

# ***GROUND CONTROL SURVEY REPORT***

**GPS SURVEY  
FOR LIDAR CONTROL**

**JEFFERSON COUNTY, WI  
WROC LIDAR SURVEY**

**JEFFERSON COUNTY, WISCONSIN**

*Services provided by:*

**AYRES**  

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**ASSOCIATES**

**Geospatial Services  
1802 Pankratz Street  
Madison, WI 53704**

## **ABSTRACT**

This report documents the GPS ground surveys conducted in support of FEMA accuracy testing of the lidar data collection for Jefferson County, Wisconsin, in 2012. Surveys were conducted at 5 sites utilizing the base stations established in the static network. These surveys established “ground truth” data at each site on different surface types, including bare earth, low grass, brush lands, low trees, forest, high grass, weeds, crops, and urban areas. Statistical comparisons were made between ground truth points collected from the ground survey and the elevation at the associated horizontal coordinates represented on the LiDAR-derived digital terrain model.

## **SAMPLE POINTS/TEST POINTS**

The ground survey test points were distributed and categorized into sites as shown in the Test Survey Locations map on the next page.

## **DATA ANALYSIS**

To qualify as an acceptable accuracy test, the lidar data must be compared with a dataset of higher accuracy – in this instance ground survey. To develop a comparable dataset of points from the lidar dataset, a utility from proprietary software was used.

The ground control survey results were imported into an ESRI Pointz shapefile with each point’s information as attributes. The utility then accessed the lidar and generated a triangulated irregular network (TIN), which is a continuous digital terrain surface, using the bare-earth lidar points and the compiled breaklines. The utility probed the TIN surface to determine its elevations at each of the survey point’s horizontal locations.

The elevation was then appended as a field to the Pointz shapefile; the attributes for each point were exported to a database; and then statistical analysis was performed. The results can be seen on the following pages.

## **OVERALL ACCURACY**

A comparison of ground survey versus lidar model values indicates a vertical root mean square error (RMSEz) of 0.482 feet. This is within the FEMA specified vertical accuracy tolerance of 0.6. This RMSEz equates to a tested 0.945 feet vertical accuracy at 95% confidence level.

**GROUND TRUTH ANALYSIS**  
Comparison of Lidar Points to Ground-Truth Points  
Wisconsin State Plane South Coordinate System  
NAD 83 HARN / NAVD 88, survey feet

Field definitions

Name – The designation given to the ground survey point to identify it with its coordinates and land cover type

X, Y, and Z – The coordinates that describe the point's horizontal and vertical location within the Jefferson County WISCRS Coordinate System. The X and Y values are shared between the ground control points and lidar comparison points. The Z field shows the elevation of the survey number. The lidar comparison point's elevation is implicit in the analysis' delta Z

Delta Z – The error, the difference between the elevation at a horizontal location as determined by ground survey and as determined by the lidar dataset

Delta Z Squared – The value of squaring Delta Z

Land Cover – The predominant land cover category at the location of the survey point

Statistic definitions

Sum – The sum of the analysis' Delta Z Squared values

Average – The average of the analysis' Delta Z Squared values

RMSE – The root mean squared error, the square root of the average of the squared errors

Accuracyz – The product of multiplying the RMSE with 1.96, a conversion between the RMSE value and a value with a 95% confidence level

## Jefferson County LiDAR Check Site Locations



ID	X	Y	Z	DESC_	DELTA_Z	DELTA_Z_SQ
1889	2243800.0000	368062.0000	856.6540	TREE COVE	0.000008	0.000000
1528	2351800.0000	374695.0000	866.2020	ASPH	-0.000026	0.000000
1539	2351810.0000	374694.0000	865.9960	ASPH	0.000028	0.000000
1845	2251080.0000	369167.0000	854.1150	MOWED GRA	-0.003990	0.000016
1534	2351800.0000	374679.0000	866.2770	ASPH	-0.005978	0.000036
1561	2351830.0000	374640.0000	866.1990	MOWED GRA	0.007025	0.000049
1885	2249980.0000	369048.0000	854.2740	GRAVEL	-0.007987	0.000064
1612	2351740.0000	374349.0000	866.1810	LOW TREES	0.010970	0.000120
1560	2351820.0000	374642.0000	866.2000	MOWED GRA	0.010988	0.000121
1536	2351810.0000	374683.0000	866.2800	ASPH	0.012971	0.000168
1877	2249990.0000	369053.0000	854.0120	GRAVEL	0.012976	0.000168
1531	2351800.0000	374693.0000	866.2060	ASPH	0.013006	0.000169
1530	2351800.0000	374698.0000	866.1320	ASPH	-0.014019	0.000197
1525	2351800.0000	374682.0000	866.2730	ASPH	0.014990	0.000225
1881	2249970.0000	369058.0000	854.5140	GRAVEL	-0.015977	0.000255
1882	2249970.0000	369053.0000	854.5780	GRAVEL	0.015997	0.000256
1555	2351840.0000	374640.0000	866.1990	MOWED GRA	0.016025	0.000257
1869	2249980.0000	369065.0000	854.1340	GRAVEL	-0.016972	0.000288
1844	2251090.0000	369169.0000	854.0340	MOWED GRA	0.018003	0.000324
1535	2351810.0000	374678.0000	866.3090	ASPH	0.020979	0.000440
1871	2249980.0000	369068.0000	854.2890	GRAVEL	-0.022001	0.000484
1860	2251080.0000	369184.0000	853.8380	MOWED GRA	-0.022013	0.000485
1864	2249990.0000	369068.0000	853.9960	GRAVEL	0.022028	0.000485
1879	2249980.0000	369056.0000	854.2200	GRAVEL	-0.022971	0.000528
1564	2351840.0000	374637.0000	866.2370	MOWED GRA	0.024000	0.000576
1638	2351460.0000	374572.0000	865.9170	TREE COVE	0.024008	0.000576
1856	2251070.0000	369173.0000	853.9750	MOWED GRA	0.024024	0.000577
1532	2351800.0000	374688.0000	866.2410	ASPH	-0.025028	0.000626
1529	2351800.0000	374699.0000	866.1940	ASPH	-0.025970	0.000674
1527	2351800.0000	374690.0000	866.2090	ASPH	-0.029984	0.000899
1541	2351810.0000	374689.0000	866.1640	ASPH	0.029999	0.000900
1884	2249980.0000	369050.0000	854.3170	GRAVEL	0.031983	0.001023
1526	2351800.0000	374686.0000	866.3130	ASPH	0.033012	0.001090
1841	2251090.0000	369171.0000	853.8890	MOWED GRA	-0.033977	0.001154
1873	2249980.0000	369062.0000	854.2410	GRAVEL	0.034972	0.001223
1868	2249990.0000	369064.0000	853.9590	GRAVEL	0.035016	0.001226
1627	2351460.0000	374574.0000	865.8810	TREE COVE	0.036019	0.001297
1554	2351840.0000	374645.0000	866.1280	MOWED GRA	0.039009	0.001522
1890	2243810.0000	368065.0000	856.6240	TREE COVE	-0.039023	0.001523
1635	2351460.0000	374571.0000	865.8150	TREE COVE	0.039998	0.001600
1858	2251070.0000	369178.0000	853.9500	MOWED GRA	0.042988	0.001848
1545	2351820.0000	374676.0000	866.3100	ASPH	0.043002	0.001849
1872	2249970.0000	369064.0000	854.4040	GRAVEL	-0.047992	0.002303
1891	2243810.0000	368067.0000	856.6220	TREE COVE	-0.048009	0.002305
1853	2251080.0000	369180.0000	854.0180	MOWED GRA	0.048995	0.002400
1563	2351830.0000	374638.0000	866.1670	MOWED GRA	0.050008	0.002501
1637	2351460.0000	374574.0000	865.9290	TREE COVE	0.050984	0.002599
1540	2351810.0000	374694.0000	866.0640	ASPH	0.051974	0.002701
1862	2249980.0000	369070.0000	854.1650	GRAVEL	0.052022	0.002706

