



# WASHOE COUNTY

Integrity Communication Service

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CM/ACM	<u>CV</u>
Finance	<u>KE/RA</u>
DA	<u>SH</u>
Risk Mgt	<u>DE</u>
HR	<u>n/a</u>
Other	<u>n/a</u>

## STAFF REPORT

BOARD MEETING DATE: June 27<sup>th</sup>, 2017

**DATE:** Wednesday, June 14, 2017

**TO:** Board of County Commissioners

**FROM:** Quinn Korbolic, IT Manager, Technology Services  
775-328-2348, [qkorbolic@washoecounty.us](mailto:qkorbolic@washoecounty.us)

**THROUGH:** Craig Betts, Chief Information Officer

**SUBJECT:** Approve the Joint Funding Agreement (JFA) between the United States Geological Survey (USGS) and Washoe County on behalf of the Regional Basemap Committee agencies (Washoe County, the cities of Sparks and Reno, and NV Energy) for the acquisition of Light Detection and Ranging (LiDAR) data with Washoe County's contribution not to exceed [\$110,000]. (All Commission Districts).

### SUMMARY

Approve the Joint Funding Agreement (JFA) between the United States Geological Survey (USGS) and Washoe County on behalf of the Regional Basemap Committee agencies (Washoe County, the cities of Sparks and Reno, and NV Energy) for the acquisition of Light Detection and Ranging (LiDAR) data with Washoe County's contribution not to exceed [\$110,000].

The Regional Basemap Committee intends to partner with USGS, UNR, and Storey and Lyon counties to acquire high resolution Light Detection and Ranging (LiDAR) elevation data. Approving the Joint Funding Agreement will authorize Washoe County, and in effect the Regional Basemap Committee, to contribute to the data acquisition.

**Washoe County Strategic Objective supported by this item:** Proactive Economic Development and Diversification and Safe, Secure and Healthy Communities

### PREVIOUS ACTION

On February 22, 2000, the Board contracted with Nies Mapping Group, Inc. (later renamed as Triathlon Mapping Group) on behalf of the Regional Basemap Committee to update the ortho-photography and create a 2-foot contour product of the Truckee Meadow areas (Bid No.2213-2000). The company fulfilled the contract and delivered high quality products on schedule.

AGENDA ITEM # 5.F.

On November 28, 2001, with concurrence from the Washoe County Purchasing Department and approval from the Regional Basemap Committee, Triathlon Mapping Group, Inc. was recommended to perform this work again for Washoe County with lower prices. The company fulfilled the contract and delivered high quality products on schedule.

On July 13, 2004, the Board contracted with Sanborn Map Company, Inc. on behalf of the Regional Basemap Committee and Douglas County to update the ortho-photography and create a 2-foot contour product of the Truckee Meadow and Douglas County areas (Bid No. 2428-04). The company delivered the end products on a delayed schedule.

On February 14, 2006, the Board awarded Washoe County Bid No. 2507-06 for Ortho Photography, 2-foot Contour and Building Footprint Products on behalf of Washoe County and the Joinder Agencies (the Cities of Sparks and Reno, Sierra Pacific Power Company, Carson City and Douglas County) to the Mapcon Mapping Company, Inc.

On January 26, 2016 the Board of County Commissioners Awarded Bid No. 2943-16 for Ortho-Photography and 2-foot Contour Products on behalf of Washoe County and the Joinder Agencies (the Cities of Sparks and Reno, and Nevada Power Company) to the Geophex, Ltd., 605 Mercury St., Raleigh, NC 27603 in the amount of \$196,844.56. Authorize the Purchasing and Contracts Administrator to purchase additional mapping products from the same vendor through December 31, 2016 provided there is no increase in the pricing structure.

On March 23, 2017 the Regional Basemap Committee authorized the expenditure of \$110,000 from the Regional Basemap Committee Fund as part of a Joint Funding Agreement with the United States Geological Survey (USGS) to acquire Light Detection and Ranging (LiDAR) data.

## **BACKGROUND**

In June 1998, the Board of County Commissioners adopted an inter-local agreement with the Cities of Sparks and Reno, (the agreement was amended in 2001 to add Sierra Pacific Power) creating the Regional Basemap Committee to implement digital submission standards; provide on-going review and update of the standards; implement procedures to enhance the parcel base; and coordinate on-going acquisition of digital ortho-photography and elevation data throughout Sparks, Reno and southern Washoe County. Since then, eight ortho-photography and elevation mapping projects have been executed in the years 2000, 2002, 2004, 2006, 2007, 2008, 2010, and 2016.

