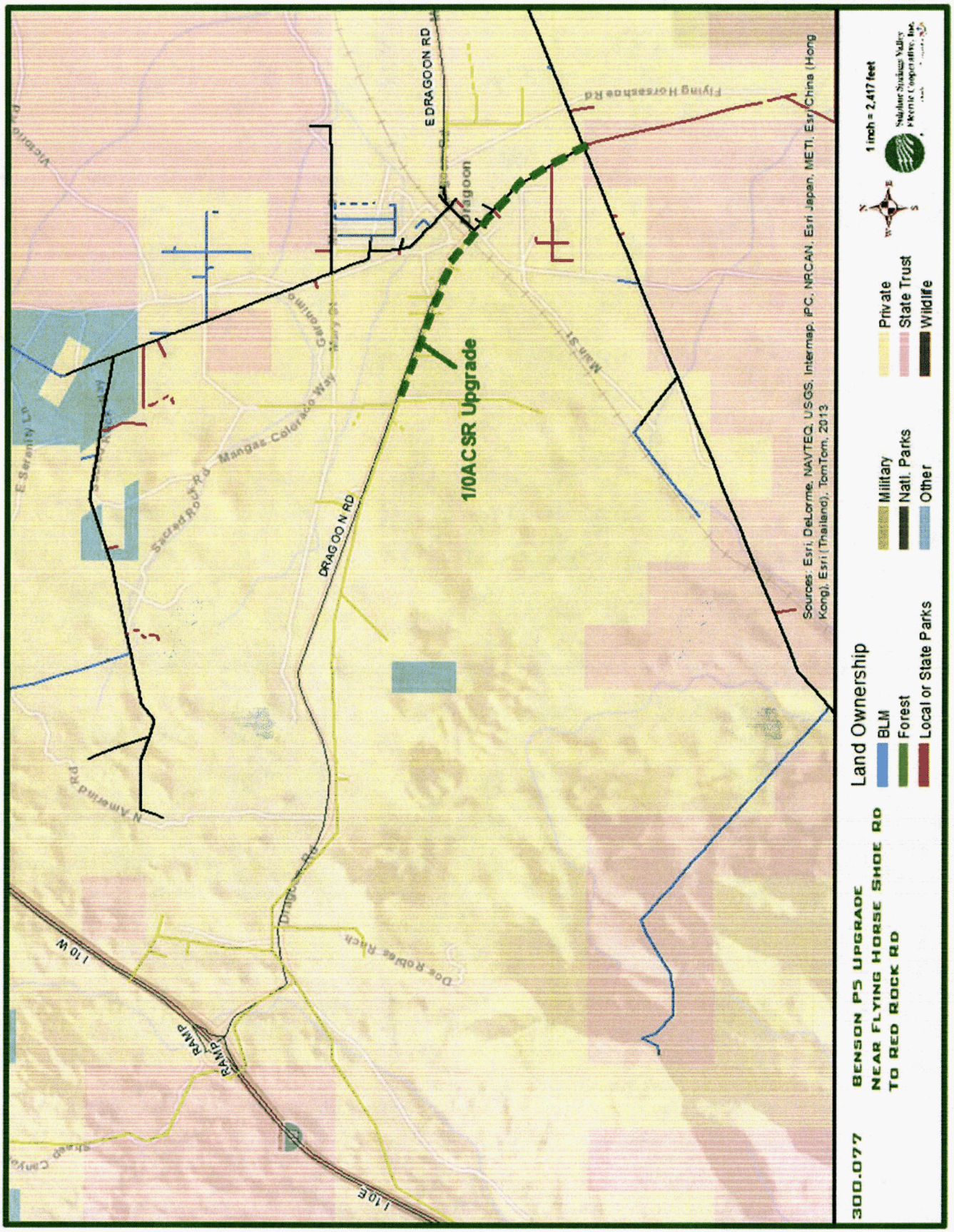
By upgrading this area to three-phase, the end of the line voltage will be acceptable and the load on the single-phase line that currently has 50A will be reduced. System losses will also be reduced by implementing the phase balancing plan.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load to
2. *Capacitors:*
   - It is recommended to add a three-phase 300kVAr bank, see CWP 600.500. Adding this bank is not sufficient to raise the voltage on its own
3. *Voltage Regulators:*
   - Voltage regulators will raise the voltage at the end of the line to acceptable but will not relieve the load from the single-phase line
4. *Conductor upgrade:*
   - Conductor upgrade and three-phase upgrade is the recommended solution.
5. *New tieline:*
   - New tieline is in conjunction with this project
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ If this option is chosen, the voltage will remain unacceptable. The single-phase line will remain heavily loaded and system reliability will not be increased. The single-phase regulator will remain at 100% loaded and may have the potential to be overloaded.


300.077
BENSON PS UPGRADE
NEAR FLYING HORSE SHOE RD
TO RED ROCK RD
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 2,417 feet
1/0ACSR Upgrade
EDRAGOON RD
DRAGOON RD
Flying Horseshoe Rd
Main St
Sacred Rock Rd
Mangas Colorado Way
E Serenity Ln
N Amerind Rd
Doe Robles Ranch
I 10 W
I 10 E
RAMP
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

Project: Huachuca V7; Upgrade from Substation to Upper Elgin Rd
CWP Item Number: 300.078 **Estimated Cost:** $1,732,000 **Project Year**: 2015-17

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement is to construct and upgrade about 10.5 miles of three phase overhead 1/0ACSR to 4/0ACSR. Start near location I05136052 and end near location I04056954. This project is the continuation of 2013-14 CWP#300.073, Rights-of-Way and Engineering.

REASON FOR PROPOSED CONSTRUCTION

This improvement is needed because the distribution poles have deteriorated beyond repair. Poles are likely to fail, causing outages. This area has been noted by SSVEC personnel as a top priority for pole replacement. This work was postponed until the Sonoita sub-transmission line and Alamo Substation were constructed, to allow for an alternate feed and lower cost construction by de-energizing sections. Having a stronger tie will provide better reliability and system back-feed between Alamo and Huachuca Substations.

RESULTS OF PROPOSED CONSTRUCTION

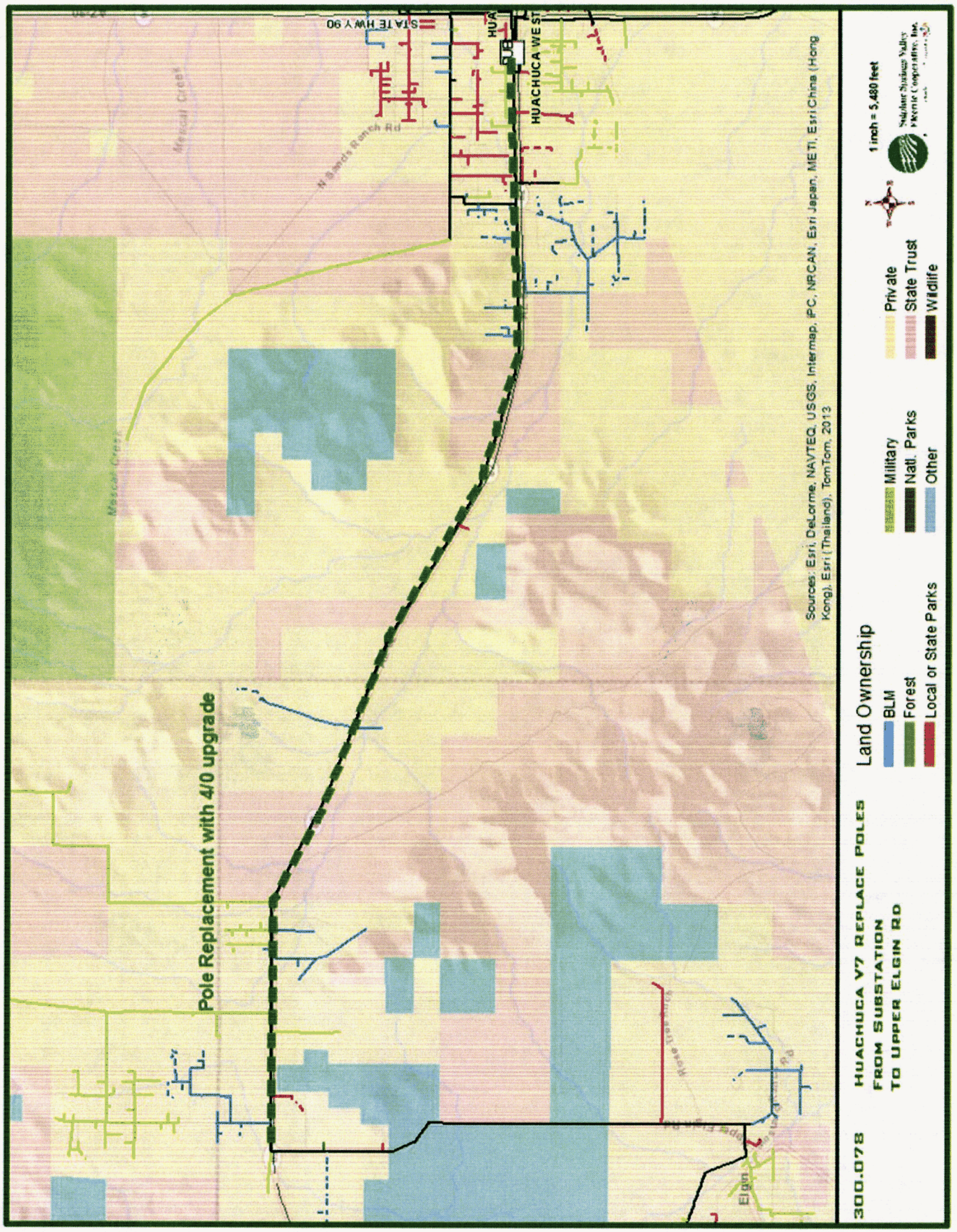
This improvement will decrease the possibilities of an outage due to pole failure. The upgraded conductor will provide back-up between Alamo and Huachuca West Substations.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Adding voltage regulators will not solve problem
4. *Conductor upgrade:*
   - This is part of the recommended solution along with pole replacement
5. *New tieline:*
   - New tieline is not feasible
6. *Voltage Conversion:*
   - Voltage is already 24.9kV

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing option is chosen, poles are more likely to fail and cause outages. Back-up reliability will not be increased.


300.078
HUACHUCA V7 REPLACE POLES
FROM SUBSTATION
TO UPPER ELGIN RD
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 5,480 feet
Pole Replacement with 4/0 upgrade
STATE HWY 90
HUACHUCA WEST
R Bands Ranch Rd
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

Project: Hereford HF2; Upgrade from Substation to Kings Ranch Rd
CWP Item Number: 300.079 **Estimated Cost:** $171,000 **Project Year**: 2015-17

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about half a mile of #4ACSR conductor to 477ACSR conductor. Start at the Hereford Substation and end at pole# 173499.

REASON FOR PROPOSED CONSTRUCTION

Currently there is 477ACSR on both sides of the proposed construction section; the #4ACSR conductor becomes a weak link when trying to back up neighboring substations.

RESULTS OF PROPOSED CONSTRUCTION

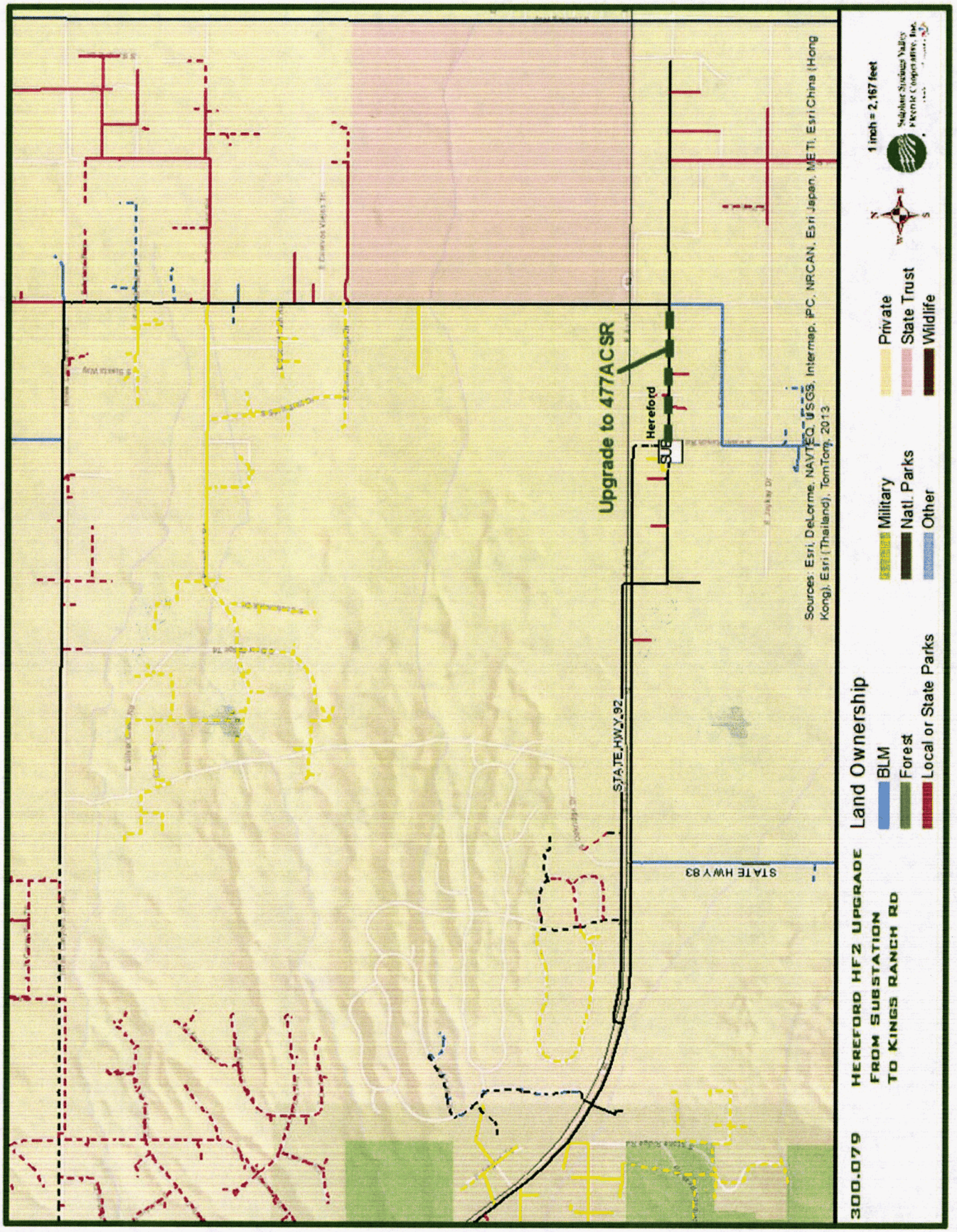
This improvement will complete the 477ACSR conductor from the Hereford Substation to Kings Ranch Rd.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Adding voltage regulators will not solve problem
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline is not feasible
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ If Do Nothing option is chosen, this section of the line will remain a "weak link" to the already upgraded and improved Hereford area.


Upgrade to 477ACSR
Hereford SUB
STATE HWY 92
STATE HWY 83
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
300.079
HEREFORD HF2 UPGRADE
FROM SUBSTATION
TO KINGS RANCH RD
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 2,167 feet

Project: Hamilton Feeders; Upgrade from Marguerite Rd to Fort Grant Rd
CWP Item Number: 300.080 **Estimated Cost:** $407,000 **Project Year**: 2017

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about 2 miles of 3 phase #4ACSR to 4/0ACSR. Start near location 123077 and end near location B10348910.

REASON FOR PROPOSED CONSTRUCTION

This improvement will serve two purposes:

1) The upgrade in conductor will serve as future feeders for the Hamilton Substation
2) This site will be the permanent mobile site and will be used to back up Willcox substation. Conductor improvements are needed to carry the load.

RESULTS OF PROPOSED CONSTRUCTION

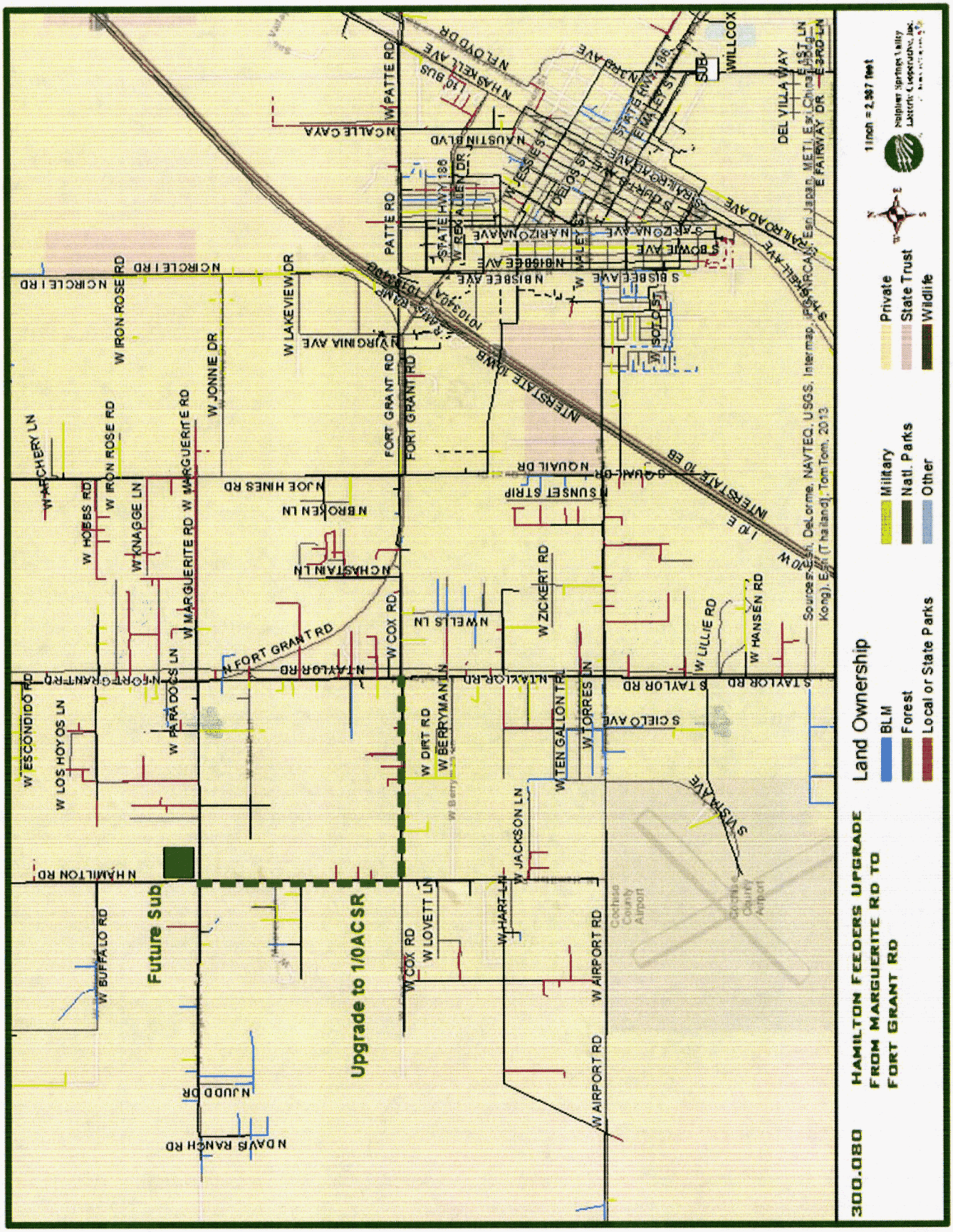
By upgrading the conductors to 4/0ACSR, the future substation will have backup capabilities for Willcox load and the mobile substation will make use of the site and upgrades.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Voltage regulators will not contribute to the solution
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tie line:*
   - New tie line will not contribute to the solution
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option
7. *Distributed Generation*
   - Not Feasible

⇨ Do Nothing/No alternatives:

↳ The new substation can be delayed along with this upgrade, but the Willcox Substation will not have adequate backup and the mobile substation cannot make use of this site without the upgrades


Future Sub
Upgrade to 1/0ACSR
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 2,367 feet
300.080
HAMILTON FEEDERS UPGRADE
FROM MARGUERITE RD TO
FORT GRANT RD
W PATTE RD
N CIRCLE I RD
W IRON ROSE RD
W JONNIE DR
W LAKEVIEW DR
FORT GRANT RD
INTERSTATE 10
W MARGUERITE RD
W KNAGGE LN
W HOBBS RD
W ARCHERY LN
N JOE HINES RD
N BROKEN LN
N CHASTAIN LN
N SUNSET STRIP
N QUAIL DR
W COX RD
W ZICKERT RD
W LILLIE RD
W HANSEN RD
N TAYLOR RD
S TAYLOR RD
W ESCONDIDO RD
W LOS HOYOS LN
W PARADOCS LN
W DIRT RD
W BERRYMAN LN
W TEN GALLON TRL
W TORRES LN
S CIELO AVE
S VISTA AVE
N HAMILTON RD
W BUFFALO RD
N JUDD DR
N DAVIS RANCH RD
W LOVETT LN
W HART LN
W JACKSON LN
W AIRPORT RD
Cochise County Airport
N CALLE CAYA
N AUSTIN BLVD
N HASKELL AVE
N LLOYD DR
WILLCOX
DEL VILLA WAY
E 1ST LN
E 2ND LN
E 3RD LN
E FAIRWAY DR
E RAILROAD AVE
S RAILROAD AVE
STATE HWY 186
W REX ALLEN DR
N BISBEE AVE
S BISBEE AVE
S BOWIE AVE
N ARIZONA AVE
S ARIZONA AVE
W SOTO ST
W VALLEY ST
E MAIN ST
E WILLCOX AVE
N 3RD AVE
S DOUGLAS AVE
E DOUGLAS AVE
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

Project: Willcox F3; Upgrade from Taylor Rd to Bisbee Ave
CWP Item Number: 300.081 **Estimated Cost:** $416,000 **Project Year**: 2016

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends reconductoring about 1.5 mile of #4ACSR to 4/0ACSR. Start near location C10011116 and end near pole number 53161.

REASON FOR PROPOSED CONSTRUCTION

The #4ACSR conductor on F3 is used as a major tie between the mobile sub and Willcox load. This line is rated at 140A and when it is being used to back up the load to Willcox, the line gets loaded to approximately 130A or more. Currently there is 1/0ACSR on both sides of the proposed construction section. This upgrade is also needed if the mobile sub is used at the Hamilton Sub site.