1636	2351460.0000	374574.0000	865.8430	TREE COVE	0.055982	0.003134
1837	2251080.0000	369161.0000	854.0080	MOWED GRA	0.057004	0.003250
1553	2351840.0000	374647.0000	866.1520	MOWED GRA	0.058022	0.003367
1851	2251090.0000	369179.0000	853.9410	MOWED GRA	0.059021	0.003483
1886	2249990.0000	369047.0000	854.2100	GRAVEL	0.059978	0.003597
1566	2351830.0000	374633.0000	866.2290	MOWED GRA	0.061996	0.003844
1870	2249980.0000	369067.0000	854.1590	GRAVEL	0.062003	0.003844
1550	2351820.0000	374650.0000	866.2770	MOWED GRA	0.063022	0.003972
1902	2243800.0000	368070.0000	856.2500	TREE COVE	0.068000	0.004624
1640	2351460.0000	374566.0000	865.9140	TREE COVE	0.071999	0.005184
1552	2351830.0000	374648.0000	866.2700	MOWED GRA	-0.072020	0.005187
1846	2251080.0000	369164.0000	854.1330	MOWED GRA	-0.072996	0.005328
1569	2351820.0000	374636.0000	866.2280	MOWED GRA	0.076973	0.005925
1567	2351830.0000	374635.0000	866.2190	MOWED GRA	0.077006	0.005930
1604	2351740.0000	374358.0000	866.2710	LOW TREES	0.078004	0.006085
109	2351590.0000	374666.0000	860.2640	CP	-0.079977	0.006396
1628	2351460.0000	374571.0000	865.7100	TREE COVE	0.079978	0.006396
1558	2351830.0000	374644.0000	866.0750	MOWED GRA	0.079988	0.006398
1893	2243800.0000	368065.0000	856.5750	TREE COVE	0.080988	0.006559
1565	2351840.0000	374633.0000	866.2910	MOWED GRA	0.081984	0.006721
1556	2351840.0000	374642.0000	866.1220	MOWED GRA	0.084991	0.007223
1537	2351810.0000	374687.0000	866.1820	ASPH	0.084993	0.007224
1639	2351460.0000	374569.0000	865.8770	TREE COVE	0.085986	0.007394
1903	2243790.0000	368066.0000	856.3650	TREE COVE	0.086010	0.007398
1883	2249970.0000	369051.0000	854.4430	GRAVEL	0.089007	0.007922
1876	2249990.0000	369058.0000	853.9280	GRAVEL	0.089021	0.007925
1533	2351800.0000	374683.0000	866.2370	ASPH	0.091000	0.008281
1875	2249990.0000	369059.0000	854.0060	GRAVEL	0.091019	0.008284
1850	2251080.0000	369176.0000	853.9240	MOWED GRA	0.092989	0.008647
1617	2351740.0000	374347.0000	866.1950	LOW TREES	0.092993	0.008648
1839	2251090.0000	369166.0000	853.8960	MOWED GRA	0.093004	0.008650
1611	2351740.0000	374351.0000	866.0680	LOW TREES	0.093007	0.008650
1546	2351820.0000	374680.0000	866.2850	ASPH	0.094027	0.008841
1843	2251090.0000	369171.0000	853.8920	MOWED GRA	0.094971	0.009020
1849	2251080.0000	369173.0000	853.9750	MOWED GRA	0.095024	0.009030
1874	2249980.0000	369060.0000	854.1320	GRAVEL	0.095981	0.009212
1547	2351820.0000	374684.0000	866.2670	ASPH	0.097971	0.009598
1572	2351830.0000	374629.0000	866.2230	MOWED GRA	0.097978	0.009600
1861	2251080.0000	369186.0000	853.7740	MOWED GRA	0.098013	0.009607
1900	2243800.0000	368067.0000	856.4020	TREE COVE	0.098022	0.009608
1859	2251080.0000	369180.0000	853.8870	MOWED GRA	0.099976	0.009995
1847	2251080.0000	369167.0000	853.9390	MOWED GRA	0.100974	0.010196
1880	2249980.0000	369057.0000	854.3250	GRAVEL	0.100988	0.010199
1570	2351820.0000	374632.0000	866.1800	MOWED GRA	0.101007	0.010202
1574	2351830.0000	374627.0000	866.2110	MOWED GRA	0.102001	0.010404
1878	2249980.0000	369054.0000	854.1310	GRAVEL	0.103019	0.010613
1543	2351810.0000	374680.0000	866.2470	ASPH	0.103991	0.010814
1603	2351730.0000	374357.0000	866.2060	LOW TREES	0.104006	0.010817
1562	2351830.0000	374639.0000	866.1570	MOWED GRA	0.104018	0.010820
1840	2251090.0000	369168.0000	853.7980	MOWED GRA	0.106026	0.011242