On March 23, 2017 the Regional Basemap Committee and its participating entities, including the cities of Reno and Sparks, NV Energy and Washoe County authorized expenditure of \$110,000 from the Regional Basemap Committee Fund as part of a Joint Funding Agreement with the United States Geological Survey (USGS) to acquire Light Detection and Ranging (LiDAR) data for an area including all of Southern Washoe County, a majority of Carson City, and portions of Storey and Lyon counties. In total, the partnership includes the USGS, the counties of Washoe, Storey and Lyon, Nevada and the University of Nevada, Reno with a total funding amount of \$482,305 (table 1). The USGS is administering the data acquisition and will invoice Washoe County as detailed in the Joint Funding Agreement.

**Table 1 – Funding contribution by agency.**

<b>Partner</b>	<b>Contribution</b>
University of Nevada Reno	\$150,000
Washoe County (contribution to BAA)	\$25,000
Washoe County (upgrade to Q1)	\$85,000
Lyon County (Q1, upgrade and additional areas)	\$37,500
Storey County (Q1, upgrade and additional areas)	\$10,200
<b>Total Non-Federal</b>	<b>\$307,700</b>
3DEP BAA Award	\$174,605
<b>Total Federal</b>	<b>\$174,605</b>
<b>TOTAL FUNDS</b>	<b>\$482,305</b>

**FISCAL IMPACT**

The Washoe County contribution to this project will be funded by Regional Basemap Committee data licensing revenue and fees levied for Basemap Committee membership and subscriptions. Fiscal Year 2017-2018 budget authority and cash exists within the Basemap Committee fund in the amount of [\$110,000] from IN20012 Fund - GL 710100 Professional Services.

**RECOMMENDATION**

Approve the Joint Funding Agreement (JFA) between the United States Geological Survey (USGS) and Washoe County on behalf of the Regional Basemap Committee agencies (Washoe County, the cities of Sparks and Reno, and NV Energy) for the acquisition of Light Detection and Ranging (LiDAR) data with Washoe County's contribution not to exceed [\$110,000].

**POSSIBLE MOTION**

Should the Board agree with staff's recommendation, a possible motion would be: "Move to approve the Joint Funding Agreement (JFA) between the United States Geological Survey (USGS) and Washoe County on behalf of the Regional Basemap Committee agencies (Washoe County, the cities of Sparks and Reno, and NV Energy) for the acquisition of Light Detection and Ranging (LiDAR) data with Washoe County's contribution not to exceed [\$110,000]."

**U.S. DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY**

Customer #:  
Agreement #:

**JOINT FUNDING AGREEMENT**

Project #:  
TIN #: 88-6000138  
Fixed Cost  
Agreement NO

FOR

2017 Reno/Carson City 3DEP lidar Acquisition and Upgrade (Washoe County)

**THIS AGREEMENT is entered into as of the, day of, by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the Washoe County, Nevada,, party of the second part.**

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation for Q2 and Q1 lidar collection over the Reno/Carson City urban area, Nevada (See attached Statement of Work for further details) herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.

2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of \$0.00

(a) by the party of the first part during the period

Amount	Date	to	Date
\$0.00	Date of Last Signature		March 31, 2019

(b) by the party of the second part during the period

Amount	Date	to	Date
\$110,000.00	Date of Last Signature		March 31, 2019

Further details of the contributions are incorporated on the attached Statement of Work.

(c) Contributions are provided by the party of the first part through other USGS regional or national programs, in the amount of: \$178,397.10

Description of the USGS regional/national program:

USGS 3D Elevation Program (3DEP) was developed to respond to the needs for high quality topographic data. The goal is to systematically collect enhanced elevation data over the conterminous US.

(d) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(e) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.

4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.

5.

The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.

6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.

**9-1366 (Continuation)**

Customer #:

Agreement #:

7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.
8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered for the full amount between July 1st and July 15th.. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983).