RESULTS OF PROPOSED CONSTRUCTION

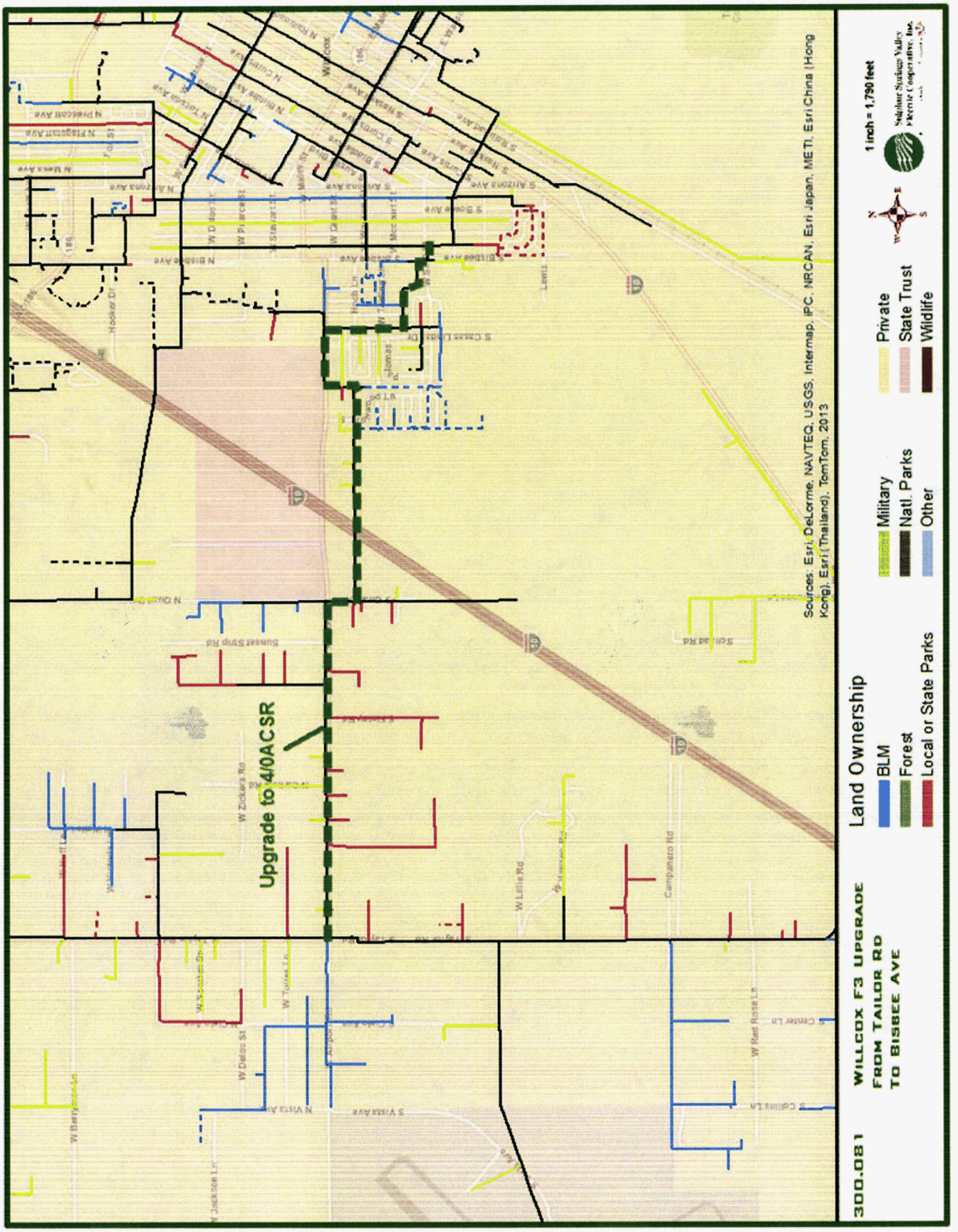
By upgrading the conductor to 4/0ACSR, the mobile sub can adequately serve the load to downtown Willcox.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load to
2. *Capacitors:*
   - Adding capacitors will not relieve the load from the conductor
3. *Voltage Regulators:*
   - Voltage regulators will not relieve the load from conductor
4. *Conductor upgrade:*
   - Upgrading the conductor is the recommended option
5. *New tie line:*
   - At this time there is no option for a new tie line
6. *Voltage Conversion:*
   - Changing the voltage is not a feasible option

⇨ *Do Nothing/No alternatives:*

↪ Do nothing can be an option but if the mobile needs to be used to feed Willcox, the conductor might not be able to handle the entire load.


Upgrade to 4/0ACSR
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
1 inch = 1,790 feet
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
300.081
WILLCOX F3 UPGRADE
FROM TAILOR RD
TO BISBEE AVE

Project: Webb M5; Upgrade from Webb Rd to near Gleeson Rd
CWP Item Number: 300.082 **Estimated Cost:** $252,000 **Project Year**: 2015-16

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about 1.5 miles of three phase overhead #4ACSR to 1/0ACSR conductor. Start near location H12313090 and end near location I12072058.

REASON FOR PROPOSED CONSTRUCTION

This improvement is needed due to voltage drop problems. Low voltages have been field confirmed and are about 111V. In addition, the existing #4ACSR conductor is near capacity. This project is in conjunction with CWP#1000.041, Webb 69kV; Upgrade from Substation to W Gleason Rd.

RESULTS OF PROPOSED CONSTRUCTION

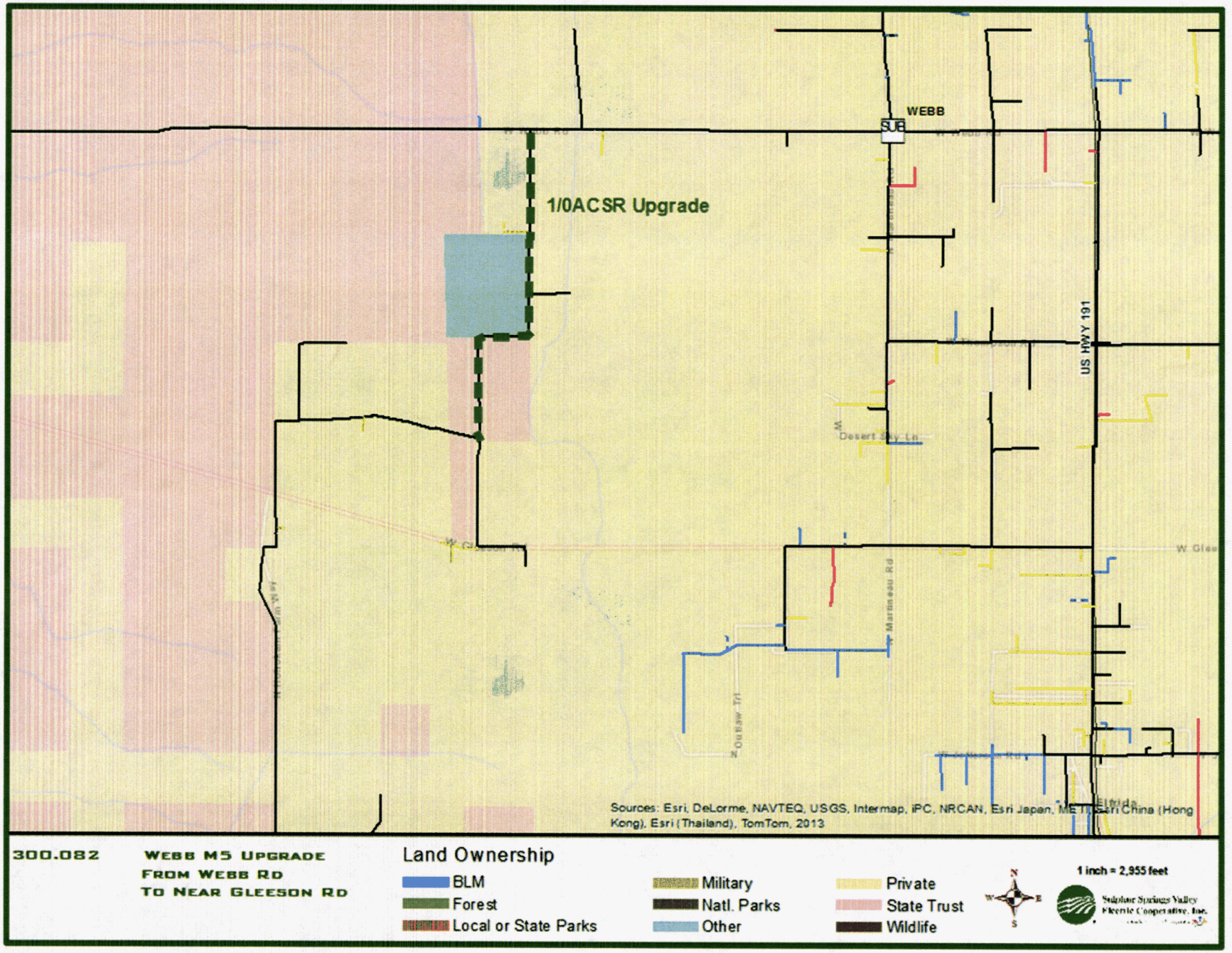
By upgrading the conductor to 1/0ACSR and upgrading the underbuild from CWP#100.041, the voltages will be acceptable.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
    - There are no nearby feeders to switch load. A new tieline would need to be constructed and switching load to another feeder would cause issues for that feeder
2. *Capacitors:*
    - Adding capacitors will not solve problem
3. *Voltage Regulators:*
    - Voltage regulators may solve the problem but there already exists a set of regulators on this line. It would take another set of three-phase regulators and one-phase regulator to boost the voltage to acceptable, making it three regulators in-line in a short distance
4. *Conductor upgrade:*
    - This is the recommended solution
5. *New tieline:*
    - New tieline is not feasible
6. *Voltage Conversion:*
    - Changing the voltage was analyzed but is not a feasible option

⇨ *Do Nothing/No alternatives:*

↳ If this option is chosen, the voltages will remain unacceptable.


WEBB
SUB
1/0ACSR Upgrade
US HWY 191
Desert Sky Ln
Marineau Rd
Outlaw Trl
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, MET, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
300.082
WEBB M5 UPGRADE
FROM WEBB RD
TO NEAR GLEESON RD
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
N
W
E
S
1 inch = 2,955 feet
Sulphur Springs Valley Electric Cooperative, Inc.

Project: Copper Replacement
CWP Item Number: 300.096 **Estimated Cost:** $600,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Copper lines built many years ago will be re-conductored, normally with #4 or 1/0 ACSR. This funding can provide for re-conductoring seven miles of three-phase line.

REASON FOR PROPOSED CONSTRUCTION

The copper lines are beyond their useful life – many of them have multiple splices and are very brittle. In many locations, the wood distribution poles need to be replaced also. Segments of lines are re-conductored as SSVEC engineering and construction labor are available, rights-of-way are acceptable, field inspections and situations deem necessary.

ALTERNATES TO PROPOSED CONSTRUCTION

The alternative is to replace the conductor as it fails, which costs more than an orderly replacement.

Project: Cable Injection
CWP Item Number: 300.097 **Estimated Cost:** $150,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Existing direct-buried underground cable that has deteriorated significantly is injected with Cablecure© or similar products. All of the cable injections will be done in existing rights-of-way.

REASON FOR PROPOSED CONSTRUCTION

The underground cables are at the end of their useful life, and the cables need to be injected or replaced. Almost all cable that can be injected has been done so in previous work plans. This is a minimum budgeted amount for injecting cables that have not been injected.

RESULTS OF PROPOSED CONSTRUCTION

Underground cable that is likely to fail is rejuvenated and is usable for ten or more years. Ultimately, the cable has to be replaced.

ALTERNATES TO PROPOSED CONSTRUCTION

The alternative is to replace the cable as it fails, which will cost more than the cable injection.

Project: Cable Replacement
CWP Item Number: 300.098 **Estimated Cost:** $1,800,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace existing underground cables as necessary.

REASON FOR PROPOSED CONSTRUCTION

The replacements are direct-buried underground cables that are now failing, or other underground cables in conduit systems that have deteriorated or failed.

If the replacement is direct buried cable, a conduit system and new cable are installed. This work almost always occurs in fully developed residential developments with mature landscaping, resulting in significant costs.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: Miscellaneous Distribution Changes
CWP Item Number: 300.099 **Estimated Cost:** $600,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Upgrade conductor or number of phases, retire without replacement, add crossarms, add a sectionalizing cabinet, or other minor modifications for short segments of overhead or underground lines. Each individual project is less than $100,000 total estimated cost.

REASON FOR PROPOSED CONSTRUCTION

During the work plan period, opportunities become available to modify distribution lines that improve reliability, provide alternative paths, or solve a system issue. The opportunities are due to line extensions for customers, pole replacement, and other activities.

400.000 New Substations

Project: Pueblo; Upgrade Substation
CWP Item Number: 400.026 **Estimated Cost:** $2,399,000 **Project Year:** 2015-17

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends building a second substation at Pueblo. The substation will mirror the existing Pueblo substation with a 22MVA transformer and new feeders. This project is in conjunction with CWP#300.075 and CWP#200.160, for the new feeders.

REASON FOR PROPOSED CONSTRUCTION

The loads at Bella Vista and Pueblo Substations are predicted to be 20MW each in the year 2015. The capacity of the both substation transformers is 20MVA base rating and 22MVA emergency rating. The new Sierra Vista hospital is planned to be online in 2015, which will be served from the Pueblo Substation.

RESULTS OF PROPOSED CONSTRUCTION

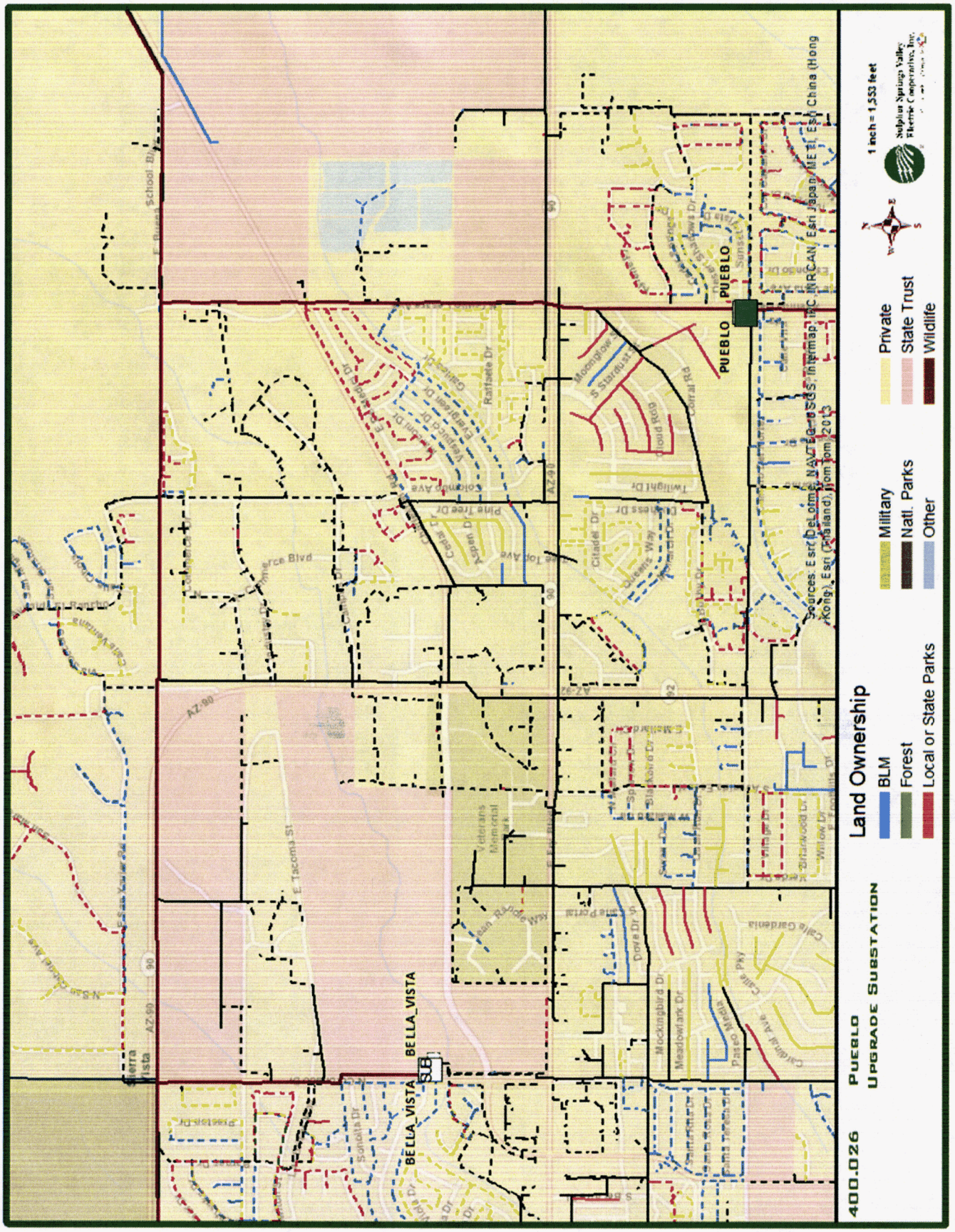
This improvement is needed due to the continued growth in customers and demand around the area. The second substation and its feeders will provide adequate electric service. Since both substations are nearing capacity, upgrading the Pueblo Substation can delay the upgrade of Bella Vista Substation.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - Load cannot be switched from Pueblo Substation to nearby feeders because it will cause issues such as substation transformer overloading, conductor overloading and low voltages.
2. *Capacitors, Voltage Regulators, Conductor upgrade, New tieline:*
   - N/A
3. *Voltage Conversion:*
   - Converting the voltage is not a feasible option.
4. *Substation:*
   - An Alternative is to add a second substation at Bella Vista. This is a second alternative because getting Rights-of-Way for the new substation might be difficult to obtain.

⇨ *Do Nothing/No alternatives:*

↳ Loads will continue to grow and if do nothing is chosen, the transformer might become overloaded. This may cause an outage at the substation causing thousands of consumers to be without electricity.


400.026 Pueblo
Upgrade Substation
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 1,553 feet
BELLA_VISTA
SUB
PUEBLO
Sierra Vista
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, INCREMENT P, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

Project: Future Distribution Substation Site(s) Acquisition
CWP Item Number: 400.098 **Estimated Cost:** $75,000

DESCRIPTION OF PROPOSED PROJECT

Acquire property for future substation sites.

REASON FOR PROPOSED PROJECT

Opportunities for acquiring needed substation sites arise during the work plan period.

No construction will result due to this project.

ALTERNATES TO PROPOSED PROJECT

The alternative is not to do any site acquisition for any currently unknown projects and restrict the opportunity to identify and pursue options as they arise.

500.000 Substation Changes

Project: Miscellaneous Substation Replacement
CWP Item Number: 500.099 **Estimated Cost:** $300,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Repair equipment jumpers, failed relays, broken insulators, and other equipment inside substations as needed. Install fencing around existing substation sites that have not been built.

REASON FOR PROPOSED CONSTRUCTION

Equipment fails due to lightning strikes, fault current, and deterioration. Fencing around vacant substation sites is to establish property boundaries.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

600.000 Miscellaneous Distribution Items

CWP Item Numbers:

600.100	Pole Mounted Transformers
600.101	Pad Mounted Transformers
600.200	Meters, Metering Transformers & Equipment

Description

These items are used for material purchases.

Codes	Project Description		Gross Project Dollars
600.000	**Miscellaneous Distribution Items**		
600.100	Pole Mounted Transformers	$	700,000
600.101	Pad Mounted Transformers	$	700,000
600.200	Meters, Metering Transformers & Equipment	$	400,000

Project: Service Upgrades
CWP Item Number: 600.300

Estimated Cost: $100,000
CIAC: $100,000

Service upgrades occur when a customer requests an upgrade of his service wires and/or distribution transformer due to increased load. The 2009 rate modification requires customers to pay 100% of the costs.

CWP Item Numbers:

600.400	Single-Phase ACR's, Sectionalizers, or Fusing
600.401	Three-Phase ACR's or Sectionalizing
600.402	Switches [Ganged or Knifeblade]
600.403	Pad Mounted Sectionalizing Equipment
600.404	Voltage Regulators
600.500	Capacitor/Inductors

These items are used to provide better service to SSVEC customers by minimizing the outages to a more local area [600.400 to 600.403] or to maintain the voltage within acceptable ranges [600.404 & 600.500]. There are no specific locations except for voltage regulators and capacitors/inductors. Locations are determined throughout the work plan period.

Codes	Project Description	Gross Project Dollars
600.400	Single Phase ACR's, Sectionalizers, or Fusing	$ 153,000
600.401	Three Phase ACR's or Sectionalizing	$ 360,000
600.402	Switches (ganged or knifeblade)	$ 330,000
600.403	Pad Mounted Sectionalizing Equipment	$ 300,000
600.404	Voltage Regulators	$ 600,000
600.405	Line Regulator Upgrades	$ 300,000
600.500	Capacitors/Inductors	$ 300,000

Project: Distribution Pole Replacement
CWP Item Number: 600.600 **Estimated Cost:** $9,500,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace distribution poles that have deteriorated beyond repair, or have failed resulting in an outage.

REASON FOR PROPOSED CONSTRUCTION

Poles have failed or are likely to fail during the construction work plan period, causing an outage.

RESULTS OF PROPOSED CONSTRUCTION

Replacement of poles prior to failure results in fewer outages to the customers. In addition, the cost of replacing a pole after normal work hours is much more expensive than a planned replacement.

ALTERNATES TO PROPOSED CONSTRUCTION

An alternative is to allow the poles to fail and then replace them. This causes disruptions in service to the customers, disrupts planned work by crews, and increases overall costs.

CWP Item Number:

600.601	General Replacement – OH Distribution
600.602	General Replacement – UG Distribution

Estimated Cost:

600.601	$900,000
600.602	$525,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace crossarms, insulators, UG elbows, sectionalizing cabinets, and other miscellaneous equipment that fails due to vehicle accidents, lightning strikes, equipment failure and other reasons.

REASON FOR PROPOSED CONSTRUCTION

Facilities fail unexpectedly for various reasons, causing an outage.

RESULTS OF PROPOSED CONSTRUCTION

Facilities are repaired.

ALTERNATES TO PROPOSED CONSTRUCTION

No reasonable alternatives.

Project: Wildlife Protection Plan
CWP Item Number: 600.603 **Estimated Cost:** $228,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Install insulated cover-up on existing electrical facilities to decrease avian and other wildlife contacts. The installation of cover-up will be for two substations per year.

