

# Memo



**Date:** October 5, 2015  
**To:** Kevin Stewart  
**From:** Markus Ritsch  
**Subject:** September 2015 ALERT Data Analysis

## I. ALERT Data Source

Raw ALERT data records extracted from the Urban Drainage and Flood Control District's NovaStar 5 base station were analyzed for the period September 1 through September 30, 2015.

## II. General System Analysis Summary

In 2015 data will be received at the District through both the legacy ALERT channel and through the ALERT2 (concentrator plus A2 self-reports) channel. The following (Table 1) quantifies the data reports received by each channel.

**Table 1. Reception of Data at Diamond Hill (Legacy, ALERT2 and Concentrator Reports)**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Legacy	216,461	241,285	268,551	282,306	345,191	348,979	284,647	269,298	246,919			
Concentrator	366,229	405,210	443,612	458,979	499,841	511,002	449,469	438,917	403,457			
ALERT2	172,927	233,617	286,836	295,399	319,764	302,746	320,675	376,339	358,553			
<b>TOTAL</b>	<b>755,617</b>	<b>880,112</b>	<b>998,999</b>	<b>1,036,684</b>	<b>1,164,796</b>	<b>1,162,727</b>	<b>1,054,791</b>	<b>1,084,554</b>	<b>1,008,929</b>	<b>0</b>	<b>0</b>	<b>0</b>
Conc+A2	539,156	638,827	730,448	754,378	819,605	813,748	770,144	815,256	762,010			
Conc/Leg	1.69	1.68	1.65	1.63	1.45	1.46	1.58	1.63	1.63			
DataChron	529,216	564,798	652,811	702,865	777,203	772,052	742,221	755,645	716,065			

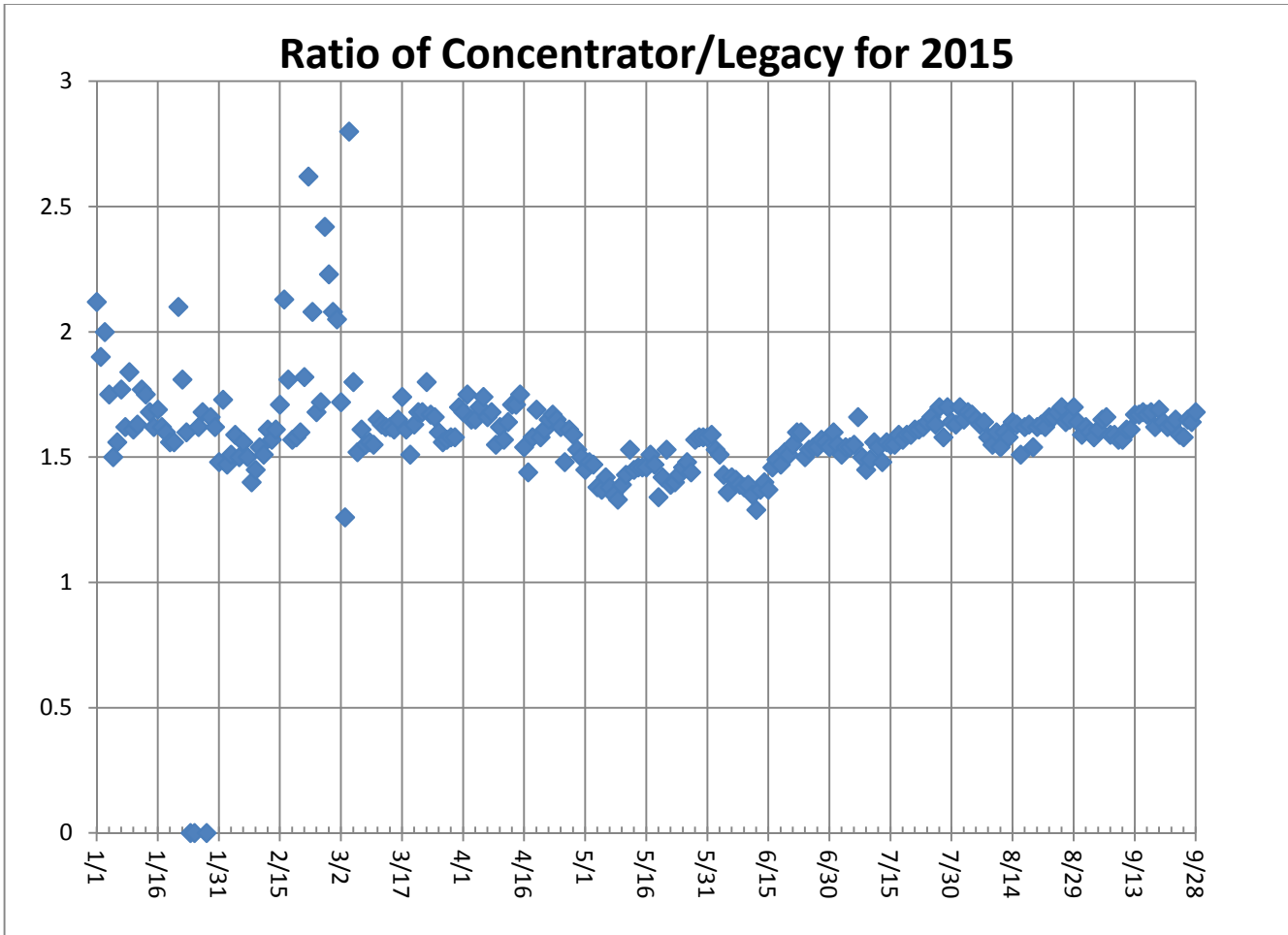
The District operates two redundant NovaStar5 base stations: the primary (ns5a) at Diamond Hill and a redundant base (ns5b) at Greenhouse Data. Additional analyses are conducted on the data received by these two base stations (Table 2). The data received by both base stations for the month are shown below.

**Table 2. Comparison of Data Reception by ns5a and ns5b**

NS5A (Diamond Hill)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Legacy	216,461	241,285	268,551	282,306	345,191	348,979	284,647	269,298	246,919	
Concentrator	366,229	405,210	443,612	458,979	499,841	511,002	449,469	438,917	403,457	
ALERT2	172,927	233,617	286,836	295,399	319,764	302,746	320,675	376,339	358,553	
NS5B (Greenhouse)										
Legacy	244,232	241,143	268,417	262,549	341,926	341,600	288,199	269,168	246,796	
Concentrator	409,951	405,875	444,660	430,407	499,657	502,908	456,087	440,313	405,243	
ALERT2	191,784	234,150	289,044	275,955	319,750	299,635	328,435	381,397	365,140	
Diff (NS5a-NS5b)										
Legacy (Digi One)	-27,771	142	134	19,757	3,265	7,379	-3,552	130	123	
Concentrator (B2010)	-43,722	-665	-1,048	28,572	184	8,094	-6,618	-1,396	-1,786	
ALERT2 (B2010)	-18,857	-533	-2,208	19,444	14	3,111	-7,760	-5,058	-6,587	
Comments	Failed hard drive on ns5a		Tot A2 diff 1%	Outage on ns5b this month			Ns5a data collection was down on July 1		Total A2 diff about 1%	

Interesting to see the large difference in ALERT2 reports between Diamond Hill and Greenhouse relative to the smaller difference from the legacy feed. The Greenhouse server saw approximately 1 percent more ALERT2 reports.

The daily ratio of total concentrator reports received versus total legacy ALERT reports received is shown (Figure 1).



