

NV Reno Carson Urban Lidar 2017 B17
SURVEY REPORT

USGS Contract: G16PC00044
Task Order Number: G17PD01257



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OVERVIEW

Digital Aerial Solutions, LLC (DAS) with contract number G16PC00044 was contracted by the USGS/NGTOC under task order number G17PD01257 collect a high resolution LiDAR data set covering 1534 square miles affecting Carson City, Douglas, Lyon, Sierra, Storey and Washoe counties in Nevada. Each of these categories was spread out as evenly as possible throughout the Area of Interest (AOI). The survey was completed using the Global Positioning System (GPS). Each observation was identified in the field and surveyed utilizing GPS receivers, collecting GNSS and GLONASS information and utilizing a Leica Smart-Net RTK network. In accordance with section C.1.b.(viii) of the task order, the spatial reference system used was:

Spatial Reference System:

Coordinate System:	Universal Transverse Mercator 11 North
Horizontal Datum:	North American Datum 1983 of (2011)
Vertical Datum:	North American Vertical Datum of 1988
Units:	Meters
Geoid Model:	Geoid 12B

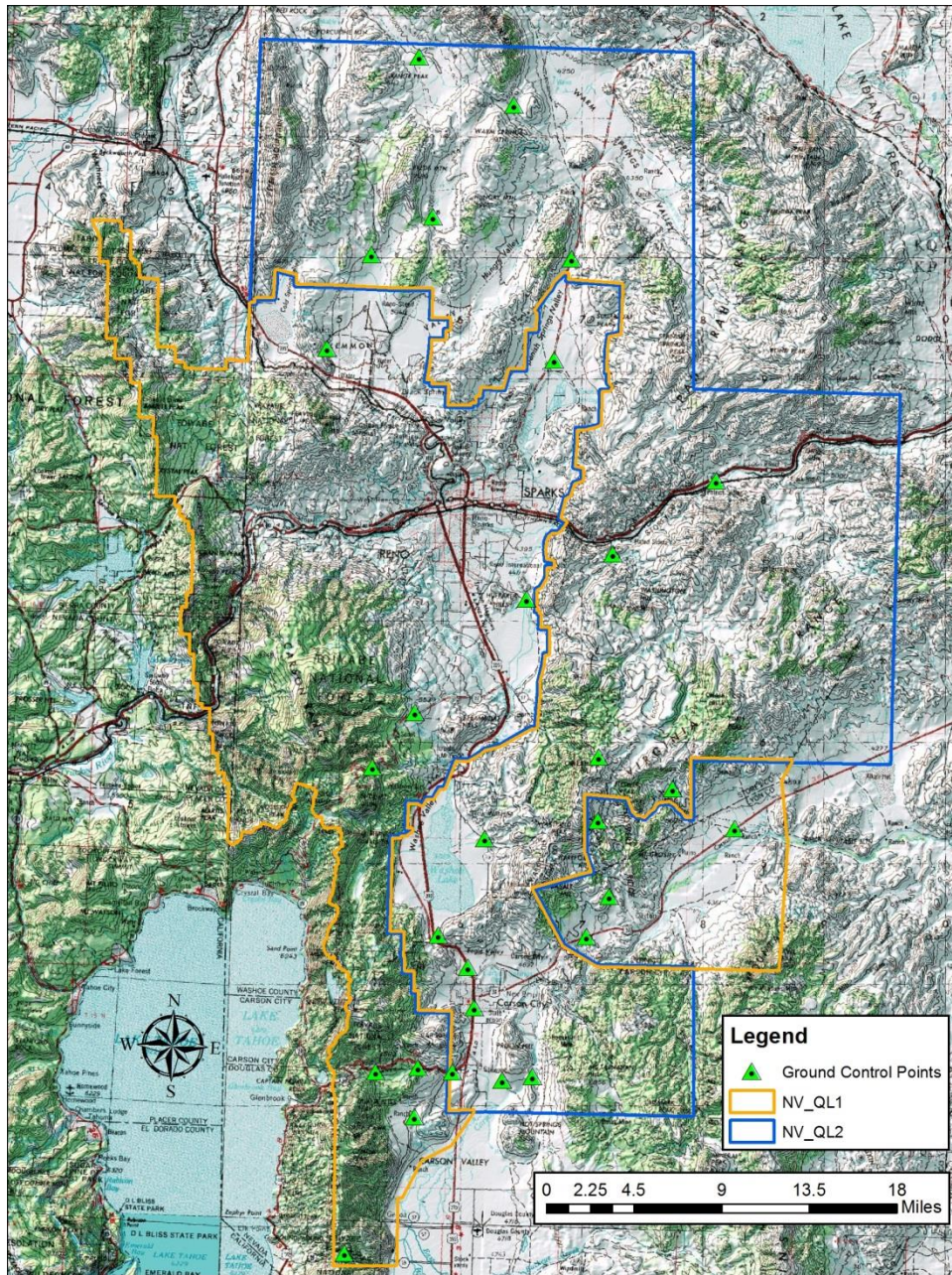
Section C.1.b.(ix) of the task order outlines the ground control minimum requirements and specifications for this LiDAR project. 30 Supplemental ground control points were collected and used to support the airborne GPS solution and positional accuracy. DAS also collected more than the required number of Non-Vegetated Vertical Accuracy (NVA) and Vegetated Vertical Accuracy (VVA) Quality Checkpoints as stated in the task order. These checkpoints serve as an independent delivery to the client and were not incorporated into the vertical solution.

Glossary of Terms

Term	Definition
ATTN	- Attention
BG	- Bare-Ground Checkpoint (see NVA)
CO	- Colorado, USA
CTRL	- Control
DAS	- Digital Aerial Solutions, LLC
Ellip	- Ellipsoid Height
FIPS	- Federal Information Processing Standard
FL	- Florida
GPS	- Global Positioning Systems
HVEG	- High Vegetation(see VVA)
ID	- Identification
LVEG	- Low Vegetation (see VVA)
LiDAR	- Light Detection and Ranging
MVEG	- Medium Vegetation (see VVA)
NAD83	- North American Datum of 1983
NAVD88	- North American Vertical Datum of 1988
NGS	- National Geodetic Survey
NGTOC	- National Geospatial Technical Operations Center
NVA	- Non-Vegetated Vertical Accuracy
Ortho	- Orthometric Height
POC	- Point of Contact
PT	- Pavement(see NVA)
RTK	- Real Time Kinematics
SD	- Sand(see NVA)
USGS	- United States Geological Survey
VP	- Vice President
VVA	- Vegetated Vertical Accuracy

Supplemental Ground Control

The Map shows the overall distribution of the Supplemental Ground Control throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is UTM 11N, NAD83 (2011), NAVD88, Geoid 12B and using Meters for measurement.



Point ID	Easting X (Meters)	Northing Y (Meters)	Ortho (Meters)
GCP.BG.01	260969.099	4338273.650	1423.118
GCP.BG.10	277392.198	4356378.341	1648.380
GCP.BG.11	277392.199	4356378.343	1648.371
GCP_NVA.BG.02	256020.902	4329290.092	1528.339
GCP_NVA.BG.03	250244.158	4318040.241	2163.541
GCP_NVA.BG.04	272152.037	4347496.544	1554.815
GCP_NVA.BG.06	271231.517	4353733.300	1907.229
GCP_NVA.BG.07	271263.717	4359012.689	2074.733
GCP_NVA.BG.11	252561.759	4358148.771	2308.951
GCP.HP.01	258003.661	4344308.104	1550.248
GCP.HP.02	272445.392	4375771.769	1338.888
GCP.HP.11	282521.926	4353104.002	1323.601
GCP.HP.12	257558.262	4403563.812	1563.345
GCP_NVA.HP.03	259189.646	4332992.955	1480.408
GCP_NVA.HP.06	263293.752	4332298.771	1438.997
GCP_NVA.HP.08	270245.594	4344174.034	1481.727
GCP_NVA.HP.09	256091.814	4362654.773	1771.648
GCP_NVA.HP.16	260442.590	4341638.183	1442.508
GCP_NVA.HP.24	280973.185	4381806.092	1308.072
GCP_NVA.LV.10	261848.550	4352267.561	1569.989
GCP.PS.01	248807.550	4392717.700	1520.357
GCP.PS.02	256445.016	4416808.361	1513.873
GCP_NVA.PS.04	256325.956	4333359.564	1631.584
GCP_NVA.PS.06	252854.437	4332996.338	1824.366
GCP_NVA.PS.08	265773.119	4332626.121	1415.375
GCP_NVA.PS.13	265301.972	4372050.220	1347.786
GCP_NVA.PS.18	252471.425	4400483.183	1575.459
GCP_NVA.PS.28	264254.101	4412809.060	1476.773
GCP_NVA.PS.30	269039.062	4400110.380	1434.329
GCP_NVA.PS.31	267592.540	4391765.602	1372.906

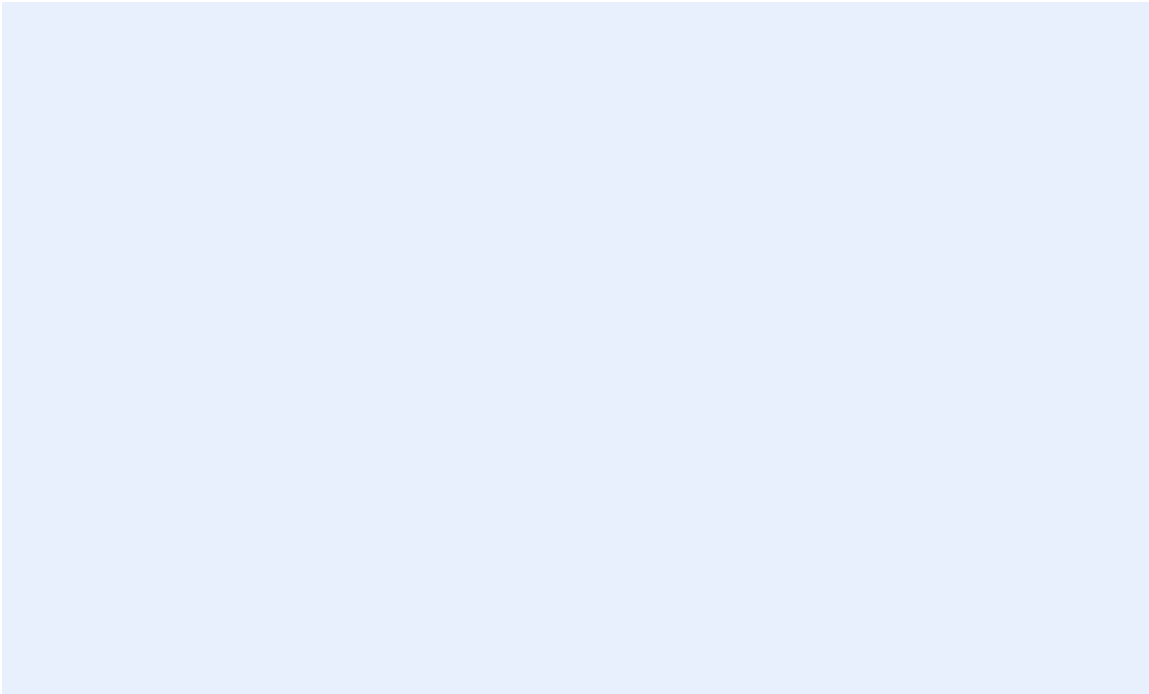
GCP.BG.01



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP.BG.01	260969.099	4338273.650	1398.696	1423.118