<b>U.S. Geological Survey United States Department of the Interior USGS Point of Contact</b>		<b>Washoe County, Nevada Customer Point of Contact</b>	
Name:	Carol Ostergren	Name:	Quinn Korbulic
Address:	6000 J Street, Placer Hall, Sacramento CA 85819	Address:	1001 E. Ninth Street , Reno NV 89512
Telephone:	916-278-9510	Telephone:	775-328-2348
Email:	costergren@usgs.gov	Email:	QKorbulic@washoecounty.us

**Signatures and Date**

Signature:	<b>KARI CRAUN</b>	<small>Digitally signed by KARI CRAUN DN: cn=US, o=U.S. Government, ou=Department of the Interior, ou=Geological Survey, cn=KARI CRAUN, o.S.2342.10200300.100.1.1=1400100029 #101 Date: 2017.06.02 13:26:20 -0500</small>	Date:	6/6/17	Signature:		Date:	
Name:	Kari Craun	Name:	Bob Lucey –	blucey@washoecounty.us				
Title:	Director, National Geospatial Technical Operatio...	Title:	Chair, Board of County Commissioners					

## STATEMENT OF WORK

### Washoe County BAA Contribution and Q1 Upgrade

#### 2017 Reno/Carson City Lidar Acquisition

##### 1. Purpose

The USGS and Washoe County Nevada will collaborate to acquire high-resolution digital elevation data developed from airborne lidar (Light Detection and Ranging) for their contribution to the USGS BAA Reno/Carson City Lidar Acquisition and for the Quality Level 1 (QL1) upgrade for an area of approximately 230 square miles in the AOI (Appendix A). The Reno/Carson City urban area is experiencing rapid population growth, business investment, and infrastructure development. The acquisition area includes the most densely populated region of western Nevada, critical infrastructure such as power plants and transportation corridors, and is surrounded by diverse public lands, managed by multiple federal and state agencies. The area is bisected by the Carson and Truckee Rivers, which provide water resources to the region and riparian wildlife habitat.

Much of the acquisition area has been affected by flooding both along Truckee and Carson Rivers and local flash floods on alluvial fans. In 1997 a flood on the Truckee River caused \$540 million in damages, and numerous other floods from small catchments have impacted housing developments built on alluvial fans. High resolution topographic data will allow for more accurate flood hazard mapping and improve preparedness in the region.

The data is to be acquired between mid-summer and early fall of 2017. The project will capture high accuracy classified bare-earth lidar data in LAS format as well as raster Digital Elevation Models (DEMs) per project requirements.

##### 2. General Terms

USGS will select a qualified vendor to perform the lidar collection and processing via the Bureau's Geospatial Product and Service Contract (GPSC). GPSC task orders are awarded to qualified vendors through federal government solicitation. Qualified consultants are selected in accordance with Public Law 92-528 (Brooks Act) and FAR 36.6 - Architect-Engineering Services, which establishes a qualifications-based selection process, in which contracts for Architectural and Engineering services are negotiated on the basis of demonstrated competence and qualification for the type of professional services required at a fair and reasonable price. Vendor selection is based on the following 6 criteria (1) Professional qualifications necessary for satisfactory performance of required services; (2) Specialized experience and technical

competence in the type of work required; (3) Capacity to accomplish the work in the required time; (4) Past performance on contracts with Government agencies and private industry in terms of cost control, quality of work, and compliance with performance schedules; (5) Location in the general geographical area of the project and knowledge of the locality of the project and (6) Acceptability under other appropriate evaluation criteria. This process is aligned with the Department's consultant RFP and selection process.

The Task Order issued by USGS to the selected GPSC Contractor provides full details regarding project collection requirements and resulting deliverables. A copy of the Task Order will be provided to the Washoe County, Nevada.

### 3. Partner Responsibilities

#### USGS will:

- Execute separate funding agreements with partners shown in the Funding section below in support of the total project cost.
- Prepare and provide a Task Order for agreed upon products and services.
- Serve as Government Point of Contact during the full period of the Agreement.
- Administer data quality assurance and quality control (QA/QC), and manage all data deliverables.
- Provide a QL1 pilot area for Washoe County evaluation; area to be determined during project kick-off.
- Ensure that all land surveys conducted in support of this project will be performed by a qualified professional land surveyor.
- Receive, inspect, and catalog all project deliverables.
- Prepare Quality Assessment Reports and distribute to relevant project Points of Contact.
- Return data to Contractor as needed for error correction/rework.
- Make all data products available through the USGS National Map portal.

#### Partner Will:

- Provide funding for the project as described in Funding section.
- Pay contract project costs plus applicable GPSC assessment fee which is calculated by USGS as 5% of the contracted project cost, not to exceed the amount specified in the JFA (\$110,000).
- Assist the USGS NGTOC in resolving project issues as needed and appropriate.
- Provide timely review of pilot area.
- Provide available information, including informal observations from interested parties, on ground conditions to facilitate project flight planning.

4. Funding

Separate funding agreements will be executed with each partner below (amounts shown are projected).