**Figure 1. Daily Ratio of Concentrator Reports to Legacy Reports**

The ratio is very consistent throughout the month. The ratio seems to fluctuate just around 1.6.

## **A. Continuous Operation of Base Receiver/Decoder**

The ns5 base stations were NOT in continuous operation for the entire month. Data collection was down very briefly on September 29<sup>th</sup> from 4:16 AM to 4:19 AM. This two-minute outage was short lived.

## **B. Specific Issues Identified this Month**

Performance of the following sensors (Table 3) was questionable this month.

**Table 3. Sensors with Poor Performance Characteristics**

<b>Sensor ID</b>	<b>Description</b>	<b>Comments</b>
2330	Morrison	Poor timer performance and poor event performance
430	Utah Park	Poor timer performance and poor event performance
2360	Indian Hills	
2271, 2272, 2274	Unknown IDs	Cub Creek below Blue (2270)
4469	Unknown ID	This unknown ID had over 500 reports this month
413	Kelly Dam	This stage sensor has a large number if invalid reports
853	Flying J	This stage sensor has a large number if invalid reports
1629	SPR at Dartmouth	This stage sensor has a large number if invalid reports
100237	Havana Pond	This stage sensor has a large number if invalid reports
2372	Red Rocks Park	This stage sensor has a large number if invalid reports
2810	Pine Cliff Road	This rain sensor had many invalid reports

## C. Performance of New A2 Sites

This section of the report will look at specific reporting characteristics of the new A2 sites by analyzing their APDUID (Application PDU Identifier). The APDUID is a cyclical, incrementing counter from 0 to 6. Tracking skipped values and restarts of the application control byte counter provides useful insight into site performance and general network health. The performance of the cyclical counter is quantified for each A2 self-reporting site and repeater path (Table 4).

**Table 4. APDUID Performance of A2 Sites by Source Address**

Description	ID	W. Creek (6001)	Smoky Hill (6502)	Blue Mt. (6503)	Lee Hill (6505)	Gold Hill (6506)
Carr Street (10012)	100		0.963	0.985	0.975	0.960
Murphy Creek (10019)	870		0.995	0.994	0.993	0.989
Maple Grove (10013)	1000		0.997	0.373	0.835	0.997
Lena @ Nolte Pond (10025)	1020		0.990	0.993	0.990	0.983
Newlin Gulch	3070		0.973	0.259	0.953	0.282
Heritage Regional Park	3090		0.629	0.403	0.739	0.954
Lower Left Hand (10018)	4453		0.998	--	0.855	0.001
Magnolia	6602		0.892	0.979	0.995	0.972
Blackstone**	100100		0.143	0.132	0.127	0.143
ETG @ Hampden**	100110		0.143	0.139	0.141	0.141
Upper Sellers	100140	0.911				
Haystack Road	100150	0.890				
Sand Cr at Colfax	100160		0.989	0.964	0.991	0.991
James Creek	100177		0.144	--	1.00	0.863
S. St. Vrain at Berry Ridge	100210		--	--	0.987	0.013
Arvada/Blunn Reservoir	100227		0.978	0.967	0.973	0.693
Havana Pond	100237		0.988	0.955	0.973	0.952
Westerly Creek Dam	100247		0.991	0.991	0.994	0.994
Trumbull (Hayman)	100260	0.814	--	--	--	--
West Creek (Hayman)	100270	0.912	--	--	--	--

\*\*-the APDUID is disabled for these sites.....these are original HSE A2 transmitters and may not support the APDUID

## D. ALERT2 Repeater Loading

The ALERT2 architecture utilizes 5 repeaters with a single transmit frequency (170.300 MHz) to Diamond Hill. The repeaters utilize a 20 second frame where each repeater is allocated a slot of specific size and an offset within the frame. The slot allocated to each repeater is sized appropriately to accommodate the total number of existing and future remote sites routed through that repeater. Each repeater is shown along with its designated slot (Table 5). Currently there is no pass-listing for the ALERT2 repeaters. Any remote ALERT2 site can be received by all repeaters and re-broadcast to the base except for West Creek which has an input frequency unique to Douglas County.

**Table 5. ALERT2 Repeater Architecture**

Repeater	Slot Size (sec)	Slot Offset (sec)	Source Address	ALERT2 Input Frequency (MHz)	ALERT2 Output Frequency (MHz) – received at Diamond Hill
West Creek	2	0	6001	169.425	170.300
Smoky	3	2	6502	169.525	170.300
Blue Mt.	4	5	6503	169.525	170.300
Lee Hill	3	9	6505	169.525	170.300
Gold Hill	3	12	6506	169.525	170.300
Magnolia	5	15	6507		170.300
Frame Size	20				

The following tables summarize the total number of reports received through each repeater (Table 6) and the distribution of reports by time slot (Table 7). This quantifies repeater loading for the ALERT2 backbone.

**Table 6. ALERT2 Reports Received through Each Repeater**

Month	West Creek (6001)	Smoky (6502)	Blue Mt. (6503)	Lee Hill (6505)	Gold Hill (6506)	TOTAL
Jan	0	44,501	44,636	44,783	39,007	172,927
Feb	0	58,543	56,150	61,160	57,764	233,617
Mar	346	73,198	69,604	77,968	65,323	286,439
Apr	595	73,711	69,568	79,215	72,310	295,399
May	5,259	78,694	72,340	86,297	77,174	319,764
June	11,987	72,449	65,742	82,998	69,570	302,746
July	28,595	75,379	71,394	79,026	74,041	328,435
Aug	28,409	92,299	84,057	84,363	87,211	376,339
Sep	26,809	84,143	84,776	84,289	85,123	365,140

**Table 7. Messages Received by Time Slot (Only A2 Self Reports)**

Tot	West Cr. (6001)		Smoky (6502)				Blue Mt. (6503)				Lee Hill (6505)			Gold Hill (6506)			Unused				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
	9424	6412	14492	29006	9581	24084	25948	6892	1730	5652	4706	228	7297	739	19	9	5	0	0	1361	
Sep	2146	4625	3578	434	3495	9698	7494	384	6792	5839	2429	7362	11102	2336	92	45	46	57	33	30	
	19	5084	16455	3714	4452	3717	250	59	20912	32398	5662	30702	23090	2775	215	28	6	0	0	0	
365,140	11,589	16,121	34,525	33,154	17,528	37,499	33,692	7,335	29,434	43,889	12,797	38,292	41,489	5,850	326	82	57	57	33	1,391	

The following tables summarize the system-wide latency of ALERT2 self-reports (Table 8 and Table 9).

**Table 8. System-Wide Latency of ALERT2 Self-Reports (seconds)**

Statistical Parameter	Value	Comments
Mean	70.48	The average time it took a report from the field to reach the base
Minimum	4	The minimum time it took for a report to go from the field to the base
Maximum	264	The maximum time it took for a report to go from the field to the base

**Table 9. Summary of ALERT2 System-Wide Latency (seconds)**

Statistical Parameter	Feb	Mar*	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean	340	35.7	44.04	38.14	34.23	59.75	71.60	70.48			
Minimum	5	3	3	3	3	4	3	4			
Maximum	35,209	3,706	43,089	205	245	1,093	261	264			

## E. Rain Sensor Timer Reporting Summary

The following analysis assumes that each legacy rain sensor has a 12-hour timer-reporting interval and each A2 rain sensor has a 1-hour timer-reporting interval. The worst performing rain sensors for the month are summarized (Table 10).