Point ID	LATTITUDE	LONGITUDE
GCP.BG.01	39° 9' 39.10338"	-119° 45' 59.36652"

GCP.BG.10



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP.BG.10	277392.198	4356378.341	1624.190	1648.380

Point ID	LATTITUDE	LONGITUDE
GCP.BG.10	39° 19' 41.49649"	-119° 34' 57.26532"

GCP.BG.11



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP.BG.11	277392.199	4356378.343	1624.181	1648.371

Point ID	LATTITUDE	LONGITUDE
GCP.BG.11	39° 19' 41.49656"	-119° 34' 57.26532"

GCP_NVA.BG.02



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.BG.02	256020.902	4329290.092	1503.877	1528.339

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.BG.02	39° 4' 43.08596"	119° 49' 13.683"

GCP_NVA.BG.03



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.BG.03	250244.158	4318040.241	2139.306	2163.541

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.BG.03	38° 58' 32.71462"	-119° 52' 58.98324"

GCP_NVA.BG.04



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.BG.04	272152.037	4347496.544	1530.542	1554.815

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.BG.04	39° 14' 48.77308"	-119° 38' 25.08576"

GCP_NVA.BG.06



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.BG.06	271231.517	4353733.300	1883.094	1907.229

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.BG.06	39° 18' 10.00015"	-119° 39' 11.07288"

GCP_NVA.BG.07



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.BG.07	271263.717	4359012.689	2050.668	2074.733

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.BG.07	39° 21' 1.10513"	-119° 39' 16.19964"

GCP_NVA.BG.11



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.BG.11	252561.759	4358148.771	2285.225	2308.951

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.BG.11	39° 20' 14.57466"	-119° 52' 15.5046"

GCP.HP.01



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP.HP.01	258003.661	4344308.104	1525.997	1550.248

Point ID	LATTITUDE	LONGITUDE
GCP.HP.01	39° 12' 51.67526"	-119° 48' 10.5552"

GCP.HP.02



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP.HP.02	272445.392	4375771.769	1314.749	1338.888

Point ID	LATTITUDE	LONGITUDE
GCP.HP.02	39° 30' 5.28743"	-119° 38' 47.41368"

GCP.HP.11



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP.HP.11	282521.926	4353104.002	1299.269	1323.601

Point ID	LATTITUDE	LONGITUDE
GCP.HP.11	39° 18' 0.08032"	-119° 31' 19.40484"

GCP.HP.12



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP.HP.12	257558.262	4403563.812	1539.593	1563.345

Point ID	LATTITUDE	LONGITUDE
GCP.HP.12	39° 44' 51.04536"	-119° 49' 46.66584"

GCP_NVA.HP.03



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.HP.03	259189.646	4332992.955	1455.930	1480.408

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.HP. 03	39° 6' 46.23397"	-119° 47' 6.67824"

GCP_NVA.HP.06



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.HP.06	263293.752	4332298.771	1414.475	1438.997

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.HP.06	39° 6' 27.78678"	-119° 44' 15.10728"

GCP_NVA.HP.08



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.HP.08	270245.594	4344174.034	1457.430	1481.727

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.HP.08	39° 12' 59.29888"	-119° 39' 40.46616"

GCP_NVA.HP.09



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.HP.09	270245.594	4344174.034	1747.778	1481.727

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.HP.09	39° 22' 44.1754"	-119° 49' 54.12108"

GCP_NVA.HP.16



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.HP.16	260442.590	4341638.183	1418.162	1442.508

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.HP.16	39° 11' 27.59921"	-119° 46' 25.56552"

GCP_NVA.HP.24



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.HP.24	280973.185	4381806.092	1283.954	1308.072

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.HP.24	39° 33' 28.80727"	-119° 32' 57.85728"

GCP_NVA.LV.10



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.LV.10	261848.550	4352267.561	1545.803	1569.989

Point ID	LATTITUDE	LONGITUDE
GCP_NVA.LV.10	39° 17' 13.40131"	-119° 45' 40.52664"

GCP.PS.01



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP.PS.01	248807.550	4392717.700	1496.610	1520.357

Point ID	LATTITUDE	LONGITUDE
GCP.PS.01	39° 38' 50.57023"	-119° 55' 39.03276"

GCP.PS.02



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP.PS.02	256445.016	4416808.361	1490.221	1513.873

Point ID	LATTITUDE	LONGITUDE
GCP.PS.02	39° 51' 58.97732"	-119° 50' 51.08712"

GCP_NVA.PS.04



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.PS.04	256325.956	4333359.564	1607.187	1631.584

Point ID	LATITUDE	LONGITUDE
GCP_NVA.PS.04	39° 6' 55.24783"	-119° 49' 6.25404"

GCP_NVA.PS.06



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.PS.06	252854.437	4332996.338	1800.073	1824.366

Point ID	LATITUDE	LONGITUDE
GCP_NVA.PS.06	39° 6' 39.96108"	-119° 51' 30.1608"

GCP_NVA.PS.08



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.PS.08	265773.119	4332626.121	1390.895	1415.375

Point ID	LATITUDE	LONGITUDE
GCP_NVA.PS.08	39° 6' 40.80467"	-119° 42' 32.39532"

GCP_NVA.PS.13



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.PS.13	265301.972	4372050.220	1323.615	1347.786

Point ID	LATITUDE	LONGITUDE
GCP_NVA.PS.13	39° 27' 57.79202"	-119° 43' 41.46996"

GCP_NVA.PS.18



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.PS.18	252471.425	4400483.183	1551.711	1575.459

Point ID	LATITUDE	LONGITUDE
GCP_NVA.PS.18	39° 43' 5.98415"	-119° 53' 15.97812"

GCP_NVA.PS.28



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.PS.28	264254.101	4412809.060	1453.081	1476.773

Point ID	LATITUDE	LONGITUDE
GCP_NVA.PS.28	39° 49' 57.34283"	-119° 45' 17.58672"

GCP_NVA.PS.30



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.PS.30	269039.062	4400110.380	1410.436	1434.329

Point ID	LATITUDE	LONGITUDE
GCP_NVA.PS.30	39° 43' 10.6288"	-119° 41' 40.43112"

GCP_NVA.PS.31



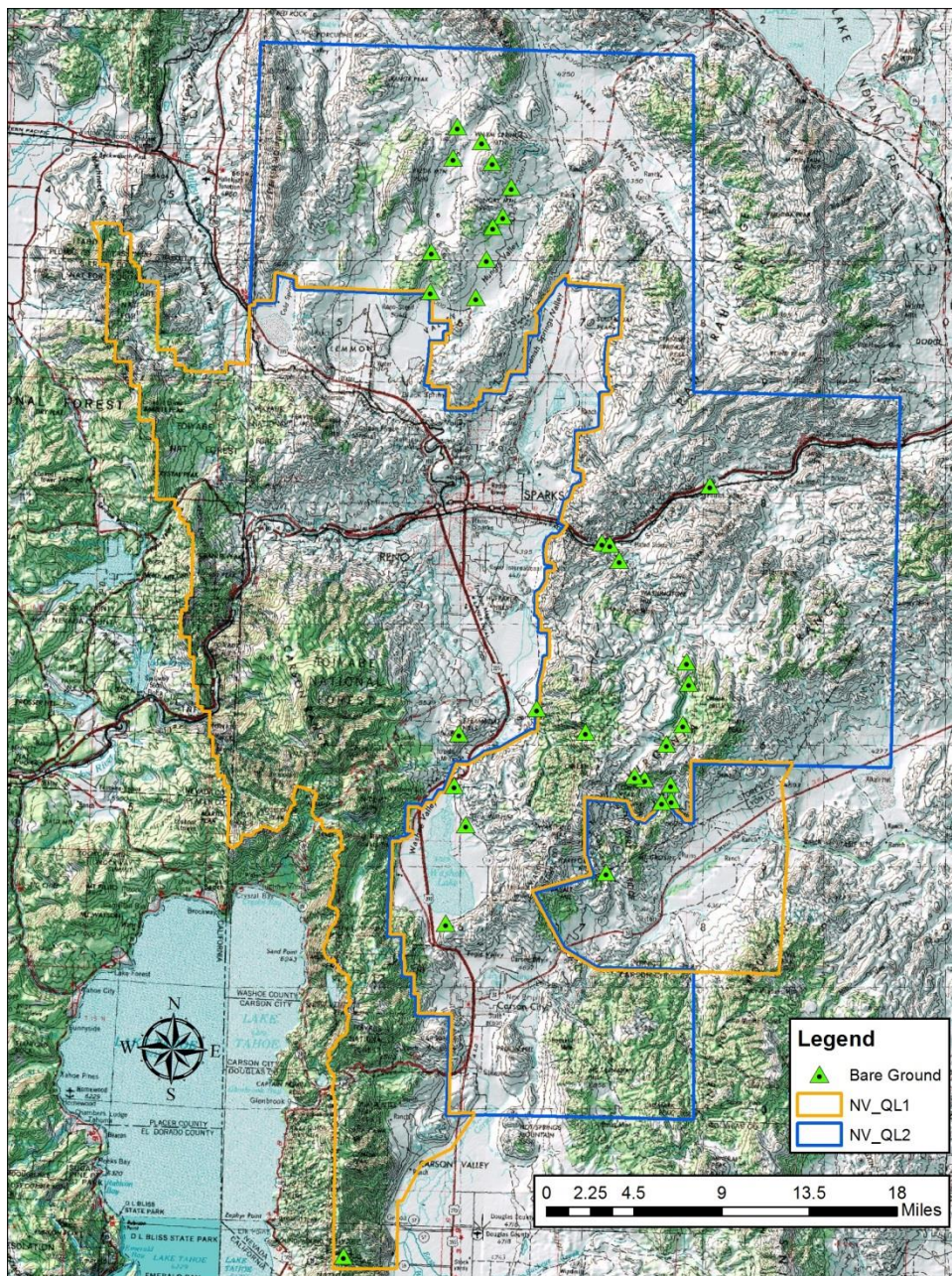
Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
GCP_NVA.PS.31	267592.540	4391765.602	1348.901	1372.906

Point ID	LATITUDE	LONGITUDE
GCP_NVA.PS.31	39° 38' 38.83801"	-119° 42' 30.546"

Non-Vegetated Vertical Accuracy Checkpoints

Bare Earth

The Map shows the overall distribution of the Non-Vegetated Vertical Accuracy Checkpoint, Bare Earth throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is UTM 11N, NAD83 (2011), NAVD88, Geoid 12B and using Meters for measurement.