REASON FOR PROPOSED CONSTRUCTION

Current SSVEC construction standards for new and modified power lines minimize wildlife contacts on power lines using insulated wire covers, phase cover-ups, perch deterrents, bushing covers, and other equipment. Old standards for electrical facilities were not designed with phase to phase clearances and insulated equipment, now recommended for preventing wildlife fatalities. Several substations currently have some form of wildlife barriers installed, while others have little to none. Last year we had several large outages due to wildlife contacts in substations. Although outages cannot be fully prevented, adding insulated cover-up has proven to be effective.

RESULTS OF PROPOSED CONSTRUCTION

A decrease in avian and other wildlife contacts will occur which will result in fewer outages, fewer momentary outages, and decreased wildlife fatalities. In addition, Federal laws associated with the Migratory Bird Treaty Act prohibit the "take" (killing or collection) of migratory birds throughout the United States. Power companies are not exempt from these laws and must show they are doing their part in proactively preventing future avian fatalities on their facilities. By installing avian protection on older poles, SSVEC is complying with this federal law. By not installing avian protection, SSVEC is held liable for avian deaths on unprotected structures and could be fined by the United States Fish and Wildlife Service.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: Retirement of Distribution Facilities
CWP Item Number: 600.701 **Estimated Cost:** $75,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Retire distribution facilities without replacement. Facilities could include service wire, transformers, primary voltage lines, and other facilities.

REASON FOR PROPOSED CONSTRUCTION

Customers may abandon their irrigation pump due to a new well location, their workshop and/or residence, and other similar actions. Distribution facilities are no longer used or useable.

RESULTS OF PROPOSED CONSTRUCTION

Retirement of facilities prevents maintenance being required and decreases SSVEC's tax burden. Some facilities may be re-used and/or sold for scrap.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: Distribution Automation
CWP Item Number: 600.710 **Estimated Cost:** $500,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Install communication and controls on equipment to allow for control and data acquisition. This equipment will be installed on reclosers, capacitors, regulators, distribution switches and 69 kV GOAB switches.

REASON FOR PROPOSED CONSTRUCTION

To allow control and data acquisition of key devices on the system.

RESULTS OF PROPOSED CONSTRUCTION

- SSVEC will be able to restore distribution outages quicker. Using SCADA, SSVEC will be able to view what is occurring on the distribution and help in switching to restore power in locations with Distribution Automation.
- SSVEC will operate the distribution system more efficiently. Use SCADA accessible equipment to isolate or reconfigure distribution system remotely. Currently line crews have to drive to each equipment location to operate the equipment.
- SSVEC has implemented new switching order procedures that provide and require more SCADA Center involvement.

ALTERNATES TO PROPOSED CONSTRUCTION

The alternate to this construction is to continue with line crews field switching to reroute power in outage situations.

700.000 Other Distribution Items

CWP Item Numbers:	700.002	Security Light Installations
	700.003	Street Light Installations
Estimated Cost:	700.002	$25,000
		CIAC: $25,000
	700.003	$60,000
		CIAC: $60,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Install security lights and street lights at the request of customers, developers and/or cities. The 2009 rate case requires customers to pay 100% of the cost.

REASON FOR PROPOSED CONSTRUCTION

Install lights at customers' and developers' requests.

Project: SCADA Field Upgrades
CWP Item Number: 700.004 **Estimated Cost:** $75,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Install SCADA field equipment expansion or upgrades such as firmware upgrades, new radios, new locations, and other. Demand side management equipment is not part of this project.

REASON FOR PROPOSED CONSTRUCTION

SCADA field equipment expansion or upgrades needed to keep equipment working or to expand the use of SCADA.

RESULTS OF PROPOSED CONSTRUCTION

Better and enhanced use of SCADA system.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: SCADA Control Center Upgrade
CWP Item Number: 700.012 **Estimated Cost:** $150,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Install computer and software upgrades, system view upgrades, software addition, and radio upgrades for the SCADA Control Center.

REASON FOR PROPOSED CONSTRUCTION

As substations and other new field SCADA points are added, SCADA Control Center stations have to be upgraded for the increased volume of data. Regularly scheduled replacement of SCADA computers occurs.

RESULTS OF PROPOSED CONSTRUCTION

There will be an enhanced and continued use of SCADA system.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: New Mobile Substation
CWP Item Number: 700.025 **Estimated Cost:** $2,311,000 **Project Year**: 2015-17

DESCRIPTION OF PROPOSED CONSTRUCTION

This project will be to design and acquire SSVEC's next mobile substation. The mobile would be 10 to 20MVA, 69kV to 12.47/24.9kV and have 69kV protection. Options such as distribution voltage regulation and protection, SCADA, AMI, physical size and weight of trailer, new versus re-built equipment, and other will be considered.

REASON FOR PROPOSED CONSTRUCTION

The current mobile transformer was manufactured in the 1970's and has 10.5MVA capacity. This mobile is being used consistently throughout the year for construction and maintenance projects. Should the mobile be in use and an outage occurred elsewhere, the outage would require the facilities to be repaired. An alternative would be to move the mobile, but this would take 2 or more days as the mobile is de-energized and the existing facilities are put back into operating condition.

Several of SSVEC substations were constructed 30 years ago, and several other substation transformers are the same age. By delaying rebuilding substations, SSVEC incurs a significant cost benefit but at the risk of an outage.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Use TRICO's or APS's mobile transformers*
   - Both entities have mobile transformers
   - These entities may not be able or willingly to rent the mobile transformers
   - Rent charges would be fairly large
   - Time spent getting mobile here would take long
2. *Rent a Mobile from unknown commercial entity*
   - Companies do have mobiles available for rent
   - Rent charges would be fairly large
   - Time spent getting mobile here would take long
3. *Don't Allow the Mobile to be used other than emergencies*
   - The capacity of the mobile is limited
   - This would require significant changes and costs in operations and maintenance of the system

⇨ *Do Nothing/No alternatives:*

↳ If the existing mobile is in use at a location and another issue requires the use of a mobile, there will be extended outage and costs. If the mobile's capacity is not sufficient, significant costs and the possibility of outages will occur.

Project: TS1 AMI Replacement Phase 1
CWP Item Number: 700.026 **Estimated Cost:** $3,000,000 **Project Years:** 2015-17

DESCRIPTION OF PROPOSED CONSTRUCTION

Begin replacement of obsolete TS1 automatic metering infrastructure. Total project will involve approximately 24,000 meters in 18 substation areas. Details have not been decided yet. Alternatives include using new powerline carrier AMI such as PLX ["TS3"] or radio/cellphone AMI. Each alternative has significant advantages and disadvantages.

REASON FOR PROPOSED CONSTRUCTION

Landis&Gyr has informed TS1 AMI users that hardware cannot be ordered after December 2013 and software support ends December 2016.

RESULTS OF PROPOSED CONSTRUCTION

SSVEC can continue to read meters remotely. Additional benefits such as enhanced load control, remote connect/disconnect, and other may occur.

ALTERNATES TO PROPOSED CONSTRUCTION

- If Do Nothing option is chosen, SSVEC could continue to use the TS1 AMI for many years provided that no software conflicts occur after December 2016. SSVEC has sufficient hardware for many years, and could likely purchase used hardware.

Project: Future Distribution Line Rights-of-Way
CWP Item Number: 700.098 **Estimated Cost:** $75,000

DESCRIPTION OF PROPOSED PROJECT

Acquire easements for future distribution lines.

REASON FOR PROPOSED PROJECT

Opportunities for acquiring needed easements arise during the work plan period.

No construction will result due to this project.

ALTERNATES TO PROPOSED PROJECT

The alternative is not to do any easement acquisition for any currently unknown projects and restrict the opportunity to identify and pursue options as they arise.

800.000 New Subtransmission Lines

Project: Future Subtransmission Line Rights-of-Way
CWP Item Number: 800.098 **Estimated Cost:** $120,000

DESCRIPTION OF PROPOSED PROJECT

Acquire easements for future subtransmission lines.

REASON FOR PROPOSED PROJECT

Opportunities for acquiring needed easements arise during the work plan period.

No construction will result due to this project.

ALTERNATES TO PROPOSED PROJECT

The alternative is not to do any easement acquisition for any currently unknown projects and restrict the opportunity to identify and pursue options as they arise.

900.000 New Subtransmission Substations & Switching Stations

Project: 69kV Switching Station; At or Near Webb Substation
CWP Item Number: 900.020 **Estimated Cost:** $1,384,000 **Project Year:** 2016-17

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends building a 69kV breaker station at or near Webb Substation for the 69kV transmission line from Webb to Tombstone Junction.

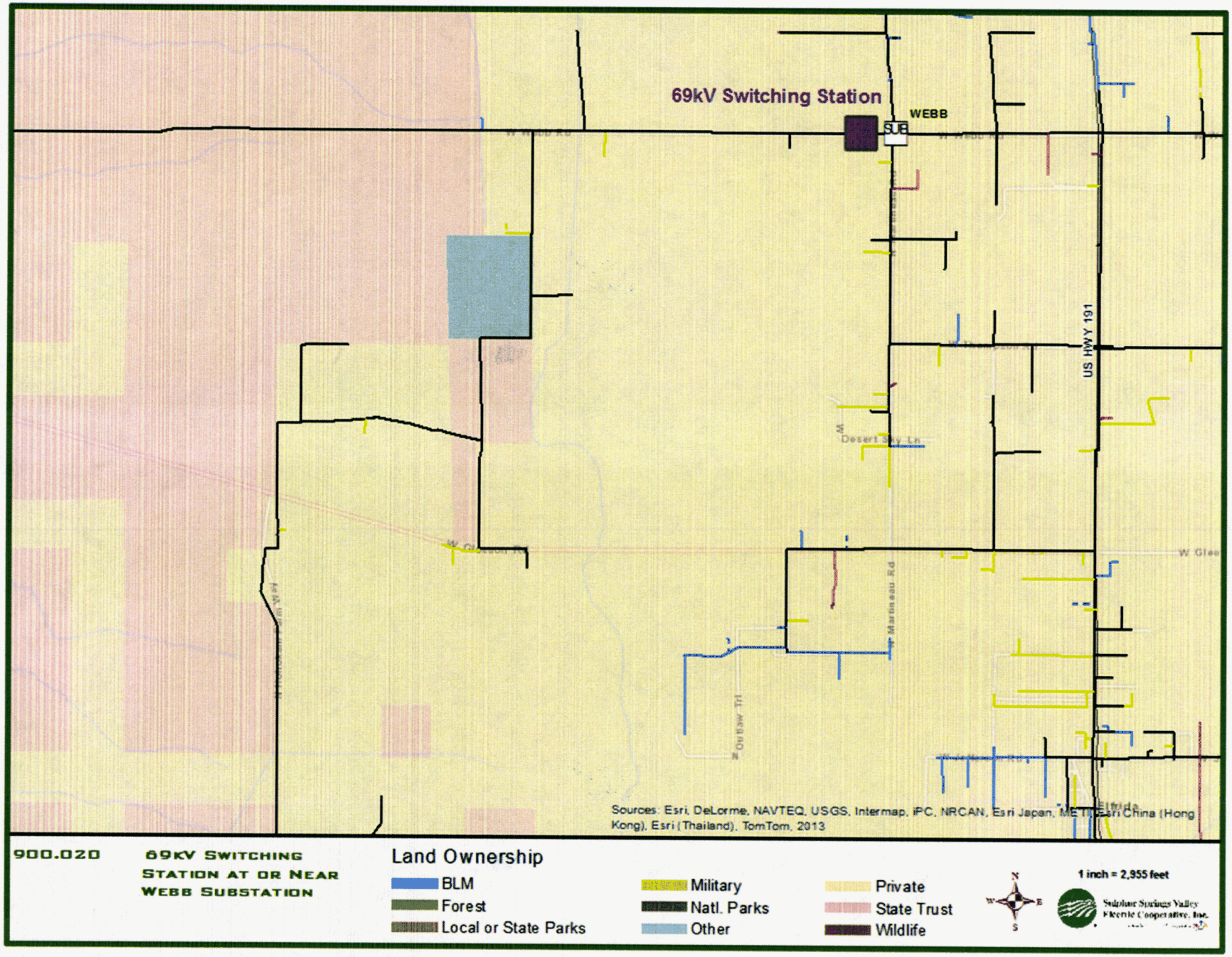
REASON FOR PROPOSED CONSTRUCTION

The 69kV sub-transmission lines have been reconfigured to limit outage exposure to the more heavily loaded substations like Pueblo Sub. The 69kV breaker protects 69 miles directly and an additional 41 miles indirectly. The sub-transmission lines were reconfigured because of outages occurring due to aging of poles. Because of the reconfiguration, 110 miles of sub-transmission line are being exposed to outages.

RESULTS OF PROPOSED CONSTRUCTION

This improvement will limit the outage exposure of the 110 miles of sub-transmission line.

- *Do Nothing/No alternatives:*
  - If Do Nothing is chosen, there may be an elevated risk of extended outages


69kV Switching Station
WEBB
SUB
US HWY 191
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
900.020
69kV Switching Station at or Near Webb Substation
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 2,955 feet
Sulphur Springs Valley Electric Cooperative, Inc.

1000.000 Subtransmission Line Changes

Project: Bowie 69kV; Replace Poles from Bowie to San Simon
CWP Item Number: 1000.040 **Estimated Cost:** $2,716,000 **Project Year**: 2016

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends replacing poles for the 17 miles of transmission line from Bowie Substation to San Simon Substation. Approximately 95% of the 17 miles of transmission poles need to be replaced. In addition, fiber optic cable (ADSS) will be added. Start near pole location 11923 and end near pole location 12113.

REASON FOR PROPOSED CONSTRUCTION

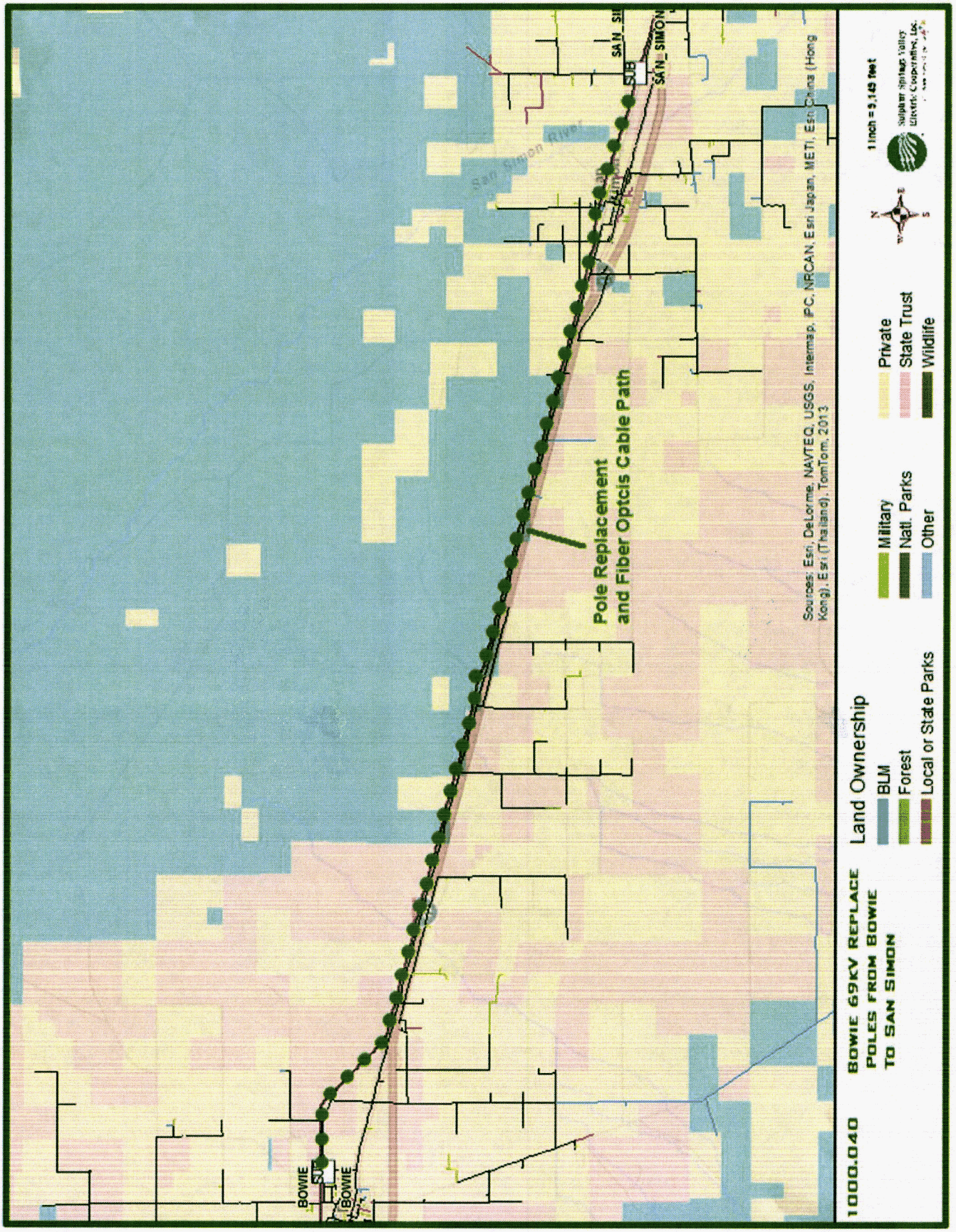
This improvement is needed because the transmission poles have deteriorated beyond repair. Poles are likely to fail, causing outages. This area has been noted by SSVEC personnel as a top priority for pole replacement.

RESULTS OF PROPOSED CONSTRUCTION

This improvement will decrease the possibilities of an outage due to pole failure.

ALTERNATES TO PROPOSED CONSTRUCTION

An alternative is not to include this project. Poles are likely to fall and cause disruptions in service to customers, disrupt planned work by crews, and increases overall costs.


BOWIE
SUB
BOWIE
SAN_SIMON
SUB
San Simon River
Pole Replacement
and Fiber Optcis Cable Path
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
1000.040
BOWIE 69KV REPLACE
POLES FROM BOWIE
TO SAN SIMON
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 3,145 feet

Project: Webb 69kV; Upgrade from Substation to W Gleeson Rd
CWP Item Number: 1000.041 **Estimated Cost:** $2,208,000 **Project Year**: 2016

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about 6.5 miles of 4/0ACSR transmission line to 795ACSR with fiber optics and upgrade about 1.75 miles of underbuild distribution from #4ACSR to 4/0ACSR. The underbuild upgrade will start at Webb Substation and end at or near location H12313090. The Transmission upgrade will start at the Webb Substation and end near location# I11055739, the underbuild for this section will be designed for 4/0ACSR with a minimum build of 1/0ACSR. Eventually the transmission rebuild must end at Tombstone Junction, which is 25 miles from Webb Substation. The rebuild process will be divided into three segments, with the other two segments left for future work plans.

REASON FOR PROPOSED CONSTRUCTION

This transmission line section has been identified by operations as a priority for pole replacement. In addition, the upgraded underbuild is needed to serve the load for this feeder, which currently has low voltages of 111V. The underbuild improvement will be part of CWP#300.082, Webb M5; Upgrade from Webb Rd to Near Gleason Rd

RESULTS OF PROPOSED CONSTRUCTION

This improvement will serve three purposes:

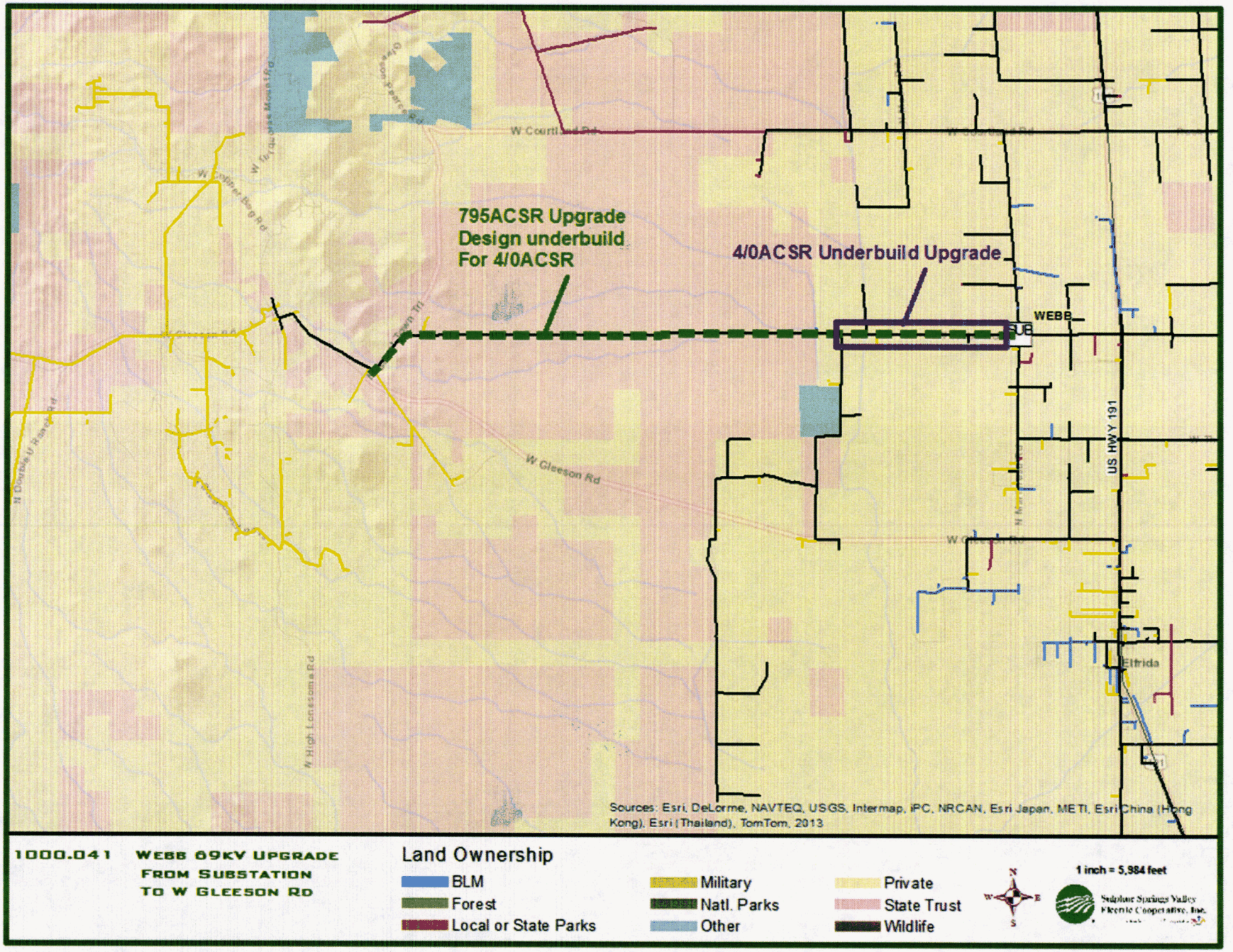
i. The upgrade in transmission conductor will provide better back-up support for outages on SWTC delivery points
ii. Upgrading the underbuild to 4/0ACSR conductor will provide better voltage support to the consumers on this feeder.
iii. Adding fiber optics will provide additional communications capabilities from Webb and to Tombstone Junction.