**Table 10. Monthly Summary of Sensors with Poor Timer Performance (Sensor ID)**

Jan*	Feb*	Mar*	Apr	May	Jun	Jul	Aug	Sep	Oct*	Nov*	Dec*
4470	4470	4470	4850	2330	430	2330	1660	4850			
700	2330	4270	2330	310	2330	2360	430	100140			
2330	4870	2790	430	2360	3010	1570	2330	2850			
4240	3010	4240	5720	430	2360	430	2850	430			
3010	1660	4870	2970	4470	310	2850	1570	2330			
4870	4240	3010	2360	4870	1660	1660	2360	2360			

\*- Only sensors that operate year-round (weather stations and stations in Boulder County) are included for the analysis in these months.

Sensors identified as having poor timer performance in multiple months are shaded with unique colors. A developing trend can thus be identified from the color shading as the year progresses.

## III. Rain Sensor Event Reporting Summary

### A. District-Wide Total Tip/Count Statistics

The incrementing reports from all 1-mm rain sensors were analyzed to quantify the District-wide statistical total monthly tip summary (Table 11). For the months of January, February, March, October, November and December only the stations that operate year-round are included in the rain event analysis. These stations include all weather stations and the stations in Boulder County.

**Table 11. District-Wide Total Tip/Count Statistical Summary**

Statistical Parameter	Value	Comments
Mean	7.16	Only the 1-mm rain sensors were included in the analysis
Median	5	Only the 1-mm rain sensors were included in the analysis
Standard deviation	10.13	Only the 1-mm rain sensors were included in the analysis
Mean plus three standard deviations	37.55	Only the 1-mm rain sensors were included in the analysis
Mean minus two standard deviations	--	Only the 1-mm rain sensors were included in the analysis
Minimum total count	1	Multiple sites
Maximum total count	70	Expo Park (420) – influenced by irrigation
Sensors showing <b>NO</b> rain for the month		22 sites had no rain this month
Sensors greater than 3 SD (over reporting)		Utah Park, Temple Pond, Powers Park, Expo Park, Havana Park
Sensors less than 2 SD (under reporting)		

## B. Monthly Average Tip/Count Summary

A monthly summary of the District-wide mean total tip/count is presented (Table 12).

**Table 12. Monthly Summary of District-Wide Mean Total 1-mm Tip/Count**

Year	Jan*	Feb*	Mar*	Apr	May	Jun	Jul	Aug	Sep	Oct*	Nov*	Dec*	Ave
2006	4.62	5.92	18.39	20.47	19.44	13.75	74.03	46.89	24.17	41.13	5.04	16.45	24.19
2007	11.56	5.40	29.75	65.03	68.30	15.87	36.20	46.38	22.13	29.50	6.54	11.29	29.00
2008	4.05	7.38	12.26	20.57	54.82	26.06	16.43	90.20	37.54	19.59	2.82	9.24	25.08
2009	6.33	3.11	11.37	59.26	63.45	68.00	65.00	20.00	27.29	30.24	11.00	5.60	30.89
2010	5.97	11.90	32.54	70.57	39.63	56.04	50.23	31.01	4.18	18.31	8.30	3.31	27.67
2011	6.78	7.45	7.54	33.94	92.68	39.42	90.87	18.25	37.67	25.73	10.41	13.59	32.03
2012	4.89	13.57	2.35	30.17	38.97	19.35	73.03	11.31	48.81	22.32	2.98	4.18	22.66
2013	2.96	14.31	21.86	35.96	45.87	16.39	52.33	50.63	229.74	29.64	5.86	4.00	42.46
2014	6.88	11.86	25.91	29.30	77.30	29.16	99.73	43.59	50.96	29.26	13.36	8.11	35.45
2015	9.88	24.42	20.78	69.75	143.07	86.93	54.59	29.95	7.16				

\*- Only sensors that operate year-round (weather stations and stations in Boulder County) are included for the analysis in these months.

## C. Sensors with a Jump of Six or More in the Sequential Count

Several sensors experienced a large jump in the sequential tip count (Table 13).

**Table 13. Sensors with a Jump of 6 or More in Sequential Count**

Sensor Description	Sensor ID	Comment
Porphory Peak	4850	Several times this month had a large jump in count

## D. Sensor-by-Sensor Incrementing Count Summary

The system-wide reception rate of incrementing, 1-mm tip reports for the month was approximately 95 percent. A total of 1,125 incrementing reports were received and a total of 1,189 reports were expected. The total loss of incrementing reports for the month was approximately 5 percent. Those sensors with the worst event transmission performance are summarized (Table 14).

**Table 14. Monthly Summary of Sensors with the Worst Performance**

Jan*	Feb*	Mar*	Apr	May	Jun	Jul	Aug	Sep	Oct*	Nov*	Dec*
4470	2330	100150	100150	310	430	2790	2330	2240			
700	4470	4470	4240	1620	4470	430	430	2970			
4750	700	2340	430	2330	2330	2360	4330	1440			
4330	2320	100140	100140	430	2970	4870	4270	1040			
2790	4330	1520	2330	2230	2230	2850	4470	1710			
4870	4870	1100	1620	4470	2360	2330	1660	4330			

\*-Only sensors that are operational year-round (weather stations and stations in Boulder County) are included for the analysis in these months.

Sensors identified as having poor event performance in multiple months are shaded with unique colors. A developing trend can thus be identified from the color shading as the year progresses.

## IV. Unknown Device Analysis – Received Data Log

The ALERT IDs present in the audio signal received by the decoder are compared against a list of “active” device IDs that are defined within NovaStar. Those IDs received by the decoder that are not defined within NovaStar are considered to be “unknown” and may be the result of radio noise or problems with the telemetry system. The reception of “unknown” device reports for the month is summarized (Table 15).

**Table 15. Summary of Unknown IDs**

Description	Concentrator	Legacy	A2
Total number of unknown IDs (IDs without a device definition)	206	214	0
Total reports from unknown IDs	1,153	1,090	0
Unknown IDs with only a single received report (potential noise)	138	161	0
Total reports from all IDs – RecData Log entire month	403,457	246,919	358,553
Unknown reports as a fraction of total reports	0.29%	0.44%	0%

The total number of reports from unknown sensors is very small relative to the total reports received for the month. Shown below (Table 16) are the total reports received from unknown sensor IDs for each month of the year.

**Table 16. Monthly Summary of Total Reports from Unknown IDs (Concentrator)**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	1,220	1,474	1,276	1,174	721	5,707	610	1,738	442	533	2,857	6,396
2011	1,231	2,165	3,065	1,254	2,051	439	489	456	191	683	747	861
2012	692	750	1,575	977	5,469	11,016	453	683	774	2,657	3,854	5,466
2013	4,265	994	1,100	2,589	3,623	6,973	5,230	1,070	4,429	781	13,459	1,213
2014	870	4,284	2,399	2,104	25,746	1,832	3,983	268	369	448	470	1,099
2015	542	9,137	1,524	1,007	946	699	1,179	1,860	1,153			

The fraction of reports from unknown sensors relative to the total number of reports is shown below (Table 17).