1641	2351460.0000	374563.0000	865.9430	TREE COVE	0.108007	0.011665
1557	2351830.0000	374643.0000	866.1130	MOWED GRA	0.108024	0.011669
1645	2351460.0000	374571.0000	865.8900	TREE COVE	0.109985	0.012097
1901	2243800.0000	368070.0000	856.2760	TREE COVE	0.110999	0.012321
1909	2243790.0000	368062.0000	856.0790	TREE COVE	0.111021	0.012326
1894	2243800.0000	368063.0000	856.5230	TREE COVE	0.111990	0.012542
1559	2351820.0000	374646.0000	866.2030	MOWED GRA	0.112997	0.012768
1608	2351730.0000	374355.0000	866.1860	LOW TREES	0.114026	0.013002
1538	2351810.0000	374691.0000	866.0440	ASPH	0.119994	0.014398
1867	2249990.0000	369062.0000	853.8060	GRAVEL	0.120970	0.014634
1571	2351820.0000	374630.0000	866.2440	MOWED GRA	0.120981	0.014637
1551	2351830.0000	374649.0000	866.1390	MOWED GRA	0.122023	0.014890
1899	2243800.0000	368063.0000	856.3820	TREE COVE	0.124981	0.015620
1643	2351450.0000	374566.0000	865.8700	TREE COVE	0.125005	0.015626
1606	2351740.0000	374356.0000	866.1900	LOW TREES	0.125998	0.015875
1646	2351460.0000	374573.0000	865.8950	TREE COVE	0.126980	0.016124
1644	2351450.0000	374568.0000	865.8740	TREE COVE	0.129977	0.016894
112	2243910.0000	368057.0000	860.5400	CP	0.134022	0.017962
108	2351450.0000	374615.0000	862.8550	CP	0.135020	0.018230
1898	2243800.0000	368060.0000	856.3400	TREE COVE	0.135973	0.018489
1892	2243800.0000	368068.0000	856.4930	TREE COVE	0.143019	0.020454
1582	2351690.0000	374505.0000	865.3660	TALL GRAS	0.148972	0.022193
1842	2251090.0000	369174.0000	853.7890	MOWED GRA	0.148999	0.022201
1601	2351740.0000	374359.0000	866.2610	LOW TREES	0.149014	0.022205
1542	2351810.0000	374684.0000	866.2070	ASPH	0.152030	0.023113
1897	2243800.0000	368057.0000	856.4560	TREE COVE	0.154006	0.023718
1863	2249980.0000	369069.0000	854.0380	GRAVEL	0.154975	0.024017
1549	2351820.0000	374692.0000	866.0520	ASPH	0.154998	0.024024
1852	2251090.0000	369182.0000	853.8600	MOWED GRA	0.156015	0.024341
1857	2251070.0000	369175.0000	853.8800	MOWED GRA	0.159995	0.025598
1568	2351820.0000	374635.0000	866.2180	MOWED GRA	0.160982	0.025915
1548	2351820.0000	374688.0000	866.1270	ASPH	0.160986	0.025916
1629	2351460.0000	374568.0000	865.7170	TREE COVE	0.162020	0.026250
1650	2351450.0000	374567.0000	865.9890	TREE COVE	0.163986	0.026892
1865	2249990.0000	369068.0000	853.8500	GRAVEL	0.168024	0.028232
1642	2351450.0000	374563.0000	865.9300	TREE COVE	0.170007	0.028902
1633	2351460.0000	374565.0000	865.7880	TREE COVE	0.173975	0.030267
1919	2303060.0000	432694.0000	820.8840	ASPH	0.174028	0.030286
1757	2306700.0000	315105.0000	809.5700	TREE COVE	0.175993	0.030973
1910	2243790.0000	368066.0000	856.0430	TREE COVE	0.176970	0.031318
1651	2351450.0000	374564.0000	865.9860	TREE COVE	0.176977	0.031321
1593	2351680.0000	374513.0000	865.4090	TALL GRAS	0.178003	0.031685
1930	2303070.0000	432685.0000	820.7630	ASPH	0.180000	0.032400
1848	2251080.0000	369170.0000	853.8870	MOWED GRA	0.180976	0.032752
1887	2243800.0000	368055.0000	856.4780	TREE COVE	0.181973	0.033114
1607	2351740.0000	374355.0000	866.1080	LOW TREES	0.182029	0.033134
1838	2251090.0000	369164.0000	853.8760	MOWED GRA	0.184023	0.033865
1920	2303060.0000	432692.0000	820.8210	ASPH	0.187016	0.034975
1855	2251080.0000	369175.0000	853.7630	MOWED GRA	0.188000	0.035344
1854	2251080.0000	369177.0000	853.8440	MOWED GRA	0.190006	0.036102

1926	2303060.0000	432680.0000	820.6990	ASPH	0.192025	0.036874
1866	2249990.0000	369068.0000	853.7610	GRAVEL	0.194014	0.037641
1906	2243790.0000	368054.0000	856.2140	TREE COVE	0.196011	0.038420
2034	2302820.0000	432451.0000	820.7150	TREE COVE	0.197973	0.039193
1911	2243790.0000	368069.0000	855.8990	TREE COVE	0.199013	0.039606
1602	2351730.0000	374359.0000	866.1790	LOW TREES	0.200984	0.040395
1649	2351450.0000	374570.0000	865.9310	TREE COVE	0.201970	0.040792
1929	2303070.0000	432688.0000	820.7910	ASPH	0.201984	0.040798
1905	2243790.0000	368058.0000	856.3120	TREE COVE	0.201988	0.040799
1895	2243800.0000	368060.0000	856.4640	TREE COVE	0.202011	0.040808
1599	2351670.0000	374500.0000	865.2610	TALL GRAS	0.202014	0.040810
1928	2303070.0000	432685.0000	820.8300	ASPH	0.203983	0.041609
2023	2302820.0000	432449.0000	820.6370	TREE COVE	0.205976	0.042426
1544	2351810.0000	374676.0000	866.2330	ASPH	0.206029	0.042448
1634	2351460.0000	374568.0000	865.7960	TREE COVE	0.211979	0.044935
1584	2351690.0000	374515.0000	865.3870	TALL GRAS	0.212976	0.045359
1610	2351730.0000	374352.0000	866.1360	LOW TREES	0.213014	0.045375
1888	2243800.0000	368059.0000	856.5200	TREE COVE	0.213980	0.045788
1581	2351690.0000	374501.0000	865.2340	TALL GRAS	0.213991	0.045792
1908	2243790.0000	368059.0000	856.0050	TREE COVE	0.214995	0.046223
115	2302970.0000	432491.0000	820.4040	CP	0.215008	0.046229
1589	2351680.0000	374498.0000	865.1860	TALL GRAS	0.215026	0.046236
1573	2351830.0000	374628.0000	866.1710	MOWED GRA	0.216979	0.047080
1579	2351690.0000	374495.0000	865.2220	TALL GRAS	0.220015	0.048407
1896	2243800.0000	368057.0000	856.4540	TREE COVE	0.220021	0.048409
1600	2351740.0000	374359.0000	866.1970	LOW TREES	0.221979	0.049274
1918	2303060.0000	432691.0000	820.8600	ASPH	0.222015	0.049291
1907	2243790.0000	368056.0000	855.9660	TREE COVE	0.222997	0.049727
1596	2351680.0000	374514.0000	865.3490	TALL GRAS	0.223001	0.049729
1647	2351450.0000	374574.0000	865.8750	TREE COVE	0.225000	0.050625
1583	2351690.0000	374510.0000	865.3350	TALL GRAS	0.225978	0.051066
2033	2302820.0000	432453.0000	820.7830	TREE COVE	0.225980	0.051067
1927	2303060.0000	432682.0000	820.7680	ASPH	0.226995	0.051527
1588	2351680.0000	374503.0000	865.2830	TALL GRAS	0.228980	0.052432
1576	2351690.0000	374508.0000	865.2560	TALL GRAS	0.231019	0.053370
2041	2302830.0000	432455.0000	820.7860	TREE COVE	0.231989	0.053819
2039	2302830.0000	432449.0000	820.6990	TREE COVE	0.232025	0.053836
1592	2351680.0000	374509.0000	865.3920	TALL GRAS	0.232971	0.054276
1632	2351460.0000	374562.0000	865.8450	TREE COVE	0.233029	0.054303
1597	2351680.0000	374510.0000	865.2890	TALL GRAS	0.235999	0.055695
1931	2303070.0000	432682.0000	820.8240	ASPH	0.236025	0.055708
1625	2351730.0000	374340.0000	866.2230	LOW TREES	0.236978	0.056158
1624	2351740.0000	374340.0000	866.2000	LOW TREES	0.238988	0.057115
1922	2303060.0000	432685.0000	820.7990	ASPH	0.238989	0.057116
1605	2351740.0000	374357.0000	866.1300	LOW TREES	0.238995	0.057119
1577	2351690.0000	374504.0000	865.2240	TALL GRAS	0.239001	0.057121
1934	2303060.0000	432674.0000	820.5600	ASPH	0.240002	0.057601
2019	2302820.0000	432439.0000	820.5130	TREE COVE	0.242000	0.058564
1939	2303080.0000	432681.0000	820.6590	ASPH	0.243003	0.059051
1594	2351680.0000	374518.0000	865.3720	TALL GRAS	0.243991	0.059531