Point ID	Easting X (Meters)	Northing Y (Meters)	Ortho (Meters)
NVA.BG.03A	250244.122	4318038.929	2163.561
NVA.BG.05	271973.423	4349694.748	1560.549
NVA.BG.08	270241.281	4361309.801	1934.795
NVA.BG.09	266248.56	4363224.658	1481.683
NVA.BG.10	259795.06	4361167.423	1838.814
NVA.BG.11	258724.86	4345532.127	1543.781
NVA.BG.12	260353.727	4353643.357	1552.69
NVA.BG.13	259421.284	4356882.446	1547.528
NVA.BG.14	271607.062	4376914.191	1354.109
NVA.BG.15	272251.052	4376819.247	1331.011
NVA.BG.16	273058.573	4375480.444	1345.184
NVA.BG.17	280558.528	4381665.727	1304.147
NVA.BG.24	277346.7	4355681.048	1537.208
NVA.BG.25	276571.055	4355540.406	1558.04
NVA.BG.26	277323.692	4356988.818	1736.75
NVA.BG.27	275141.375	4357400.1	1778.342
NVA.BG.28	274341.871	4357659.906	1931.523
NVA.BG.29	276948.999	4360293.082	1837.21
NVA.BG.30	278296.379	4361923.176	1793.652
NVA.BG.31	278800.915	4365322.289	1758.492
NVA.BG.32	278601.896	4367091.565	1714.901
NVA.BG.33	257416.204	4397686.049	1543.609
NVA.BG.34	257536.856	4400939.036	1675.732
NVA.BG.35	259328.032	4408701.385	1579.476
NVA.BG.36	259678.057	4411293.895	1616.269
NVA.BG.37	261661.994	4410052.846	1627.899
NVA.BG.38	262545.573	4408347.662	1746.511
NVA.BG.39	264149.326	4406305.152	1543.064
NVA.BG.40	263437.076	4403900.184	1562.443
NVA.BG.41	262593.578	4403012.766	1598.613
NVA.BG.42	262060.194	4400355.207	1549.99
NVA.BG.43	261180.16	4397202.348	1551.117

NVA.BG.03A



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.03 A	250244.122	4318038.929	2139.326	2163.561

Point ID	LATTITUDE	LONGITUDE
NVA.BG.03A	38° 58' 32.67206"	-119° 52' 58.98324"

NVA.BG.05



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.05	271973.423	4349694.748	1536.314	1560.549

Point ID	LATTITUDE	LONGITUDE
NVA.BG.05	39° 15' 59.83664"	-119° 38' 35.20572"

NVA.BG.08



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.08	270241.281	4361309.801	1910.741	1934.795

Point ID	LATTITUDE	LONGITUDE
NVA.BG.08	39° 22' 14.56385"	-119° 40' 1.70436"

NVA.BG.09



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.09	266248.56	4363224.658	1457.560	1481.683

Point ID	LATTITUDE	LONGITUDE
NVA.BG.09	39° 23' 12.75338"	-119° 42' 50.79204"

NVA.BG.10



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.10	259795.060	4361167.423	1814.798	1838.814

Point ID	LATTITUDE	LONGITUDE
NVA.BG.10	39° 21' 59.72155"	-119° 47' 17.59884"

NVA.BG.11



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.11	258724.860	4345532.127	1519.533	1543.781

Point ID	LATTITUDE	LONGITUDE
NVA.BG.11	39° 13' 32.05704"	-119° 47' 42.09072"

NVA.BG.12



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.12	260353.727	4353643.357	1528.535	1552.690

Point ID	LATTITUDE	LONGITUDE
NVA.BG.12	39° 17' 56.49468"	-119° 46' 44.61636"

NVA.BG.13



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.13	259421.284	4356882.446	1523.451	1547.528

Point ID	LATTITUDE	LONGITUDE
NVA.BG.13	39° 19' 40.51236"	-119° 47' 27.67236"

NVA.BG.14



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.14	271607.062	4376914.191	1329.981	1354.109

Point ID	LATTITUDE	LONGITUDE
NVA.BG.14	39° 30' 41.5053"	-119° 39' 23.88888"

NVA.BG.15



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.15	272251.052	4376819.247	1306.879	1331.011

Point ID	LATTITUDE	LONGITUDE
NVA.BG.15	39° 30' 39.04398"	-119° 38' 56.832"

NVA.BG.16



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.16	273058.573	4375480.444	1321.043	1345.184

Point ID	LATTITUDE	LONGITUDE
NVA.BG.16	39° 29' 56.43089"	-119° 38' 21.40908"

NVA.BG.17



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.17	280558.528	4381665.727	1280.030	1304.147

Point ID	LATTITUDE	LONGITUDE
NVA.BG.17	39° 33' 23.87729"	-119° 33' 15.0498"

NVA.BG.24



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.24	277346.700	4355681.048	1512.998	1537.208

Point ID	LATITUDE	LONGITUDE
NVA.BG.24	39° 19' 18.85786"	-119° 34' 58.332"

NVA.BG.25



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.25	276571.055	4355540.406	1533.837	1558.040

Point ID	LATTITUDE	LONGITUDE
NVA.BG.25	39° 19' 13.58047"	-119° 35' 30.525"

NVA.BG.26



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.26	277323.692	4356988.818	1712.579	1736.750

Point ID	LATTITUDE	LONGITUDE
NVA.BG.26	39° 20' 1.21614"	-119° 35' 0.85236"

NVA.BG.27



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.27	275141.375	4357400.100	1754.206	1778.342

Point ID	LATTITUDE	LONGITUDE
NVA.BG.27	39° 20' 12.51136"	-119° 36' 32.41224"

NVA.BG.28



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.28	274341.871	4357659.906	1907.402	1931.523

Point ID	LATTITUDE	LONGITUDE
NVA.BG.28	39° 20' 20.18072"	-119° 37' 6.08952"

NVA.BG.29



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.29	276948.999	4360293.082	1813.106	1837.210

Point ID	LATTITUDE	LONGITUDE
NVA.BG.29	39° 21' 47.94577"	-119° 35' 20.44104"

NVA.BG.30



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.30	278296.379	4361923.176	1769.555	1793.652

Point ID	LATTITUDE	LONGITUDE
NVA.BG.30	39° 22' 42.01903"	-119° 34' 26.13288"

NVA.BG.31



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.31	278800.915	4365322.289	1734.402	1758.492

Point ID	LATTITUDE	LONGITUDE
NVA.BG.31	39° 24' 32.63652"	-119° 34' 9.1074"

NVA.BG.32



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.32	278601.896	4367091.565	1690.802	1714.901

Point ID	LATTITUDE	LONGITUDE
NVA.BG.32	39° 25' 29.78753"	-119° 34' 19.5294"

NVA.BG.33



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.33	257416.204	4397686.049	1519.796	1543.609

Point ID	LATTITUDE	LONGITUDE
NVA.BG.33	39° 41' 40.4768"	-119° 49' 44.83776"

NVA.BG.34



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.34	257536.856	4400939.036	1651.969	1675.732

Point ID	LATTITUDE	LONGITUDE
NVA.BG.34	39° 43' 25.9882"	-119° 49' 44.08464"

NVA.BG.35



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.35	259328.032	4408701.385	1555.756	1579.476

Point ID	LATTITUDE	LONGITUDE
NVA.BG.35	39° 47' 39.29521"	-119° 48' 39.1626"

NVA.BG.36



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.36	259678.057	4411293.895	1592.576	1616.269

Point ID	LATTITUDE	LONGITUDE
NVA.BG.36	39° 49' 3.64181"	-119° 48' 27.88092"

NVA.BG.37



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.37	261661.994	4410052.846	1604.197	1627.899

Point ID	LATTITUDE	LONGITUDE
NVA.BG.37	39° 48' 25.44458"	-119° 47' 2.90652"

NVA.BG.38



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.38	262545.573	4408347.662	1722.791	1746.511

Point ID	LATTITUDE	LONGITUDE
NVA.BG.38	39° 47' 31.08905"	-119° 46' 23.56932"

NVA.BG.39



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.39	264149.326	4406305.152	1519.290	1543.064

Point ID	LATTITUDE	LONGITUDE
NVA.BG.39	39° 46' 26.51927"	-119° 45' 13.57416"

NVA.BG.40



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.40	263437.076	4403900.184	1538.641	1562.443

Point ID	LATTITUDE	LONGITUDE
NVA.BG.40	39° 45' 7.88987"	-119° 45' 40.36464"

NVA.BG.41



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.41	262593.578	4403012.766	1574.810	1598.613

Point ID	LATTITUDE	LONGITUDE
NVA.BG.41	39° 44' 38.29434"	-119° 46' 14.61684"

NVA.BG.42



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.42	262060.194	4400355.207	1526.153	1549.99

Point ID	LATTITUDE	LONGITUDE
NVA.BG.42	39° 43' 11.65775"	-119° 46' 33.54528"

NVA.BG.43



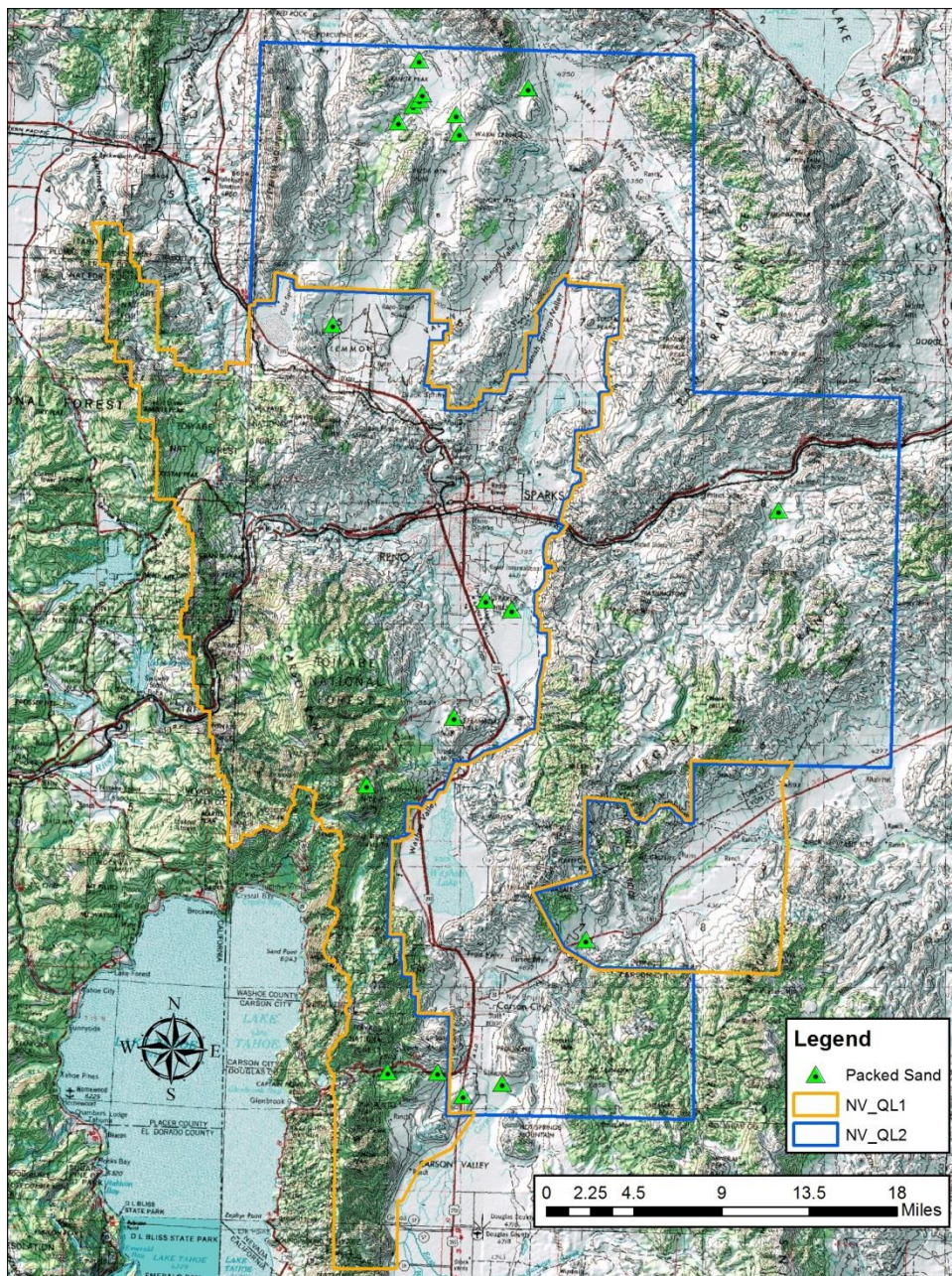
Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.BG.43	261180.16	4397202.348	1527.251	1551.117