**Table 17. Monthly Percent of Unknown Sensor Reports (Concentrator)**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	0.42%	0.56%	0.38%	0.32%	0.20%	1.61%	0.17%	0.49%	0.13%	0.16%	0.93%	1.88%
2011	0.39%	0.73%	0.90%	0.37%	0.58%	0.12%	0.12%	0.05%	0.12%	0.18%	0.22%	0.26%
2012	0.30%	0.25%	0.43%	0.26%	1.37%	2.74%	0.11%	0.18%	0.20%	0.72%	1.15%	1.62%
2013	1.40%	0.31%	0.29%	0.60%	0.37%	0.61%	0.82%	0.21%	0.96%	0.31%	5.37%	0.23%
2014	0.14%	0.94%	0.40%	0.34%	3.95%	0.34%	0.66%	0.03%	0.03%	0.07%	0.11%	0.26%
2015	0.15%	2.25%	0.34%	0.22%	0.19%	0.14%	0.26%	0.42%	0.29%			

Any month shaded in yellow has an excessive number of reports from unknown sensors.

A number of “unknown” sensors had multiple reports, which may indicate the existence of a transmitter that is sending information on an ID that is not currently defined within NovaStar. The unknown IDs with multiple reports including the number of reports received by each are shown (Table 18).

**Table 18. Reports Received by Unknown IDs**

Concentrator		Legacy ALERT		Comment
Unknown ID	Reports	Unknown ID	Reports	
4469	566	4469	557	Little Narrows
623	54	623	57	Quincy/Highline
2283	45	2283	42	Kinney Peak
2274	41	2274	42	Cub Creek below Blue
2272	39	2272	40	Cub Creek below Blue
2271	38	2271	39	Cub Creek below Blue
1430	14	1430	14	



## V. Sensors with Invalid Reports

The sensors below (Table 19 and Table 20) have the largest number of invalid decodes as determined by the validation process defined at the District NovaStar5 base station. These invalid reports may indicate poor radio paths (bit flip/contention errors/random decode) or validation criteria that do not match the physical installation at the site.

**Table 19. Rain Sensors with the Most Invalid Reports**

Sensor ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temple Pond at DTC (630)	0	0	0	0	0	0	113	0	0			
Bear Creek @ Lowell (1530)	5	6	2	1	15	9	0	0	0			
Pine Cliff Road (2810)	4	5	6	4	2	7	5	5	7			
Porphory Mtn (4850)	0	0	0	0	0	7	5	2	1			
East/West Trailhead (3050)	0	0	0	0	0	5	4	1	1			
Haskins Gulch (2820)	0	0	0	0	64	0	0	0	0			
Wx-West Creek (3020)	0	0	10	4	13	1	0	2	0			
Wx-Castle Rock (2750)	0	0	5	2	30	0	0	0	0			
A2-Newlin Gulch (3070)	0	0	0	6	35	2	0	0	1			
CC at Stroh Road (2860)	0	0	0	0	0	0	0	10	0			
Cannon Mt (4270)	0	0	0	0	0	0	0	8	0			

**Table 20. Level Sensors with the Most Invalid Reports**

Sensor ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Van Bibber @ Hwy 93 (333)	0	0	0	0	0	0	43	5	0			
Horseshoe Park Drop (713)	0	0	0	0	0	0	198	0	0			
Louisville Rec Ctr (1103)	0	0	0	0	0	0	94	4	0			
Pine Cliff Road (2813)	0	0	0	0	0	0	41	17	0			
Ferril Lake (1383)	666	667	725	720	261	0	0	0	0			
Kelly Dam (413)	0	0	0	0	61	70	47	42	18			
A2-Lena @ Nolte Pond (1023)	na	545	745	738	0	0	0	1	0			
Piney at Liverpool (953)	0	0	228	232	26	0	0	0	0			
Flying J (853)	0	0	52	60	60	58	61	62	59			
Sanderson at Xavier (1343)	0	0	31	7	15	26	6	1	0			
SPR at Henderson (1663)	0	0	0	0	0	0	18	10	5			
Little Narrows (4473)	33	208	2	8	11	24	7	1	3			
SPR at Dartmouth (1629)				49	58	3	0	51	96			
Murphy Creek GC (873)	0	0	0	0	36	1	0	0	0			
Marston Lake North (1523)	0	0	0	0	20	10	0	4	0			
Bridge (4423)	0	0	0	0	0	32	3	0	0			
SBC @ San Souci (4833)	0	0	0	0	0	26	1	1	6			
Sand Creek Park (1803)	0	0	0	0	0	23	1	0	4			
Newlin Gulch (3073)	0	0	0	0	0	0	0	34	0			
A2-Havana Pond (100237)	0	0	0	0	0	0	0	13	60			
Lyons Diversion NSV (4563)	0	0	0	0	0	0	0	0	16			
Red Rocks Park (2373)	0	0	0	0	0	0	0	0	10			

## VI. Rainfall Alarms and Intensity Analysis

The following rainfall rate alarms from the Urban Drainage and Flood Control District NovaStar 5.0 Web Server were identified this month. A total of 2 alarms were triggered this month and 2 total tweets went out.

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ID	Description	Rain Alarm	Date
2970	Rampart Range Road Precipitation-DG	2970 Rampart Range Road 0.2" in 30 Minutes Rainfall	9/29/2015 16:15
1550	Lakewood CC Precipitation-JF	Jefferson County 10 minute rainfall	9/29/2015 16:59

# General System Analysis

**Database Name**

P:\A207-UDFCD-Data-Analysis\2015\09-2015\Novastar\_extract\_2015Sep.mdb

**First Date in Database**

9/1/15 12:00 AM

**Total Days**

30.0

**Last Date in Database**

9/30/15 11:59 PM

**Total Hours**

720.0

Summarize

**Total Records Analyzed**

403,457

Records by Group	Concentrator	Percent	Legacy	Percent	ALERT2	Percent
Wind Data	154,606	38.32%	84,558	34.25%	131,922	36.79%
Temperature	68,175	16.90%	37,014	14.99%	46,007	12.83%
Relative Humidity	58,926	14.61%	35,836	14.51%	43,641	12.17%
Barometric Pressure	34,270	8.49%	20,627	8.35%	997	0.28%
Battery Voltage	25,429	6.30%	13,912	5.63%	36,778	10.26%
Water Level	16,587	4.11%	14,711	5.96%	31,723	8.85%
Precipitation	11,771	2.92%	9,696	3.93%	22,873	6.38%
Solar Radiation	10,261	2.54%	10,552	4.27%	0	0.00%
Fuel Temperature	5,756	1.43%	5,712	2.31%	0	0.00%
Fuel Moisture	5,704	1.41%	5,692	2.31%	0	0.00%
Wind Direction	3,751	0.93%	0	0.00%	9,985	2.78%
Soil Moisture	2,839	0.70%	2,817	1.14%	0	0.00%
Repeater Status Report	2,052	0.51%	2,750	1.11%	0	0.00%
Unknown	1,153	0.29%	1,090	0.44%	0	0.00%
ET-Hourly	712	0.18%	708	0.29%	0	0.00%
Hayman Battery	604	0.15%	0	0.00%	0	0.00%
12Hr Status Report	340	0.08%	339	0.14%	2,829	0.79%
Not Used	277	0.07%	277	0.11%	720	0.20%
GPS Lock	100	0.02%	0	0.00%	11,333	3.16%
Handar 585 ALARM Status	57	0.01%	58	0.02%	0	0.00%
Repeater Pass List	56	0.01%	539	0.22%	0	0.00%
ET-Daily	30	0.01%	30	0.01%	0	0.00%
ALERT/A2 Testing	1	0.00%	1	0.00%	0	0.00%
Dew Point Temperature	0	0.00%	0	0.00%	8,395	2.34%
Wind Chill	0	0.00%	0	0.00%	8,392	2.34%
Flasher Status	0	0.00%	0	0.00%	2,958	0.82%
<b>Total</b>	<b>403,457</b>	<b>100.00%</b>	<b>246,919</b>	<b>100.00%</b>	<b>358,553</b>	<b>100.00%</b>