1786	2262230.0000	369157.0000	894.9480	OAKLAND E	0.245002	0.060026
1932	2303070.0000	432679.0000	820.7590	ASPH	0.247028	0.061023
2006	2303000.0000	432491.0000	821.0300	LOW TREES	0.247971	0.061489
1921	2303060.0000	432688.0000	820.8450	ASPH	0.250029	0.062515
1598	2351670.0000	374505.0000	865.2760	TALL GRAS	0.251999	0.063504
2032	2302820.0000	432451.0000	820.7450	TREE COVE	0.252005	0.063506
2040	2302830.0000	432452.0000	820.6380	TREE COVE	0.255000	0.065025
1937	2303070.0000	432676.0000	820.7530	ASPH	0.257009	0.066054
2018	2302820.0000	432437.0000	820.4570	TREE COVE	0.257030	0.066064
1938	2303080.0000	432678.0000	820.7640	ASPH	0.258023	0.066576
1936	2303070.0000	432673.0000	820.6760	ASPH	0.258975	0.067068
1766	2306700.0000	315107.0000	809.3770	TREE COVE	0.258986	0.067074
2020	2302820.0000	432442.0000	820.6550	TREE COVE	0.260971	0.068106
2024	2302820.0000	432446.0000	820.6080	TREE COVE	0.261029	0.068136
1591	2351680.0000	374504.0000	865.3260	TALL GRAS	0.262011	0.068650
2022	2302810.0000	432446.0000	820.6050	TREE COVE	0.263020	0.069179
1575	2351690.0000	374513.0000	865.3000	TALL GRAS	0.264012	0.069702
113	2244060.0000	368233.0000	860.8500	CP	0.264024	0.069709
1933	2303060.0000	432676.0000	820.6720	ASPH	0.265003	0.070227
1648	2351450.0000	374572.0000	865.8690	TREE COVE	0.267981	0.071814
2027	2302820.0000	432441.0000	820.4990	TREE COVE	0.268977	0.072348
1923	2303060.0000	432683.0000	820.7210	ASPH	0.268992	0.072357
1630	2351460.0000	374565.0000	865.7260	TREE COVE	0.269987	0.072893
1578	2351690.0000	374499.0000	865.2270	TALL GRAS	0.271010	0.073447
2038	2302830.0000	432446.0000	820.7140	TREE COVE	0.271011	0.073447
2025	2302820.0000	432445.0000	820.5960	TREE COVE	0.271992	0.073979
2037	2302830.0000	432444.0000	820.6020	TREE COVE	0.272010	0.073990
1917	2303060.0000	432689.0000	820.8220	ASPH	0.272979	0.074517
1980	2303210.0000	432499.0000	820.6490	TALL GRAS	0.274013	0.075083
1955	2303020.0000	432647.0000	821.3750	MOWED GRA	0.277000	0.076729
1925	2303060.0000	432677.0000	820.5840	ASPH	0.277016	0.076738
1590	2351680.0000	374498.0000	865.2160	TALL GRAS	0.280997	0.078959
2028	2302830.0000	432441.0000	820.5290	TREE COVE	0.281008	0.078966
1964	2303010.0000	432649.0000	821.7070	MOWED GRA	0.285030	0.081242
1935	2303070.0000	432671.0000	820.5470	ASPH	0.289003	0.083523
1585	2351690.0000	374516.0000	865.3950	TALL GRAS	0.289980	0.084089
1953	2303020.0000	432647.0000	821.0180	MOWED GRA	0.291995	0.085261
1945	2303020.0000	432640.0000	820.7740	MOWED GRA	0.293013	0.085857
1956	2303020.0000	432650.0000	821.1760	MOWED GRA	0.295975	0.087601
1914	2318140.0000	437242.0000	855.5310	WATERTOWN	0.295994	0.087613
2021	2302820.0000	432444.0000	820.6090	TREE COVE	0.298991	0.089396
1587	2351680.0000	374507.0000	865.2720	TALL GRAS	0.300027	0.090016
1954	2303020.0000	432644.0000	821.1570	MOWED GRA	0.303018	0.091820
1924	2303050.0000	432680.0000	820.6440	ASPH	0.307018	0.094260
1957	2303020.0000	432653.0000	821.0720	MOWED GRA	0.309979	0.096087
114	2302870.0000	432398.0000	819.8960	CP	0.310004	0.096102
1950	2303030.0000	432655.0000	820.6230	MOWED GRA	0.311014	0.096730
1968	2303190.0000	432504.0000	820.7580	TALL GRAS	0.312004	0.097347
1978	2303200.0000	432499.0000	820.6860	TALL GRAS	0.314026	0.098612
1916	2303050.0000	432687.0000	820.7550	ASPH	0.314995	0.099222