ALTERNATES TO PROPOSED CONSTRUCTION

1. *Switching:*
   - There are no nearby feeders to switch load to
2. *Capacitors:*
   - Adding capacitors will not solve problem
3. *Voltage Regulators:*
   - Voltage regulators will not contribute to the solution
4. *Conductor upgrade:*
   - This is the recommended solution
5. *New tieline:*
   - New tieline will not contribute to the solution

⇨ *Do Nothing/No alternatives:*

↪ If this option is chosen, the voltages will remain unacceptable. In addition, poles are likely to fall and cause disruptions in service to customers, disrupt planned work by crews, and increase overall costs.


795ACSR Upgrade
Design underbuild
For 4/0ACSR
4/0ACSR Underbuild Upgrade
WEBB
SUB
W Gleeson Rd
W Courtland Rd
W Coffee Bean Rd
W High Lonesome Rd
N Double U Ranch Rd
US HWY 191
Elfrida
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
1000.041 WEBB 69KV UPGRADE FROM SUBSTATION TO W GLEESON RD
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
N
W
E
S
1 inch = 5,984 feet
Sulphur Springs Valley Electric Cooperative, Inc.

Project: Tombstone Jct to San Pedro; Pole Replacement
CWP Item Number: 1000.042 **Estimated Cost:** $1,298,000 **Project Year**: 2016-17

DESCRIPTION OF PROPOSED CONSTRUCTION

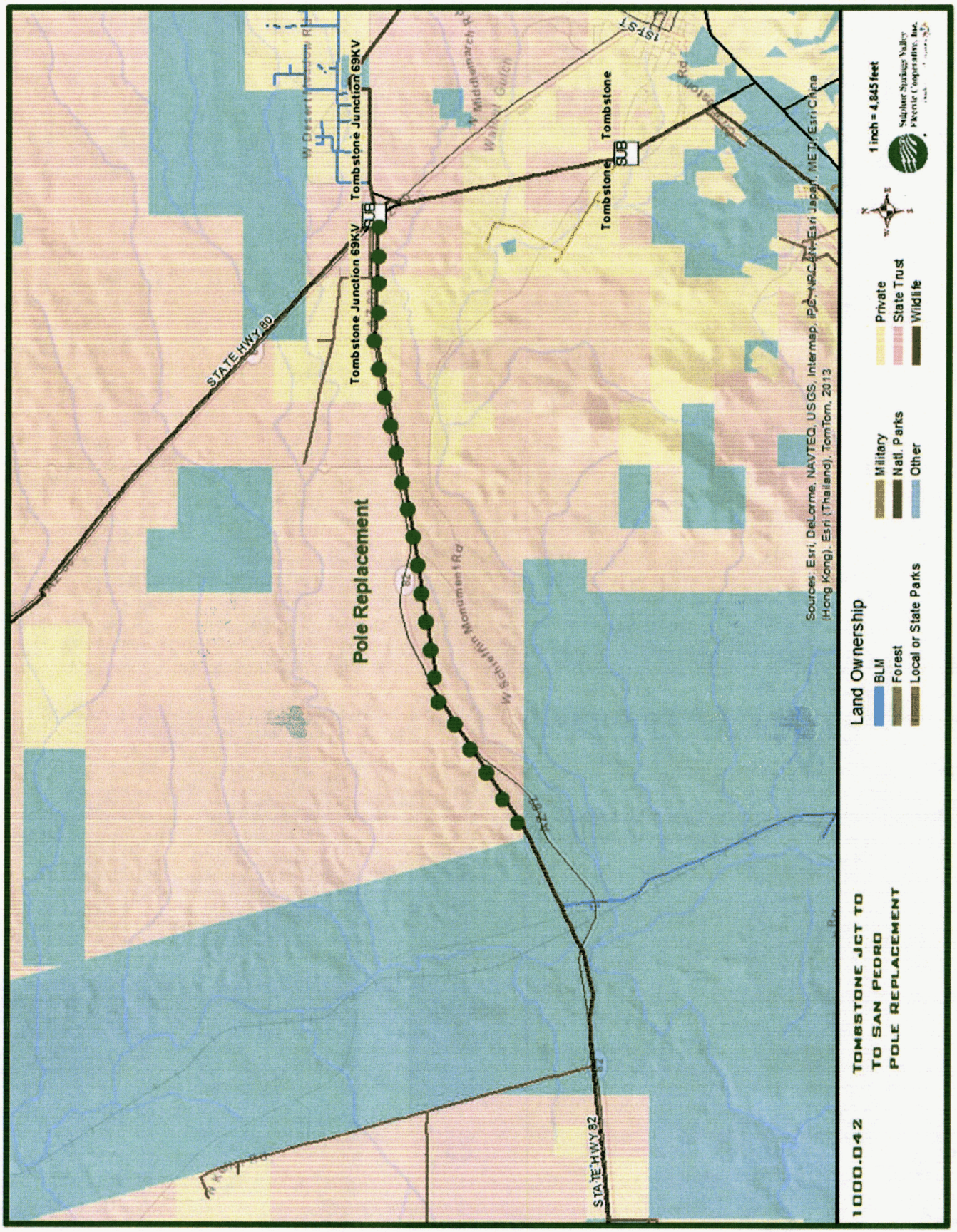
This project is to replace about five miles of 69kV poles and add fiber optics from Tombstone Junction to East of San Pedro River. Start at or near Tombstone Junction and end at or near pole number 10651.

REASON FOR PROPOSED CONSTRUCTION

Poles have significantly been deteriorated along this route and need to be replaced.

ALTERNATES TO PROPOSED PROJECT

- If Do Nothing is chosen, there would be elevated risk of outages due to pole failures.


1000.042
TOMBSTONE JCT TO
TO SAN PEDRO
POLE REPLACEMENT
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
1 inch = 4,845 feet
Pole Replacement
Tombstone Junction 69KV
SUB
Tombstone
STATE HWY 80
STATE HWY 82
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

Project: General Replacement & Miscellaneous Subtransmission Line Changes
CWP Item Number: 1000.099 **Estimated Cost:** $75,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace wishbone arms, insulators, guying, pole grounds, and other items due to equipment failure. Minor upgrades as needed. This project doesn't include poles.

REASON FOR PROPOSED CONSTRUCTION

Equipment fails to deterioration, lightning strikes, material degradation, and other reasons.

RESULTS OF PROPOSED CONSTRUCTION

Subtransmission equipment is repaired.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Project: Replace Miscellaneous Subtransmission Poles
CWP Item Number: 1000.101 **Estimated Cost:** $2,250,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Replace subtransmission poles that have deteriorated beyond repair, or have failed resulting in an outage.

REASON FOR PROPOSED CONSTRUCTION

Poles have failed or are likely to fail during the construction work plan period, causing an outage.

RESULTS OF PROPOSED CONSTRUCTION

Replacement of poles prior to failure results in fewer outages to the customers. In addition, the cost of replacing a pole after normal work hours is much more expensive than a planned replacement.

ALTERNATES TO PROPOSED CONSTRUCTION

An alternative is to allow the poles to fail and then replace them. This causes disruptions in service to the customers, disrupts planned work by crews, and increases overall costs.

Project: Hawes 69kV; Upgrade from Substation to Cherokee Ave
CWP Item Number: 1000.130 **Estimated Cost:** $974,000 **Project Year**: 2015

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about one mile of 336ACSR to 795ACSR and upgrade the underbuild from 4/0ACSR to 477ACSR. Start near location K06139289 and end near location K06131787. This project includes adding fiber optics to provide a communications loop around Sierra Vista.

REASON FOR PROPOSED CONSTRUCTION

This project will be the first of two improvements to provide a more robust distribution tieline between Hawes and Keating Substations. The project will also provide a second robust 69kV tieline between SWTC Kartchner and San Rafael delivery points. ROW might be difficult for this project because the existing facilities are in residential back yards. This improvement is needed because the X1 feeder 4/0ACSR conductor has been overloaded in the past years. Also, this conductor becomes a weak link when trying to back-up neighboring substations. This recommended improvement in conjunction with *CWP#1000.131* will work towards completing a 795ACSR transmission circuit between San Rafael and Kartchner sub-transmission substations.

RESULTS OF PROPOSED CONSTRUCTION

This improvement will serve two purposes:

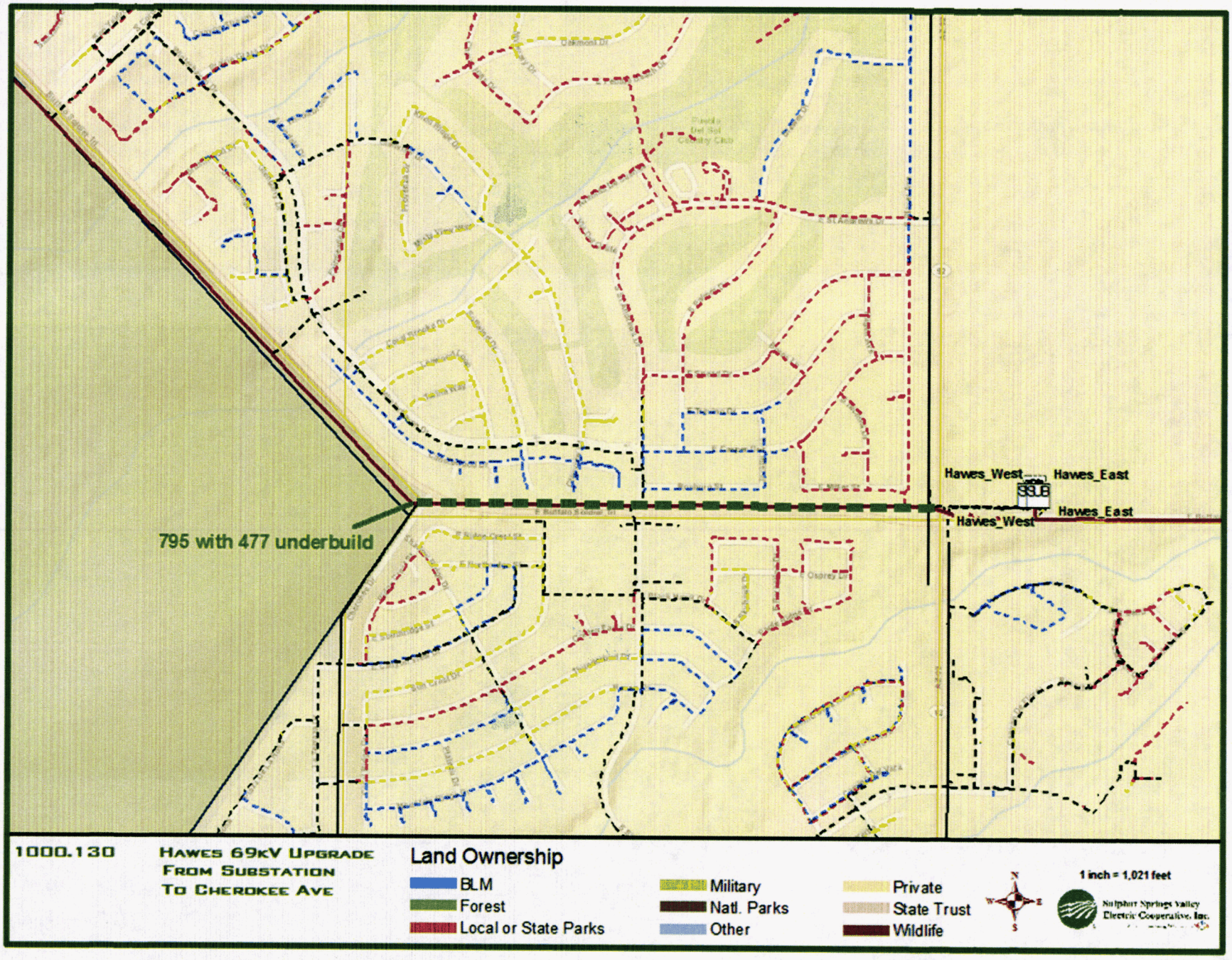
iv. The upgrade in transmission conductor will provide better back-up support for outages on SWTC delivery points
v. Upgrading the 4/0ACSR conductor will reduce the risk of overload and possible outage. The upgraded conductor will also provide adequate back-up for neighboring Ramsey and Keating Substations

ALTERNATES TO PROPOSED CONSTRUCTION

6. *Switching:*
   - Load can be switched to X8 feeder, but it will not be enough to relieve the 4/0ACSR conductor
7. *Capacitors:*
   - Adding capacitors will not solve problem
8. *Voltage Regulators:*
   - Voltage regulators will not contribute to the solution
9. *Conductor upgrade:*
   - This is the recommended solution
10. *New tieline:*
    - New tieline will not contribute to the solution

⇨ *Do Nothing/No alternatives:*

↪ Delaying the upgraded conductor will overload the 4/0ACSR conductor, likely causing outages.


Hawes_West
Hawes_East
SSUB
Hawes_East
Hawes_West
795 with 477 underbuild
1000.130
Hawes 69kV Upgrade
From Substation
To Cherokee Ave
Land Ownership
BLM
Forest
Local or State Parks
Military
Natl. Parks
Other
Private
State Trust
Wildlife
N
W
E
S
1 inch = 1,021 feet
Sulphur Springs Valley
Electric Cooperative, Inc.

1100.000 Subtransmission Substation Changes

Project: Miscellaneous Subtransmission Substation Changes
CWP Item Number: 1100.099 **Estimated Cost:** $75,000

DESCRIPTION OF PROPOSED CONSTRUCTION

Repair equipment jumpers, failed relays, broken insulators, and other equipment inside the substation. Upgrade equipment as needed.

REASON FOR PROPOSED CONSTRUCTION

Equipment fails due to lightning strikes, fault current, and deterioration.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Cost Summary
SSVEC 2015-17 Construction Work Plan

Codes	Project Description	Gross Project Dollars	Amendment 1 Dollars Change	Amendment 1 Net Project
	Distribution			
100.000	**New Lines for New Customers [including CIAC Contributions]**			
	Designates construction of new line to serve new consumers (overhead and/or underground) where no lines presently exist. This includes the installation of poles, pole top assemblies guy and anchor assemblies, primary, secondary, and service conductor, and miscellaneous associated equipment such as lightning arrestors, grounding conductor and electrode, fused disconnect switches, etc. required for safe, dependable delivery of electrical power to new consumers. this 100 series also provides for separate code numbers (code 103+) for "major developments" exceeding investment of $100,000 (code 100 type expenditures) in accordance with 7 CFR 1721.			
	Underground			
101.001	1-Phase Underground Primary	$ 200,000		
101.002	3-Phase Underground Primary	$ 240,000		
101.003	3-Wire Underground Secondary	$ 300,000		
101.004	4-Wire Underground Secondary	$ 80,000		
	Overhead			
102.001	1-Phase Overhead Primary	$ 125,000		
102.002	3-Phase Overhead Primary	$ 350,000		
102.003	3-Wire Overhead Secondary	$ 100,000		
102.004	4-Wire Overhead Secondary	$ 80,000		
	Subtotal	$ 1,475,000		
103.001	Subdivisions [Over 5 lots]	$ 180,000		
	Subtotal	**$ 1,655,000**	**$ -**	**$ -**
	CIAC for New Lines	**$ (1,655,000)**	**$ -**	**$ -**
100.000	**Subtotal -- New Lines for New Customers**	**$ -**	**$ -**	**$ -**
200.000	**New Feeders and Tie Lines**			
	Designates construction of new line (overhead and/or underground) for the purpose of connection two or more existing circuits or substations buses. It includes similar material and equipment required in Code 100 for the purpose of transferring load, reducing voltage drop or conductor loading, and provides alternate feeds for construction purposes and increased system reliability.			
200.153	Benson P5; Tie Line from Serenity Ln To Interstate 10			$ 252,000
200.155	Hereford HF2; Tie Line from Three Canyons Rd To Hereford Rd	$ 865,000	$ (865,000)	$ -
200.160	Pueblo; New Z6 feeder from Substation to Hwy 90	$ 663,000		
200.161	Mesquite; MQ3 and MQ4 Feeders		$ 1,500,000	$ 1,500,000
200.162	Mesquite; MQ2 Feeder		$ 421,000	$ 421,000
200.099	Misc Tie Lines [under $100K each]	$ 600,000		
200.000	**Subtotal -- New Feeders and Tie Lines**	**$ 2,128,000**	**$ 1,056,000**	**$ 3,184,000**
300.000	**Conversions & Line Changes**			
	Designates any conversion or line change of and existing primary circuit to improve the quality or quantity of service to more than one existing consumer. This generally involves replacing conductor, adding conductors (single phase to three phase, etc.), replacing direct buried UG with conduit system, or changing system voltage to increase capacity and reduce voltage drop. Specifically. this construction includes changing conductor, adding conductors, changing insulators, changing pole top assemblies, changing guys and anchors and replacing poles.			
300.068	Benson P5; Upgrade near Flying Horseshoe Rd To Red Rock Rd			$ 53,000
300.075	Pueblo Z4; Upgrade from Substation to Hwy 92	$ 1,149,000		
300.076	Keating T2; Upgrade near Hummingbird Ln To Hwy 92	$ 337,000		
300.077	Benson P5; Upgrade near Flying Horseshoe Rd To Red Rock Rd	$ 154,000		
300.078	Huachuca V7; Upgrade from Substation to Upper Elgin Rd	$ 1,732,000		
300.079	Hereford HF2; Upgrade from Substation to Kings Ranch Rd	$ 171,000	$ (171,000)	$ -
300.080	Hamilton Feeders; Upgrade from Marguerite Rd to Fort Grant Rd.aspx	$ 407,000	$ (407,000)	$ -
300.081	Willcox F3; Upgrade from Taylor Rd to Bisbee Ave	$ 416,000	$ (416,000)	$ -
300.082	Webb M5; Upgrade from Webb Rd to Near Gleeson RD	$ 252,000		
300.084	Mesquite; 25kV Conversion Apache Power Plant		$ 200,000	$ 200,000
300.096	Copper Replacement	$ 600,000		
300.097	Cable Injection	$ 150,000		
300.098	Cable Replacement	$ 1,800,000		
300.099	Misc Dist Line Changes [under $100K each]	$ 600,000		
300.000	**Subtotal -- Conversions & Line Changes**	**$ 7,768,000**	**$ (794,000)**	**$ 6,974,000**

Cost Summary
SSVEC 2015-17 Construction Work Plan

Codes	Project Description	Gross Project Dollars	Amendment 1 Dollars Change	Amendment 1 Net Project
400.000	**New Distribution Substations**			
	Building a new distribution [output voltage is 24.9kV or 12.47kV] substation, or retiring an existing distribution substation and building a new substation to replace it. Substation is defined as everything within the substation fence, access roads, and first distribution line segment from inside substation fence to outside substation			
400.026	Pueblo; Upgrade Substation	$ 2,399,000		
400.027	Mesquite; New Substation		$ 3,500,000	$ 3,500,000
400.028	St David; New Substation		$ 5,000,000	$ 5,000,000
400.098	Future Distribution Substation Site(s) Acquisition	$ 75,000		
400.000	**Subtotal -- New Distribution Substations**	**$ 2,474,000**	**$ 8,500,000**	**$ 10,974,000**
500.000	**Distribution Substation Changes**			
	Modifying equipment, access road, and/or anything else within an existing substation. Substation is defined as everything within the substation fence, access roads, and first distribution line segment from inside substation fence to outside substation			
500.050	Tombstone; Upgrade Protection		$ 100,000	$ 100,000
500.051	Cottonwood; Upgrade Protection		$ 120,000	$ 120,000
500.052	Cochise Substation; Retire		$ 200,000	$ 200,000
500.099	Miscellaneous Substation Changes [under $100K each]	$ 300,000		
500.000	**Subtotal -- Distribution Substation Changes**	**$ 300,000**	**$ 420,000**	**$ 720,000**
600.000	**Miscellaneous Distribution Items**			
600.100	Pole Mounted Transformers	$ 700,000		
600.101	Pad Mounted Transformers	$ 700,000		
600.200	Meters, Metering Transformers & Equipment	$ 400,000		
600.300	Service Upgrades	$ 100,000		
	CIAC for Service Upgrades	$ (100,000)		
600.400	Single Phase ACR's, Sectionalizers, or Fusing	$ 153,000		
600.401	Three Phase ACR's or Sectionalizing	$ 360,000		
600.402	Switches (ganged or knifeblade)	$ 330,000		
600.403	Pad Mounted Sectionalizing Equipment	$ 300,000		
600.404	Voltage Regulators	$ 600,000		
600.405	Line Regulator Upgrades	$ 300,000		
600.500	Capacitors/Inductors	$ 300,000		
600.600	Distribution Pole Replacement	$ 9,500,000		
600.601	General Replacement -- OH Distribution	$ 900,000		
600.602	General Replacement -- UG Distribution	$ 525,000		
600.603	Wildlife Protection Plan	$ 228,000		
600.701	Retirement of Distribution Facilities	$ 75,000		
600.710	Distribution automation	$ 500,000		
600.000	**Subtotal -- Miscellaneous Distribution Items**	**$ 15,871,000**	**$ -**	**$ -**
700.000	**Other Dist. Items**			
700.002	Security Light Installations	$ 25,000		
	CIAC for Security Lights	$ (25,000)		
700.003	Street Light Installations	$ 60,000		
	CIAC for Street Lights	$ (60,000)		
700.004	SCADA Field Upgrades	$ 75,000		
700.012	SCADA Control Center Upgrade	$ 150,000		
700.025	New Mobile Substation	$ 2,311,000		
700.026	TS1 AMI Replacement Phase 1	$ 3,000,000		
700.098	Future Distribution Line Rights-of-Way	$ 75,000		
700.000	**Subtotal -- Other Dist. Items**	**$ 5,611,000**		
	Distribution Subtotal	**$ 34,152,000**	**$ 9,182,000**	**$ 43,334,000**
	Subtransmission			
800.000	**New Subtransmission Lines**			
800.098	New Future Subtransmission Line Rights-of-Way	$ 120,000		
800.000	**Subtotal -- New Subtransmission Lines**	**$ 120,000**	**$ -**	**$ -**

