



Cache
County
1857

DEVELOPMENT SERVICES DEPARTMENT

BUILDING | SURVEYING | ENGINEERING | GIS | PLANNING & ZONING | ROADS | WEEDS

CACHE COUNTY SECTION CORNER PROJECT

A PROPSAL TO: State of Utah Monument Replacement and
Restoration Committee (MRRC)

APPLICANT: Cache County, Utah

DATE: February 10, 2016



State of Utah
 Monument Replacement and
 Restoration Committee
 1 State Office Building, Room 5130
 Salt Lake City, UT 84114

For Committee Use Only

Application No. _____

Date Filed: _____

GRANT APPLICATION

Applicant Information

Applicant agency Cache County
 Street 179 N Main
 City Logan State UT Zip 84321
 Contact person Josh Runhaar
 Phone (435) 755-1640 Fax (435) 755-1987
 Email josh.runhaar@cachecounty.org
 Presiding official Craig W. Buttars
 Title Executive/Surveyor
 Phone (435) 755-1640
 Email craig.buttars@cachecounty.org

Proposed Funding

Total project cost \$20,533
 Total MRRRC funds requested \$12,000
 Other project funding (specify) \$2,250 in kind, \$6,283 cash, misc. material costs (unknown)

Attachment checklist

1. Description of the problem or situation to be addressed and how the proposed project will remedy the problem. A superior project description will thoroughly address each category of the Committee's Evaluation Criteria.
2. Map of the project area.
3. Cost estimate. Itemization of expenditures is encouraged. Include cost sharing if applicable.

Presiding official signature

I, Craig W. Buttars the Executive/Surveyor
 (typed name) (typed title)

of Cache County
 (typed name of applicant agency)

do hereby certify the information in this application is accurate and correct to the best of my knowledge and this application has been authorized by the applicant agency.

Craig W. Buttars
 (signature)

2/1/2016
 (date)

SUMMARY

Beginning in 2013 the Cache County Development Services Department was given the task of managing the County Surveyor workload and began making increased efforts to resolve the lack of section corner perpetuation in the county. Prior to 2013 county section corners and tie sheets were neglected and unmaintained to the point that tie sheets had very little to no information (*Image 1: Cache County Tie Sheet # 356*). Due to the lack of perpetuation and documentation the condition or existence of many section corner monuments is unknown. Cache County has contracted Foresight Surveying to assist with perpetuating monuments and to fix/replace monuments as needed.

PROBLEM

Phase 1- Priority 1A, (*Image 2: Cache County Section Corner Summary*) of the project is near completion (190 of 590 existing section corners remaining). During this phase Foresight Surveyors focused on perpetuating corners that had existing tie sheets and were located on the valley floor in easily accessible and frequently used locations. For Phase 2 - Priority 1B, Foresight Surveyors will focus on corners that have not been located and limited to no data exists. Because the lack of maintenance and perpetuation in the past, the difficulty in accessing some corners, and the fact that many of the incomplete corners are located in roadways requiring excavation/repair/rings & caps, and many have been disturbed or are threatened by landowner activities, the cost is expected to significantly increase. In just December 2015, Foresight Surveyors perpetuated 10 corners and placed 16 new monuments. During 2016 Cache County's primary focus will be finalizing perpetuation in Priority 1A and setting new monumentation in Priority 1B and therefore be required to purchase hardware, such as posts and caps, rings and lids, as well as materials for reference points. Cache County has been and will continue to use hardware (*Image 3: Cache County Section Corner Close Up*) standards set forth in *Field Procedures 1.2.5*.

WORKFLOW

Jeff Nielsen P.L.S. of Foresight Surveying completes all the research and field work for new section corners utilizing all existing information (records of survey, historic surveyor notes, etc.) and periodically turns in section corner data to the Development Service Department – GIS Division. The GIS staff is responsible for creating tie sheets (*Image 4: Tie Sheet 573*). Cache County tie sheets meet and will continue to meet tie sheet standards set forth in “Attachment D” of the *Public Land Survey System (PLSS) Grant Program*. New tie sheets created with data from Foresight Surveying is merged and documented with old tie sheets as well as area photos, monument close up photos, and notes. Once data is entered into Cache County's Spatial Database, and tie sheets are created, the data is then published to the *Cache County Section Corner & Survey Viewer* (<http://66.232.67.238/websites/surveyviewer/>).