Point ID	LATTITUDE	LONGITUDE
NVA.BG.43	39° 41' 28.62467"	-119° 47' 6.35532"

Non-Vegetated Vertical Accuracy Checkpoints

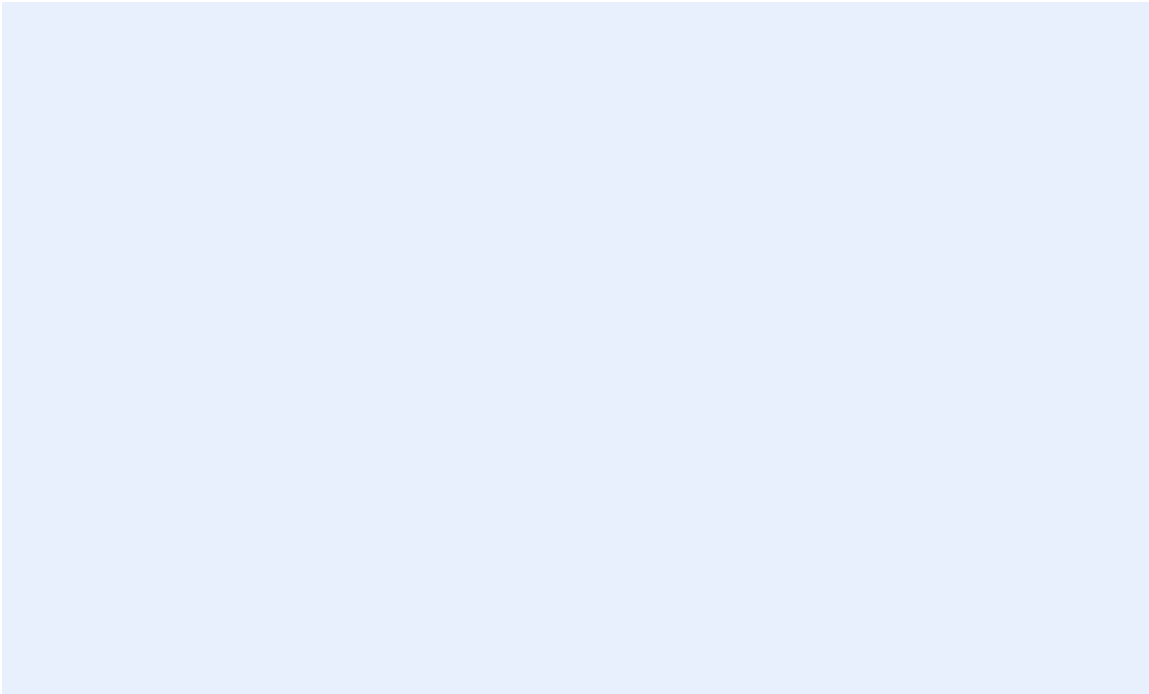
Packed Sand

The Map shows the overall distribution of the Non-Vegetated Vertical Accuracy Checkpoints, Packed Sand throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is UTM 11N, NAD83 (2011), NAVD88, Geoid 12B and using Meters for measurement.



Point ID	Easting X (Meters)	Northing Y (Meters)	Ortho (Meters)
NVA.PS.01	260077.748	4331270.429	1499.361
NVA.PS.02	257949.35	4333225.197	1534.277
NVA.PS.05	253843.07	4333261.732	1763.536
NVA.PS.06	263283.818	4332312.137	1439.166
NVA.PS.08	270232.562	4344152.078	1481.648
NVA.PS.09	259304.563	4362515.291	1673.398
NVA.PS.11	261949.149	4372209.098	1352.894
NVA.PS.12	264091.47	4371438.505	1373.478
NVA.PS.14	286148.928	4379619.688	1376.758
NVA.PS.17	249279.308	4394940.003	1549.494
NVA.PS.19	254736.826	4411680.533	1609.864
NVA.PS.20	255956.585	4413033.566	1575.988
NVA.PS.21	256466.575	4413504.973	1561.61
NVA.PS.22	256684.262	4413982.568	1552.958
NVA.PS.23	256429.905	4416791.861	1514.027
NVA.PS.26	259511.422	4412301.519	1603.816
NVA.PS.27	259741.516	4410771.315	1624.1
NVA.PS.29	265439.212	4414492.122	1408.449
NVA.PS10	252100.416	4356929.867	2413.397

NVA.PS.01



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.01	260077.748	4331270.429	1474.834	1499.361

Point ID	LATTITUDE	LONGITUDE
NVA.PS.01	39° 5' 51.3019"	-119° 46' 27.55092"

NVA.PS.02



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.02	257949.35	4333225.197	1509.838	1534.277

Point ID	LATTITUDE	LONGITUDE
NVA.PS.02	39° 6' 52.52238"	-119° 47' 58.56108"

NVA.PS.05



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.05	253843.07	4333261.732	1739.211	1763.536

Point ID	LATTITUDE	LONGITUDE
NVA.PS.05	39° 6' 49.56678"	-119° 50' 49.39188"

NVA.PS.06



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.06	263283.818	4332312.137	1414.644	1439.166

Point ID	LATTITUDE	LONGITUDE
NVA.PS.06	39° 6' 28.21018"	-119° 44' 15.53712"

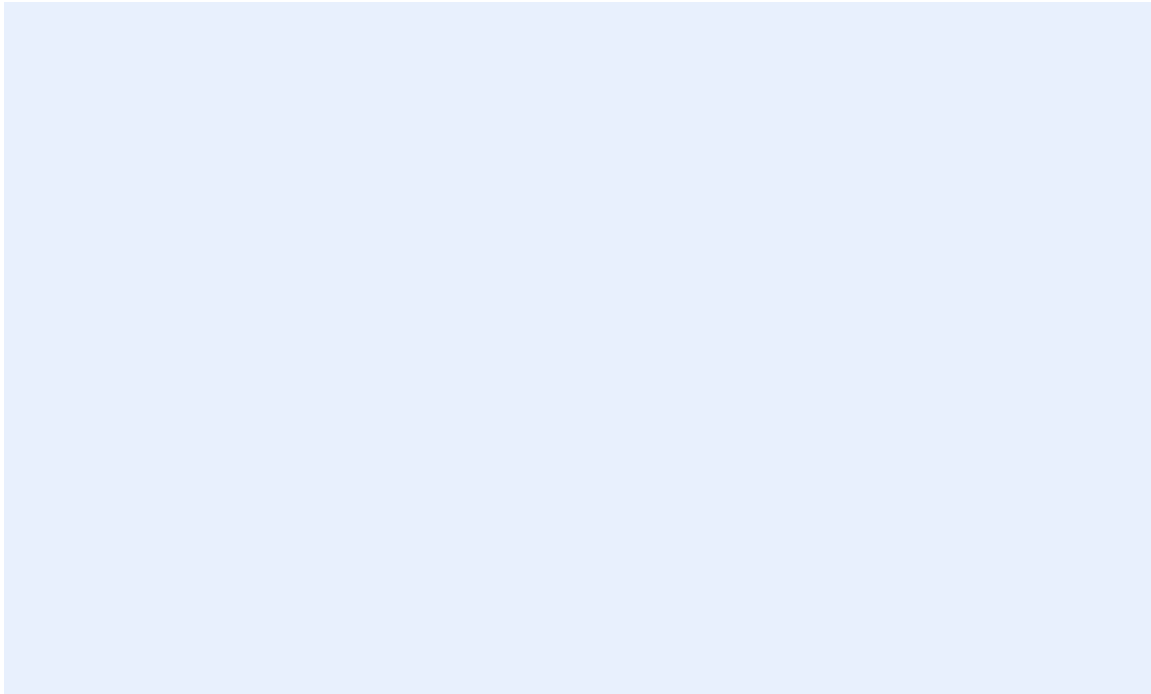
NVA.PS.08



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.08	270232.562	4344152.078	1457.351	1481.648

Point ID	LATTITUDE	LONGITUDE
NVA.PS.08	39° 12' 58.57499"	-119° 39' 40.98204"

NVA.PS.09



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.09	259304.563	4362515.291	1649.401	1673.398

Point ID	LATTITUDE	LONGITUDE
NVA.PS.09	39° 22' 42.90121"	-119° 47' 39.8148"

NVA.PS.11



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.11	261949.149	4372209.098	1328.732	1352.894

Point ID	LATTITUDE	LONGITUDE
NVA.PS.11	39° 27' 59.62583"	-119° 46' 1.8282"

NVA.PS.12



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.12	264091.470	4371438.505	1349.303	1373.478

Point ID	LATTITUDE	LONGITUDE
NVA.PS.12	39° 27' 36.78077"	-119° 44' 31.2936"

NVA.PS.14



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.14	286148.928	4379619.688	1352.663	1376.758

Point ID	LATTITUDE	LONGITUDE
NVA.PS.14	39° 32' 22.65212"	-119° 29' 18.64032"

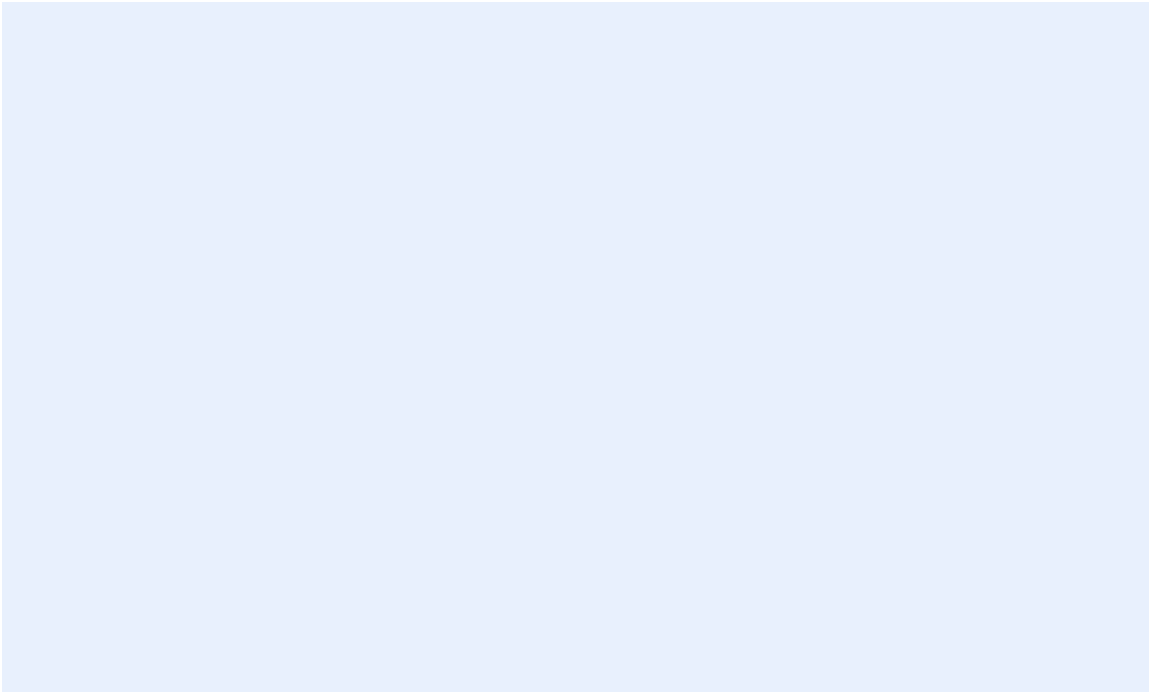
NVA.PS.17



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.17	249279.308	4394940.003	1525.729	1549.494