Partner	Contribution
University of Nevada Reno	\$150,000
Washoe County (QL1 Upgrade and BAA contribution)	\$110,000
Lyon County (QL1, upgrade and additional areas)	\$37,500
Storey County (QL1, upgrade and additional areas)	\$10,200
<b>Total Non-Federal</b>	<b>\$307,700</b>
3DEP BAA Award	\$178,397.10
USFS Region 4 (QL2 additional areas)	\$27,000.00
<b>Total Federal</b>	<b>\$205,397.10</b>
<b>TOTAL FUNDS</b>	<b>\$513,097.10</b>

Billing terms: Washoe County (tax ID 88-6000138) requests a single billing in FY2018 (fiscal year starts July 1, 2017).

5. Specifications and Deliverables

Unless otherwise stated all specifications and deliverables will meet or exceed the (Quality Level 2) U.S. Geological Survey Lidar Guidelines and Base Specification, v 1.2) (<http://pubs.usgs.gov/tm/11b4/>). To supplement USGS specifications, FEMA-specific requirements such as cross section surveys, treatment of bridges and other features appearing in FEMA Procedure Memorandum No. 61 – Standards for Lidar and Other High Quality Digital Topography, (<http://www.fema.gov/media-library/assets/documents/6998?id=2206>) will be adhered to and reflected in final product delivery.

**General Requirements**

- Data for the upgrade portion of the agreement shall be of Quality Level 1 (QL 1), meeting the following accuracy requirements:

Quality Level	Point Density	Vertical Accuracy RMSEz	Aggregate Nominal Pulse Spacing (ANPS)	Aggregate Nominal Pulse Density (ANPD)	DEM Post Spacing
1	8 pts/m <sup>2</sup>	10 cm	0.35 m	8 pts/sq m	1 m

- Horizontal Datum: Horizontal NAD83 (2011).
- Vertical Datum: NAVD88 using the most recent approved Geoid model from the National Geodetic Survey (NGS) for purposes of performing conversions from ellipsoidal heights to orthometric heights. Data to be delivered in orthometric heights.
- Coordinate System and Projection: UTM , Zone 11 North, horizontal units in Meters and vertical units in Meters.
- Tiling Scheme: U.S. National Grid naming convention, 1500 meters x 1500 meters, non-overlapping tiles.
- Digital Elevation Model (DEM): 1 Meter Cells, Individually tiled from bare Earth, hydro-flattened, delivered in ERDAS .img format.

The lidar data will be processed to produce a classified point cloud, tile-based bare earth Digital Elevation Models (DEMs), and related products. All resulting elevation products will be placed in the public domain and will be made available for viewing and download through the USGS National Map and EarthExplorer.

#### 6. Other Terms

- Every effort will be made to award contract(s) to complete the work as described in this SOW. However, if the total funding amount is not sufficient to complete the work as described, then adjustments will be made to either obtain additional funding, or, the project will be re-scoped to the mutual satisfaction of all stakeholders.
- Partner prefers to expand collection area beyond the original scope of the BAA should excess funds be available in the contracting process to maximize the partnership and fill any Q1 gaps existing between this agreement footprint and a potential USFS upgrade to the AOI.
- If data acquisition cannot be completed during a single season due to unacceptable capture conditions, then it is possible that the remaining AOI would be acquired during the next suitable collection window which may or may not be in the same calendar year.
- If data is to be collected over military properties then DoD clearance may be required. Should unexpected restrictions affect access to data over military properties, then only federal funds will be applied to these areas. No areas of military lands are identified in the project.
- A QA/QC cycle begins when NGTOC receives a data deliverable. The NGTOC has 60 days to review the data deliverable and return data to the contractor if any corrections are required. Upon receiving requested corrections from the NGTOC, the contractor has 30 days to deliver the requested corrections. After the corrections are completed, they are delivered to NGTOC and a new QA/QC cycle begins. This process repeats till the data has been fully accepted by the