GOAL

1. Complete Priority 1A - Existing section corners on the valley floor in need of perpetuation
 - a. Perpetuation Completed = 400
 - b. Needs to be Perpetuated = 190
2. Priority 1B - General area of the valley floor where section corners have not as of yet been located and limited to no data exists. Unknown count of section corners that can be reasonably placed (limitations of data, accessibility and usefulness)
3. Priority 2A – Existing section corners in the mountainous areas in need of perpetuation
 - a. Perpetuation Completed = 12
 - b. Needs to be Perpetuated = 137
4. Priority 2B – General area of the mountainous areas where section corners have not as of yet been located and limited to no data exists. Unknown count of section corners that can be reasonably placed (limitations of data, accessibility, and usefulness)

Cache County has already made significant improvements on perpetuation. The challenge going forward will become locating monumentation with little to no information. Through the 2016 year, Cache County will use funds to complete perpetuation of monuments already existing on the valley floor. Once existing monumentation has been perpetuated, the focus will shift to locating corners with limited to no data and/or tie sheet.

BUDGET

Priority 1A: Existing corners needing minimal effort

Materials

1. 4 Rebar Reference Points \$1.67 each (\$6.68)
2. 4 Plastic Caps \$0.26 each (\$1.04)

Total - \$7.72 per corner.

Labor

1. Survey Monument \approx 2 hours each = \$260.00
2. Data compilation \approx 1/3 hour each = \$37.00

Total - \$297.00 per corner.

It is estimated that 91 of the remaining 190 section remaining in Priority 1A can be perpetuated with existing caps and limited labor due to the ease of access. Cache County estimates a cost of \$27,730.

The initial efforts of the Cache County Section Corner Project have been focused on the section corners that fall within this category. Our efforts will continue to focus on corners in dire need of perpetuation

Priority 1A: Existing damaged/missing corners requiring additional repairs

Materials

1. 4 Rebar Reference Points \$1.67 each (\$6.68)
2. 4 plastic caps \$0.26 each (\$1.04)
3. Aluminum survey caps \$9.80 each
4. Caps, rings, and lids for 71 section corners \$108.00 each (\$7,668.00)

Total - \$17.52 per corner. \$125.52 for each section corner requiring rings & lids in roadway.

Labor

1. Survey monument $\approx 3 \frac{1}{2}$ hours each = \$455.00
2. Data Compilation $\approx 1/3$ hour each = \$37.00

Total - \$492 per corner.

It is estimated that 99 of the 190 remaining section corners will require replacement caps and increased labor cost due to difficulty accessing the corner. Cache County estimates a cost of \$58,111.

Labor and material costs will vary. These costs are best guessed estimates derived from GIS data and previous section corner work completed. The total estimated cost is \$85,841.

The initial efforts of the Cache County Section Corner Project have been focused on the section corners that fall within Priority 1A-minimal effort category. Our efforts will continue to focus on corners in dire need of perpetuation with little to no data similar to *Image 1: Cache County Tie Sheet # 356*. Cache County is seeking funds to complete 60 section corners with the initial round of funding. The estimated cost to complete this is \$18,283. (60 Section Corners @ \approx \$297.00 + \$7.72 = \$18,283)

This project is scalable to the amount of funding made available (more section corners can be added with additional funding and/or less corners with less funding).

County Resources/Match

The County is also putting financial and in kind effort into this project and request. While Cache County is seeking funds to finalize perpetuation of monuments in Priority 1A, the County has allocated funding to 1) pay unique material costs for Priority 1A (asphalt, flowable fill, etc.) and 2) in kind staff time for tie sheet creation and 3) cash match. Additionally, the County will provide crews to cut/patch asphalt and complete traffic control in roadways as needed.