Cost Summary
SSVEC 2015-17 Construction Work Plan

Codes	Project Description	Gross Project Dollars	Amendment 1 Dollars Change	Amendment 1 Net Project
900.000	**New Subtransmission Substations & Switching Stations**			
900.020	69kV Switching Station; At or Near Webb Substation	$ 1,384,000	$ (1,384,000)	$ -
900.000	**Subtotal -- New Subtransmission Substations & Switching Stations**	**$ 1,384,000**	**$ (1,384,000)**	**$ -**
1000.000	**Subtransmission Line Changes**			
1000.110	Rebuild St. David Tap to St. David Substation			$ 1,900,000
1000.040	Bowie 69kV; Replace Poles from Bowie to San Simon	$ 2,716,000		
1000.041	Webb 69kV; Upgrade from Substation to W Gleeson Rd	$ 2,208,000		
1000.042	Tombstone Jct to San Pedro; Pole Replacement	$ 1,298,000		
1000.099	General Replacement & Misc Sub Transmission Line Changes	$ 75,000		
1000.101	Replace Miscellaneous Subtransmission Poles	$ 2,250,000		
1000.130	Hawes 69kV; Upgrade from Substation to Cherokee Ave	$ 974,000		$ 1,480,000
1000.131	Hawes 69kV; Upgrade from Cherokee Ave to Golf links Rd			$ 1,600,000
1000.134	Huachuca 69kV; Replace Poles from In Balance Ranch to Fairbank			$ 300,000
1000.135	Tombstone Jct to Charleston Jct; Rebuild		$ 3,630,000	$ 3,630,000
1000.000	**Subtotal -- Subtransmission Line Changes**	**$ 9,521,000**	**$ 3,630,000**	**$ 13,151,000**
1100.000	**Subtransmission Substation Changes**			
1100.030	Webb; Replace 69kV Switches		$ 100,000	$ 100,000
1100.099	Miscellaneous Subtransmission Substation Changes	$ 75,000		
1100.000	**Subtotal -- Subtransmission Substation Changes**	**$ 75,000**	**$ -**	**$ -**
	Subtransmission Subtotal	**$ 11,100,000**	**$ 2,246,000**	**$ 13,346,000**
	Other Projects			
1200.000	**Communications**			
1200.000	**Subtotal -- Communications**	**$ -**	**$ -**	**$ -**
1300.000	**Not used**			
1300.000	**Subtotal -- not used**	**$ -**	**$ -**	**$ -**
1400.000	**Energy Supply**			
1400.000	**Subtotal -- Distributed Generation**	**$ -**	**$ -**	**$ -**
1500.000	**Reserved for Fort projects in Accounting**			
1600.000	**Miscellaneous Projects**			
		$ -	**$ -**	**$ -**
	Other Projects Subtotal	**$ -**	**$ -**	**$ -**
	Grand Total	**$ 45,252,000**	**$ 11,428,000**	**$ 56,680,000**

2015 -17 Construction Work Plan
Amendment #1
May 2015

Written by:

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Planning Engineer

Reviewed by:

Daniel Wilson, P.E.
Engineering Manager

Anselmo Torres
Chief Operations and Engineering Officer

Creden Huber
Chief Executive Officer

740c Code	Project	Type of Change	Change in Dollars	Reason
200.155	Hereford HF2; Tie Line from Three Canyons Rd To Hereford Rd	Cancel Project	($885,000)	Cancel project until future CWP. Rights-of-way not available
200.161	Mesquite MQ3 and MQ4 Feeders	New Project	$1,500,000	Build double circuit 477ACSR line and 1000mcm underground for solar generation
200.162	Mesquite MQ2 Feeder	New Project	$421,000	Build new feeder due to new substation Mesquite
300.079	Hereford HF2; Upgrade from Substation to Kings Ranch Rd	Cancel Project	($171,000)	Cancel project until future CWP.
300.080	Hamilton Feeders; Upgrade from Marguerite Rd to Fort Grant Rd.aspx	Cancel Project	($407,000)	Cancel project until future CWP.
300.081	Willcox F3; Upgrade from Taylor Rd to Bisbee Ave	Cancel Project	($416,000)	Cancel project until future CWP.

740c Code	Project	Type of Change	Change in Dollars	Reason
300.084	Mesquite; 25kV Conversion Apache Power Plant	New Project	$200,000	Continue area voltage conversion around Apache Power Plant
400.027	Mesquite Substation	New Project	$3,500,000	New substation to replace Cochise
400.028	St David Substation	New Project	$5,000,000	Rebuild substation and retire old
500.050	Tombstone; Upgrade SCADA	New Project	$100,000	Upgrade SCADA
500.051	Cottonwood; Upgrade SCADA	New Project	$120,000	Upgrade SCADA
500.052	Cochise; Retire Substation	New Project	$200,000	Retire substation
900.020	69kV Switching Station; At or Near Webb Substation	Cancel Project	($1,384,000)	Cancel project. Not needed.
1000.135	Tombstone Jct to Charleston Jct	New Project	$3,630,000	Rebuild two 2mile segments of 69kV

Project: Hereford HF2; Tieline from Three Canyons Rd to Hereford Rd [Engr & ROW Only]
CWP Item Number: 200.155 **Estimated Cost:** $73,000 **Project Year**: 2013-14

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends acquiring Rights-of-Way and completing an engineering design for an overhead distribution tieline between the new Hereford Substation and Ramsey Substation.

REASON FOR PROPOSED CONSTRUCTION

This improvement will provide an alternate tie between the new Hereford Substation and Ramsey Substation. Currently, there is only one tieline between Hereford and Ramsey. This tieline is about 10 miles long between substations.

RESULTS OF PROPOSED CONSTRUCTION

This new tieline will allow for better system reliability and system back-up. Additional tielines allow Ramsey, Hereford, and Hawes Substations to support each other.

Amendment #1 – Revised to $0 total

Cancel project for now. Rights-of-way are unavailable.

Project: Mesquite MQ3 and MQ4; Build double circuit feeder to solar project
CWP Item Number: 200.161 **Estimated Cost:** $1,500,000 **Project Year**: 2017

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement is to build a double circuit line for two feeders from the new Mesquite substation to the new 20MW solar plant. The feeders will be a combination of two 1000mcm underground and double circuit 477ACSR overhead. Estimated mileage is 1.93 miles.

REASON FOR PROPOSED CONSTRUCTION

This improvement will provide two feeders to the 20MW solar plant. Each feeder is capable of almost the full output of the solar plant by itself.

RESULTS OF PROPOSED CONSTRUCTION

These feeders will connect the new solar plant to the new Mesquite substation.

Amendment #1 – new project

Project: Mesquite MQ2; Build new feeder to serve Dragoon
CWP Item Number: 200.162 **Estimated Cost:** $421,000 **Project Year**: 2017

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement is to build a new 4/0ACSR feeder from the new Mesquite Substation going west to the existing line along Cochise Stronghold Road. Estimated mileage is 1.77 miles.

REASON FOR PROPOSED CONSTRUCTION

This improvement will provide a new feed from the new Mesquite Substation to the west. This will sectionalize the existing system much better than the two feeders currently. Also, this will provide a more direct feed to provide a tieline between Benson and Mesquite Substations

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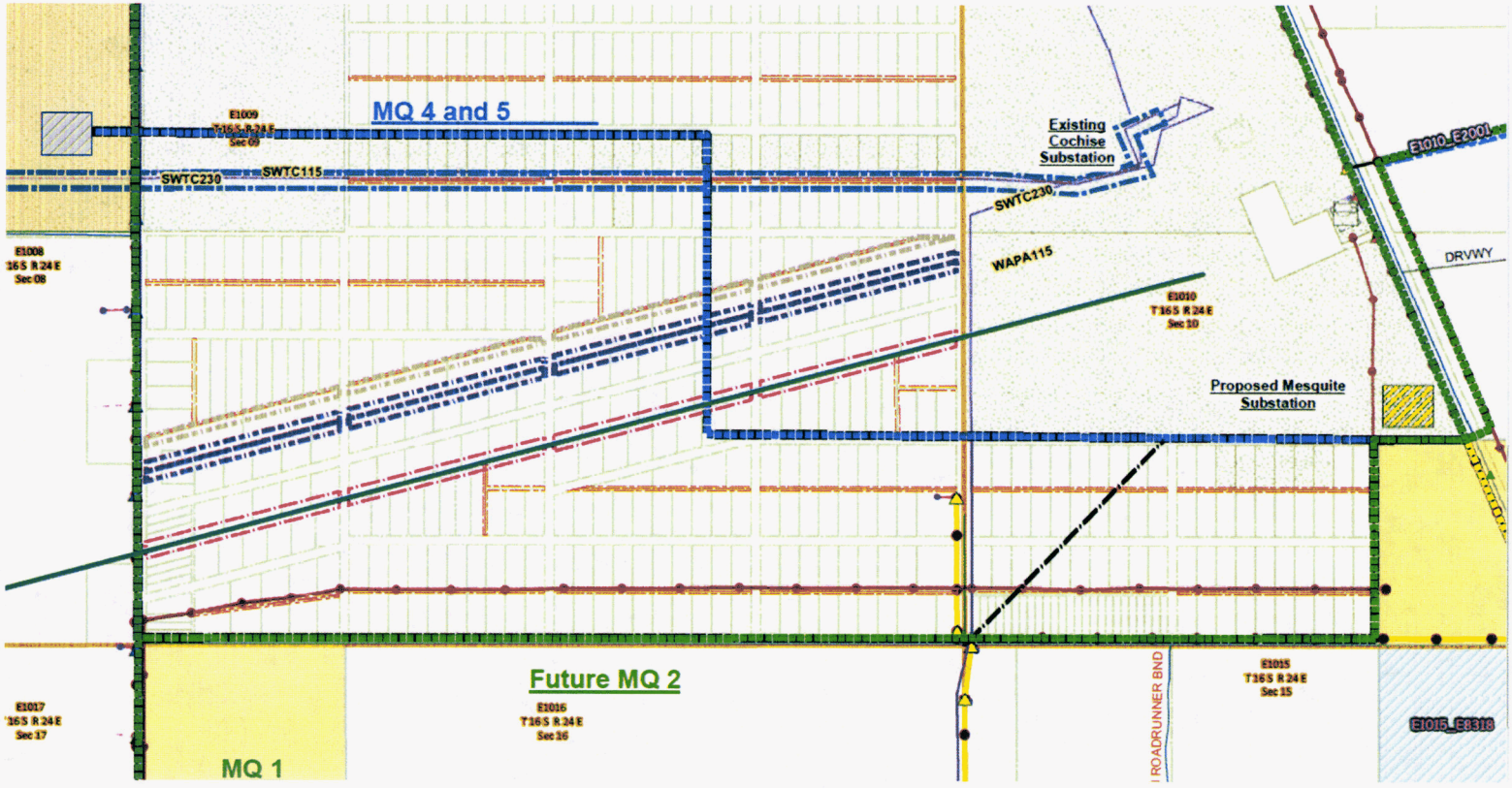
Amendment #1 – new project


MQ 4 and 5
E1009
T16S R24E
Sec 09
SWTC230
SWTC115
Existing
Cochise
Substation
SWTC230
E1010_E2001
E1008
16S R24E
Sec 08
WAPA115
DRVWY
E1010
T16S R24E
Sec 10
Proposed Mesquite
Substation
Future MQ 2
E1016
T16S R24E
Sec 16
E1015
T16S R24E
Sec 15
E1015_E8318
E1017
16S R24E
Sec 17
MQ 1
ROADRUNNER BND

Project: Hereford HF2; Upgrade from Substation to Kings Ranch Rd
CWP Item Number: 300.079 **Estimated Cost:** $171,000 **Project Year**: 2015-17

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about half a mile of #4ACSR conductor to 477ACSR conductor. Start at the Hereford Substation and end at pole# 173499.

REASON FOR PROPOSED CONSTRUCTION

Currently there is 477ACSR on both sides of the proposed construction section; the #4ACSR conductor becomes a weak link when trying to back up neighboring substations.

RESULTS OF PROPOSED CONSTRUCTION

This improvement will complete the 477ACSR conductor from the Hereford Substation to Kings Ranch Rd.

Amendment #1 – Revised to $0 total

Cancel project for now. No benefit without 200.152 Three Canyons Rd to Hereford Rd tieline.

Project: Hamilton Feeders; Upgrade from Marguerite Rd to Fort Grant Rd
CWP Item Number: 300.080 **Estimated Cost:** $407,000 **Project Year**: 2017

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends upgrading about two miles of 3 phase #4ACSR to 4/0ACSR. Start near location 123077 and end near location B10348910.

REASON FOR PROPOSED CONSTRUCTION

This improvement will serve two purposes:

1) The upgrade in conductor will serve as future feeders for the Hamilton Substation
2) This site will be the permanent mobile site and will be used to back up Willcox substation. Conductor improvements are needed to carry the load.

RESULTS OF PROPOSED CONSTRUCTION

By upgrading the conductors to 4/0ACSR, the future substation will have backup capabilities for Willcox load and the mobile substation will make use of the site and upgrades.

Amendment #1 – Revised to $0 total

Cancel project for now. Willcox substation and Willcox 69kV Tap have been recently rebuilt.

Project: Willcox F3; Upgrade from Taylor Rd to Bisbee Ave
CWP Item Number: 300.081 **Estimated Cost:** $416,000 **Project Year**: 2016

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends reconductoring about 1.5 mile of #4ACSR to 4/0ACSR. Start near location C10011116 and end near pole number 53161.

REASON FOR PROPOSED CONSTRUCTION

The #4ACSR conductor on F3 is used as a major tie between the mobile sub and Willcox load. This line is rated at 140A and when it is being used to back up the load to Willcox, the line gets loaded to approximately 130A or more. Currently there is 1/0ACSR on both sides of the proposed construction section. This upgrade is also needed if the mobile sub is used at the Hamilton Sub site.

RESULTS OF PROPOSED CONSTRUCTION

By upgrading the conductor to 4/0ACSR, the mobile sub can adequately serve the load to downtown Willcox.

Amendment #1 – Revised to $0 total

Cancel project for now. Willcox substation and Willcox 69kV Tap have been recently rebuilt.

Project: Mesquite; Convert Apache Power plant to 25kV
CWP Item Number: 300.084 **Estimated Cost:** $200,000 **Project Year**: 2017

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends:

- Install stepdown transformers and upgrade 6H70 at Cochise Stronghold & Dragoon road
- Move Ash Pond regulators to Stronghold & Dragoon roads
- Retire stepdowns and regulators on Richland road
- Conversion and switching by Operations

REASON FOR PROPOSED CONSTRUCTION

This improvement will convert the service area around Apache Power plant to 25kV and allow the area to be served by the proposed Mesquite Substation.

Amendment #1 – Add new project

Project: Mesquite; Build New Substation
CWP Item Number: 400.027 **Estimated Cost:** $3,500,000 **Project Year:** 2016

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends building a new 69/25kV substation at Apache Power Plant. The substation will have 22MVA capacity, have a 69kV bus with three breakers, and have a minimum of five feeders.

REASON FOR PROPOSED CONSTRUCTION

The proposed 20MW solar plant needs an interconnection to SSVEC's system. Also, the Cochise substation service area has been mostly converted to 25kV and needs a 25kV substation.

RESULTS OF PROPOSED CONSTRUCTION

Provide an interconnection to SSVEC 20MW solar plant and 25kV substation to serve load.

ALTERNATES TO PROPOSED CONSTRUCTION

The following was reviewed:

- 230kV substation – not available due to proximity of 230kV switchyard.
- 69kV substation near/at solar plant – requires land acquisition for substation or 69kV line which is problematic for the timeline. Difficulties in connecting existing feeders.
- Rebuild Cochise substation in place -- site is too small and presents problems building a new substation while keeping the existing substation energized.

All alternatives are a higher cost than the recommended option.

Amendment #1 – new project

Project: St David; Rebuild New Substation
CWP Item Number: 400.028 **Estimated Cost:** $5,000,000 **Project Year:** >2017

DESCRIPTION OF PROPOSED CONSTRUCTION

Rebuild the existing St David substation, and retiring the old substation. The new substation will be 69/12.47kV with 20MVA capacity, and will include a 69kV switching station for four 69kV lines.

REASON FOR PROPOSED CONSTRUCTION

The current substation is a wood pole substation including wood crossarms. The poles and crossarms have deteriorated significantly.

RESULTS OF PROPOSED CONSTRUCTION

Increased reliability for: the St David area; an important alternative to Benson and Mescal substations; and SSVEC's 2nd largest consumer

ALTERNATES TO PROPOSED CONSTRUCTION

The following was reviewed:

- Retire the substation without replacement but the Benson and Mescal substations would not have enough distribution backup.
- Repair the substation but there is too much to do.
- Do nothing but the substation needs to be replaced.

Amendment #1 – new project

Project: Tombstone; Upgrade SCADA
CWP Item Number: 500.050 **Estimated Cost:** $100,000 **Project Year:** 2016

DESCRIPTION OF PROPOSED CONSTRUCTION

Convert from radio communications for polling data to using fiber optic communications infrastructure. Reprogram the substation's RTU. Reprogram SCADA Control Center. Purchase and install switching equipment for SCADA Control Center station.

REASON FOR PROPOSED CONSTRUCTION

Utilize the new fiber optic cable SSVEC is installing from other parts of the smart grid project. Increase the substation's SCADA communications security, upgrade the SCADA programming to SSVEC's standard, and meet the requirements of switching procedure 5.2

RESULTS OF PROPOSED CONSTRUCTION

This project will provide SSVEC with remote access to this substation and allow Operations to follow the approved switching procedure 5.2.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Amendment #1 – new project

Project: Cottonwood; Upgrade SCADA
CWP Item Number: 500.051 **Estimated Cost:** $120,000 **Project Year:** 2016

DESCRIPTION OF PROPOSED CONSTRUCTION

Upgrade the substation's RTU. Reprogram SCADA Control Center. Purchase and install switching equipment for SCADA Control Center station.

REASON FOR PROPOSED CONSTRUCTION

Increase the substation's SCADA communications security, upgrade the SCADA programming to SSVEC's standard, and meet the requirements of switching procedure 5.2

RESULTS OF PROPOSED CONSTRUCTION

This project will provide SSVEC with more secured SCADA access to this substation and allow Operations to follow the approved switching procedure 5.2.

ALTERNATES TO PROPOSED CONSTRUCTION

There are no reasonable alternatives.

Amendment #1 – new project

Project: Cochise Substation; Retire Substation
CWP Item Number: 500.052 **Estimated Cost:** $200,000 **Project Year:** 2017

DESCRIPTION OF PROPOSED CONSTRUCTION

Retire the substation, remove facilities but retain 69kV line through site, and return property to SWTC.

REASON FOR PROPOSED CONSTRUCTION

The Cochise substation will be replaced by Mesquite Substation.

RESULTS OF PROPOSED CONSTRUCTION

This project will retire an unneeded substation.

ALTERNATES TO PROPOSED CONSTRUCTION

The substation could be retained but it will be the wrong distribution voltage and too small in MVA capacity.

Amendment #1 – new project

Project: 69kV Switching Station; At or Near Webb Substation
CWP Item Number: 900.020 **Estimated Cost:** $1,384,000 **Project Year:** 2016-17

DESCRIPTION OF PROPOSED CONSTRUCTION

This improvement recommends building a 69kV breaker station at or near Webb Substation for the 69kV transmission line from Webb to Tombstone Junction.

REASON FOR PROPOSED CONSTRUCTION

The 69kV sub-transmission lines have been reconfigured to limit outage exposure to the more heavily loaded substations like Pueblo Sub. The 69kV breaker protects 69 miles directly and an additional 41 miles indirectly. The sub-transmission lines were reconfigured because of outages occurring due to aging of poles. Because of the reconfiguration, 110 miles of sub-transmission line are being exposed to outages.

RESULTS OF PROPOSED CONSTRUCTION

This improvement will limit the outage exposure of the 110 miles of sub-transmission line.

Amendment #1 – Revised to $0 total

Cancel project. The issue will be resolved by switching Tombstone Junction from being fed from Webb to being fed from Huachuca Junction.

Project: Tombstone Jct to Charleston Jct; Rebuild Two 2mile Segments
CWP Item Number: 1000.135 **Estimated Cost:** $3,630,000 **Project Year:** >2017

DESCRIPTION OF PROPOSED CONSTRUCTION

Rebuild two 2 mile segments of the 69kV line between Tombstone Junction and Charleston Junction. Rebuild to 795ACSR 69kV with 24pair of fiber optics. As needed, move 69kV line closer to existing roads and add 1/0ACSR distribution underbuild.

REASON FOR PROPOSED CONSTRUCTION

The existing 3/0ACSR 69kV line was built in approximately 1957. Many of the poles have deteriorated significantly, and poles are being identified & replaced as emergency pole replacements in the pole inspection program. In addition, the 3/0ACSR's 34MW capacity is frequently an obstacle in switching programs. The 795ACSR's 100MW capacity is needed.

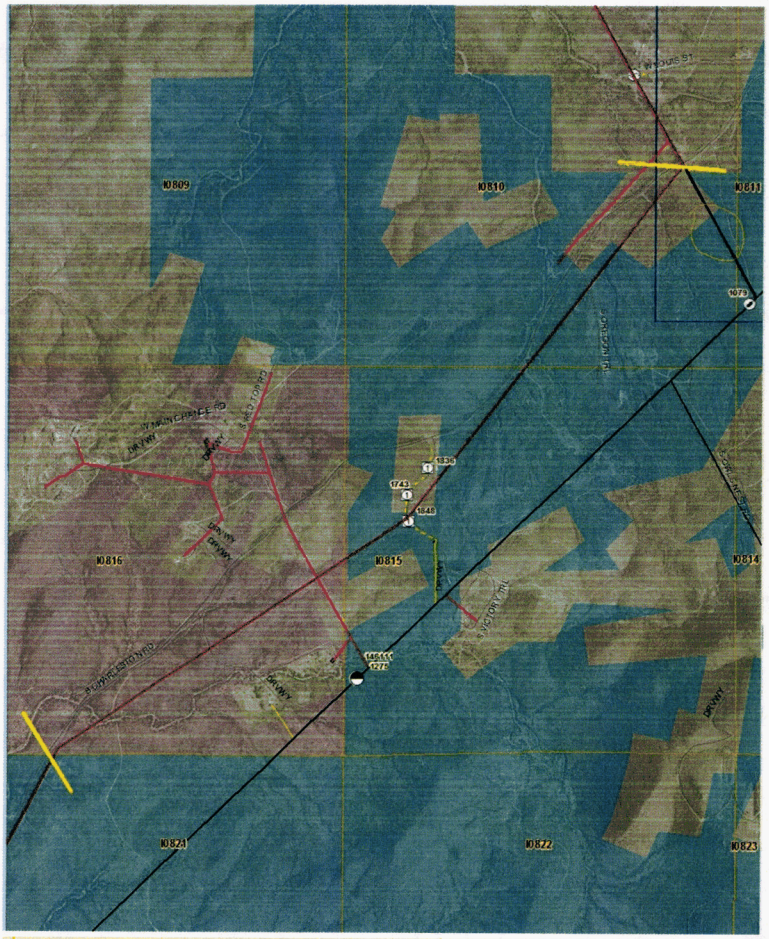
RESULTS OF PROPOSED CONSTRUCTION

Replace deteriorated poles and upgrade the capacity.