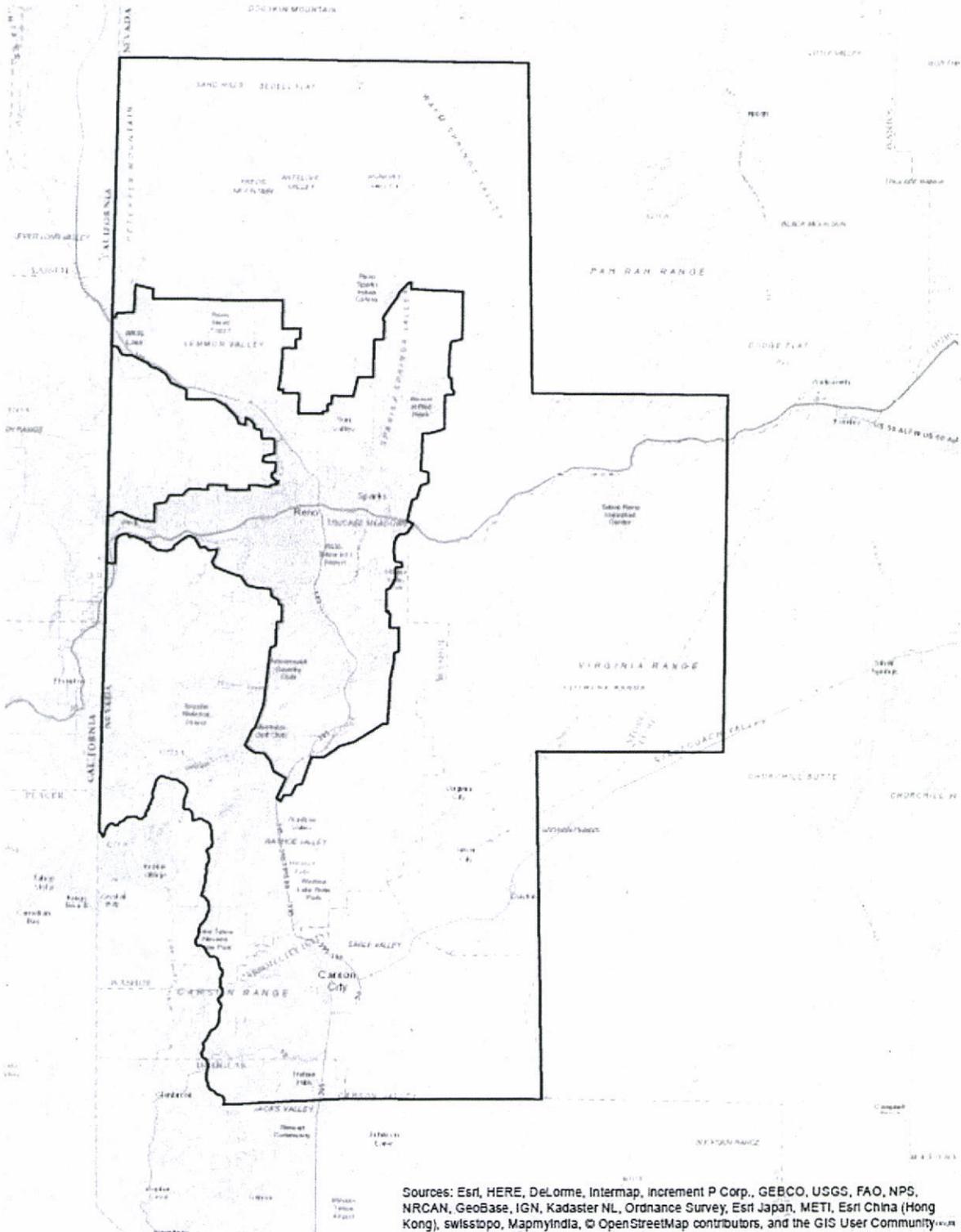
NGTOC. At least one corrections cycle is common and partners should take this into consideration when planning their projects.

- In light of the provisions of NRS 244.320 and 354.626, if the County’s governing body does not appropriate or budget funds for the purposes specified in this Joint Funding Agreement, or the County’s governing body has, in its sole discretion, determined to amend previous appropriated or budgeted amounts to eliminate or reduce funding for the purposes of this Joint Funding Agreement, this Agreement shall be terminated without penalty, charge or sanction.

7. Contacts

<b>USGS Financial Contact:</b>		<b>Partner Financial Contact:</b>
Jim Almekinder	Name	Valerie Johnson
US Geological Survey		Basemap Committee Chair
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573-308-3549	Telephone	775.785.5859
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<b>USGS Technical Contact:</b>		
		<b>Partner Technical Contact and Partner Data Delivery:</b>
Gail Dunn	Name	Quinn Korbolic
US Geological Survey		Washoe County Technology Services
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<b>USGS Liaison</b>		
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8. Appendix A – Project Area Map (Pink outline is the Reno/Carson City lidar acquisition area; blue outline show area of QL1 upgrade funded through this Joint Funding Agreement)



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community