Total county match

1. Tie sheet preparation 60 @ $\approx 3/4$ hour each = \$2,250 (in kind)
2. Cash contribution \$6,283 + out of pocket expense for unique materials

For this round of funding Cache County is hoping to repair/perpetuate 11 section corners (*See Image 5: Cache County Section Corners to be Maintained*) listed as follows with price quotes from Foresight Surveying;

Southeast corner of section 31 T12N R1W \approx \$877.67

South $\frac{1}{4}$ corner of section 31 T12N R1W \approx \$877.67

East $\frac{1}{4}$ corner of section 31 T12N R1W \approx \$877.67

South $\frac{1}{4}$ corner of section 36 T12N R1W \approx \$877.67

East $\frac{1}{4}$ corner of section 6 T11N R1W \approx \$1157.67

Southeast corner of section 6 T11N R1W \approx \$1157.67

East $\frac{1}{4}$ corner of section 8 T11N R1W \approx \$1157.67

South $\frac{1}{4}$ corner of section 8 T11N R1W \approx \$1157.67

Southeast corner of section 8 T11N R1W \approx \$1157.67

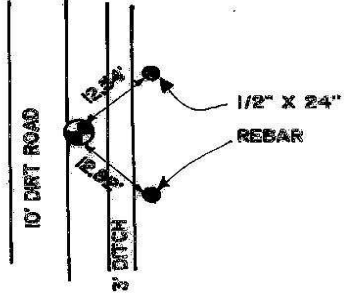
Southeast corner of section 17 T11N R1W \approx \$1157.67

East $\frac{1}{4}$ corner of section 20 T11N R1W \approx \$1157.67

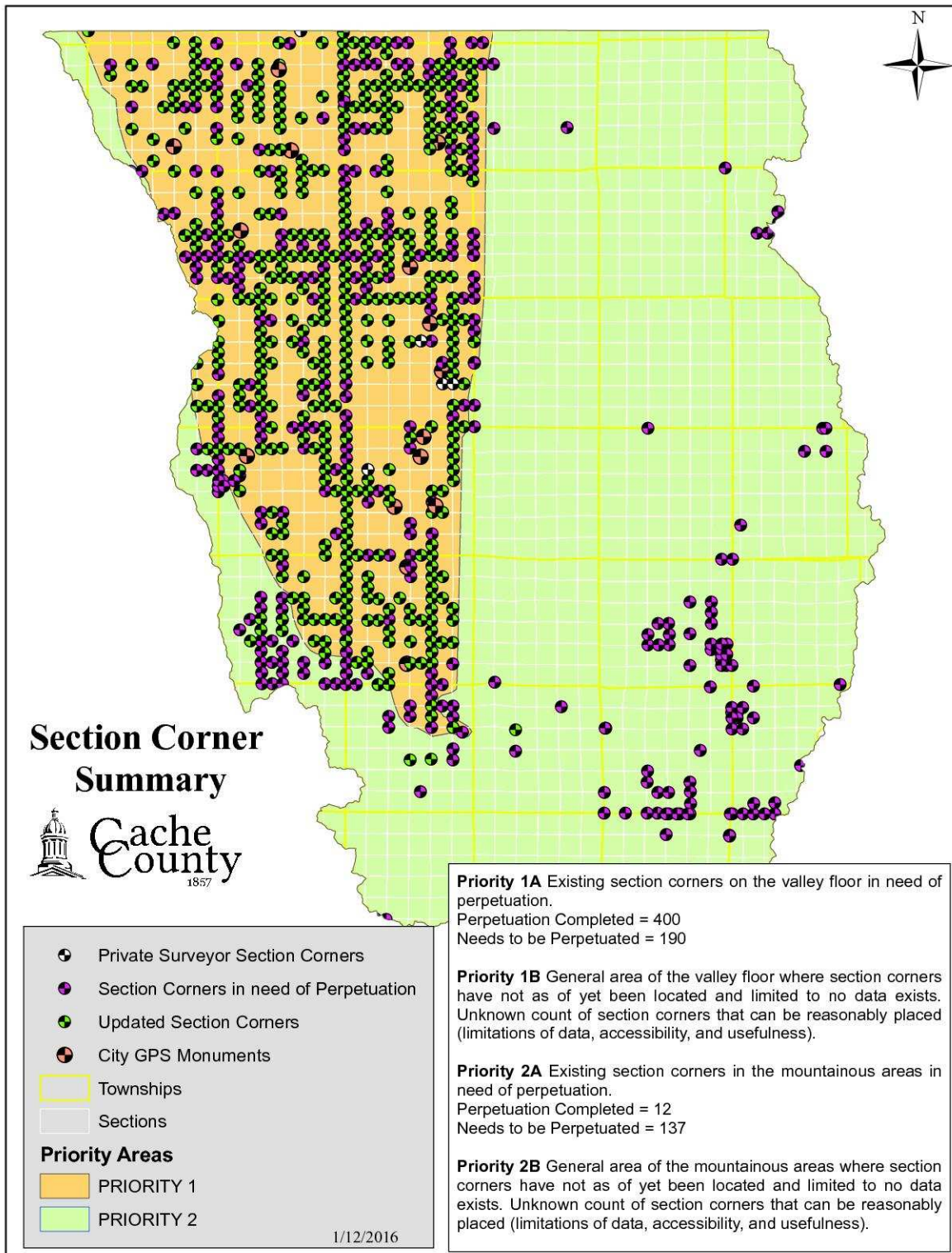
The estimated total to complete repairs/perpetuation on these 11 corners is \approx \$11,614.00