**Traffic Loading Summary**

	Concentrator		Legacy		ALERT2	
Alert Reports	403,457		246,919		358,553	
Average Daily Traffic	13,449		8,231		11,952	
Average Hourly Traffic	560		343		498	
Median Hourly Traffic	555	hour beginning	341	hour beginning	497	hour beginning
Peak Hourly Traffic	815	Sep 29, 5:00 PM	498	Sep 29, 5:00 PM	611	Sep 10, 6:00 AM
2nd Max	768	Sep 15, 10:00 AM	470	Sep 3, 6:00 PM	608	Sep 10, 5:00 AM
3rd Max	751	Sep 29, 4:00 PM	453	Sep 10, 11:00 AM	608	Sep 10, 12:00 PM
4th Max	738	Sep 15, 12:00 PM	443	Sep 7, 2:00 PM	586	Sep 10, 7:00 AM
5th Max	737	Sep 29, 2:00 PM	443	Sep 9, 1:00 AM	583	Sep 10, 11:00 AM

# Rain Timer Performance

Analyze Rain Sensors

Rain Sensors	Description	Rcv	Timer	Exp	Performance
4850	Porphory Mtn	22	22:44	60	37%
100140	A2-Upper Sellers Gulch Precip	278		720	39%
2850	Cherry Cr bl Bayou Glch	24	5:42	60	40%
430	Utah Park	28	17:31	60	47%
2330	Morrison	33	19:55	60	55%
2360	Indian Hills	38	17:22	60	63%
1710	Shop Creek	39	17:50	60	65%
2230	Bear Cr below Cub	39	18:46	60	65%
100290	A2-PlumCr at Sedalia - Precip	489		720	68%
2350	Idledale	41	16:52	60	68%
100150	A2-Sellers Gulch at Haystack Precip	503		720	70%
4270	Cannon Mountain	43	15:19	60	72%
1660	SPR at Henderson	46	14:30	60	77%
2320	Choke Cherry Resvr	46	15:16	60	77%
4330	Hansen Rain	46	15:01	60	77%
2790	Wx-W. Cherry Creek	47	14:56	60	78%
310	Guy Hill Ranch	50	14:02	60	83%
4870	SBC @ SB Road	50	14:00	60	83%
2270	Cub Cr below Blue	52	13:31	60	87%
4510	Pinewood Springs	52	13:11	60	87%
520	Jewell Detention	53	13:19	60	88%
940	Aurora Regional Pond	53	13:08	60	88%
1400	Upper Sloan Det.	53	13:24	60	88%
1530	Bear Creek @ Lowell	53	13:08	60	88%
3090	A2-Highland Heritage Park	643		720	89%
2280	Kinney Peak	54	12:12	60	90%
330	Van Bibber @ Hwy 93	55	12:38	60	92%
650	Iliff Pond	55	12:55	60	92%
820	ETG @ Buckley	55	12:25	60	92%
1200	Broomfield 3207	55	12:51	60	92%
1620	Slaughterhouse Glch	55	12:53	60	92%
2370	Red Rocks Park	55	12:53	60	92%
2710	Wx-Highlands Ranch WTP	55	13:02	60	92%
3080	Tallman Gulch	55	12:56	60	92%
220	Upper Leyden	56	12:27	60	93%
540	Parker/Mississippi	56	12:37	60	93%
840	Fire Station 12	56	12:28	60	93%
1370	West Metro FS13	56	12:24	60	93%
1440	Wx-Elbert	56	12:40	60	93%
1640	SPR at Union Ave.	56	12:36	60	93%
1700	Cherry Cr @ Champa	56	12:37	60	93%
2860	CC at Stroh Rd	56	12:52	60	93%
2900	Russelville Gulch-Douglas	56	12:40	60	93%
2910	East Cherry Cr-Douglas	56	12:40	60	93%
4350	Conifer Hill	56	12:37	60	93%
4520	Eagle Ridge	56	12:40	60	93%
110	Ralston Reservoir	57	12:23	60	95%
300	Van Bibber Park	57	12:23	60	95%
610	Harvard @ Jackson	57	12:24	60	95%
640	Goldsmith @ Eastman	57	12:24	60	95%
700	Toll Gate @ 6th	57	12:26	60	95%
810	Granby Ditch @ 6th	57	12:36	60	95%
850	Flying J	57	12:16	60	95%
1060	Heritage Square	57	12:23	60	95%

1360	Denver Zoo	57	12:27	60	95%
1550	Lakewood CC	57	12:10	60	95%
1570	Wx-Brighton Ditch	57	11:48	60	95%
1920	Wx-Brighton	57	12:27	60	95%
2250	Rosedale	57	12:25	60	95%
2310	Genesee Village	57	12:10	60	95%
2940	Willow Creek - DougCnty	57	12:26	60	95%
2950	DC Public Works	57	12:25	60	95%
4040	Martin Gulch	57	12:24	60	95%
4180	Gold Lake	57	12:11	60	95%
4220	Fling's	57	12:25	60	95%
4340	Riverside	57	12:24	60	95%
4490	Apple Valley	57	12:23	60	95%
4790	Wx-Button Rock	57	12:26	60	95%
4810	Shanahan Ridge	57	12:24	60	95%
140	Wx-Blue Mountain	58	12:13	60	97%
150	Nott Creek	58	11:57	60	97%
210	Leyden Confluence	58	12:09	60	97%
320	Sports Complex	58	12:10	60	97%
410	Kelly Dam	58	12:11	60	97%
600	Harvard Gulch Park	58	12:32	60	97%
710	Horseshoe Park Drop	58	12:10	60	97%
730	No Name @ Quincy	58	12:10	60	97%
800	Sable Ditch @ 18th	58	12:10	60	97%
970	Pump Sta 3	58	12:13	60	97%
1030	NREL/S. Table Mtn.	58	12:09	60	97%
1040	Lena @ U.S. Hwy 6	58	12:22	60	97%
1050	Jeffco Fairgrounds	58	12:23	60	97%
1110	Gunbarrel	58	11:57	60	97%
1300	Hidden Lake	58	12:38	60	97%
1310	LDC at 64th	58	12:23	60	97%
1320	SPR at 3rd Ave	58	12:11	60	97%
1340	Sanderson at Xavier	58	11:58	60	97%
1350	Chatfield COE	58	12:13	60	97%
1480	Third Creek at DIA	58	12:10	60	97%
1720	Cherry Cr @ Steele	58	12:10	60	97%
1800	Sand Creek Park	58	12:11	60	97%
2240	Cold Sprg Glch conf	58	12:24	60	97%
2340	El Rancho	58	12:10	60	97%
2810	Pine Cliff Road	58	12:00	60	97%
2820	Haskins Gulch Conf	58	12:12	60	97%
2840	Sulphur Gulch	58	12:13	60	97%
2890	Spruce Mt - Douglas	58	12:00	60	97%
2960	Indian Creek	58	12:12	60	97%
2980	Dakan Rd	58	12:12	60	97%
2990	Wx-Tomah Rd-DougCnty	58	12:12	60	97%
3010	WX-EPC at Hwy 105	58	12:00	60	97%
3020	Wx-West Creek WX	58	12:12	60	97%
3030	WX-Bingham Lake Park	58	12:13	60	97%
3040	CC @ Russelville Road Precip	58	12:12	60	97%
3060	Fire Sta 47	58	12:12	60	97%
4030	Red Garden	58	12:13	60	97%
4060	Lakeshore	58	12:22	60	97%
4100	Filter Plant	58	11:57	60	97%
4110	Betasso	58	12:10	60	97%
4200	Lazy Acres	58	12:10	60	97%
4360	Justice Center	58	12:23	60	97%
4570	St. Antons	58	12:13	60	97%
4820	Doudy Draw	58	12:24	60	97%
4860	Fairview Peak	58	12:13	60	97%