ALTERNATES TO PROPOSED CONSTRUCTION

1) Poles could be replaced and leave the existing 3/0ACSR wire, but this would not alleviated the needed capacity issue.
2) Retire the 69kV line but this would retire a needed backup to SWTC's delivery points.
3) Do nothing – poles will fail and may have to be replaced at inopportune times. Capacity issue will still exist.

Amendment #1 – new project


J0809
J0810
J0811
J0816
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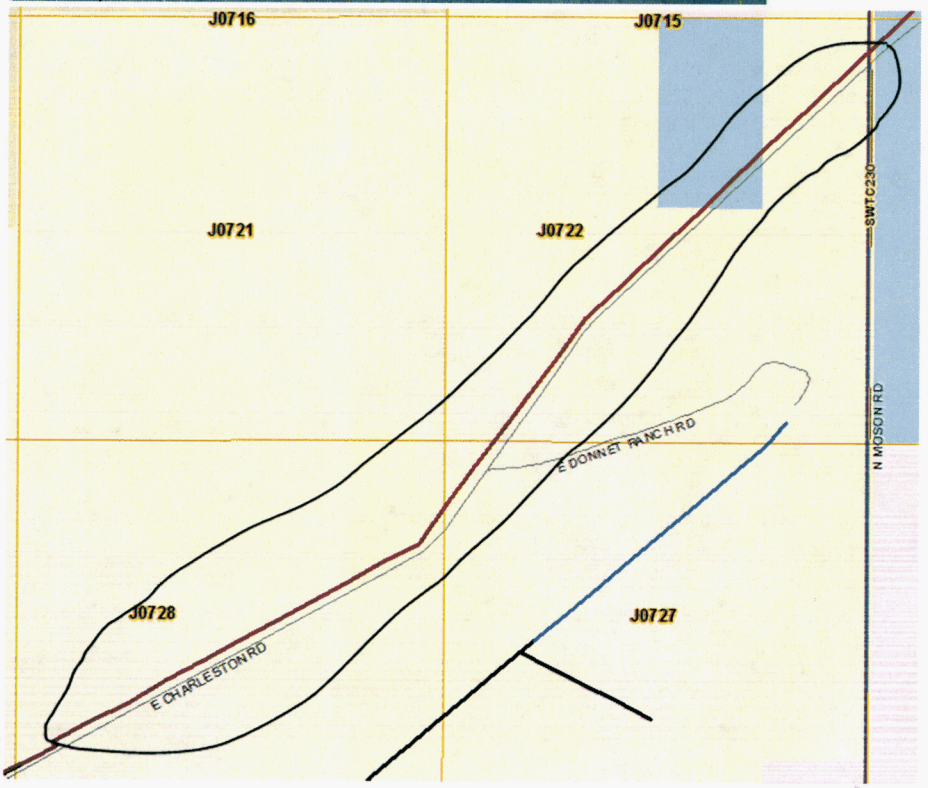
J0814
J0824
J0822
J0823
W HUGHES ST
N MAIN CREEK RD
E CHARLESTON RD
DRWY


J0716
J0715
J0721
J0722
J0728
J0727
SWTC230
N MOSON RD
E DONNET RANCH RD
E CHARLESTON RD

ATTACHMENT 2

RESOLUTION **2015-05**

The following resolution was adopted at a meeting of the Sulphur Springs Valley Electric Cooperative, Inc., Board of Directors held May 20, 2015 in Sierra Vista, Arizona:

WHEREAS, Management is directed to close previous Work Plans before 2015-17 Work Plan, move four open projects and funding for two other projects to the 2015-17 Work Plan, and de-obligate available funds;

WHEREAS, that the Amendment #1 to the 2015-17 Construction Work Plan with new and cancelled projects was reviewed by the Board;

WHEREAS, Management is directed to submit any construction work plan projects that have not been previously approved by the ACC, including those listed above, to the ACC for approval.

NOW, THEREFORE, BE IT RESOLVED, the Board of Directors hereby directs Management to apply to the ACC for amending Decision #72237 to allow loan funds for other projects and extend the time period when the loan funds can be drawn to December 31, 2020;

RESOLVED FURTHER, that the Board of Directors hereby authorizes that the proceeds of any Refinancing Loan be used to refinance certain existing variable rate indebtedness of the Corporation with CoBank, with the selection of the indebtedness to be refinanced to be determined by an Authorized Officer as advisable and in the interest of the Corporation.

RESOLVED, FURTHER, that Management is directed to amend the loan documents with CoBank and CFC to amend the loan until December 31, 2020.

I, Kathy Thatcher, Secretary of the Corporation, do hereby certify that the above is a true and correct copy of the resolution of the Board of Directors of the Corporation duly adopted at its meeting held after due and proper notice on May 20, 2015.

Secretary

(SEAL)

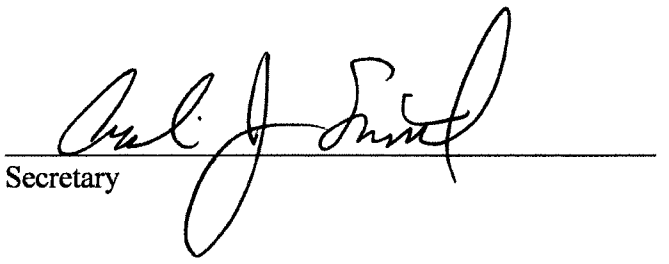
ATTACHMENT 3

RESOLUTION **2012-12**

The following resolution was adopted at a meeting of the Sulphur Springs Valley Electric Cooperative, Inc., Board of Directors held December 19, 2012:

> BE IT RESOLVED, that upon reviewing the Construction Work Plan 2013-14 Amendment, as presented by the SSVEC Engineering Division, this Plan is hereby accepted and approved by the Board of Directors, for the period from January 2013 through December 2014:
>
> BE IT FURTHER RESOLVED, that projects included in this Work Plan Amendment and previously approved projects establish the construction and loan fund requirements for SSVEC for the above-mentioned period. The Board of Directors further recognizes that loan funds presented in the Construction Work Plan Amendment are to be expended for these designated items and projects or as amended by the Board of Directors.
>
> NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors hereby directs Management to use remaining and available loan funds as necessary and implement this Construction Work Plan 2013-14 Amendment as presented herein.

I, Archie J. Smith, do hereby certify that I am the Secretary of Sulphur Springs Valley Electric Cooperative, Inc., and the foregoing is a true and correct copy of a resolution adopted by the SSVEC Board of Directors at a regular meeting held on December 19, 2012.



Secretary

(SEAL)

ATTACHMENT 4

RESOLUTION 2014-08

The following resolution was adopted at a regular meeting of the Sulphur Springs Valley Electric Cooperative, Inc., Board of Directors held August 20, 2014, in Sierra Vista, Arizona:

> BE IT RESOLVED, that the Amendment #1 to 2013-14 Construction Work Plan was reviewed by the Board
>
> BE IT FURTHER RESOLVED, that after full consideration and discussion, a motion was made by Pat English, seconded by Gene Manring, and passed that this Amendment #1 is approved.

I, Harold L. Hinkley, do hereby certify that I am the Secretary of Sulphur Springs Valley Electric Cooperative, Inc., and the foregoing is a true and correct copy of a resolution adopted by the SSVEC Board of Directors at a regular meeting held on August 20, 2014.

Harold Hinkley
Secretary

SEAL

ATTACHMENT 5

2013-2014 SSVEC CWP Estimate to Complete Started Projects

WO	Customer	Description	Cost Estimate	Sum of WO Amt	Balance Left
84987	SSVEC/24 UPGRADE	UPGRADE CONDUCTOR AND REPOLE	$ 130,000.00	$ 13,297.08	$ 116,702.92
85993	SSVEC 13 FRY AND MOORMAN AVE	UPGRADE THREE PHASE LINE FROM 4/0 TO 477 ACSR	$ 395,024.18	$ 365,660.80	$ 29,363.38
86102	SSVEC/HUACHUCA TO BALANCE	REPLACE TRANSMISSION POLES	$ 974,149.94	$ 571,310.03	$ 402,839.91
86104	SSVEC/HUACHUCA TO BLM FIBER	INSTALL FIBER ON TRANSMISSION LINE	$ 300,613.71	$ 134,523.04	$ 166,090.67
86288	SSVEC/2013	REPLACE ROTTEN POLE OCOTILLO RD #2	$ 137,701.66	$ 107,047.94	$ 30,653.72
86295	SSVEC\WELLS FARGO\WOODPECKERS	REPLACE WOODPECKER DAMAGED POLES	$ 36,658.18	$ 16,544.77	$ 20,113.41
86401	SSVEC\KNIFFEN\RETIRE	RETIRE UNUSED SERVICE	$ 2,067.87	$ 594.39	$ 1,473.48
86506	SSVEC/BALANCE- FAIRBANK POLES	REPLACE TRANSMISSION POLES	$ 228,323.44	$ 1,545.71	$ 226,777.73
86581	SSVEC 13 ROBERT SMITH /CATCLAW	POLE REPLACEMENTS PER SPOT MAINTENANCE FORMS	$ 17,789.07	$ 108.75	$ 17,680.32
86614	SSVEC 13 NEWMAN RD	POLE REPLACEMENTS PER SPOT MAINTENANCE FORMS	$ 8,740.93	$ 145.54	$ 8,595.39
86642	SSVEC 13 JAMES DR.	REPLACE POLE SPOT MAINTENANCE	$ 2,877.51	$ 40.37	$ 2,837.14
86672	SSVEC\DAVIS\RELOCATE	RELOCATE ADOT CONFLICT POLES	$ 38,940.23	$ 2,287.62	$ 36,652.61
86675	SSVEC/DOS CABEZAS POLES	REPLACE ONE AND REMOVE ONE LIGHT POLE	$ 2,313.27	$ -	$ 2,313.27
86784	SSVEC/CHARLESTON/ N. LEONARDO	REPLACE UG FAULTED CABLE USE 50K FUSE AT J07-31-4968, 486.	$ 185,785.04	$ 117,662.63	$ 68,122.41
86923	SSVEC\UPRR\RETIRE	RETIRE UNUSED SERVICES PER UPRR	$ 10,355.71	$ 938.09	$ 9,417.62
87043	SSVEC\CENTRAL\REPHASE	REPHASE LINE TO SINGLE PHASE	$ 4,558.08	$ 402.75	$ 4,155.33
87082	SSVEC/2014	RETIRE ROTTEN AND UNESED POLES	$ 9,810.84	$ 268.13	$ 9,542.71
87140	SSVEC/EMPIRITA TIE LINE	O/H AND U/G PRIMARY EMPIRITA TIE LINE	$ 41,165.90	$ 1,098.08	$ 40,067.82
87177	SSVEC 14 FRY AND MOORMAN	REPLACE O/H WITH U/G ON Y-2 @ FRY AND MORMAN	$ 321,567.38	$ 175,306.60	$ 146,260.78
87241	SSVEC/BOWIE\UPGRADE	REPLACE OH SEC TO 1/0	$ 393,728.52	$ 328.01	$ 393,400.51
87254	SSVEC/2014	REPLACE ROTTEN POLES A-7 RANCH	$ 60,524.71	$ 23,703.95	$ 36,820.76
87330	SSVEC 14 BRAMWELL	LOWER OPEN SECONDARY, ADD TRANSFORMER	$ 1,713.40	$ 62.21	$ 1,651.19
87532	SSVEC\SULPHUR\REPLACE POLES	REPLACE OSMOSE POLES	$ 28,858.27	$ 243.51	$ 28,614.76
87539	SSVEC\H 4\REPLACE POLES	REPLACE 3 WOODPECKER POLES	$ 13,162.49	$ 3,460.93	$ 9,701.56
87555	SSVEC 14 4210 GLENN RD	RETIRE 3 POLES	$ 1,168.50	$ 31.00	$ 1,137.50
87580	SSVEC 14 VETERAN'S PARK	INSTALL 2 ND350s, 1 NEW POLE PRI RISER, RETIRE 2 POLES	$ 34,384.21	$ 204.43	$ 34,179.78
87601	SSVEC\HAYWIRE\REPLACE POLE	REPLACE ROTTEN POLE	$ 4,387.50	$ 549.17	$ 3,838.33
87633	SSVEC\UPRR\RETIRE	RETIRE UNUSED SERVICES	$ 3,965.42	$ 1,927.19	$ 2,038.23
87646	SSVEC\RATLIFF \RETIRE		$ 10,000.00	$ 531.05	$ 9,468.95
87653	SSVEC/NATURE CONSERVANCY	REPLACE ROTTEN POLE	$ 8,873.46		$ 8,873.46
87671	SSVEC/OSMOSE/THOMAS	RETIRE UNUSED SERVICE AND OSMOSE POLE	$ 1,687.31	$ 103.50	$ 1,583.81
87737	SSVEC/BAILEY FOSTER	REPLACE AND RELOCATE ROTTEN POLES.	$ 22,625.69	$ 8,337.28	$ 14,288.41
87754	SSVEC/ST DAVID TAP RETIRE	RETIRE ORIGINAL ST DAVID 69 KV TAP	$ 84,075.26		$ 84,075.26
					$ 1,969,333.13

ATTACHMENT 6

RESOLUTION **2013-10**

The following resolution was adopted at a meeting of the Sulphur Springs Valley Electric Cooperative, Inc., Board of Directors held December 18, 2013:

> BE IT RESOLVED that, upon reviewing the Construction Work Plan 2015-17, as presented by the SSVEC Engineering Division, this Plan is hereby accepted and approved by the Board of Directors, for the period from January 2015 through December 2017;
>
> BE IT FURTHER RESOLVED that projects included in this Work Plan and previously approved projects establish the construction and loan fund requirements for SSVEC for the above-mentioned period. The Board of Directors further recognizes that loan funds presented in the Construction Work Plan are to be expended for those designated items and projects or as amended by the Board of Directors.
>
> NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors hereby directs Management to seek loan funds as necessary and implement this Construction Work Plan 2015-17 as presented herein.

I, Harold L. Hinkley, do hereby certify that I am the Secretary of Sulphur Springs Valley Electric Cooperative, Inc., and the foregoing is a true and correct copy of a resolution adopted by the SSVEC Board of Directors at a regular meeting held December 18, 2013.

Harold L. Hinkley
Secretary

(S E A L)

ATTACHMENT 7

NATIONAL RURAL UTILITIES COOPERATIVE FINANCE CORPORATION FINANCIAL AND STATISTICAL REPORT	BORROWER NAME	Sulphur Springs Valley Electric Cooper
	BORROWER DESIGNATION	AZ014
	ENDING DATE	12/31/2014

Submit one electronic copy and one signed hard copy to CFC Round all numbers to the nearest dollar

CERTIFICATION

We hereby certify that the entries in this report are in accordance with the accounts and other records of the system and reflect the status of the system to the best of our knowledge and belief.

Signature of Office Manager or Accountant — Date 3/3/15

Signature of Manager — Date 3/4/15

BALANCE CHECK RESULTS

1 — Needs Attention

AUTHORIZATION CHOICES

A. NRECA uses rural electric system data for legislative, regulatory and other purposes. May we provide this report from your system to NRECA? [redacted]

B. Will you authorize CFC to share your data with other cooperatives? [redacted]

PART A. STATEMENT OF OPERATIONS

ITEM	YEAR-TO-DATE LAST YEAR (a)	YEAR-TO-DATE THIS YEAR (b)	YEAR-TO-DATE BUDGET (c)	THIS MONTH (d)
1. Operating Revenue and Patronage Capital	106,272,294	101,965,774	107,825,757	7,913,004
2. Power Production Expense	0	0	0	0
3. Cost of Purchased Power	62,412,496	56,681,170	60,694,255	4,204,556
4. Transmission Expense	615,184	777,392	575,030	77,650
5. Regional Market Operations Expense	0	0	0	0
6. Distribution Expense - Operation	10,825,713	10,680,268	10,220,637	1,045,537
7. Distribution Expense - Maintenance	3,519,855	3,710,179	3,371,816	397,992
8. Consumer Accounts Expense	3,042,286	3,146,814	3,181,887	266,759
9. Customer Service and Informational Expense	997,786	765,415	899,413	62,205
10. Sales Expense	391,078	385,273	334,342	27,961
11. Administrative and General Expense	5,328,206	5,705,545	5,266,716	554,545
12. Total Operation & Maintenance Expense (2 thru 11)	**87,132,604**	**81,852,056**	**84,544,094**	**6,637,204**
13. Depreciation & Amortization Expense	10,249,609	10,692,934	10,306,636	902,244
14. Tax Expense - Property & Gross Receipts	0	0	0	0
15. Tax Expense - Other	1,186,612	366,804	1,341,550	1,130
16. Interest on Long-Term Debt	6,303,001	5,044,256	6,481,632	560,007
17. Interest Charged to Construction (Credit)	0	0	0	0
18. Interest Expense - Other	45,633	8,823	59,600	8
19. Other Deductions	296,622	364,017	315,747	77,981
20. Total Cost of Electric Service (12 thru 19)	**105,214,081**	**98,328,890**	**103,049,259**	**8,178,575**
21. Patronage Capital & Operating Margins (1 minus 20)	**1,058,212**	**3,636,884**	**4,776,498**	**(265,571)**
22. Non Operating Margins - Interest	175,934	171,224	237,449	14,533
23. Allowance for Funds Used During Construction	0	0	0	0
24. Income (Loss) from Equity Investments	0	0	0	0
25. Non Operating Margins - Other	168,186	85,333	67,073	(31,877)
26. Generation & Transmission Capital Credits	3,018,234	4,026,166	4,600,000	0
27. Other Capital Credits & Patronage Dividends	952,510	294,675	1,173,755	21,251
28. Extraordinary Items	0	0	0	0
29. Patronage Capital or Margins (21 thru 28)	**5,373,075**	**8,214,283**	**10,854,775**	**(261,664)**

PART B. DATA ON TRANSMISSION AND DISTRIBUTION PLANT

ITEM	YEAR-TO-DATE LAST YEAR (a)	YEAR-TO-DATE THIS YEAR (b)	ITEM	YEAR-TO-DATE LAST YEAR (a)	YEAR-TO-DATE THIS YEAR (b)
1. New Services Connected	377	382	5. Miles Transmission	332	318
2. Services Retired	133	154	6. Miles Distribution Overhead	3,040	3,044
3. Total Services In Place	58,359	58,505	7. Miles Distribution Underground	759	762
4. Idle Services (Exclude Seasonal)	7,546	7,458	**8. Total Miles Energized (5+6+7)**	**4,131**	**4,124**

CFC FORM 7

NATIONAL RURAL UTILITIES COOPERATIVE FINANCE CORPORATION FINANCIAL AND STATISTICAL REPORT	BORROWER NAME	Sulphur Springs
	BORROWER DESIGNATION	AZ014
	ENDING DATE	12/31/2014

PART C. BALANCE SHEET

ASSETS AND OTHER DEBITS		LIABILITIES AND OTHER CREDITS	
1. Total Utility Plant in Service	328,798,905	29. Memberships	192,740
2. Construction Work in Progress	9,161,117	30. Patronage Capital	91,796,502
3. Total Utility Plant (1+2)	**337,960,022**	31. Operating Margins - Prior Years	0
4. Accum. Provision for Depreciation and Amort	121,553,067	32. Operating Margins - Current Year	7,957,726
5. Net Utility Plant (3-4)	**216,406,955**	33. Non-Operating Margins	256,557
6. Nonutility Property - Net	6,667,562	34. Other Margins & Equities	(3,087,623)
7. Investment in Subsidiary Companies	0	**35. Total Margins & Equities (29 thru 34)**	**97,115,902**
8. Invest. in Assoc. Org. - Patronage Capital	43,208,048	36. Long-Term Debt CFC (Net)	58,447,832
9. Invest. in Assoc. Org. - Other - General Funds	191,360	37. Long-Term Debt - Other (Net)	103,495,930
10. Invest in Assoc. Org. - Other - Nongeneral Funds	3,976,932	**38. Total Long-Term Debt (36 + 37)**	**161,943,762**
11. Investments in Economic Development Projects	0	39. Obligations Under Capital Leases - Non current	0
12. Other Investments	135,098	40. Accumulated Operating Provisions - Asset Retirement Obligations	2,502,954
13. Special Funds	1,210,062	**41. Total Other Noncurrent Liabilities (39+40)**	**2,502,954**
14. Total Other Property & Investments (6 thru 13)	**55,389,062**	42. Notes Payable	784,070
15. Cash-General Funds	2,195,491	43. Accounts Payable	5,122,468
16. Cash-Construction Funds-Trustee	0	44. Consumers Deposits	2,481,299
17. Special Deposits	82,342	45. Current Maturities Long-Term Debt	6,987,062
18. Temporary Investments	2,322,373	46. Current Maturities Long-Term Debt-Economic Dev.	0
19. Notes Receivable - Net	0	47. Current Maturities Capital Leases	0
20. Accounts Receivable - Net Sales of Energy	4,599,992	48. Other Current & Accrued Liabilities	7,962,426
21. Accounts Receivable - Net Other	1,834,689	**49. Total Current & Accrued Liabilities (42 thru 48)**	**23,337,326**
22. Renewable Energy Credits	0	50. Deferred Credits	3,146,964
23. Materials & Supplies - Electric and Other	3,174,247	**51. Total Liabilities & Other Credits (35+38+41+49+50)**	**288,046,908**
24. Prepayments	633,972		
25. Other Current & Accrued Assets	77,288	**ESTIMATED CONTRIBUTION-IN-AID-OF-CONSTRUCTION**	
26. Total Current & Accrued Assets (15 thru 25)	**14,920,394**	Balance Beginning of Year	39,074,424
27. Deferred Debits	1,330,497	Amounts Received This Year (Net)	4,779,534
28. Total Assets & Other Debits (5+14+26+27)	**288,046,908**	TOTAL Contributions-In-Aid-Of-Construction	**43,853,957**

PART D. THE SPACE BELOW IS PROVIDED FOR IMPORTANT NOTES REGARDING THE FINANCIAL STATEMENT CONTAINED IN THIS REPORT.