CONCLUSION

Neglect in the past has created an inventory of section corners that county offices and surveyors have no recent information for. Prior to the beginning of the Cache County Section Corner Project there was no perpetuation of tie sheets and/or corner maintenance. Cache County has made significant improvements to existing section corner data and tie sheets. The *Cache County Section Corner & Survey Viewer* is one of the county's most used tools for surveyors, realtors, title companies, cities, and the general public. As Cache County transitions into a more financially burdensome phase of the project, the requested funding assistance will greatly improve the project's success and completion schedule. Cache County hopes to provide the PLSS with better quality section corner data as well as create an environment to receive higher quality land surveys and avoid property disputes.

CACHE COUNTY SURVEYOR'S SECTION TIES		Corner No. <u>356</u>						
T12N RIW		<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">29</td> <td style="padding: 5px;">28</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 5px;">●</td> </tr> <tr> <td style="padding: 5px;">32</td> <td style="padding: 5px;">35</td> </tr> </table>	29	28	●		32	35
29	28							
●								
32	35							
								
								
State Coordinates: X = _____ Y = _____ Bearing to _____ Bearing to _____ Bearing to _____ Bearing to _____ Revision of Entry No. _____ Book No. _____ Page No. _____ Approved: _____ _____ Cache County Surveyor	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 5px;">Description of Marker</td> </tr> <tr> <td style="text-align: center; padding: 10px;"> SET 3 1/2" COUNTY ALUM. CAP ON 30" ALUM. PIPE 29" IN THE GROUND SURROUNDED BY CONCRETE. </td> </tr> <tr> <td style="text-align: center; padding: 5px;">County Recorder's Certificate</td> </tr> <tr> <td style="padding: 10px;"> State of Utah } County of Cache } SS. This is to certify that this Section Corner Tie was filed for record in the County Recorder's Office on the _____ day of _____, A.D., 19____, at _____ o'clock _____ and is duly recorded. Filing No. _____ _____ County Recorder </td> </tr> </table>		Description of Marker	SET 3 1/2" COUNTY ALUM. CAP ON 30" ALUM. PIPE 29" IN THE GROUND SURROUNDED BY CONCRETE.	County Recorder's Certificate	State of Utah } County of Cache } SS. This is to certify that this Section Corner Tie was filed for record in the County Recorder's Office on the _____ day of _____, A.D., 19____, at _____ o'clock _____ and is duly recorded. Filing No. _____ _____ County Recorder		
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(Image 1: Cache County Tie Sheet #356)



(Image 2: Cache County Section Corner Summary)



(Image 3: Cache County Section Corner Close Up)