100110	A2-ETG @ Hampden Precip	58	12:00	60	97%
120	West Woods	59	11:56	60	98%
200	Leyden Reservoir	59	11:57	60	98%
420	Expo Park	59	11:57	60	98%
440	Fire Station #7	59	11:57	60	98%
510	Virginia Court	59	11:56	60	98%
620	Quincy/Highline	59	12:09	60	98%
630	Temple Pond at DTC	59	11:56	60	98%
720	Confluence Pond	59	11:58	60	98%
750	Wx-Quincy Reservoir	59	11:56	60	98%
760	Mission Viejo Park	59	11:57	60	98%
900	Wx-Aurora Reservoir	59	12:00	60	98%
920	Wx-Aurora Town Hall	59	12:00	60	98%
1010	Denver West	59	12:09	60	98%
1100	Louisville Rec Ctr	59	11:59	60	98%
1420	Wx-Diamond Hill	59	12:00	60	98%
1460	Wx-Urban Farm	59	12:00	60	98%
1500	Powers Park	59	12:16	60	98%
1520	Wx-Marston Lake North	59	12:00	60	98%
1600	Englewood Dam	59	12:09	60	98%
1900	Niver Detention	59	11:57	60	98%
2210	Wx-Hiwan G.C.	59	12:00	60	98%
2260	Brook Forest	59	12:11	60	98%
2730	Wx-Salisbury Park	59	12:00	60	98%
2750	Wx-Castle Rock	59	12:00	60	98%
2870	Cottonwood (Apache)	59	12:00	60	98%
2880	Happy Canyon at N Surrey Dr	59	12:00	60	98%
2920	West Cherry Head-Douglas Cnty	59	12:00	60	98%
2930	Wx-Spring Valley Rd-DougCnty	59	12:00	60	98%
3050	East/West Trailhead	59	12:00	60	98%
4050	Walker Ranch	59	12:10	60	98%
4070	Bear Peak	59	11:57	60	98%
4080	Twin Sisters	59	12:01	60	98%
4090	Magnolia	59	11:58	60	98%
4130	Swiss Peaks	59	11:57	60	98%
4140	Logan Mill	59	11:57	60	98%
4150	Gold Hill	59	11:58	60	98%
4160	Sunshine	59	12:11	60	98%
4170	Pine Brook	59	11:57	60	98%
4190	Slaughterhouse	59	11:58	60	98%
4230	Golden Age	59	11:57	60	98%
4240	Sunset	59	11:57	60	98%
4250	Geer Canyon	59	11:57	60	98%
4260	Taylor Mountain	59	12:10	60	98%
4290	Red Hill	59	11:57	60	98%
4300	Big Elk Park	59	11:57	60	98%
4310	Johnny Park	59	11:57	60	98%
4320	Lee Hill Rain 2012	59	11:58	60	98%
4530	Winiger Ridge	59	11:58	60	98%
4710	Wx-Ward C-1	59	12:00	60	98%
4730	Wx-Sugarloaf	59	12:00	60	98%
4750	Wx-Louisville Lake	59	12:00	60	98%
4770	Wx-Cal-Wood Ranch	59	12:00	60	98%
4840	SBC@S Boulder Ditch	59	11:57	60	98%
100100	A2-Blackstone Precip	59	12:00	60	98%
870	A2-Murphy Creek GC	716		720	99%
100230	A2-Havana Pond Precip	716		720	99%
100160	A2-Sand Creek at Colfax Precip	718		720	100%
100	A2-Carr Street	719		720	100%
1000	A2-Maple Grove Resv.	719		720	100%

100240	A2-Westerly Cr Dam Precip	719		720	100%
500	Havana Park	60	11:57	60	100%
530	Fire Station #19	60	11:57	60	100%
830	Side Creek Park	60	11:58	60	100%
950	Piney at Liverpool	60	11:57	60	100%
4010	Crescent	60	11:57	60	100%
4020	Rio Grande	60	11:57	60	100%
4550	Boulder Jail	60	11:56	60	100%
4880	Whispering Pines	60	11:57	60	100%
3070	A2-Newlin Gulch Precip	725		720	101%
4830	SBC @ San Souci	61	11:55	60	102%
6601	A2-Magnolia WX-Precip	89	8:00	60	148%
2970	Rampart Range Rd-Satellite	180		60	
4470	Little Narrows	634		60	
5720	Four Mile Creek	43	16:23	60	72%
5730	West Creek	58	12:12	60	97%
5740	Trail Creek	59	12:00	60	98%
5810	Stump Bump	52	13:40	60	87%
5860	Cedar Mountain	59	12:00	60	98%
5880	Hackett Mountain	56	12:39	60	93%
5900	Horse Creek-Satellite	826		60	
5940	Log Jumper	57	12:26	60	95%
100260	A2-Trumbull (Hayman) - Precip	423		720	59%
100270	A2-WestCreek (Hayman) - Precip	571		720	79%