Prepayments long term right of was leases amortized 10 years 182,296
Deferred credit lump sum ISAC payments amortized 25 years 97,325
Deferred credit patronage capital uncashed checks 62,488
Deferred credit feul adjustment balance 809,517
Deferred credit joint use rent amortized over terms of lease 267,381
Deferred credit cost of removal 47,238
Deferred Fort Huachuca 1,191,426
AR Other includes Fort Huachuca 999,057
CWIP includes Fort Huachuca 211,520
CREB's Bond Deposit 354,694
Long Term Debt CFC includes CREB's Bonds 6,055,283
Long Term Debt CoBank includes CREB's Bonds 5,181,818
Deferred credit demand side management 797,541
Deferred credit Sun Watts 143,274
Unbilled revenue AR estimate 2,142,231
Accrued self insurance health care costs 268,901
Cash received from retirements Assoc. Orgs. 1,030,422
Change in accounting principle current portion of captial credit retirements applied as expense reduction

CFC FORM 7

NATIONAL RURAL UTILITIES
COOPERATIVE FINANCE CORPORATION
FINANCIAL AND STATISTICAL REPORT

BORROWER NAME	Sulphur Springs
BORROWER DESIGNATION	AZ014
ENDING DATE	12/31/2014

PART E. CHANGES IN UTILITY PLANT

	PLANT ITEM	BALANCE BEGINNING OF YEAR (a)	ADDITIONS (b)	RETIREMENTS (c)	ADJUSTMENTS AND TRANSFER (d)	BALANCE END OF YEAR (e)
1	Distribution Plant Subtotal	271,461,479	10,796,373	2,306,947	0	279,950,905
2	General Plant Subtotal	28,069,736	586,353	463,483	0	28,192,606
3	Headquarters Plant	11,919,903	321,263	0	0	12,241,166
4	Intangibles	0	0	0	0	0
5	Transmission Plant Subtotal	32,930,493	1,485,100	290,980	0	34,124,613
6	Regional Transmission and Market Operation Plant	0	0	0	0	0
7	Production Plant - Steam	0	0	0	0	0
8	Production Plant - Nuclear	0	0	0	0	0
9	Production Plant - Hydro	0	0	0	0	0
10	Production Plant - Other	5,418,964	0	0	0	5,418,964
11	All Other Utility Plant	(30,213,244)	(916,106)	0	0	(31,129,350)
12	**SUBTOTAL: (1 thru 11)**	**319,587,331**	**12,272,984**	**3,061,410**	**0**	**328,798,905**
13	Construction Work in Progress	10,502,263	(1,341,146)			9,161,117
14	**TOTAL UTILITY PLANT (12+13)**	**330,089,594**	**10,931,838**	**3,061,410**	**0**	**337,960,022**

CFC NO LONGER REQUIRES SECTIONS "F", "G", AND "N" DATA
Those sections refer to data on "Analysis of Accumulated Provision for Depreciation" (F), "Materials and Supplies" (G), "Annual Meeting and Board Data" (N), and "Conservation Data" (P).

PART H. SERVICE INTERRUPTIONS

	ITEM	Avg. Minutes per Consumer by Cause: Power Supplier (a)	Avg. Minutes per Consumer by Cause: Major Event (b)	Avg. Minutes per Consumer by Cause: Planned (c)	Avg. Minutes per Consumer by Cause: All Other (d)	TOTAL (e)
1.	Present Year	0.00	0.00	8.11	79.89	88.00
2.	Five-Year Average	3.08	32.82	4.43	94.72	135.05

PART I. EMPLOYEE - HOUR AND PAYROLL STATISTICS

1.	Number of Full Time Employees	174	4.	Payroll - Expensed	7,715,903
2.	Employee - Hours Worked - Regular Time	409,929	5.	Payroll - Capitalized	3,168,469
3.	Employee - Hours Worked - Overtime	20,577	6.	Payroll - Other	3,377,534

PART J. PATRONAGE CAPITAL

	ITEM	THIS YEAR (a)	CUMULATIVE (b)
1.	General Retirement	250,005	13,308,307
2.	Special Retirements	51,770	288,413
3.	**Total Retirements (1+2)**	**301,775**	**13,596,720**
4.	Cash Received from Retirement of Patronage Capital by Suppliers of Electric Power	191,406	
5.	Cash Received from Retirement of Patronage Capital by Lenders for Credit Extended to the Electric Syster	763,753	
6.	**Total Cash Received (4+5)**	**955,159**	

PART K. DUE FROM CONSUMERS FOR ELECTRIC SERVICE

1. Amount Due Over 60 Days:	300,407
2. Amount Written Off During Year:	114,415

CFC FORM 7

NATIONAL RURAL UTILITIES COOPERATIVE FINANCE CORPORATION FINANCIAL AND STATISTICAL REPORT	BORROWER NAME	Sulphur Springs
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PART L. KWH PURCHASED AND TOTAL COST

	NAME OF SUPPLIER (a)	CFC USE ONLY SUPPLIER CODE (b)	RENEWABLE ENERGY PROGRAM NAME (c)	RENEWABLE FUEL TYPE (d)	KWH PURCHASED (e)	TOTAL COST (f)	AVERAGE COST PER KWH (cents) (g)	INCLUDED IN TOTAL COST		
								FUEL COST ADJUSTMENT (h)	WHEELING & OTHER CHARGES (or Credits) (i)	COMMENTS (j)
1	AEPCO			0 None	941,531,450	54,997,415	5.84	(2,731,509)	6,534,292	Comments
2	SunWatts			0 None	3,120,000	108,797	3.49	0	0	Comments
3	Members			0 None	1,027,176	33,614	3.27	0	0	Comments
4	Market Purchases			0 None	33,568,000	1,541,344	4.59	0	0	Comments
5				0 None	0	0	0.00	0	0	Comments
6				0 None	0	0	0.00	0	0	Comments
7				0 None	0	0	0.00	0	0	Comments
8				0 None	0	0	0.00	0	0	Comments
9				0 None	0	0	0.00	0	0	Comments
10				0 None	0	0	0.00	0	0	Comments
11				0 None	0	0	0.00	0	0	Comments
12				0 None	0	0	0.00	0	0	Comments
13				0 None	0	0	0.00	0	0	Comments
14				0 None	0	0	0.00	0	0	Comments
15				0 None	0	0	0.00	0	0	Comments
16				0 None	0	0	0.00	0	0	Comments
17				0 None	0	0	0.00	0	0	Comments
18				0 None	0	0	0.00	0	0	Comments
19				0 None	0	0	0.00	0	0	Comments
20				0 None	0	0	0.00	0	0	Comments
21	TOTALS				979,246,626	56,681,170	5.79	(2,731,509)	6,534,292	

CFC FORM 7

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PART L. KWH PURCHASED AND TOTAL COST (Continued)

	COMMENTS
1	
2	
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CFC FORM 7

NATIONAL RURAL UTILITIES COOPERATIVE FINANCE CORPORATION FINANCIAL AND STATISTICAL REPORT	BORROWER NAME	Sulphur Springs
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PART M. LONG-TERM LEASES (If additional space is needed, use separate sheet)

*LIST BELOW ALL "RESTRICTED PROPERTY" ** HELD UNDER "LONG TERM" LEASE. (If none, State "NONE")*

	NAME OF LESSOR	TYPE OF PROPERTY	RENTAL THIS YEAR
1.	NONE		$0
2			$0
3.		TOTAL	$0

** "RESTRICTED PROPERTY" means all properties other than automobiles, trucks, tractors, other vehicles (including without limitation aircraft and ships), office and warehouse space and office equipment (including without limitation computers). "LONG TERM" means leases having unexpired terms in excess of 3 years and covering property having an intial cost in excess of $250,000).

PART O. LONG-TERM DEBT SERVICE REQUIREMENTS

	NAME OF LENDER	BALANCE END OF YEAR	BILLED THIS YEAR			CFC USE ONLY
			INTEREST (a)	PRINCIPAL (b)	TOTAL (c)	(d)
1	National Rural Utilities Cooperative Finance Corporation	61,551,531	3,435,717	3,300,677	6,736,394	
2	NCSC	0	0	0	0	
3	Farmer Mac	0	0	0	0	
4	CoBank	107,230,104	2,400,318	3,021,439	5,421,757	
5		0	0	0	0	
6		0	0	0	0	
7		0	0	0	0	
8		0	0	0	0	
9		0	0	0	0	
10	Principal Payments Received from Ultimate Recipients of IRP Loans			0		
11	Principal Payments Received from Ultimate Recipients of REDL Loans			0		
12	TOTAL (Sum of 1 thru 9)	$168,781,635	$5,836,035	$6,322,116	$12,158,151	

CFC FORM 7

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	ENDING DATE	12/31/2014

PART R. POWER REQUIREMENTS DATA BASE

CLASSIFICATION	CONSUMER, SALES, AND REVENUE DATA	JANUARY CONSUMERS (a)	DECEMBER CONSUMERS (b)	AVERAGE CONSUMERS (c)	TOTAL KWH SALES AND REVENUE (d)
1. Residential Sales (excluding seasonal)	a. No. Consumers Served	41,036	41,190	41,113	
	b. KWH Sold				337,035,283
	c. Revenue				45,077,129
2. Residential Sales - Seasonal	a. No. Consumers Served	0	0	0	
	b. KWH Sold				0
	c. Revenue				0
3. Irrigation Sales	a. No. Consumers Served	827	852	840	
	b. KWH Sold				169,708,486
	c. Revenue				16,509,813
4. Comm. and Ind. 1000 KVA or Less	a. No. Consumers Served	8,892	8,921	8,907	
	b. KWH Sold				236,383,984
	c. Revenue				26,939,149
5. Comm. and Ind. Over 1000 KVA	a. No. Consumers Served	5	4	5	
	b. KWH Sold				47,715,560
	c. Revenue				4,345,017
6. Public Street & Highway Lighting	a. No. Consumers Served	46	46	46	
	b. KWH Sold				2,202,888
	c. Revenue				552,122
7. Other Sales to Public Authority	a. No. Consumers Served	0	0	0	
	b. KWH Sold				0
	c. Revenue				0
8. Sales for Resales-RUS Borrowers	a. No. Consumers Served	0	0	0	
	b. KWH Sold				0
	c. Revenue				0
9. Sales for Resales-Other	a. No. Consumers Served	21	24	23	
	b. KWH Sold				131,184,000
	c. Revenue				5,233,179
10. TOTAL No. of Consumers (lines 1a thru 9a)		**50,827**	**51,037**	**50,932**	
11. TOTAL KWH Sold (lines 1b thru 9b)					**924,230,201**
12. TOTAL Revenue Received From Sales of Electric Energy (line 1c thru 9c)					**98,656,409**
13. Transmission Revenue					0
14. Other Electric Revenue					3,309,366
15. KWH - Own Use					1,499,044
16. TOTAL KWH Purchased					979,246,626
17. TOTAL KWH Generated					0
18. Cost of Purchases and Generation					57,458,562
19. Interchange - KWH - Net					0
20. Peak - Sum All KW Input (Metered) ○ Non-coincident ○ Coincident					198,630

CFC FORM 7

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PART S. ENERGY EFFICIENCY PROGRAMS

Line #	Classification	Added This Year			Total To Date		
		Number of Consumers (a)	Amount Invested (b)	ESTIMATED MMBTU Savings (c)	Number of Consumers (d)	Amount Invested (e)	ESTIMATED MMBTU Savings (f)
1.	Residential Sales (excluding seasonal)	0	0	0	0	0	0
2.	Residential Sales - Seasonal	0	0	0	0	0	0
3.	Irrigation Sales	0	0	0	0	0	0
4.	Comm. and Ind. 1000 KVA or Less	0	0	0	0	0	0
5.	Comm. and Ind. Over 1000 KVA	0	0	0	0	0	0
6.	Public Street and Highway Lighting	0	0	0	0	0	0
7.	Other Sales to Public Authorities	0	0	0	0	0	0
8.	Sales for Resales - RUS Borrowers	0	0	0	0	0	0
9.	Sales for Resales - Other	0	0	0	0	0	0
10.	**TOTAL**	**0**	**0**	**0**	**0**	**0**	**0**

CFC FORM 7

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COOPERATIVE FINANCE CORPORATION	BORROWER DESIGNATION	AZ014
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(All investments refer to your most recent CFC Loan Agreement)

7a - PART 1 - INVESTMENTS

	DESCRIPTION (a)	INCLUDED ($) (b)	EXCLUDED ($) (c)	INCOME OR LOSS (d)
2. INVESTMENTS IN ASSOCIATED ORGANIZATIONS				
5	G&T, CFC, Federated Nisc, NRTC,CRC.CoBank		43,208,048	
6	CFC Fee, Assoc Ent.,GCSECA		191.360	
7	CTC's CFC		3,976,932	
8				
	Subtotal (Line 5 thru 8)	**0**	**47,376,340**	**0**
3. INVESTMENTS IN ECONOMIC DEVELOPMENT PROJECTS				
9				
10				
11				
12				
	Subtotal (Line 9 thru 12)	**0**	**0**	**0**
4. OTHER INVESTMENTS				
13	ERC Loans Receivable		104.098	
14	Prepaid Self-Insurance Impound		31.000	
15				
16				
	Subtotal (Line 13 thru 16)	**0**	**135,098**	**0**
5. SPECIAL FUNDS				
17	Deferred Compensation-Employees		1,210,062	
18				
19				
20				
	Subtotal (Line 17 thru 20)	**0**	**1,210,062**	**0**
6. CASH - GENERAL				
21	Wells Fargo, Chase, On Hand	1,945,491	250,000	
22				
23				
24				
	Subtotal (Line 21 thru 24)	**1,945,491**	**250,000**	**0**
7. SPECIAL DEPOSITS				
25	PDA CORP Membership	3.500		
26	OSG Deposit and Savage Law	14.588		
27	Hawes Substation Certificate	35.890		
28	Steel Reel Deposit	28.364		
	Subtotal (Line 25 thru 28)	**82,342**	**0**	**0**
8. TEMPORARY INVESTMENTS				
29	CoBank	321.244		
30	Edward Jones CD's	2,001.129		
31				
32				
	Subtotal (Line 29 thru 32)	**2,322,373**	**0**	**0**
9. ACCOUNT & NOTES RECEIVABLE - NET				
33	Accounts Receivable-Other	1,834,689		
34				
35				
36				
	Subtotal (Line 33 thru 36)	**1,834,689**	**0**	**0**
10. COMMITMENTS TO INVEST WITHIN 12 MONTHS BUT NOT ACTUALLY PURCHASED				
37				
38				
39				
40				
	Subtotal (Line 37 thru 40)	**0**	**0**	**0**
	Total	**6,184,895**	**48,971,500**	**0**

CFC FORM 7

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(All investments refer to your most recent CFC Loan Agreement)

7a - PART II. LOAN GUARANTEES

Line No.	Organization & Guarantee Beneficiary (a)	Maturity Date of Guarantee Obligation (b)	Original Amount ($) (c)	Performance Guarantee Exposure or Loan Balance ($) (d)	Available Loans (Covered by Guarantees) (e)
1			0	0	0
2			0	0	0
3			0	0	0
4			0	0	0
5			0	0	0
TOTALS (Line 1 thru 5)			**0**	**0**	**0**

7a - PART III. LOANS

Line No.	Name of Organization (a)	Maturity Date (b)	Original Amount ($) (c)	Loan Balance ($) (d)	Available Loans (e)
1			0	0	0
2			0	0	0
3			0	0	0
4			0	0	0
5			0	0	0
TOTALS (Line 1 thru 5)			**0**	**0**	**0**

7a - PART IV. TOTAL INVESTMENTS AND LOANS GUARANTEES

1	TOTAL (Part I, Total - Column b + Part II, Totals - Column d + Column e + Part III, Totals - Column d + Column e)		**6,184,895**
2	LARGER OF (a) OR (b)		**50,694,003**
	a. 15 percent of Total Utility Plant (CFC Form 7, Part C, Line 3)	**50,694,003**	
	b. 50 percent of Total Equity (CFC Form 7, Part C, Line 35)	**48,557,951**	

CFC FORM 7

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PRELIMINARY FINANCIAL & STATISTICAL RATIOS

These preliminary ratios can be used to evaluate your system's performance and used as an error checking device. MDSC and DSC will be "estimated" values. Your system's prior year's "Investment in Associated Orgs -- Patronage Capital" *must be entered as a part of the calculation for MDSC.*

ITEM DESCRIPTION	ENTER DATA
2013 Part C. Balance Sheet, Line 8 - Invest. In Assoc. Org. - Pat Cap	38,908,307
2014 Billed Debt Service	**12,158,151**
2013 Part R. Power Req. Database, Line 11, Column (d) - Total MWH Sold	**873,738**
2013 Part R. Power Req. Database, Line 10, Column (c) - Average Number of Consumers	**50,819**
2013 Part C. Balance Sheet, Line 3 - Total Utility Plant	**330,090**
2012 Part C. Balance Sheet, Line 35 - Total Margins & Equities	89,362,825
2013 Part C. Balance Sheet, Line 35 - Total Margins & Equities	89,164,479
2012 Part C. Balance Sheet, Line 38 - Total Long-Term Debt	162,397,329
2013 Part C. Balance Sheet, Line 38 - Total Long-Term Debt	162,839,468
2009 Part C. Balance Sheet, Line 34 - Total Margins & Equities	65,917,528
2009 Part C. Balance Sheet, Line 37 - Total Long-Term Debt	134,946,486
2013 Part C. Balance Sheet, Line 46 - Current Maturities Long-Term Debt - Economic Dev.	*0*
2013 Part C. Balance Sheet, Line 45 - Current Maturaties Long-Term Debt	6,343,755

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2012 TIER	1.74	
2013 TIER	1.85	
2014 TIER	2.63	
2012 OTIER	1.37	
2013 OTIER	1.26	
2014 OTIER	1.91	
2012 MDSC	1.58	
2013 MDSC	1.48	
2014 MDSC	1.61	
2012 DSC	1.76	
2013 DSC	1.77	
2014 DSC	1.97	
2012 ODSC	1.55	
2013 ODSC	1.47	
2014 ODSC	1.67	
2% of Total Margins & Equity	1,942,318	
Total Long-Term Leases	-	
1/3 of the Lease portion	(647,439)	
Pat Cap (Cash) portion	21,100	

CFC FORM 7

RATIO No.	RATIO DESCRIPTION	KRTA 2009	KRTA 2010	KRTA 2011	KRTA 2012	KRTA 2013	*ESTIMATED RATIOS FOR 2014*
1	RATIO 1 --- AVERAGE TOTAL CONSUMERS SERVED	50,498	50,849	51,010	50,900	50,819	**50,932**
2	RATIO 2 --- TOTAL KWH SOLD (1,000)	834,119	822,776	840,861	853,741	873,738	**924,230**
3	RATIO 3 --- TOTAL UTILITY PLANT (1,000)	286,216	288,110	302,402	321,436	330,090	**337,960**
4	RATIO 4 --- TOTAL NUMBER OF EMPLOYEES (FULL TIME ONLY)	194	202	209	198	198	**174**
5	RATIO 5 --- TOTAL MILES OF LINE	4,039	4,059	4,095	4,105	4,131	**4,124**
6	RATIO 6 --- TIER	1.81	2.01	2.02	1.74	1.85	**2.63**
7	RATIO 7 --- TIER (2 OF 3 YEAR HIGH AVERAGE)	2.29	2.39	2.01	2.01	1.94	**2.24**
8	RATIO 8 --- OTIER	0.90	1.44	1.56	1.37	1.26	**1.91**
9	RATIO 9 --- OTIER (2 OF 3 YEAR HIGH AVERAGE)	1.16	1.23	1.50	1.50	1.46	**1.64**
10	RATIO 10 --- MODIFIED DSC (MDSC)	1.26	1.68	1.72	1.58	1.48	**1.61**
11	RATIO 11 --- MDSC (2 OF 3 YEAR HIGH AVERAGE)	2.46	2.55	1.70	1.70	1.65	**1.59**
12	RATIO 12 --- DEBT SERVICE COVERAGE (DSC)	1.83	2.00	1.97	1.76	1.77	**1.97**
13	RATIO 13 --- DSC (2 OF 3 YEAR HIGH AVERAGE)	2.15	2.24	1.98	1.98	1.87	**1.87**
14	RATIO 14 --- ODSC	1.27	1.65	1.69	1.55	1.47	**1.67**
15	RATIO 15 --- ODSC (2 OF 3 YEAR HIGH AVERAGE)	1.44	1.53	1.67	1.67	1.62	**1.61**
16	RATIO 16 --- EQUITY AS A % OF ASSETS	26.01	28.24	29.60	31.29	31.23	**33.72**
17	RATIO 17 --- DISTRIBUTION EQUITY (EXCLUDES EQUITY IN ASSOC. ORG'S PATRONAGE CAPITAL)	17.26	18.65	19.58	21.53	20.38	**22.02**
18	RATIO 18 --- EQUITY AS A % OF TOTAL CAPITALIZATION	32.82	33.87	33.63	35.50	35.38	**37.49**
19	RATIO 19 --- LONG TERM DEBT AS A % OF TOTAL ASSETS	53.25	55.14	58.40	56.86	57.03	**56.22**
20	RATIO 20 --- LONG TERM DEBT PER KWH SOLD (MILLS)	161.78	172.93	186.51	190.22	186.37	**175.22**
21	RATIO 21 --- LONG TERM DEBT PER CONSUMER ($)	2,672.31	2,798.17	3,074.44	3,190.52	3,204.30	**3,179.61**
22	RATIO 22 --- NON-GOVERNMENT DEBT AS A % OF TOTAL LONG TERM DEBT	100.00	100.00	100.00	100.00	100.00	**100.00**
23	RATIO 23 --- BLENDED INTEREST RATE (%)	5.52	5.10	4.66	4.25	3.74	**2.98**
24	RATIO 24 --- ANNUAL CAPITAL CREDITS RETIRED PER TOTAL EQUITY (%)	0.39	0.59	1.00	0.55	0.34	**0.31**
25	RATIO 25 --- LONG-TERM INTEREST AS A % OF REVENUE	7.25	7.04	6.87	6.44	5.93	**4.95**
26	RATIO 26 --- CUMULATIVE PATRONAGE CAPITAL RETIRED AS A % OF TOTAL PATRONAGE CAPITAL	14.81	14.03	13.76	12.85	12.98	**12.28**
27	RATIO 27 --- RATE OF RETURN ON EQUITY (%)	8.93	10.11	9.25	5.83	6.03	**8.46**
28	RATIO 28 --- RATE OF RETURN ON TOTAL CAPITALIZATION (%)	6.56	6.82	6.16	4.86	4.63	**5.12**
29	RATIO 29 --- CURRENT RATIO	0.42	0.45	0.59	0.55	0.47	**0.64**
30	RATIO 30 --- GENERAL FUNDS PER TUP (%)	3.03	4.53	4.83	3.89	3.64	**3.76**
31	RATIO 31 --- PLANT REVENUE RATIO (PRR) ONE YEAR	7.93	6.82	7.24	7.80	7.63	**7.59**
32	RATIO 32 --- INVESTMENT IN SUBSIDIARIES TO TOTAL ASSETS (%)	#N/A	#N/A	#N/A	#N/A	#N/A	**0.00**
33	RATIO 33 --- TOTAL OPERATING REVENUE PER KWH SOLD (MILLS)	120.56	126.20	124.70	127.63	121.63	**110.33**