1963	2303010.0000	432652.0000	821.4510	MOWED GRA	0.316011	0.099863
1958	2303030.0000	432656.0000	820.9330	MOWED GRA	0.319017	0.101772
1915	2303050.0000	432684.0000	820.6910	ASPH	0.320021	0.102413
2013	2303000.0000	432488.0000	820.9370	LOW TREES	0.320988	0.103033
1982	2303200.0000	432494.0000	820.5180	TALL GRAS	0.321995	0.103681
1676	2305450.0000	314789.0000	806.0490	ASPH	0.322989	0.104322
1961	2303020.0000	432658.0000	821.0840	MOWED GRA	0.323016	0.104339
1962	2303020.0000	432655.0000	821.2830	MOWED GRA	0.323980	0.104963
1586	2351690.0000	374512.0000	865.3430	TALL GRAS	0.323982	0.104965
1989	2303210.0000	432499.0000	820.5010	TALL GRAS	0.324023	0.104991
1946	2303030.0000	432644.0000	820.7020	MOWED GRA	0.324974	0.105608
1972	2303190.0000	432499.0000	820.6860	TALL GRAS	0.326026	0.106293
1983	2303200.0000	432492.0000	820.4650	TALL GRAS	0.329973	0.108882
1952	2303030.0000	432649.0000	820.9040	MOWED GRA	0.332008	0.110230
1960	2303020.0000	432661.0000	820.8140	MOWED GRA	0.332974	0.110872
1988	2303200.0000	432496.0000	820.5490	TALL GRAS	0.332989	0.110882
1948	2303030.0000	432649.0000	820.4740	MOWED GRA	0.335001	0.112226
1970	2303200.0000	432504.0000	820.7990	TALL GRAS	0.337989	0.114236
1949	2303040.0000	432652.0000	820.3760	MOWED GRA	0.339023	0.114937
1580	2351690.0000	374496.0000	865.1470	TALL GRAS	0.340027	0.115619
1677	2305450.0000	314784.0000	806.0320	ASPH	0.341018	0.116293
1663	2305440.0000	314801.0000	806.2060	ASPH	0.342006	0.116968
2035	2302830.0000	432449.0000	820.5900	TREE COVE	0.345973	0.119697
1660	2305440.0000	314806.0000	806.2130	ASPH	0.348987	0.121792
1684	2305490.0000	314884.0000	806.5560	MOWED GRA	0.349970	0.122479
2026	2302820.0000	432443.0000	820.5010	TREE COVE	0.350023	0.122516
2029	2302830.0000	432443.0000	820.4880	TREE COVE	0.353024	0.124626
1959	2303030.0000	432659.0000	820.7760	MOWED GRA	0.356999	0.127448
1609	2351730.0000	374353.0000	866.1130	LOW TREES	0.359024	0.128898
2005	2303000.0000	432492.0000	820.9880	LOW TREES	0.362024	0.131061
1966	2303190.0000	432498.0000	820.6750	TALL GRAS	0.364012	0.132505
1613	2351740.0000	374350.0000	866.0250	LOW TREES	0.364976	0.133207
1997	2302990.0000	432496.0000	820.9340	LOW TREES	0.364979	0.133210
1974	2303190.0000	432494.0000	820.4940	TALL GRAS	0.364981	0.133211
1944	2303030.0000	432637.0000	820.4670	MOWED GRA	0.365020	0.133240
1965	2303190.0000	432496.0000	820.5860	TALL GRAS	0.366001	0.133957
1947	2303030.0000	432646.0000	820.5070	MOWED GRA	0.369981	0.136886
1987	2303200.0000	432493.0000	820.4070	TALL GRAS	0.372018	0.138397
1618	2351740.0000	374345.0000	866.2340	LOW TREES	0.379991	0.144393
2031	2302820.0000	432449.0000	820.6700	TREE COVE	0.381017	0.145174
1616	2351740.0000	374347.0000	866.1500	LOW TREES	0.381976	0.145905
1979	2303200.0000	432502.0000	820.6350	TALL GRAS	0.382990	0.146682
1951	2303030.0000	432652.0000	820.7740	MOWED GRA	0.383013	0.146699
1981	2303200.0000	432496.0000	820.5410	TALL GRAS	0.383984	0.147444
1662	2305430.0000	314802.0000	806.1600	ASPH	0.385027	0.148246
1940	2303040.0000	432649.0000	820.2150	MOWED GRA	0.386973	0.149748
1623	2351740.0000	374343.0000	866.3310	LOW TREES	0.391006	0.152886
1975	2303190.0000	432491.0000	820.4420	TALL GRAS	0.392983	0.154436
1524	2338510.0000	371958.0000	850.3700	SULLIVAN	0.395005	0.156029
1661	2305430.0000	314806.0000	806.1360	ASPH	0.396014	0.156827