Rain Event Performance		Reports Received	Reports Received	1,125	Analyze Rain Sensors							0	<<show stations with zero rain (1=yes, 0=no)				
		Systemwide Avg	Total Tips	1,189													
		94.62%	Data Loss	5.38%													
Description	Sensor	Performance	1-tips	2-tips	3-tips	4-tips	5-tips	6-tips	>6-tips	Rcv	Exp	Miss	Hold	Bucket			
Cold Sprg Glch conf	2240	50%	0	2	0	0	0	0	0	2	4	2	0	0.03937			
Rampart Range Rd-Satellite	2970	56%	3	1	0	1	0	0	0	5	9	4	0	0.03937	Mean	7.162651	
Wx-Elbert	1440	65%	8	1	1	1	0	0	0	11	17	6	2	0.03937	Median	5	
Lena @ U.S. Hwy 6	1040	67%	1	1	0	0	0	0	0	2	3	1	0	0.03937	St. Dev	10.12905	
Shop Creek	1710	67%	1	1	0	0	0	0	0	2	3	1	0	0.03937	Mean plus 3 SD	37.5498	
Hansen Rain	4330	67%	2	2	0	0	0	0	0	4	6	2	0	0.03937	Min	1	
Utah Park	430	73%	30	7	4	0	0	0	0	41	56	15	0	0.03937	Max	70	
Sand Creek Park	1800	75%	2	1	0	0	0	0	0	3	4	1	0	0.03937			
Red Garden	4030	75%	5	0	1	0	0	0	0	6	8	2	1	0.03937			
Morrison	2330	80%	3	1	0	0	0	0	0	4	5	1	0	0.03937			
Wx-Salisbury Park	2730	80%	6	2	0	0	0	0	0	8	10	2	0	0.03937			
Willow Creek - DougCnty	2940	80%	3	1	0	0	0	0	0	4	5	1	0	0.03937			
A2-ETG @ Hampden Precip	100110	80%	7	0	1	0	0	0	0	8	10	2	0	0.03937			
A2-Havana Pond Precip	100230	80%	9	3	0	0	0	0	0	12	15	3	0	0.03937			
Guy Hill Ranch	310	83%	4	1	0	0	0	0	0	5	6	1	0	0.03937			
Third Creek at DIA	1480	83%	4	1	0	0	0	0	0	5	6	1	0	0.03937			
Tallman Gulch	3080	83%	4	1	0	0	0	0	0	5	6	1	0	0.03937			
Cannon Mountain	4270	83%	4	1	0	0	0	0	0	5	6	1	0	0.03937			
Betasso	4110	85%	10	0	1	0	0	0	0	11	13	2	0	0.03937			
Kelly Dam	410	86%	5	1	0	0	0	0	0	6	7	1	0	0.03937			
Harvard @ Jackson	610	86%	5	1	0	0	0	0	0	6	7	1	0	0.03937			
Cub Cr below Blue	2270	86%	5	1	0	0	0	0	0	6	7	1	0	0.03937			
Indian Hills	2360	86%	5	1	0	0	0	0	0	6	7	1	0	0.03937			
Brook Forest	2260	88%	6	1	0	0	0	0	0	7	8	1	0	0.03937			
A2-Murphy Creek GC	870	89%	7	1	0	0	0	0	0	8	9	1	0	0.03937			
Nott Creek	150	90%	8	1	0	0	0	0	0	9	10	1	0	0.03937			
Doudy Draw	4820	91%	9	1	0	0	0	0	0	10	11	1	0	0.03937			
Twin Sisters	4080	92%	10	1	0	0	0	0	0	11	12	1	0	0.03937			
Magnolia	4090	92%	10	1	0	0	0	0	0	11	12	1	0	0.03937			
Temple Pond at DTC	630	96%	52	2	0	0	0	0	0	54	56	2	0	0.03937			
Harvard Gulch Park	600	97%	31	1	0	0	0	0	0	32	33	1	0	0.03937			
Powers Park	1500	98%	61	1	0	0	0	0	0	62	63	1	0	0.03937			
Expo Park	420	99%	68	1	0	0	0	0	0	69	70	1	0	0.03937			
A2-Carr Street	100	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937			
Ralston Reservoir	110	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937			
West Woods	120	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937			
Wx-Blue Mountain	140	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937			
Leyden Reservoir	200	100%	1	0	0	0	0	0	0	1	1	0	0	0.03937			
Leyden Confluence	210	100%	1	0	0	0	0	0	0	1	1	0	0	0.03937			
Upper Leyden	220	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937			
Van Bibber Park	300	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937			
Sports Complex	320	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937			
Van Bibber @ Hwy 93	330	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937			
Fire Station #7	440	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937			
Havana Park	500	100%	44	0	0	0	0	0	0	44	44	0	0	0.03937			
Virginia Court	510	100%	26	0	0	0	0	0	0	26	26	0	0	0.03937			
Fire Station #19	530	100%	5	0	0	0	0	0	0	5	5	0	0	0.03937			
Parker/Mississippi	540	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937			
Quincy/Highline	620	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937			
Goldsmith @ Eastman	640	100%	5	0	0	0	0	0	0	5	5	0	0	0.03937			
Iliff Pond	650	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937			
Toll Gate @ 6th	700	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937			

Horseshoe Park Drop	710	100%	5	0	0	0	0	0	0	0	5	5	0	0	0.03937		
Confluence Pond	720	100%	2	0	0	0	0	0	0	0	2	2	0	0	0.03937		
No Name @ Quincy	730	100%	1	0	0	0	0	0	0	0	1	1	0	0	0.03937		
Wx-Quincy Reservoir	750	100%	3	0	0	0	0	0	0	0	3	3	0	0	0.03937		
Mission Viejo Park	760	100%	2	0	0	0	0	0	0	0	2	2	0	0	0.03937		
Sable Ditch @ 18th	800	100%	5	0	0	0	0	0	0	0	5	5	0	0	0.03937		
Granby Ditch @ 6th	810	100%	3	0	0	0	0	0	0	0	3	3	0	0	0.03937		
ETG @ Buckley	820	100%	2	0	0	0	0	0	0	0	2	2	0	0	0.03937		
Side Creek Park	830	100%	3	0	0	0	0	0	0	0	3	3	0	0	0.03937		
Fire Station 12	840	100%	5	0	0	0	0	0	0	0	5	5	0	0	0.03937		
Flying J	850	100%	20	0	0	0	0	0	0	0	20	20	0	0	0.03937		
Wx-Aurora Town Hall	920	100%	8	0	0	0	0	0	0	0	8	8	0	0	0.03937		
Piney at Liverpool	950	100%	3	0	0	0	0	0	0	0	3	3	0	0	0.03937		
Pump Sta 3	970	100%	6	0	0	0	0	0	0	0	6	6	0	0	0.03937		
A2-Maple Grove Resv.	1000	100%	3	0	0	0	0	0	0	0	3	3	0	0	0.03937		
Louisville Rec Ctr	1100	100%	4	0	0	0	0	0	0	0	4	4	0	0	0.03937		
Gunbarrel	1110	100%	4	0	0	0	0	0	0	0	4	4	0	0	0.03937		
Hidden Lake	1300	100%	4	0	0	0	0	0	0	0	4	4	0	0	0.03937		
LDC at 64th	1310	100%	1	0	0	0	0	0	0	0	1	1	0	0	0.03937		
SPR at 3rd Ave	1320	100%	8	0	0	0	0	0	0	0	8	8	0	0	0.03937		
Sanderson at Xavier	1340	100%	3	0	0	0	0	0	0	0	3	3	0	0	0.03937		
Chatfield COE	1350	100%	7	0	0	0	0	0	0	0	7	7	0	0	0.03937		
Denver Zoo	1360	100%	6	0	0	0	0	0	0	0	6	6	0	0	0.03937		
West Metro FS13	1370	100%	2	0	0	0	0	0	0	0	2	2	0	0	0.03937		
Upper Sloan Det.	1400	100%	6	0	0	0	0	0	0	0	6	6	0	0	0.03937		
Wx-Diamond Hill	1420	100%	6	0	0	0	0	0	0	0	6	6	0	0	0.03937		
Wx-Urban Farm	1460	100%	4	0	0	0	0	0	0	0	4	4	0	0	0.03937		
Wx-Marston Lake North	1520	100%	11	0	0	0	0	0	0	0	11	11	0	0	0.03937		
Bear Creek @ Lowell	1530	100%	3	0	0	0	0	0	0	0	3	3	0	0	0.03937		
Lakewood CC	1550	100%	18	0	0	0	0	0	0	0	18	18	0	0	0.03937		
Wx-Brighton Ditch	1570	100%	5	0	0	0	0	0	0	0	5	5	0	0	0.03937		
Englewood Dam	1600	100%	5	0	0	0	0	0	0	0	5	5	0	0	0.03937		
Slaughterhouse Glch	1620	100%	3	0	0	0	0	0	0	0	3	3	0	0	0.03937		
SPR at Union Ave.	1640	100%	2	0	0	0	0	0	0	0	2	2	0	0	0.03937		
SPR at Henderson	1660	100%	2	0	0	0	0	0	0	0	2	2	0	0	0.03937		
Cherry Cr @ Champa	1700	100%	7	0	0	0	0	0	0	0	7	7	0	0	0.03937		
Cherry Cr @ Steele	1720	100%	6	0	0	0	0	0	0	0	6	6	0	0	0.03937		
Wx-Brighton	1920	100%	5	0	0	0	0	0	0	0	5	5	0	0	0.03937		
Wx-Hiwan G.C.	2210	100%	6	0	0	0	0	0	0	0	6	6	0	1	0.03937		
Bear Cr below Cub	2230	100%	6	0	0	0	0	0	0	0	6	6	0	0	0.03937		
Rosedale	2250	100%	8	0	0	0	0	0	0	0	8	8	0	0	0.03937		
Kinney Peak	2280	100%	6	0	0	0	0	0	0	0	6	6	0	0	0.03937		
Genesee Village	2310	100%	3	0	0	0	0	0	0	0	3	3	0	0	0.03937		
Choke Cherry Resvr	2320	100%	2	0	0	0	0	0	0	0	2	2	0	0	0.03937		
El Rancho	2340	100%	5	0	0	0	0	0	0	0	5	5	0	0	0.03937		
Idledale	2350	100%	2	0	0	0	0	0	0	0	2	2	0	0	0.03937		
Red Rocks Park	2370	100%	4	0	0	0	0	0	0	0	4	4	0	0	0.03937		
Wx-Highlands Ranch WTP	2710	100%	18	0	0	0	0	0	0	0	18	18	0	0	0.03937		
Wx-Castle Rock	2750	100%	1	0	0	0	0	0	0	0	1	1	0	0	0.03937		
Wx-W. Cherry Creek	2790	100%	2	0	0	0	0	0	0	0	2	2	0	0	0.03937		
Sulphur Gulch	2840	100%	7	0	0	0	0	0	0	0	7	7	0	0	0.03937		
Cherry Cr bl Bayou Glch	2850	100%	3	0	0	0	0	0	0	0	3	3	0	0	0.03937		
CC at Stroh Rd	2860	100%	8	0	0	0	0	0	0	0	8	8	0	0	0.03937		
Cottonwood (Apache)	2870	100%	6	0	0	0	0	0	0	0	6	6	0	0	0.03937		
Happy Canyon at N Surrey Dr	2880	100%	5	0	0	0	0	0	0	0	5	5	0	0	0.03937		
Spruce Mt - Douglas	2890	100%	4	0	0	0	0	0	0	0	4	4	0	0	0.03937		
Russelville Gulch-Douglas	2900	100%	6	0	0	0	0	0	0	0	6	6	0	0	0.03937		
East Cherry Cr-Douglas	2910	100%	1	0	0	0	0	0	0	0	1	1	0	0	0.03937		