Point ID	LATTITUDE	LONGITUDE
NVA.PS.17	39° 40' 3.05976"	-119° 55' 22.29852"

NVA.PS.19



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.19	254736.826	4411680.533	1586.162	1609.864

Point ID	LATTITUDE	LONGITUDE
NVA.PS.19	39° 49' 11.08826"	-119° 51' 55.98612"

NVA.PS.20



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.20	255956.585	4413033.566	1552.291	1575.988

Point ID	LATTITUDE	LONGITUDE
NVA.PS.20	39° 49' 56.1846"	-119° 51' 6.5556"

NVA.PS.21



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.21	256466.575	4413504.973	1537.918	1561.61

Point ID	LATTITUDE	LONGITUDE
NVA.PS.21	39° 50' 11.98302"	-119° 50' 45.75696"

NVA.PS.22



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.22	256684.262	4413982.568	1529.272	1552.958

Point ID	LATTITUDE	LONGITUDE
NVA.PS.22	39° 50' 27.67974"	-119° 50' 37.24764"

NVA.PS.23



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.23	256429.905	4416791.861	1490.375	1514.027

Point ID	LATTITUDE	LONGITUDE
NVA.PS.23	39° 51' 58.42717"	-119° 50' 51.70056"

NVA.PS.26



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.26	259511.422	4412301.519	1580.132	1603.816

Point ID	LATTITUDE	LONGITUDE
NVA.PS.26	39° 49' 36.1164"	-119° 48' 36.2124"

NVA.PS.27



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.27	259741.516	4410771.315	1600.402	1624.1

Point ID	LATTITUDE	LONGITUDE
NVA.PS.27	39° 48' 46.77617"	-119° 48' 24.52572"

NVA.PS.29



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS.29	265439.212	4414492.122	1384.770	1408.449

Point ID	LATTITUDE	LONGITUDE
NVA.PS.29	39° 50' 53.05283"	-119° 44' 29.9544"

NVA.PS10



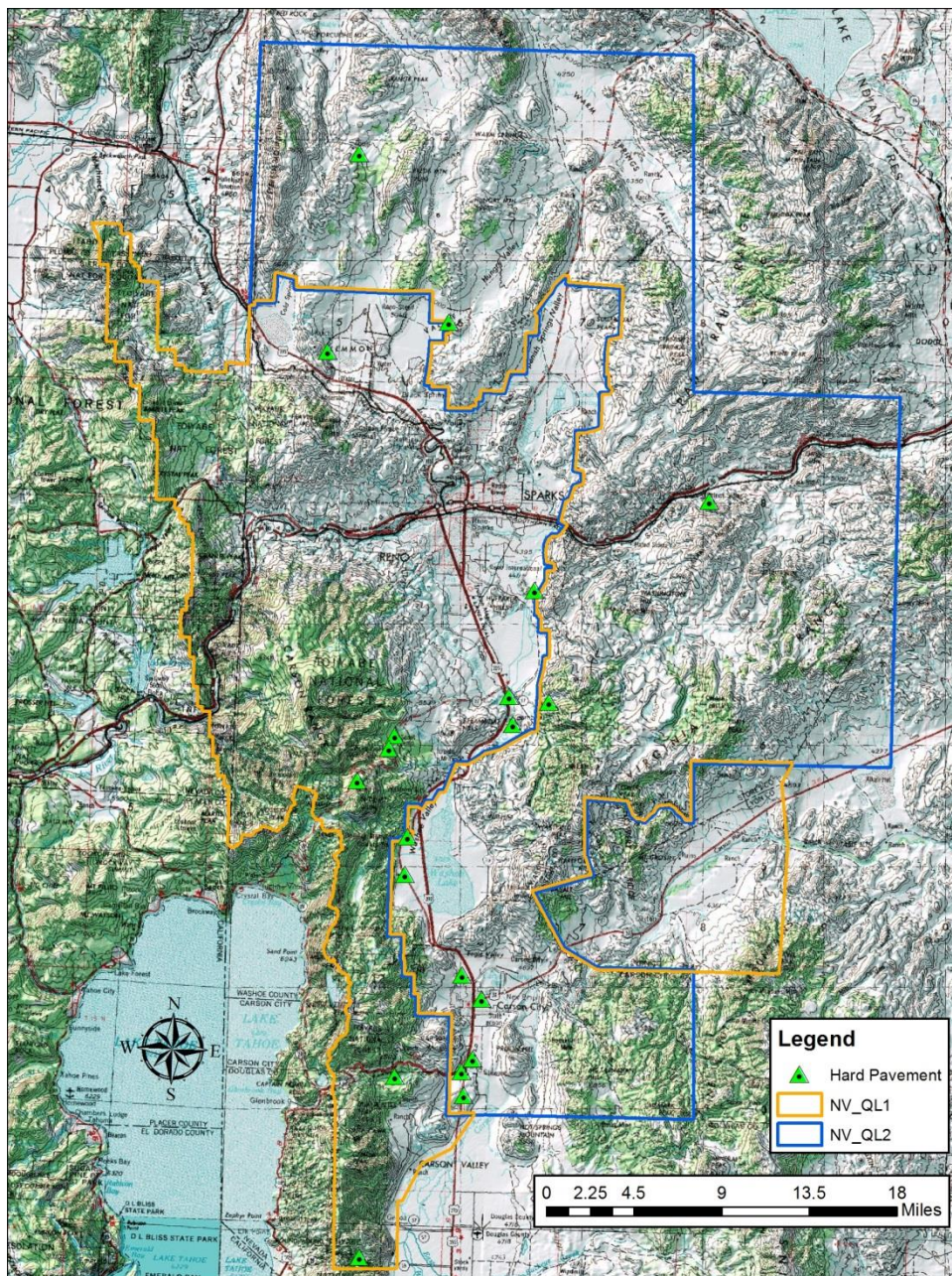
Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.PS10	252100.416	4356929.867	2389.685	2413.397

Point ID	LATTITUDE	LONGITUDE
NVA.PS10	39° 19' 34.60894"	-119° 52' 33.13308"

Non-Vegetated Vertical Accuracy Checkpoints

Hard Pavement

The Map shows the overall distribution of the Non-Vegetated Vertical Accuracy Checkpoints, Hard Pavement throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. is UTM 11N, NAD83 (2011), NAVD88, Geoid 12B and using Meters for measurement.



Point ID	Easting X (Meters)	Northing Y (Meters)	Ortho (Meters)
NVA.HP.01	260090.266	4331304.003	1501.797
NVA.HP.02	259930.611	4333245.923	1454.073
NVA.HP.04	254432.307	4332876.681	1708.791
NVA.HP.05	260856.059	4334298.574	1445.82
NVA.HP.07	251482.829	4317967.107	2075.945
NVA.HP.08	267162.876	4363743.27	1642.658
NVA.HP.10	254431.015	4361015.03	1849.759
NVA.HP.11	253952.746	4359955.868	1906.247
NVA.HP.13	255477.844	4352644.52	1549.053
NVA.HP.14	255258.558	4349548.263	1541.022
NVA.HP.17	259991.982	4341231.157	1450.091
NVA.HP.19	264174.186	4361930.152	1413.747
NVA.HP.20	263855.503	4364228.647	1390.093
NVA.HP.22	265964.295	4372987.633	1364.119
NVA.HP.23	280396.462	4380333.896	1310.768
NVA.HP.25	248838.345	4392713.852	1519.603
NVA.HP.26	251494.758	4409036.363	1759.634
NVA.HP.34	258876.235	4395146.386	1509.969
NVA.HP12	251311.849	4357262.871	2515.081
VVA.HP.15	261606.381	4339243.81	1423.046

NVA.HP.01



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.01	260090.266	4331304.003	1477.271	1501.797

Point ID	LATTITUDE	LONGITUDE
NVA.HP.01	39° 5' 52.40216"	-119° 46' 27.07284"

NVA.HP.02



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.02	259930.611	4333245.923	1429.583	1454.073

Point ID	LATTITUDE	LONGITUDE
NVA.HP.02	39° 6' 55.16636"	-119° 46' 36.18228"

NVA.HP.04



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.04	254432.307	4332876.681	1684.438	1708.791

Point ID	LATTITUDE	LONGITUDE
NVA.HP.04	39° 6' 37.68926"	-119° 50' 24.38448"

NVA.HP.05



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.05	260856.059	4334298.574	1421.329	1445.82

Point ID	LATTITUDE	LONGITUDE
NVA.HP.05	39° 7' 30.19048"	-119° 45' 59.02452"

NVA.HP.07



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.07	251482.829	4317967.107	2051.627	2075.945

Point ID	LATTITUDE	LONGITUDE
NVA.HP.07	38° 58' 31.6132"	-119° 52' 7.473"

NVA.HP.08



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.08	267162.876	4363743.27	1618.557	1642.658

Point ID	LATTITUDE	LONGITUDE
NVA.HP.08	39° 23' 30.44717"	-119° 42' 13.26276"

NVA.HP.10



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.10	254431.015	4361015.03	1825.950	1849.759

Point ID	LATTITUDE	LONGITUDE
NVA.HP.10	39° 21' 49.35571"	-119° 51' 1.29168"

NVA.HP.11



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.11	253952.746	4359955.868	1882.455	1906.247

Point ID	LATTITUDE	LONGITUDE
NVA.HP.11	39° 21' 14.55066"	-119° 51' 19.85508"

NVA.HP.13



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.13	255477.844	4352644.52	1524.980	1549.053

Point ID	LATTITUDE	LONGITUDE
NVA.HP.13	39° 17' 19.22647"	-119° 50' 6.63468"

NVA.HP.14



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.14	255258.558	4349548.263	1516.879	1541.022

Point ID	LATTITUDE	LONGITUDE
NVA.HP.14	39° 15' 38.68639"	-119° 50' 11.72832"

NVA.HP.17



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.17	259991.982	4341231.157	1425.744	1450.091

Point ID	LATTITUDE	LONGITUDE
NVA.HP.17	39° 11' 13.96349"	-119° 46' 43.8078"

NVA.HP.19



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.19	264174.186	4361930.152	1389.614	1413.747

Point ID	LATTITUDE	LONGITUDE
NVA.HP.19	39° 22' 28.77841"	-119° 44' 15.7686"

NVA.HP.20



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.20	263855.503	4364228.647	1365.954	1390.093

Point ID	LATTITUDE	LONGITUDE
NVA.HP.20	39° 23' 42.93967"	-119° 44' 31.98912"

NVA.HP.22



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.22	265964.295	4372987.633	1339.954	1364.119

Point ID	LATTITUDE	LONGITUDE
NVA.HP.22	39° 28' 28.81477"	-119° 43' 14.96676"

NVA.HP.23



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.23	280396.462	4380333.896	1286.656	1310.768

Point ID	LATTITUDE	LONGITUDE
NVA.HP.23	39° 32' 40.56943"	-119° 33' 20.24964"

NVA.HP.25



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.25	248838.345	4392713.852	1495.855	1519.603

Point ID	LATTITUDE	LONGITUDE
NVA.HP.25	39° 38' 50.47811"	-119° 55' 37.73712"

NVA.HP.26



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.26	251494.758	4409036.363	1735.933	1759.634

