

Memo

Date: June 9, 2015
To: Kevin Stewart
From: Markus Ritsch
Subject: May 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 May 1 through May 31, 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 through each telemetry 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							
Concentrator	366,229	405,210	443,612	458,979	499,841							
ALERT2	172,927	233,617	286,836	295,399	319,764							
TOTAL	755,617	880,112	998,999	1,036,684	1,164,796	0	0	0	0	0	0	0
Conc+A2	539,156	638,827	730,448	754,378	819,605							
Conc/Leg	1.69	1.68	1.65	1.63	1.45							
DataChron	529,216	564,798	652,811	702,865	777,203							

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					
Concentrator	366,229	405,210	443,612	458,979	499,841					
ALERT2	172,927	233,617	286,836	295,399	319,764					
NS5B (Greenhouse)										
Legacy	244,232	241,143	268,417	262,549	341,926					
Concentrator	409,951	405,875	444,660	430,407	499,657					
ALERT2	191,784	234,150	289,044	275,955	319,750					
Diff (NS5a-NS5b)										
Legacy (Digi One)	-27,771	142	134	19,757	3,265					
Concentrator (B2010)	-43,722	-665	-1,048	28,572	184					
ALERT2 (B2010)	-18,857	-533	-2,208	19,444	14					
Comments	Failed hard drive on ns5a		Tot A2 diff 1%	Outage on ns5b this month						

The total difference in reports received by Diamond Hill and Greenhouse is minimal. The difference in received legacy reports is larger as Diamond Hill received roughly 3,000 more reports. Network and B2010 outages occurred on May 27, 2015, according to OneRain.... "The B2010 data feed experienced periodic latency after the network interruption. We are investigating. Following the outage there were 3 cycles of 20 minute queuing of data and then sending it over the network to our datacenter. It has recovered and is sending data without delay at this time."

The number of total legacy, concentrator and ALERT2 reports received by ns5a and ns5b is fairly consistent. The daily ratio of total concentrator reports received versus total legacy ALERT reports received is shown (Figure 1).