1670	2305440.0000	314796.0000	806.1440	ASPH	0.397018	0.157623
1659	2305440.0000	314806.0000	806.2530	ASPH	0.407009	0.165657
1696	2305500.0000	314888.0000	805.8200	MOWED GRA	0.407993	0.166458
2002	2303000.0000	432496.0000	821.1590	LOW TREES	0.408003	0.166467
1943	2303030.0000	432640.0000	820.3430	MOWED GRA	0.408982	0.167267
1977	2303200.0000	432496.0000	820.6320	TALL GRAS	0.409981	0.168084
1704	2305510.0000	314878.0000	805.4110	MOWED GRA	0.409989	0.168091
1985	2303200.0000	432487.0000	820.3090	TALL GRAS	0.410979	0.168904
1984	2303190.0000	432490.0000	820.4030	TALL GRAS	0.413985	0.171383
1969	2303200.0000	432507.0000	820.7140	TALL GRAS	0.418011	0.174733
110	2306620.0000	314986.0000	807.8070	CP	0.418993	0.175555
2012	2303000.0000	432490.0000	820.9330	LOW TREES	0.421017	0.177255
1990	2302990.0000	432497.0000	820.8340	LOW TREES	0.422016	0.178097
1971	2303200.0000	432501.0000	820.6620	TALL GRAS	0.423013	0.178940
1668	2305440.0000	314796.0000	806.1750	ASPH	0.424012	0.179786
1678	2305440.0000	314784.0000	806.1150	ASPH	0.427010	0.182337
1779	2306700.0000	315114.0000	809.3050	TREE COVE	0.428007	0.183190
1705	2305510.0000	314882.0000	805.3480	MOWED GRA	0.429978	0.184881
1672	2305430.0000	314791.0000	806.0200	ASPH	0.430980	0.185744
1976	2303190.0000	432494.0000	820.4800	TALL GRAS	0.432020	0.186641
1973	2303190.0000	432496.0000	820.5670	TALL GRAS	0.434983	0.189211
1904	2243790.0000	368062.0000	856.2340	TREE COVE	0.436991	0.190961
1631	2351460.0000	374562.0000	865.7110	TREE COVE	0.437001	0.190970
1758	2306700.0000	315105.0000	809.3290	TREE COVE	0.437021	0.190987
1941	2303040.0000	432646.0000	820.1270	MOWED GRA	0.439986	0.193588
1657	2305450.0000	314805.0000	806.1850	ASPH	0.441002	0.194483
1671	2305430.0000	314796.0000	806.0380	ASPH	0.445975	0.198894
1759	2306700.0000	315104.0000	809.3160	TREE COVE	0.447021	0.199828
1778	2306700.0000	315114.0000	809.2130	TREE COVE	0.452987	0.205197
1689	2305490.0000	314883.0000	806.2920	MOWED GRA	0.454008	0.206123
1686	2305490.0000	314892.0000	806.5630	MOWED GRA	0.456012	0.207947
1701	2305500.0000	314872.0000	805.5840	MOWED GRA	0.456016	0.207950
1669	2305440.0000	314796.0000	806.1740	ASPH	0.459989	0.211590
1685	2305490.0000	314888.0000	806.6010	MOWED GRA	0.462987	0.214357
1673	2305440.0000	314791.0000	806.1550	ASPH	0.464971	0.216198
1723	2305640.0000	314855.0000	803.0480	TALL GRAS	0.467026	0.218114
1986	2303200.0000	432490.0000	820.2780	TALL GRAS	0.467985	0.219010
2042	2302820.0000	432458.0000	820.8020	TREE COVE	0.467998	0.219022
1720	2305630.0000	314855.0000	803.1940	TALL GRAS	0.468030	0.219052
1693	2305500.0000	314878.0000	805.9860	MOWED GRA	0.468977	0.219939
1765	2306700.0000	315107.0000	809.2730	TREE COVE	0.471990	0.222774
1683	2305490.0000	314881.0000	806.4800	MOWED GRA	0.472020	0.222802
1706	2305510.0000	314886.0000	805.2170	MOWED GRA	0.472020	0.222803
1688	2305490.0000	314887.0000	806.3170	MOWED GRA	0.472983	0.223713
1700	2305500.0000	314875.0000	805.6510	MOWED GRA	0.472999	0.223728
1679	2305440.0000	314784.0000	806.1180	ASPH	0.476019	0.226594
1780	2306690.0000	315114.0000	809.4070	TREE COVE	0.478018	0.228501
2011	2303000.0000	432491.0000	820.9600	LOW TREES	0.479978	0.230379
1703	2305510.0000	314875.0000	805.4020	MOWED GRA	0.484022	0.234278
1967	2303190.0000	432501.0000	820.5840	TALL GRAS	0.488016	0.238159

1781	2306690.0000	315114.0000	809.5480	TREE COVE	0.488026	0.238170
1667	2305450.0000	314795.0000	806.0830	ASPH	0.488992	0.239113
1681	2305430.0000	314784.0000	805.9950	ASPH	0.489005	0.239126
1682	2305490.0000	314877.0000	806.4130	MOWED GRA	0.489975	0.240076
1942	2303030.0000	432643.0000	820.1250	MOWED GRA	0.491000	0.241081
1796	2252400.0000	369140.0000	850.7920	LOW TREES	0.492008	0.242072
1713	2305630.0000	314856.0000	803.2760	TALL GRAS	0.497999	0.248003
1998	2302990.0000	432495.0000	820.8400	LOW TREES	0.502973	0.252982
1690	2305490.0000	314879.0000	806.2540	MOWED GRA	0.504972	0.254996
1680	2305430.0000	314784.0000	806.0420	ASPH	0.505008	0.255033
1675	2305440.0000	314790.0000	806.1070	ASPH	0.509005	0.259086
1719	2305630.0000	314853.0000	803.1990	TALL GRAS	0.509025	0.259107
1665	2305440.0000	314800.0000	806.2030	ASPH	0.512997	0.263166
1699	2305500.0000	314879.0000	805.6520	MOWED GRA	0.513022	0.263192
1767	2306700.0000	315109.0000	809.1950	TREE COVE	0.514993	0.265217
1692	2305490.0000	314874.0000	805.9560	MOWED GRA	0.518006	0.268331
1656	2301870.0000	313852.0000	836.1650	COLD SPRI	0.519022	0.269384
1664	2305440.0000	314801.0000	806.2000	ASPH	0.522988	0.273516
1804	2252390.0000	369145.0000	850.9170	LOW TREES	0.524008	0.274584
2003	2303000.0000	432495.0000	821.0040	LOW TREES	0.524972	0.275595
1658	2305440.0000	314805.0000	806.2770	ASPH	0.529022	0.279865
1687	2305490.0000	314892.0000	806.2910	MOWED GRA	0.530984	0.281944
1774	2306700.0000	315111.0000	809.2790	TREE COVE	0.535008	0.286234
1712	2305630.0000	314860.0000	803.2860	TALL GRAS	0.540989	0.292669
1702	2305500.0000	314870.0000	805.3880	MOWED GRA	0.541000	0.292680
1694	2305500.0000	314881.0000	805.8510	MOWED GRA	0.541987	0.293750
1698	2305500.0000	314883.0000	805.6560	MOWED GRA	0.542994	0.294843
1768	2306700.0000	315109.0000	809.2630	TREE COVE	0.543000	0.294848
1795	2252390.0000	369140.0000	850.7230	LOW TREES	0.544978	0.297001
2036	2302830.0000	432447.0000	820.5430	TREE COVE	0.547970	0.300271
1697	2305500.0000	314887.0000	805.6570	MOWED GRA	0.549018	0.301420
111	2306860.0000	314978.0000	816.3630	CP	0.550024	0.302526
1674	2305440.0000	314790.0000	806.1030	ASPH	0.551973	0.304674
1691	2305490.0000	314875.0000	806.2570	MOWED GRA	0.554981	0.308004
1666	2305450.0000	314800.0000	806.1380	ASPH	0.557000	0.310248
1773	2306690.0000	315111.0000	809.3990	TREE COVE	0.558013	0.311379
2030	2302820.0000	432447.0000	820.5510	TREE COVE	0.559975	0.313572
1726	2305640.0000	314846.0000	803.0350	TALL GRAS	0.562027	0.315874
1775	2306700.0000	315111.0000	809.2170	TREE COVE	0.563020	0.316992
1789	2252390.0000	369138.0000	850.8900	LOW TREES	0.577985	0.334067
1772	2306690.0000	315111.0000	809.5080	TREE COVE	0.581004	0.337566
1787	2252390.0000	369138.0000	850.7600	LOW TREES	0.591990	0.350452
2001	2303000.0000	432498.0000	821.1950	LOW TREES	0.594993	0.354016
1695	2305500.0000	314885.0000	805.8410	MOWED GRA	0.599997	0.359996
1622	2351730.0000	374343.0000	866.1490	LOW TREES	0.604013	0.364832
1716	2305630.0000	314844.0000	803.2950	TALL GRAS	0.604017	0.364837
1770	2306700.0000	315108.0000	809.3690	TREE COVE	0.604981	0.366003
1803	2252390.0000	369145.0000	850.8800	LOW TREES	0.607995	0.369658
1764	2306700.0000	315107.0000	809.3220	TREE COVE	0.615979	0.379430
1710	2305620.0000	314857.0000	803.3980	TALL GRAS	0.615990	0.379443