Point ID	LATTITUDE	LONGITUDE
NVA.HP.26	39° 47' 42.04252"	-119° 54' 8.58132"

NVA.HP.34



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP.34	258876.235	4395146.386	1486.102	1509.969

Point ID	LATTITUDE	LONGITUDE
NVA.HP.34	39° 40' 19.6855"	-119° 48' 40.26852"

NVA.HP12



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
NVA.HP12	251311.849	4357262.871	2491.417	2515.081

Point ID	LATTITUDE	LONGITUDE
NVA.HP12	39° 19' 44.58292"	-119° 53' 6.47088"

VVA.HP.15



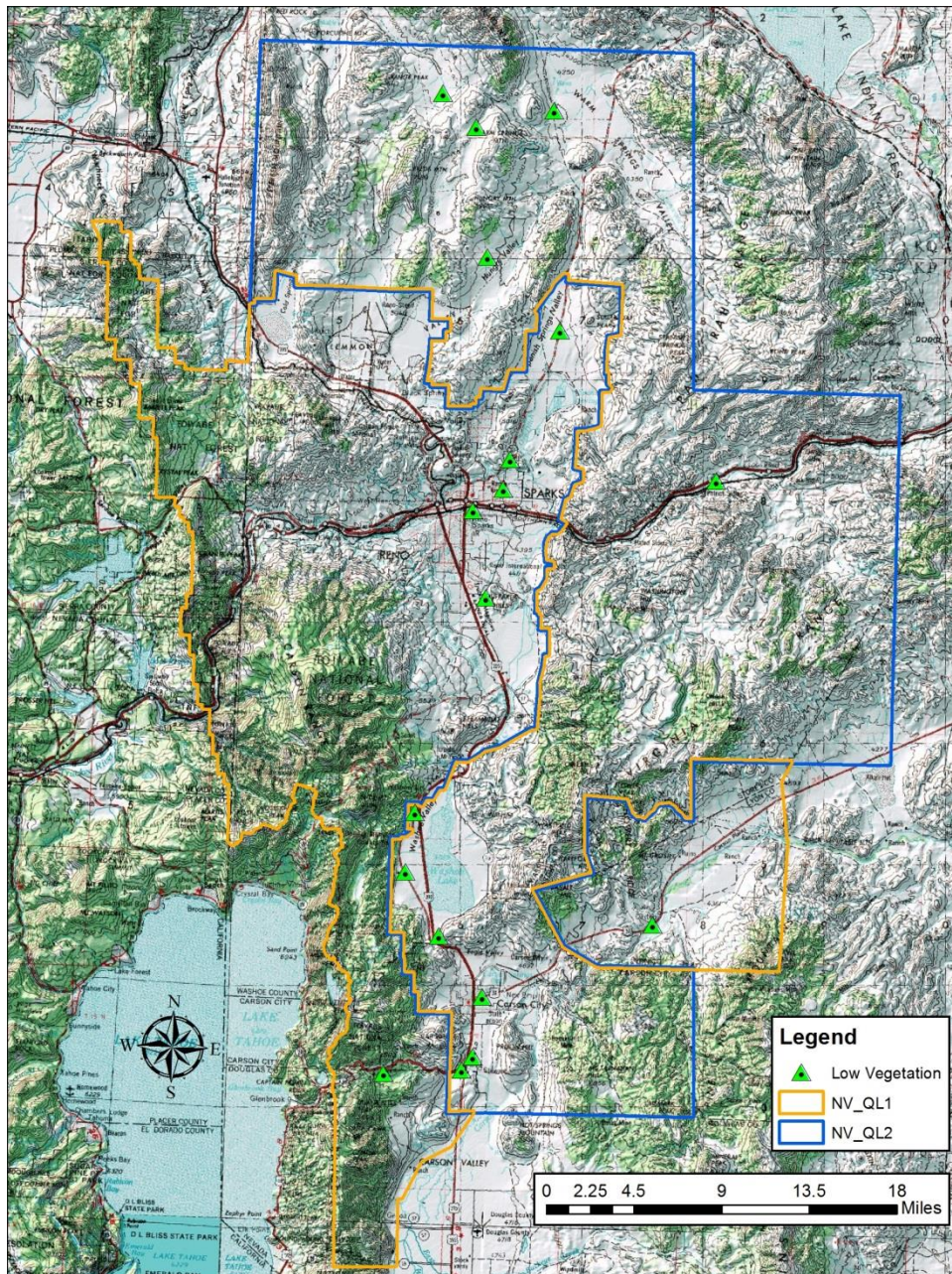
Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HP.15	261606.381	4339243.81	1398.635	1423.046

Point ID	LATTITUDE	LONGITUDE
VVA.HP.15	39° 10' 11.16804"	-119° 45' 34.07148"

Vegetated Vertical Accuracy Checkpoints

Low Vegetation

The Map shows the overall distribution of the Vegetated Vertical Accuracy Checkpoints, Low Vegetation throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is UTM 11N, NAD83 (2011), NAVD88, Geoid 12B and using Meters for measurement.



Point ID	Easting X (Meters)	Northing Y (Meters)	Ortho (Meters)
VVA.LV.01	259940.397	4333201.911	1454.564
VVA.LV.02	253498.44	4332973.635	1740.606
VVA.LV.03	260858.66	4334330.938	1446.07
VVA.LV.04	275740.261	4345190.586	1330.834
VVA.LV.05	256089.83	4354472.255	1556.336
VVA.LV.06	255272.953	4349568.976	1539.967
VVA.LV.07	261655.447	4339236.857	1422.16
VVA.LV.08	258033.599	4344308.81	1550.807
VVA.LV.09	261929.033	4372226.508	1353.061
VVA.LV.11	281000.312	4381820.762	1307.682
VVA.LV.14	258406.485	4413882.723	1541.97
VVA.LV.16	261156.124	4411042.802	1599.527
VVA.LV.17	267569.48	4412428.563	1316.993
VVA.LV.19	268087.132	4394276.469	1386.738
VVA.LV.20	263977.132	4383624.562	1391.741
VVA.LV.21	263370.479	4381176.125	1347.699
VVA.LV.22	260908.054	4379408.603	1353.934
VVA.LV.28	262075.273	4400359.356	1549.826

VVA.LV.01



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.01	259940.397	4333201.911	1430.073	1454.564

Point ID	LATTITUDE	LONGITUDE
VVA.LV.01	39° 6' 53.74998"	-119° 46' 35.71932"

VVA.LV.02



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.02	253498.44	4332973.635	1716.287	1740.606

Point ID	LATTITUDE	LONGITUDE
VVA.LV.02	39° 6' 39.88188"	-119° 51' 3.34836"

VVA.LV.03



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.03	260858.66	4334330.938	1421.579	1446.07

Point ID	LATTITUDE	LONGITUDE
VVA.LV.03	39° 7' 31.24171"	-119° 45' 58.95756"

VVA.LV.04



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.04	275740.261	4345190.586	1306.503	1330.834

Point ID	LATTITUDE	LONGITUDE
VVA.LV.04	39° 13' 37.41164"	-119° 35' 52.78344"

VVA.LV.05



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.05	256089.83	4354472.255	1532.298	1556.336

Point ID	LATTITUDE	LONGITUDE
VVA.LV.05	39° 18' 19.06542"	-119° 49' 43.5036"

VVA.LV.06



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.06	255272.953	4349568.976	1515.824	1539.967

Point ID	LATTITUDE	LONGITUDE
VVA.LV.06	39° 15' 39.37212"	-119° 50' 11.1552"

VVA.LV.07



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.07	261655.447	4339236.857	1397.748	1422.16

Point ID	LATTITUDE	LONGITUDE
VVA.LV.07	39° 10' 10.99114"	-119° 45' 32.0202"

VVA.LV.08



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.08	258033.599	4344308.81	1526.556	1550.807

Point ID	LATTITUDE	LONGITUDE
VVA.LV.08	39° 12' 51.72815"	-119° 48' 9.30924"

VVA.LV.09



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.09	261929.033	4372226.508	1328.900	1353.061

Point ID	LATTITUDE	LONGITUDE
VVA.LV.09	39° 28' 0.1699"	-119° 46' 2.69148"

VVA.LV.11



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.11	281000.312	4381820.762	1283.565	1307.682

Point ID	LATTITUDE	LONGITUDE
VVA.LV.11	39° 33' 29.3076"	-119° 32' 56.73912"

VVA.LV.14



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.14	258406.485	4413882.723	1518.292	1541.97

Point ID	LATTITUDE	LONGITUDE
VVA.LV.14	39° 50' 26.21436"	-119° 49' 24.73752"

VVA.LV.16



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.16	261156.124	4411042.802	1575.833	1599.527

Point ID	LATTITUDE	LONGITUDE
VVA.LV.16	39° 48' 57.00618"	-119° 47' 25.45404"

VVA.LV.17



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.17	267569.48	4412428.563	1293.248	1316.993

Point ID	LATTITUDE	LONGITUDE
VVA.LV.17	39° 49' 48.3024"	-119° 42' 57.77496"

VVA.LV.19



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.19	268087.132	4394276.469	1362.759	1386.738

Point ID	LATTITUDE	LONGITUDE
VVA.LV.19	39° 40' 0.67591"	-119° 42' 12.9888"

VVA.LV.20



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.20	263977.132	4383624.562	1367.654	1391.741

Point ID	LATTITUDE	LONGITUDE
VVA.LV.20	39° 34' 11.50457"	-119° 44' 51.62712"

VVA.LV.21



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.21	263370.479	4381176.125	1323.571	1347.699

Point ID	LATTITUDE	LONGITUDE
VVA.LV.21	39° 32' 51.57301"	-119° 45' 13.88412"

VVA.LV.22



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.22	260908.054	4379408.603	1329.805	1353.934

Point ID	LATTITUDE	LONGITUDE
VVA.LV.22	39° 31' 51.84991"	-119° 46' 54.64884"