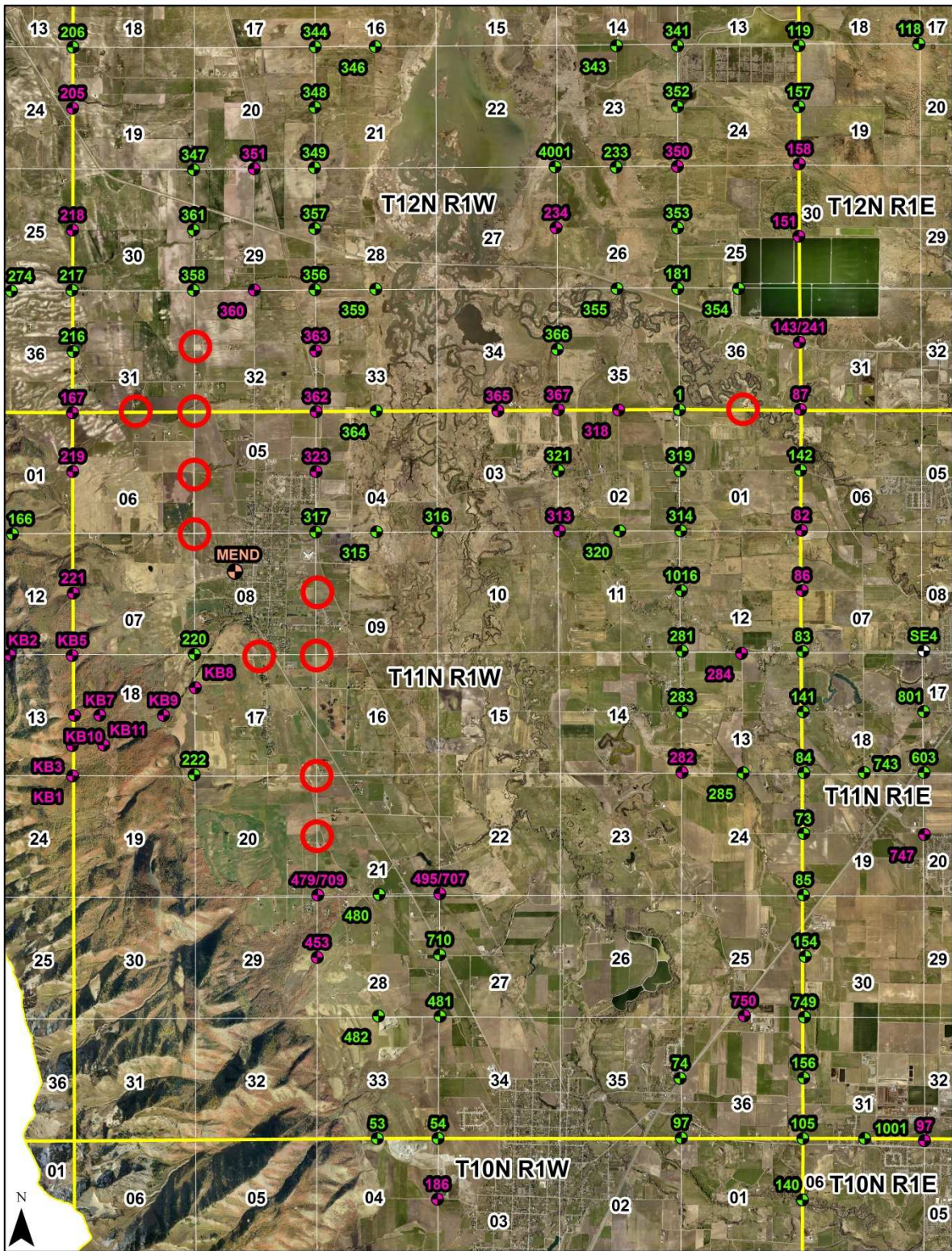
Cache County

Cache County
Corner ID # **573**

Monument Record Sheet

BLM Point Name UT260140N0010W0_300340		Contact Name Jeff C. Nielsen	License Number 5152661	Date 6/13/2014																																																																																											
Corner Of Section 300340		Map View Photo or Sketch																																																																																													
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		Additional Notes		Disclaimer																																																																																											
		Found 3.5" Cache alum cap, 10" above grade, set 1995, good condition		<p>Cache County makes no guarantees, representations, or warranties of any kind, expresses or implied, as to the content, accuracy, timeliness, or completeness of any of the data. Cache County reserves the right to make changes to the data at anytime without notice.</p>																																																																																											

(Image 4: Tie Sheet 573)



(Image 5: Cache County Section Corners to be Maintained)