1794	2252390.0000	369139.0000	850.7440	LOW TREES	0.617981	0.381901
2009	2303000.0000	432494.0000	820.9250	LOW TREES	0.619012	0.383176
1615	2351730.0000	374348.0000	866.0830	LOW TREES	0.627992	0.394374
1711	2305620.0000	314860.0000	803.3650	TALL GRAS	0.628010	0.394396
1776	2306700.0000	315111.0000	809.1140	TREE COVE	0.628986	0.395624
1777	2306700.0000	315114.0000	809.1140	TREE COVE	0.632986	0.400672
2008	2303000.0000	432493.0000	820.8550	LOW TREES	0.634020	0.401981
1763	2306700.0000	315107.0000	809.3860	TREE COVE	0.635014	0.403242
1769	2306700.0000	315109.0000	809.2510	TREE COVE	0.640023	0.409630
1788	2252390.0000	369138.0000	850.7360	LOW TREES	0.643977	0.414706
2004	2303000.0000	432494.0000	820.8300	LOW TREES	0.646983	0.418587
1614	2351730.0000	374350.0000	865.9420	LOW TREES	0.646983	0.418588
1760	2306700.0000	315104.0000	809.4240	TREE COVE	0.653989	0.427701
1708	2305620.0000	314849.0000	803.4190	TALL GRAS	0.656994	0.431641
1709	2305620.0000	314853.0000	803.3870	TALL GRAS	0.660976	0.436889
1832	2252390.0000	369007.0000	851.8460	TALL GRAS	0.661992	0.438233
1732	2306070.0000	314384.0000	795.7730	LOW TREES	0.667990	0.446210
1824	2252400.0000	369001.0000	851.8390	TALL GRAS	0.676011	0.456991
2014	2303000.0000	432487.0000	820.7220	LOW TREES	0.676015	0.456996
1718	2305630.0000	314849.0000	803.1190	TALL GRAS	0.676981	0.458304
1714	2305630.0000	314852.0000	803.1940	TALL GRAS	0.678030	0.459725
1741	2306070.0000	314383.0000	795.7650	LOW TREES	0.680985	0.463741
1715	2305630.0000	314848.0000	803.2850	TALL GRAS	0.681027	0.463798
2007	2303000.0000	432492.0000	820.7140	LOW TREES	0.682011	0.465139
1725	2305640.0000	314849.0000	803.0580	TALL GRAS	0.684017	0.467879
1727	2305640.0000	314846.0000	803.0070	TALL GRAS	0.686981	0.471943
1799	2252390.0000	369142.0000	850.6360	LOW TREES	0.688014	0.473363
1721	2305630.0000	314859.0000	803.1280	TALL GRAS	0.698009	0.487217
1800	2252390.0000	369142.0000	850.7690	LOW TREES	0.702018	0.492829
1801	2252390.0000	369142.0000	850.8450	LOW TREES	0.702029	0.492845
1771	2306690.0000	315108.0000	809.5370	TREE COVE	0.704013	0.495634
2010	2303000.0000	432492.0000	820.8110	LOW TREES	0.708026	0.501301
1730	2305640.0000	314855.0000	802.9210	TALL GRAS	0.724979	0.525595
1798	2252390.0000	369142.0000	850.5840	LOW TREES	0.726016	0.527099
1722	2305640.0000	314860.0000	803.0190	TALL GRAS	0.727018	0.528555
1731	2305640.0000	314858.0000	802.9060	TALL GRAS	0.729994	0.532891
1811	2252390.0000	369146.0000	850.8760	LOW TREES	0.739023	0.546156
1742	2306070.0000	314382.0000	795.9300	LOW TREES	0.745007	0.555036
1792	2252390.0000	369139.0000	850.8460	LOW TREES	0.745992	0.556504
2000	2303000.0000	432497.0000	821.0800	LOW TREES	0.752983	0.566983
1762	2306690.0000	315107.0000	809.4640	TREE COVE	0.759011	0.576097
1626	2351730.0000	374340.0000	865.6960	LOW TREES	0.762016	0.580669
1807	2252390.0000	369147.0000	850.7140	LOW TREES	0.766011	0.586772
2017	2303000.0000	432490.0000	820.8590	LOW TREES	0.766991	0.588276
1802	2252390.0000	369144.0000	850.7160	LOW TREES	0.773997	0.599071
1761	2306690.0000	315104.0000	809.5290	TREE COVE	0.780008	0.608413
1619	2351740.0000	374345.0000	866.1310	LOW TREES	0.790019	0.624129
1707	2305620.0000	314845.0000	803.3220	TALL GRAS	0.795979	0.633582
1821	2252400.0000	369005.0000	851.7240	TALL GRAS	0.796001	0.633618
1753	2306060.0000	314379.0000	796.0960	LOW TREES	0.797992	0.636791