VVA.LV.28



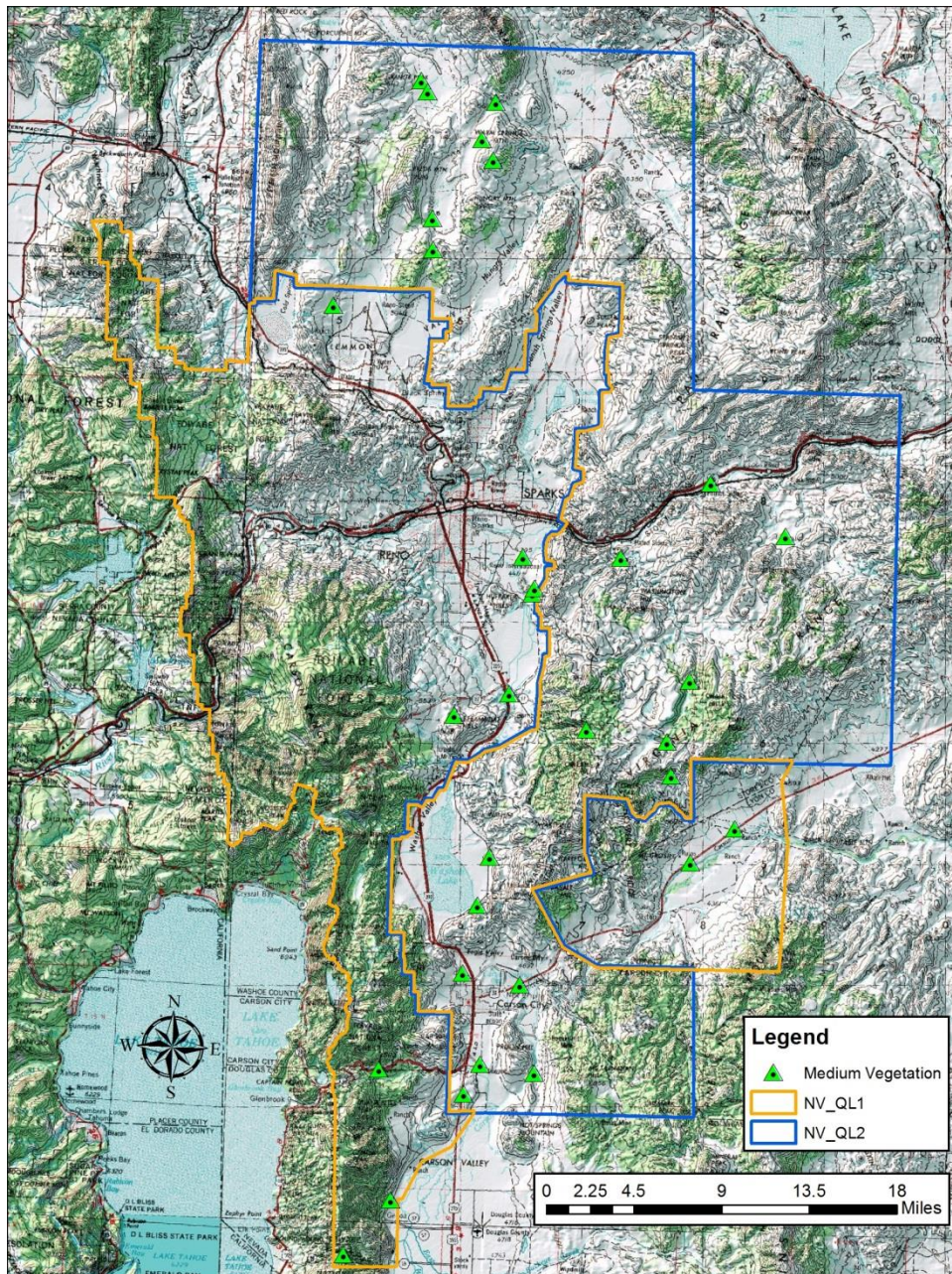
Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.LV.28	262075.273	4400359.356	1525.989	1549.826

Point ID	LATTITUDE	LONGITUDE
VVA.LV.28	39° 43' 11.80729"	-119° 46' 32.91816"

Vegetated Vertical Accuracy Checkpoints

Medium Vegetation

The Map shows the overall distribution of the Vegetated Vertical Accuracy Checkpoints, Medium Vegetation throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is UTM 11N, NAD83 (2011), NAVD88, Geoid 12B and using Meters for measurement.



Point ID	Easting X (Meters)	Northing Y (Meters)	Ortho (Meters)
VVA.MV.01	260123.163	4331257.599	1502.811
VVA.MV.03	253103.693	4333306.699	1794.299
VVA.MV.04	261453.963	4333719.388	1439.973
VVA.MV.05	265944.636	4332937.55	1418.247
VVA.MV.06	254068.118	4322510.346	1460.026
VVA.MV.08	250189.547	4318008.106	2166.073
VVA.MV.10	264764.773	4340278.581	1412.03
VVA.MV.11	278855.283	4350324.596	1326.654
VVA.MV.12	270277.978	4361313.335	1932.919
VVA.MV.14	259321.83	4362521.322	1672.985
VVA.MV.15	260036.705	4341230.108	1448.416
VVA.MV.16	261250.282	4346845.995	1549.494
VVA.MV.18	262230.859	4350800.154	1561.104
VVA.MV.19	263874.341	4364265.688	1389.309
VVA.MV.20	265801.209	4372569.162	1386.607
VVA.MV.21	265983.351	4372995.75	1365.034
VVA.MV.22	265023.936	4375571.919	1338.797
VVA.MV.23	273103.663	4375508.195	1345.511
VVA.MV.24	280543.625	4381675.251	1304.599
VVA.MV.25	286709.35	4377289.998	1457.819
VVA.MV.27	249355.773	4396343.949	1578.84
VVA.MV.28	256604.726	4414894.456	1546.168
VVA.MV.30	257149.992	4413997.34	1546.964
VVA.MV.31	262784.504	4413127.863	1531.308
VVA.MV.37	282521.392	4353137.669	1322.79
VVA.MV.39	277274.264	4357491.917	1773.836
VVA.MV.40	276930.14	4360314.501	1835.441
VVA.MV.41	278801.133	4365338.805	1758.597
VVA.MV.42	257564.889	4400938.394	1676.647
VVA.MV.43	257515.177	4403556.876	1563.513
VVA.MV.45	261651.638	4410039.138	1627.872
VVA.MV.47	262558.096	4408354.54	1746.299

VVA.MV.01



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.01	260123.163	4331257.599	1478.283	1502.811

Point ID	LATTITUDE	LONGITUDE
VVA.MV.01	39° 5' 50.93113"	-119° 46' 25.64616"

VVA.MV.03



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.03	253103.693	4333306.699	1770.003	1794.299

Point ID	LATTITUDE	LONGITUDE
VVA.MV.03	39° 6' 50.27098"	-119° 51' 20.20068"

VVA.MV.04



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.04	261453.963	4333719.388	1415.468	1439.973

Point ID	LATTITUDE	LONGITUDE
VVA.MV.04	39° 7' 12.01339"	-119° 45' 33.41952"

VVA.MV.05



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.05	265944.636	4332937.55	1393.773	1418.247

Point ID	LATTITUDE	LONGITUDE
VVA.MV.05	39° 6' 51.06204"	-119° 42' 25.64748"

VVA.MV.06



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.06	254068.118	4322510.346	1435.584	1460.026

Point ID	LATTITUDE	LONGITUDE
VVA.MV.06	39° 1' 1.44505"	-119° 50' 26.04984"

VVA.MV.08



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.08	250189.547	4318008.106	2141.840	2166.073

Point ID	LATTITUDE	LONGITUDE
VVA.MV.08	38° 58' 31.61741"	-119° 53' 1.20804"

VVA.MV.10



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.10	264764.773	4340278.581	1387.635	1412.03

Point ID	LATTITUDE	LONGITUDE
VVA.MV.10	39° 10' 47.79289"	-119° 43' 23.8926"

VVA.MV.11



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.11	278855.283	4350324.596	1302.319	1326.654

Point ID	LATTITUDE	LONGITUDE
VVA.MV.11	39° 16' 26.6659"	-119° 33' 49.05324"

VVA.MV.12



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.12	270277.978	4361313.335	1908.865	1932.919

Point ID	LATTITUDE	LONGITUDE
VVA.MV.12	39° 22' 14.7135"	-119° 40' 0.17688"

VVA.MV.14



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.14	259321.83	4362521.322	1648.987	1672.985

Point ID	LATTITUDE	LONGITUDE
VVA.MV.14	39° 22' 43.11397"	-119° 47' 39.10164"

VVA.MV.15



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.15	260036.705	4341230.108	1424.068	1448.416

Point ID	LATTITUDE	LONGITUDE
VVA.MV.15	39° 11' 13.97393"	-119° 46' 41.94444"

VVA.MV.16



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.16	261250.282	4346845.995	1525.254	1549.494

Point ID	LATTITUDE	LONGITUDE
VVA.MV.16	39° 14' 17.14168"	-119° 45' 58.55904"

VVA.MV.18



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.18	262230.859	4350800.154	1536.903	1561.104

Point ID	LATTITUDE	LONGITUDE
VVA.MV.18	39° 16' 26.23285"	-119° 45' 22.7214"

VVA.MV.19



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.19	263874.341	4364265.688	1365.170	1389.309

Point ID	LATTITUDE	LONGITUDE
VVA.MV.19	39° 23' 44.15838"	-119° 44' 31.24968"

VVA.MV.20



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.20	265801.209	4372569.162	1362.442	1386.607

Point ID	LATTITUDE	LONGITUDE
VVA.MV.20	39° 28' 15.09596"	-119° 43' 21.25632"

VVA.MV.21



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.21	265983.351	4372995.75	1340.870	1365.034

Point ID	LATTITUDE	LONGITUDE
VVA.MV.21	39° 28' 29.09644"	-119° 43' 14.18052"

VVA.MV.22



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.22	265023.936	4375571.919	1314.614	1338.797

Point ID	LATTITUDE	LONGITUDE
VVA.MV.22	39° 29' 51.6264"	-119° 43' 57.56052"

VVA.MV.23



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.23	273103.663	4375508.195	1321.369	1345.511

Point ID	LATTITUDE	LONGITUDE
VVA.MV.23	39° 29' 57.37294"	-119° 38' 19.55724"

VVA.MV.24



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.24	280543.625	4381675.251	1280.482	1304.599

Point ID	LATTITUDE	LONGITUDE
VVA.MV.24	39° 33' 24.1722"	-119° 33' 15.68484"

VVA.MV.25



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.25	286709.35	4377289.998	1433.732	1457.819

Point ID	LATTITUDE	LONGITUDE
VVA.MV.25	39° 31' 7.65466"	-119° 28' 52.49424"

VVA.MV.27



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.27	249355.773	4396343.949	1555.084	1578.84

Point ID	LATTITUDE	LONGITUDE
VVA.MV.27	39° 40' 48.62111"	-119° 55' 21.01116"

VVA.MV.28



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.28	256604.726	4414894.456	1522.492	1546.168

Point ID	LATTITUDE	LONGITUDE
VVA.MV.28	39° 50' 57.13933"	-119° 50' 41.81028"

VVA.MV.30



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.30	257149.992	4413997.34	1523.279	1546.964

Point ID	LATTITUDE	LONGITUDE
VVA.MV.30	39° 50' 28.63799"	-119° 50' 17.69496"

VVA.MV.31



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.31	262784.504	4413127.863	1507.636	1531.308

Point ID	LATTITUDE	LONGITUDE
VVA.MV.31	39° 50' 6.19937"	-119° 46' 19.75908"

VVA.MV.37



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.37	282521.392	4353137.669	1298.459	1322.79

Point ID	LATTITUDE	LONGITUDE
VVA.MV.37	39° 18' 1.1709"	-119° 31' 19.4664"

VVA.MV.39



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.39	277274.264	4357491.917	1749.681	1773.836

Point ID	LATTITUDE	LONGITUDE
VVA.MV.39	39° 20' 17.4737"	-119° 35' 3.51564"

VVA.MV.40



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.40	276930.14	4360314.501	1811.338	1835.441

Point ID	LATTITUDE	LONGITUDE
VVA.MV.40	39° 21' 48.62236"	-119° 35' 21.25392"