West Cherry Head-Douglas Cnty	2920	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
Wx-Spring Valley Rd-DougCnty	2930	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
Dakan Rd	2980	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937
Wx-Tomah Rd-DougCnty	2990	100%	1	0	0	0	0	0	0	1	1	0	0	0.03937
Wx-West Creek WX	3020	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937
WX-Bingham Lake Park	3030	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937
CC @ Russelville Road Precip	3040	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
East/West Trailhead	3050	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937
Fire Sta 47	3060	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
A2-Newlin Gulch Precip	3070	100%	5	0	0	0	0	0	0	5	5	0	0	0.03937
A2-Highland Heritage Park	3090	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
Crescent	4010	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937
Rio Grande	4020	100%	7	0	0	0	0	0	0	7	7	0	0	0.03937
Martin Gulch	4040	100%	6	0	0	0	0	0	0	6	6	0	0	0.03937
Walker Ranch	4050	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937
Bear Peak	4070	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937
Filter Plant	4100	100%	6	0	0	0	0	0	0	6	6	0	0	0.03937
Logan Mill	4140	100%	12	0	0	0	0	0	0	12	12	0	0	0.03937
Gold Hill	4150	100%	8	0	0	0	0	0	0	8	8	0	0	0.03937
Sunshine	4160	100%	9	0	0	0	0	0	0	9	9	0	0	0.03937
Pine Brook	4170	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
Gold Lake	4180	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937
Slaughterhouse	4190	100%	5	0	0	0	0	0	0	5	5	0	0	0.03937
Lazy Acres	4200	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937
Fling's	4220	100%	6	0	0	0	0	0	0	6	6	0	0	0.03937
Golden Age	4230	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937
Sunset	4240	100%	7	0	0	0	0	0	0	7	7	0	0	0.03937
Geer Canyon	4250	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
Taylor Mountain	4260	100%	5	0	0	0	0	0	0	5	5	0	0	0.03937
Red Hill	4290	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
Big Elk Park	4300	100%	7	0	0	0	0	0	0	7	7	0	0	0.03937
Johnny Park	4310	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937
Lee Hill Rain 2012	4320	100%	9	0	0	0	0	0	0	9	9	0	0	0.03937
Riverside	4340	100%	6	0	0	0	0	0	0	6	6	0	0	0.03937
Conifer Hill	4350	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937
Justice Center	4360	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
Little Narrows	4470	100%	18	0	0	0	0	0	0	18	18	0	0	0.03937
Apple Valley	4490	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
Pinewood Springs	4510	100%	5	0	0	0	0	0	0	5	5	0	0	0.03937
Eagle Ridge	4520	100%	5	0	0	0	0	0	0	5	5	0	0	0.03937
Winiger Ridge	4530	100%	11	0	0	0	0	0	0	11	11	0	0	0.03937
St. Antons	4570	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937
Wx-Ward C-1	4710	100%	10	0	0	0	0	0	0	10	10	0	0	0.03937
Wx-Sugarloaf	4730	100%	13	0	0	0	0	0	0	13	13	0	0	0.03937
Wx-Cal-Wood Ranch	4770	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937
Wx-Button Rock	4790	100%	5	0	0	0	0	0	0	5	5	0	0	0.03937
Shanahan Ridge	4810	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
SBC @ San Souci	4830	100%	5	0	0	0	0	0	0	5	5	0	0	0.03937
SBC @ SB Road	4870	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
Whispering Pines	4880	100%	8	0	0	0	0	0	0	8	8	0	0	0.03937
A2-Blackstone Precip	100100	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
A2-Upper Sellers Gulch Precip	100140	100%	1	0	0	0	0	0	0	1	1	0	0	0.03937
A2-Sand Creek at Colfax Precip	100160	100%	7	0	0	0	0	0	0	7	7	0	0	0.03937
A2-WestCreek (Hayman) - Precip	100270	100%	1	0	0	0	0	0	0	1	1	0	0	0.03937
Wx-Aurora Reservoir	900	100%	1	0	0	0	0	0	0	1	1	0	0	0.03937
Aurora Regional Pond	940	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
		<b>Total Tips</b>	<b>1073</b>	<b>42</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1125</b>	<b>1189</b>	<b>64</b>	<b>4</b>	

Four Mile Creek	5720	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937			
West Creek	5730	100%	1	0	0	0	0	0	0	1	1	0	0	0.03937			
Stump Bump	5810	100%	1	0	0	0	0	0	0	1	1	0	0	0.03937			
Cedar Mountain	5860	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937			
Horse Creek-Satellite	5900	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937			
Log Jumper	5940	100%	4	0	0	0	0	0	0	4	4	0	0	0.03937			
A2-Westerly Cr Dam Precip	100240	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937			
A2-Trumbull (Hayman) - Precip	100260	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937			
WX-EPC at Hwy 105	3010	94%	14	1	0	0	0	0	0	15	16	1	0	0.01			
Porphory Mtn	4850	18%	1	2	0	0	0	0	1	3	17	14	0	0.01			
Fairview Peak	4860	100%	23	0	0	0	0	0	0	23	23	0	0	0.01			
A2-Magnolia WX-Precip	6601	100%	32	0	0	0	0	0	0	32	32	0	0	0.01			

## 2015 Monthly Peak Hour ALERT Radio Traffic Summary