1724	2305640.0000	314852.0000	803.0170	TALL GRAS	0.806971	0.651203
1717	2305630.0000	314845.0000	802.9240	TALL GRAS	0.808989	0.654463
1728	2305640.0000	314849.0000	803.0110	TALL GRAS	0.810014	0.656122
1820	2252400.0000	369002.0000	851.7420	TALL GRAS	0.813996	0.662589
1790	2252390.0000	369137.0000	850.7800	LOW TREES	0.815971	0.665808
1991	2302990.0000	432499.0000	820.9870	LOW TREES	0.818000	0.669125
1829	2252390.0000	369002.0000	851.6290	TALL GRAS	0.830972	0.690514
1809	2252390.0000	369147.0000	850.6070	LOW TREES	0.832005	0.692233
1808	2252390.0000	369147.0000	850.6890	LOW TREES	0.835974	0.698853
2016	2303000.0000	432489.0000	820.6640	LOW TREES	0.841999	0.708962
1793	2252390.0000	369140.0000	850.6860	LOW TREES	0.856026	0.732780
2015	2303000.0000	432488.0000	820.6770	LOW TREES	0.864998	0.748222
1810	2252390.0000	369146.0000	850.6980	LOW TREES	0.866002	0.749959
1816	2252400.0000	368996.0000	851.7020	TALL GRAS	0.866974	0.751643
1830	2252390.0000	369004.0000	851.3910	TALL GRAS	0.873009	0.762144
1999	2303000.0000	432496.0000	820.9170	LOW TREES	0.876008	0.767390
1620	2351730.0000	374345.0000	866.1580	LOW TREES	0.882980	0.779654
1993	2302990.0000	432502.0000	821.1590	LOW TREES	0.893003	0.797455
1791	2252390.0000	369137.0000	850.8420	LOW TREES	0.895020	0.801061
1729	2305640.0000	314852.0000	802.9830	TALL GRAS	0.896029	0.802868
1834	2252390.0000	369003.0000	851.5420	TALL GRAS	0.907008	0.822663
1833	2252390.0000	369005.0000	851.3850	TALL GRAS	0.913990	0.835378
1831	2252390.0000	369007.0000	851.4400	TALL GRAS	0.924998	0.855620
1825	2252400.0000	368999.0000	851.4340	TALL GRAS	0.940979	0.885441
1797	2252400.0000	369142.0000	850.2550	LOW TREES	0.953995	0.910107
1806	2252390.0000	369145.0000	850.4660	LOW TREES	0.954997	0.912018
1994	2303000.0000	432501.0000	821.2130	LOW TREES	0.963987	0.929272
1996	2302990.0000	432498.0000	821.0100	LOW TREES	0.966990	0.935070
1751	2306070.0000	314381.0000	795.8930	LOW TREES	0.970995	0.942831
1621	2351730.0000	374343.0000	865.9040	LOW TREES	0.972008	0.944800
1752	2306060.0000	314379.0000	795.8450	LOW TREES	0.980029	0.960457
1805	2252390.0000	369145.0000	850.5590	LOW TREES	0.982979	0.966248
1818	2252400.0000	368998.0000	851.5610	TALL GRAS	0.993026	0.986100
1819	2252400.0000	369000.0000	851.5400	TALL GRAS	1.024022	1.048621
1814	2252410.0000	369000.0000	851.5140	TALL GRAS	1.044023	1.089984
1992	2302990.0000	432501.0000	821.0570	LOW TREES	1.046993	1.096195
1828	2252400.0000	368999.0000	851.5030	TALL GRAS	1.077009	1.159949
1995	2302990.0000	432500.0000	821.1500	LOW TREES	1.107976	1.227610
1817	2252400.0000	368996.0000	851.4330	TALL GRAS	1.130017	1.276938
1826	2252400.0000	368996.0000	851.5020	TALL GRAS	1.139986	1.299568
1756	2306060.0000	314379.0000	795.8930	LOW TREES	1.160995	1.347909
1815	2252410.0000	368998.0000	851.3590	TALL GRAS	1.179991	1.392379
1812	2252410.0000	369004.0000	851.2850	TALL GRAS	1.194027	1.425700
1813	2252410.0000	369002.0000	851.3090	TALL GRAS	1.201979	1.444754
1755	2306060.0000	314380.0000	795.7910	LOW TREES	1.236984	1.530130
1740	2306070.0000	314384.0000	795.6150	LOW TREES	1.239010	1.535145
1835	2252390.0000	369000.0000	851.4930	TALL GRAS	1.259019	1.585129
1733	2306070.0000	314385.0000	795.5320	LOW TREES	1.290018	1.664145
1754	2306060.0000	314380.0000	795.7020	LOW TREES	1.360974	1.852249
1827	2252400.0000	368996.0000	851.2070	TALL GRAS	1.520030	2.310491

1836	2252390.0000	368998.0000	851.2620	TALL GRAS	1.586976	2.518493
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SUM	116.378739
AVERAGE	0.232757
RMSE	0.482449
AccuracyZ	0.945601

FIELD NOTES

Project FEMA ground survey notes

Contains point number and descriptions

Includes Control and Check Points left out of statistical analysis



E- Ground Truthing DD 10/7/11

- shot 1,524 is check on Sullivan N GPS
- shots 1,525 - 1,549 are Asphalt
- shots 1,550 - 1,574 are Mowed Grass
- shots 1,575 - 1,599 are Tall Grass / Weeds
- shots 1,600 - 1,626 are Low Trees / Brush

-set CP#108 - 60d nail

-set CP#109 - 60d nail

T	H1	B5	SH
108	5.24	109	5.50

- shots 1,627 - 1,651 are Tree Cover

## N - Ground Truthing

- shot 1,914 is check on Watertown N GPS
- shots 1,915 - 1,939 are Asphalt
- shots 1,940 - 1,964 are Mowed Grass
- shots 1,965 - 1,989 are Tall Grass / Weeds
- shots 1,990 - 2,017 are Low Trees / Brush

- set CP# 114 - 60d nail
- set CP# 115 60d nail

T	H1	B5	SH
114	5.40	115	5.50

- shots 2,018 - 2,042 are Tree Cover



## 5 - Ground Truthing

- shot 1,656 is check on Cold Spring S GPS
- shots 1,657 - 1,681 are Asphalt
- shots 1,682 - 1,706 are Mowed Grass
- shots 1,707 - 1,731 are Tall Grass / Weeds
- shots 1,732 - 1,756 are Low Trees / Brush

- set CP# 110 - 60d nail

- set CP# 111 - 60d nail

TP	H1	B5	SH
110	5.38	111	5.04

- shots 1,757 - 1,781 are Tree Cover

## W - Ground Truthing

- shot 1,786 is check on Oakland E GPS
- shots 1,787-1,811 are Low Trees/Brush
- shots 1,812-1,836 are Tall Grass/Weeds
- shots 1,837-1,861 are Mowed Grass
- shots 1,862-1,886 are Gravel

- set CP# 112 - 60d nail
- set CP# 113 - 60d nail

T	H1	B5	SH
112	5.23	113	5.50

- shots 1,887-1,911 are Tree Cover