CFC FORM 7

RATIO No.	RATIO DESCRIPTION	KRTA 2009	KRTA 2010	KRTA 2011	KRTA 2012	KRTA 2013	*ESTIMATED RATIOS FOR 2014*
34	RATIO 34 --- TOTAL OPERATING REVENUE PER TUP INVESTMENT (CENTS)	35.14	36.04	34.67	33.90	32.20	**30.17**
35	RATIO 35 --- TOTAL OPERATING REVENUE PER CONSUMER ($)	1,991.44	2,042.01	2,055.60	2,140.64	2,091.19	**2,002.00**
36	RATIO 36 --- ELECTRIC REVENUE PER KWH SOLD (MILLS)	115.81	120.03	119.81	123.26	115.26	**106.74**
37	RATIO 37 --- ELECTRIC REVENUE PER CONSUMER ($)	1,912.89	1,942.26	1,975.03	2,067.45	1,981.67	**1,937.02**
38	RATIO 38 --- RESIDENTIAL REVENUE PER KWH SOLD (MILLS)	128.74	134.58	137.28	140.19	135.23	**133.75**
39	RATIO 39 --- NON-RESIDENTIAL REVENUE PER KWH SOLD (MILLS)	106.28	108.30	106.55	110.86	101.52	**91.25**
40	RATIO 40 --- SEASONAL REVENUE PER KWH SOLD (MILLS)	#N/A	#N/A	#N/A	#N/A	#N/A	**#DIV/0!**
41	RATIO 41 --- IRRIGATION REVENUE PER KWH SOLD (MILLS)	91.85	100.68	97.57	104.28	100.20	**97.28**
42	RATIO 42 --- SMALL COMMERCIAL REVENUE PER KWH SOLD (MILLS)	116.87	116.89	117.45	118.10	117.25	**113.96**
43	RATIO 43 --- LARGE COMMERCIAL REVENUE PER KWH SOLD (MILLS)	105.77	91.54	87.06	101.88	87.15	**91.06**
44	RATIO 44 --- SALES FOR RESALE REVENUE PER KWH SOLD (MILLS)	10.88	34.28	32.03	24.20	36.00	**39.89**
45	RATIO 45 --- STREET & HIGHWAY LIGHTING REVENUE PER KWH SOLD (MILLS)	188.43	235.95	250.44	254.94	250.31	**250.64**
46	RATIO 46 --- OTHER SALES TO PUBLIC AUTHORITIES REVENUE PER KWH SOLD (MILLS)	#N/A	#N/A	#N/A	#N/A	#N/A	**#DIV/0!**
47	RATIO 47 --- OPERATING MARGINS PER KWH SOLD (MILLS)	(1.22)	3.46	4.39	2.45	1.21	**3.94**
48	RATIO 48 --- OPERATING MARGINS PER CONSUMER ($)	(20.23)	56.02	72.39	41.05	20.82	**71.41**
49	RATIO 49 --- NON-OPERATING MARGINS PER KWH SOLD (MILLS)	0.45	0.63	0.35	0.60	0.39	**0.28**
50	RATIO 50 --- NON-OPERATING MARGINS PER CONSUMER ($)	7.42	10.18	5.83	10.10	6.77	**5.04**
51	RATIO 51 --- TOTAL MARGINS LESS ALLOCATIONS PER KWH SOLD (MILLS)	(0.78)	4.09	4.75	3.05	1.61	**4.21**
52	RATIO 52 --- TOTAL MARGINS LESS ALLOCATIONS PER CONSUMER ($)	(12.81)	66.20	78.22	51.15	27.59	**76.44**
53	RATIO 53 --- INCOME (LOSS) FROM EQUITY INVESTMENTS PER CONSUMER ($)	#N/A	#N/A	#N/A	#N/A	#N/A	**0.00**
54	RATIO 54 --- ASSOCIATED ORGANIZATION'S CAPITAL CREDITS PER KWH SOLD (MILLS)	7.83	4.86	4.00	3.05	4.54	**4.68**
55	RATIO 55 --- ASSOCIATED ORGANIZATION'S CAPITAL CREDITS PER CONSUMER ($)	129.38	78.63	65.97	51.20	78.14	**84.84**
56	RATIO 56 --- TOTAL MARGINS PER KWH SOLD (MILLS)	7.06	8.95	8.75	6.10	6.15	**8.89**
57	RATIO 57 --- TOTAL MARGINS PER CONSUMER ($)	116.57	144.82	144.19	102.35	105.73	**161.28**
58	RATIO 58 --- A/R OVER 60 DAYS AS A % OF OPERATING REVENUE	1.13	0.70	0.51	0.32	0.31	**0.29**
59	RATIO 59 --- AMOUNT WRITTEN OFF AS A % OF OPERATING REVENUE	0.14	0.15	0.22	0.13	0.33	**0.11**
60	RATIO 60 --- TOTAL MWH SOLD PER MILE OF LINE	206.52	202.70	205.34	207.98	211.51	**224.11**
61	RATIO 61 --- AVERAGE RESIDENTIAL USAGE KWH PER MONTH	721.17	742.00	730.88	730.05	722.81	**683.15**
62	RATIO 62 --- AVERAGE SEASONAL KWH USAGE PER MONTH	#N/A	#N/A	#N/A	#N/A	#N/A	**#DIV/0!**
63	RATIO 63 --- AVERAGE IRRIGATION KWH USAGE PER MONTH	18,079.75	15,922.59	18,027.25	18,680.75	17,724.66	**16,846.19**
64	RATIO 64 --- AVERAGE SMALL COMMERCIAL KWH USAGE PER MONTH	2,391.59	2,328.54	2,343.02	2,391.42	2,214.85	**2,211.72**
65	RATIO 65 --- AVERAGE LARGE COMMERCIAL KWH USAGE PER MONTH	1,208,583.33	1,419,479.17	1,305,541.67	1,129,500.00	1,045,983.33	**883,621.48**
66	RATIO 66 --- AVERAGE STREET & HIGHWAY LIGHTING KWH USAGE PER MONTH	4,326.09	4,318.84	4,081.52	3,934.78	3,971.01	**3,990.74**
67	RATIO 67 --- AVERAGE SALES FOR RESALE KWH USAGE PER MONTH	90,333.33	72,666.67	84,900.00	80,777.78	264,547.62	**485,866.67**
68	RATIO 68 --- AVERAGE SALES TO PUBLIC AUTHORITIES KWH USAGE PER MONTH	#N/A	#N/A	#N/A	#N/A	#N/A	**#DIV/0!**
69	RATIO 69 --- RESIDENTIAL KWH SOLD PER TOTAL KWH SOLD (%)	42.41	44.64	43.16	42.28	40.76	**36.47**
70	RATIO 70 --- SEASONAL KWH SOLD PER TOTAL KWH SOLD (%)	#N/A	#N/A	#N/A	#N/A	#N/A	**0.00**
71	RATIO 71 --- IRRIGATION KWH SOLD PER TOTAL KWH SOLD (%)	19.35	16.35	18.96	20.66	19.69	**18.36**
72	RATIO 72 --- SMALL COMMERCIAL KWH SOLD PER TOTAL KWH SOLD (%)	30.34	30.01	29.55	29.77	27.02	**25.58**
73	RATIO 73 --- LARGE COMMERCIAL KWH SOLD PER TOTAL KWH SOLD (%)	6.95	8.28	7.45	6.35	7.18	**5.16**

CFC FORM 7

RATIO No.	RATIO DESCRIPTION	KRTA 2009	KRTA 2010	KRTA 2011	KRTA 2012	KRTA 2013	*ESTIMATED RATIOS FOR 2014*
74	RATIO 74 --- STREET & HIGHWAY LIGHTING KWH SOLD PER TOTAL KWH SOLD (%)	0.29	0.29	0.27	0.25	0.25	**0.24**
75	RATIO 75 --- SALES FOR RESALE PER TOTAL KWH SOLD (%)	0.65	0.42	0.61	0.68	5.09	**14.19**
76	RATIO 76 --- SALES TO PUBLIC AUTHORITIES PER TOTAL KWH SOLD (%)	#N/A	#N/A	#N/A	#N/A	#N/A	**0.00**
77	RATIO 77 --- O & M EXPENSES PER TOTAL KWH SOLD (MILLS)	13.62	14.27	13.58	14.22	16.42	**15.57**
78	RATIO 78 --- O & M EXPENSES PER DOLLARS OF TUP (MILLS)	39.69	40.75	37.77	37.76	43.46	**42.58**
79	RATIO 79 --- O & M EXPENSES PER CONSUMER ($)	224.98	230.92	223.93	238.43	282.29	**282.54**
80	RATIO 80 --- CONSUMER ACCOUNTING EXPENSES PER TOTAL KWH SOLD (MILLS)	4.11	3.64	3.44	3.45	3.48	**3.40**
81	RATIO 81 --- CONSUMER ACCOUNTING EXPENSES PER CONSUMER ($)	67.89	58.83	56.77	57.88	59.87	**61.78**
82	RATIO 82 --- CUSTOMER SALES AND SERVICE PER TOTAL KWH SOLD (MILLS)	1.45	0.84	0.71	0.96	1.59	**1.25**
83	RATIO 83 --- CUSTOMER SALES AND SERVICE PER CONSUMER ($)	23.89	13.65	11.74	16.06	27.33	**22.59**
84	RATIO 84 --- A & G EXPENSES PER TOTAL KWH SOLD (MILLS)	4.37	6.75	6.08	5.93	6.10	**6.17**
85	RATIO 85 --- A & G EXPENSES PER CONSUMER ($)	72.11	109.15	100.22	99.53	104.85	**112.02**
86	RATIO 86 --- TOTAL CONTROLLABLE EXPENSES PER TOTAL KWH SOLD (MILLS) (SAME AS RATIO #103)	23.54	25.50	23.82	24.56	27.59	**26.39**
87	RATIO 87 --- TOTAL CONTROLLABLE EXPENSES PER CONSUMER ($) (SAME AS RATIO #104)	388.88	412.54	392.66	411.90	474.33	**478.94**
88	RATIO 88 --- POWER COST PER KWH PURCHASED (MILLS)	71.73	69.98	69.33	74.04	67.81	**58.68**
89	RATIO 89 --- POWER COST PER TOTAL KWH SOLD (MILLS)	77.31	74.87	75.04	79.37	72.14	**62.17**
90	RATIO 90 --- POWER COST AS A % OF REVENUE	64.13	59.33	60.17	62.19	59.31	**56.35**
91	RATIO 91 --- LONG-TERM INTEREST COST PER TOTAL KWH SOLD (MILLS)	8.74	8.88	8.57	8.22	7.21	**5.46**
92	RATIO 92 --- LONG-TERM INTEREST COST AS A % OF TUP	2.55	2.54	2.38	2.18	1.91	**1.49**
93	RATIO 93 --- LONG-TERM INTEREST COST PER CONSUMER ($)	144.44	143.70	141.22	137.94	124.03	**99.04**
94	RATIO 94 --- DEPRECIATION EXPENSE PER TOTAL KWH SOLD (MILLS)	10.17	11.51	11.29	11.40	11.73	**11.57**
95	RATIO 95 --- DEPRECIATION EXPENSE AS A % OF TUP	2.96	3.29	3.14	3.03	3.11	**3.16**
96	RATIO 96 --- DEPRECIATION EXPENSE PER CONSUMER ($)	167.95	186.30	186.05	191.27	201.69	**209.95**
97	RATIO 97 --- ACCUMULATIVE DEPRECIATION AS A % OF PLANT IN SERVICE	33.31	33.24	35.08	34.60	35.26	**36.97**
98	RATIO 98 --- TOTAL TAX EXPENSE PER TOTAL KWH SOLD (MILLS)	1.42	1.39	1.14	1.17	1.36	**0.40**
99	RATIO 99 --- TOTAL TAX EXPENSE AS A % OF TUP	0.41	0.40	0.32	0.31	0.36	**0.11**
100	RATIO 100 --- TOTAL TAX EXPENSE PER CONSUMER	23.42	22.49	18.71	19.60	23.35	**7.20**
101	RATIO 101 --- TOTAL FIXED EXPENSES PER TOTAL KWH SOLD (MILLS)	98.24	97.24	96.49	100.62	92.83	**80.00**
102	RATIO 102 --- TOTAL FIXED EXPENSES PER CONSUMER ($)	1,622.79	1,573.45	1,590.54	1,687.70	1,596.04	**1,451.65**
103	RATIO 103 --- TOTAL OPERATING EXPENSES PER TOTAL KWH SOLD (MILLS)	23.54	25.50	23.82	24.56	27.59	**26.39**
104	RATIO 104 --- TOTAL OPERATING EXPENSES PER CONSUMER ($)	388.88	412.54	392.66	411.90	474.33	**478.94**
105	RATIO 105 --- TOTAL COST OF SERVICE (MINUS POWER COSTS) PER TOTAL KWH SOLD (MILLS)	44.47	47.87	45.27	45.81	48.28	**44.22**
106	RATIO 106 --- TOTAL COST OF ELECTRIC SERVICE PER TOTAL KWH SOLD (MILLS)	121.79	122.74	120.31	125.18	120.42	**106.39**
107	RATIO 107 --- TOTAL COST OF ELECTRIC SERVICE PER CONSUMER ($)	2,011.67	1,986.00	1,983.20	2,099.59	2,070.37	**1,930.59**
108	RATIO 108 --- AVERAGE WAGE RATE PER HOUR ($)	29.51	35.81	30.46	31.25	32.49	**33.13**
109	RATIO 109 --- TOTAL WAGES PER TOTAL KWH SOLD (MILLS)	15.94	20.25	17.56	17.10	16.53	**15.43**
110	RATIO 110 --- TOTAL WAGES PER CONSUMER ($)	263.23	327.67	289.44	286.78	284.24	**280.02**
111	RATIO 111 --- OVERTIME HOURS/TOTAL HOURS (%)	5.23	5.27	6.06	5.10	5.22	**4.78**
112	RATIO 112 --- CAPITALIZED PAYROLL / TOTAL PAYROLL (%)	27.89	30.04	31.31	30.39	28.34	**22.22**
113	RATIO 113 --- AVERAGE CONSUMERS PER EMPLOYEE	260.30	251.73	244.07	257.07	256.66	**292.71**
114	RATIO 114 --- ANNUAL GROWTH IN KWH SOLD (%)	1.84	(1.36)	2.20	1.53	2.34	**5.78**
115	RATIO 115 --- ANNUAL GROWTH IN NUMBER OF CONSUMERS (%)	0.80	0.70	0.32	(0.22)	(0.16)	**0.22**

CFC FORM 7

RATIO No.	RATIO DESCRIPTION	KRTA 2009	KRTA 2010	KRTA 2011	KRTA 2012	KRTA 2013	*ESTIMATED RATIOS FOR 2014*
116	RATIO 116 --- ANNUAL GROWTH IN TUP DOLLARS (%)	7.01	0.66	4.96	6.29	2.69	**2.38**
117	RATIO 117 --- CONST. W.I.P. TO PLANT ADDITIONS (%)	100.68	40.62	205.83	78.42	43.44	**74.64**
118	RATIO 118 --- NET NEW SERVICES TO TOTAL SERVICES (%)	0.13	0.21	0.77	0.73	0.40	**0.39**
119	RATIO 119 --- ANNUAL GROWTH IN TOTAL CAPITALIZATION (%)	8.23	7.11	9.83	6.54	0.10	**2.80**
120	RATIO 120 --- 2 YR. COMPOUND GROWTH IN TOTAL CAPITALIZATION (%)	16.81	7.67	8.46	8.17	3.27	**1.44**
121	RATIO 121 --- 5 YR. COMPOUND GROWTH IN TOTAL CAPITALIZATION (%)	13.74	12.86	11.83	11.33	6.31	**5.22**
122	RATIO 122 --- TUP INVESTMENTS PER TOTAL KWH SOLD (CENTS)	34.31	35.02	35.96	37.65	37.78	**36.57**
123	RATIO 123 --- TUP INVESTMENT PER CONSUMER ($)	5,667.86	5,665.99	5,928.30	6,315.06	6,495.40	**6,635.51**
124	RATIO 124 --- TUP INVESTMENT PER MILE OF LINE ($)	70,863.00	70,980.53	73,846.73	78,303.61	79,905.49	**81,949.57**
125	RATIO 125 --- AVERAGE CONSUMERS PER MILE	12.50	12.53	12.46	12.40	12.30	**12.35**
126	RATIO 126 --- DISTRIBUTION PLANT PER TOTAL KWH SOLD (MILLS)	264.20	294.70	294.92	304.24	310.69	**302.90**
127	RATIO 127 --- DISTRIBUTION PLANT PER CONSUMER ($)	4,364.03	4,768.54	4,861.53	5,102.95	5,341.73	**5,496.56**
128	RATIO 128 --- DISTRIBUTION PLANT PER EMPLOYEE ($)	1,135,953.47	1,200,372.78	1,186,540.00	1,311,818.23	1,371,017.57	**1,608,913.25**
129	RATIO 129 --- GENERAL PLANT PER TOTAL KWH SOLD (MILLS)	27.34	28.64	30.62	31.17	32.13	**30.50**
130	RATIO 130 --- GENERAL PLANT PER CONSUMER ($)	451.58	463.43	504.82	522.77	552.35	**553.53**
131	RATIO 131 --- GENERAL PLANT PER EMPLOYEE ($)	117,546.80	116,658.49	123,210.58	134,389.08	141,766.34	**162,026.47**
132	RATIO 132 --- HEADQUARTERS PLANT PER TOTAL KWH SOLD (MILLS)	14.19	13.91	13.89	13.81	13.64	**13.24**
133	RATIO 133 --- HEADQUARTERS PLANT PER CONSUMER ($)	234.31	225.06	228.93	231.68	234.56	**240.34**
134	RATIO 134 --- HEADQUARTERS PLANT PER EMPLOYEE ($)	60,989.85	56,655.06	55,875.03	59,557.50	60,201.53	**70,351.53**
135	RATIO 135 --- TRANSMISSION PLANT PER TOTAL KWH SOLD (MILLS)	14.29	20.28	20.55	27.36	37.69	**36.92**
136	RATIO 136 --- TRANSMISSION PLANT PER CONSUMER ($)	235.96	328.08	338.71	458.98	648.00	**670.00**
137	RATIO 137 --- TRANSMISSION PLANT PER EMPLOYEE ($)	61,420.93	82,586.89	82,667.91	117,989.87	166,315.62	**196,118.46**
138	RATIO 138 --- IDLE SERVICES TO TOTAL SERVICE (%)	4.27	3.65	4.02	12.53	12.93	**12.75**
139	RATIO 139 --- LINE LOSS (%)	7.08	6.37	7.44	6.55	5.82	**5.47**
140	RATIO 140 --- SYSTEM AVG. INTERRUPTION DURATION INDEX (SAIDI) - POWER SUPPLIER	2.19	0.13	5.41	2.80	7.07	**0.00**
141	RATIO 141 --- SYSTEM AVG. INTERRUPTION DURATION INDEX (SAIDI) - EXTREME STORM	94.45	0.00	139.03	2.39	22.69	**0.00**
142	RATIO 142 --- SYSTEM AVG. INTERRUPTION DURATION INDEX (SAIDI) - PREARRANGED	3.01	2.52	5.48	3.35	2.66	**8.11**
143	RATIO 143 --- SYSTEM AVG. INTERRUPTION DURATION INDEX (SAIDI) - ALL OTHER	39.10	147.41	106.53	58.34	81.60	**79.89**
144	RATIO 144 --- SYSTEM AVG. INTERRUPTION DURATION INDEX (SAIDI) - TOTAL	138.75	150.06	256.45	66.88	114.02	**88.00**
145	RATIO 145 --- AVG. SERVICE AVAILABILITY INDEX (ASAI) - TOTAL (%)	99.97	99.97	99.95	99.99	99.98	**99.98**

ATTACHMENT 8

PUBLIC NOTICE

Regarding

The Petition of Sulphur Springs Valley Electric Cooperative, Inc. to Amend Decision 72237 Pursuant to A.R.S. § 40-252 (Docket No. E-01575A-10-0311).

Summary

On July 31, 2015, Sulphur Springs Valley Electric Cooperative, Inc. ("SSVEC") filed a Petition ("Petition") with the Arizona Corporation Commission ("Commission") to Amend Decision 72237 pursuant to A.R.S. § 40-252. SSVEC is seeking authority from the Commission to amend Decision 72237 to: (i) extend the authorization to incur debt from December 31, 2016 to December 31, 2020; (ii) retroactively approve the use of loan funds for completed projects that were added to SSVEC's 2010-2012 Construction Work Plan after the plan was approved by the Commission; and (iii) authorize SSVEC to use approximately $32,097,789 that was previously approved under Decision 72237 but not spent on the 2010-2012 CWP for projects that remain to be constructed under SSVEC's 2013-2014 Construction Work Plan and for the 2015-2017 Construction Work Plan.

Public Comment and Intervention

Written public comments may be submitted by mailing a letter referencing Docket No. E-01575A-10-0311 to the Commission's Consumer Services Section at 1200 W. Washington, Phoenix, Arizona 85007, or by e-mail. For a form to use and instructions on how to e-mail comments to the Commission, go to http://www.azcc.gov/Divisions/Utilities/forms/PublicCommentForm1.pdf.

Requests to intervene may be filed in Docket No. E-01575A-10-0311 by any person entitled by law to intervene or who is directly and substantially affected by the proceeding. If you require assistance, either to provide public comment or to seek intervention, you may contact the Consumer Services Section at 602-542-4251 or 1-800-222-7000. All motions to intervene must be filed on or before the 15th day after publication of this notice.

The Commission may approve the Petition with or without a hearing.

How You Can View or Obtain a Copy of the Petition

A copy of the Petition is available for public inspection during regular business hours at SSVEC's offices located at 350 N. Haskell, Willcox, Arizona 85643 and 311 E. Wilcox Drive, Sierra Vista, Arizona 85635, and during regular business hours at the Commission's Docket Control Center at 1200 W. Washington Street, Phoenix, Arizona, 85007, and on the Internet via the Commission's website (www.azcc.gov) using the e-Docket function.

ADA/Equal Access Information

The Commission does not discriminate on the basis of disability in admission to its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, as well as request this document in an alternative format, by contacting the ADA Coordinator, Shaylin Bernal, e-mail sbernal@azcc.gov, voice phone number 602-542-3931. Requests should be made as early as possible to allow time to arrange the accommodation.