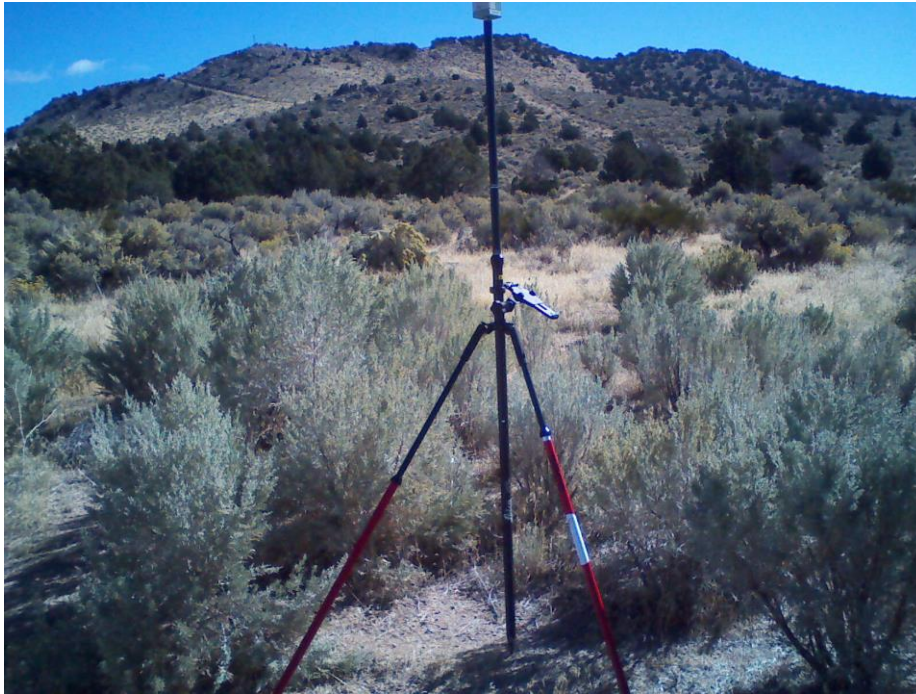
VVA.MV.41



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.41	278801.133	4365338.805	1734.507	1758.597

Point ID	LATTITUDE	LONGITUDE
VVA.MV.41	39° 24' 33.17195"	-119° 34' 9.1182"

VVA.MV.42



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.42	257564.889	4400938.394	1652.883	1676.647

Point ID	LATTITUDE	LONGITUDE
VVA.MV.42	39° 43' 25.99608"	-119° 49' 42.9078"

VVA.MV.43



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.43	257515.177	4403556.876	1539.761	1563.513

Point ID	LATTITUDE	LONGITUDE
VVA.MV.43	39° 44' 50.77655"	-119° 49' 48.46512"

VVA.MV.45



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.45	261651.638	4410039.138	1604.170	1627.872

Point ID	LATTITUDE	LONGITUDE
VVA.MV.45	39° 48' 24.99001"	-119° 47' 3.32376"

VVA.MV.47



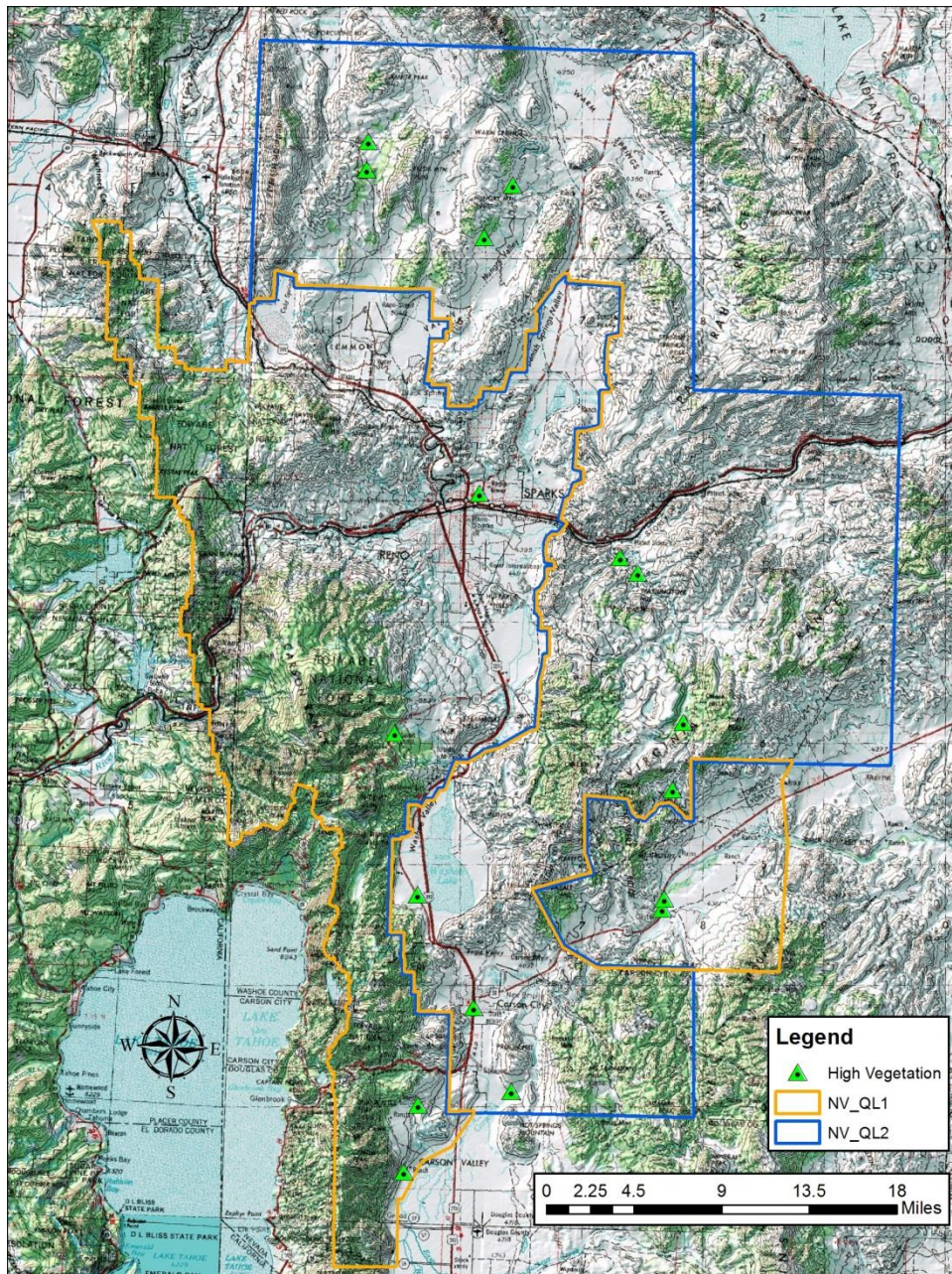
Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.MV.47	262558.096	4408354.54	1722.579	1746.299

Point ID	LATTITUDE	LONGITUDE
VVA.MV.47	39° 47' 31.32445"	-119° 46' 23.05236"

Vegetated Vertical Accuracy Checkpoints

High Vegetation

The Map shows the overall distribution of the Vegetated Vertical Accuracy Checkpoints, High Vegetation throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is UTM 11N, NAD83 (2011), NAVD88, Geoid 12B and using Meters for measurement.



Point ID	Easting X (Meters)	Northing Y (Meters)	Ortho (Meters)
VVA.HV.03	264053.116	4331467.387	1413.68
VVA.HV.04	256327.202	4330313.766	1571.086
VVA.HV.05	255144.678	4324824.1	1448.548
VVA.HV.06	276516.238	4346526.834	1327.67
VVA.HV.07	276669.651	4347338.265	1321.574
VVA.HV.08	254408.565	4361040.25	1850.649
VVA.HV.09	256290.205	4347719.943	1543.684
VVA.HV.11	260946.977	4338375.064	1424.562
VVA.HV.12	273066.04	4375519.736	1344.23
VVA.HV.13	274508.97	4374275.62	1370.766
VVA.HV.14	252236.994	4409888.614	1677.846
VVA.HV.17	252114.228	4407548.112	1766.893
VVA.HV.18	261410.453	4380811.423	1353.853
VVA.HV.19	277397.356	4356344.905	1645.479
VVA.HV.20	278279.178	4361935.702	1794.376
VVA.HV.27	264170.594	4406300.763	1542.25
VVA.HV.28	261825.682	4401955.08	1589.923

VVA.HV.03



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.03	264053.116	4331467.387	1389.155	1413.68

Point ID	LATTITUDE	LONGITUDE
VVA.HV.03	39° 6' 1.58803"	-119° 43' 42.48588"

VVA.HV.04



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.04	256327.202	4330313.766	1546.629	1571.086

Point ID	LATTITUDE	LONGITUDE
VVA.HV.04	39° 5' 16.56218"	-119° 49' 2.27028"

VVA.HV.05



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.05	255144.678	4324824.1	1424.084	1448.548

Point ID	LATTITUDE	LONGITUDE
VVA.HV.05	39° 2' 17.50049"	-119° 49' 44.32692"

VVA.HV.06



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.06	276516.238	4346526.834	1303.333	1327.67

Point ID	LATTITUDE	LONGITUDE
VVA.HV.06	39° 14' 21.43496"	-119° 35' 22.04448"

VVA.HV.07



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.07	276669.651	4347338.265	1297.237	1321.574

Point ID	LATTITUDE	LONGITUDE
VVA.HV.07	39° 14' 47.87268"	-119° 35' 16.6182"

VVA.HV.08



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.08	254408.565	4361040.25	1826.842	1850.649

Point ID	LATTITUDE	LONGITUDE
VVA.HV.08	39° 21' 50.14984"	-119° 51' 2.26188"

VVA.HV.09



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.09	256290.205	4347719.943	1519.487	1543.684

Point ID	LATTITUDE	LONGITUDE
VVA.HV.09	39° 14' 40.49477"	-119° 49' 26.35392"

VVA.HV.11



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.11	260946.977	4338375.064	1400.142	1424.562

Point ID	LATTITUDE	LONGITUDE
VVA.HV.11	39° 9' 42.3675"	-119° 46' 0.41592"

VVA.HV.12



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.12	273066.04	4375519.736	1320.089	1344.23

Point ID	LATTITUDE	LONGITUDE
VVA.HV.12	39° 29' 57.71119"	-119° 38' 21.14484"

VVA.HV.13



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.13	274508.97	4374275.62	1346.633	1370.766

Point ID	LATTITUDE	LONGITUDE
VVA.HV.13	39° 29' 18.7633"	-119° 37' 19.27704"

VVA.HV.14



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.14	252236.994	4409888.614	1654.143	1677.846

Point ID	LATTITUDE	LONGITUDE
VVA.HV.14	39° 48' 10.43024"	-119° 53' 38.5692"

VVA.HV.17



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.17	252114.228	4407548.112	1743.195	1766.893

Point ID	LATTITUDE	LONGITUDE
VVA.HV.17	39° 46' 54.48101"	-119° 53' 40.54416"

VVA.HV.18



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.18	261410.453	4380811.423	1329.741	1353.853

Point ID	LATTITUDE	LONGITUDE
VVA.HV.18	39° 32' 37.80377"	-119° 46' 35.44032"

VVA.HV.19



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.19	277397.356	4356344.905	1621.288	1645.479

Point ID	LATTITUDE	LONGITUDE
VVA.HV.19	39° 19' 40.41775"	-119° 34' 57.01044"

VVA.HV.20



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.20	278279.178	4361935.702	1770.279	1794.376

Point ID	LATTITUDE	LONGITUDE
VVA.HV.20	39° 22' 42.40906"	-119° 34' 26.8662"

VVA.HV.27



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.27	264170.594	4406300.763	1518.476	1542.25

Point ID	LATTITUDE	LONGITUDE
VVA.HV.27	39° 46' 26.39827"	-119° 45' 12.6756"

VVA.HV.28



Point ID	Easting X (m)	Northing Y (m)	Ellipsoid Height (m)	Orthometric Height (m)
VVA.HV.28	261825.682	4401955.08	1566.113	1589.923

Point ID	LATTITUDE	LONGITUDE
VVA.HV.28	39° 44' 3.25583"	-119° 46' 45.46668"