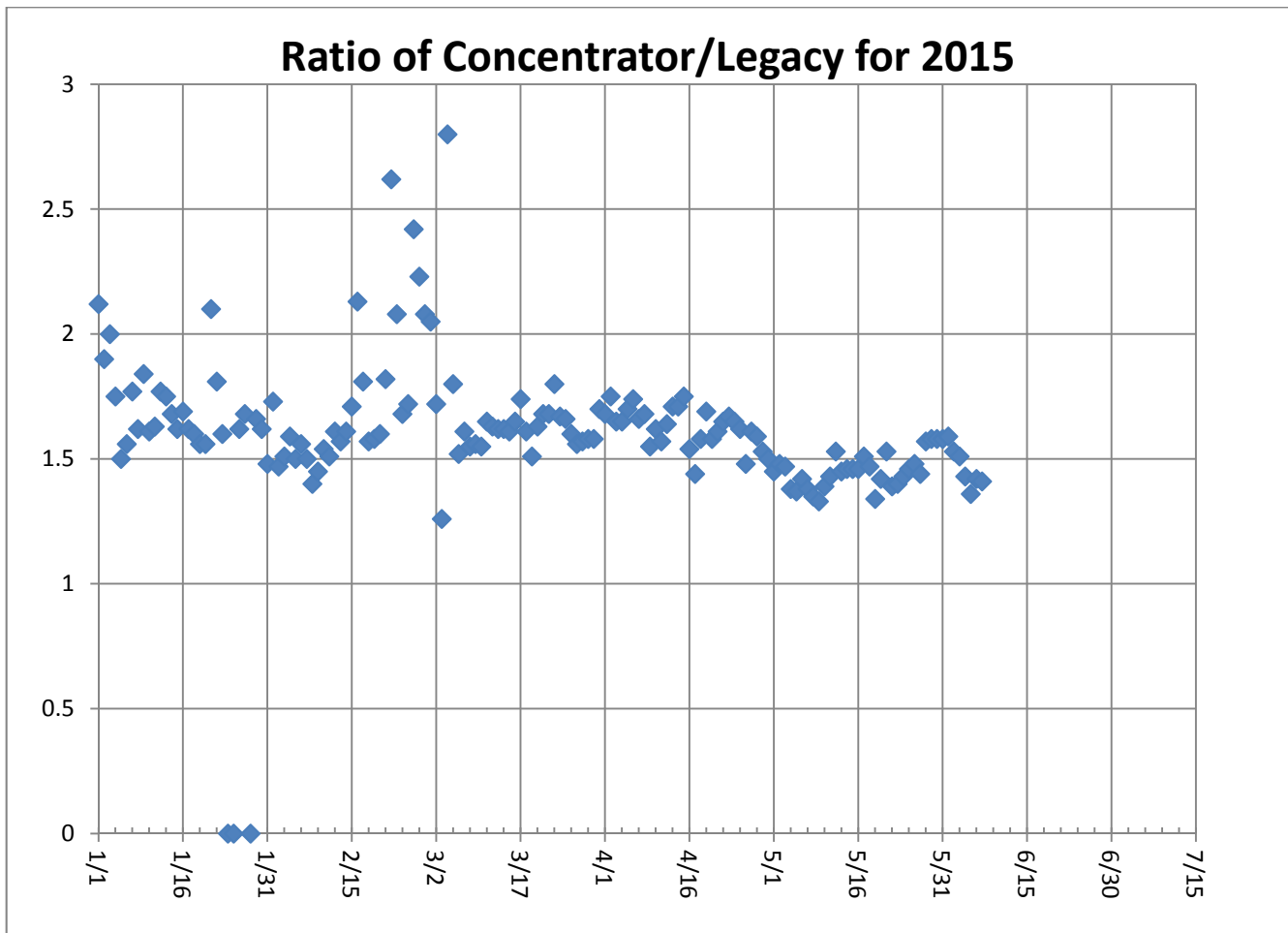


Figure 1. Daily Ratio of Concentrator Reports to Legacy Reports

The ratio is very consistent throughout the month. The Castle Rock legacy ALERT repeater was updated toward the end of April with a new directional antenna pointed toward Diamond Hill. This has improved the legacy reception of Douglas County sites at Diamond Hill. The effect of this change is a decrease in the ratio as can be seen by the numbers in May.

A. Continuous Operation of Base Receiver/Decoder

The ns5 base stations were NOT in continuous operation for the entire month. Network issues with the decoders at Diamond Hill and the network were identified on May 27th.

B. Specific Issues Identified this Month

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

Table 3. Sensors with Poor Performance Characteristics

Sensor ID	Description	Comments
2330	Morrison	Poor timer performance and poor event performance
430	Utah Park	Poor timer performance and poor event performance
1570	Wx-Brighton Ditch	Under-reporting rain, lowest rain total two months in a row
310	Guy Hill Ranch	Poor performance and under-reporting rain
710	Horseshoe Park Drop	Under-reporting rain
2980	Dakan Road	Under-reporting rain
1620	Slaughterhouse Gulch	Under-reporting rain
2271, 2272, 2274	Unknown IDs	Cub Creek below Blue (2270)

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		0.940	0.955	0.957	0.764
Murphy Creek (10019)	870		0.918	0.875	0.918	0.912
Maple Grove (10013)	1000		0.983	0.922	0.983	0.992
Lena @ Nolte Pond (10025)	1020		0.976	0.981	0.981	0.930
Newlin Gulch	3070	--	0.862	0.360	0.770	0.521
Heritage Regional Park	3090		0.665	0.380	0.837	0.864
Lower Left Hand (10018)	4453		0.990	--	0.963	--
Magnolia	6602		0.979	0.941	0.988	0.973
Blackstone**	100100		0.132	0.102	0.143	0.143
ETG @ Hampden**	100110		0.143	0.129	0.143	0.139
Upper Sellers	100140	0.915				
Haystack Road	100150	0.983				
Sand Cr at Colfax	100160		0.978	0.938	0.985	0.981
James Creek	100177		0.304	--	0.998	0.931
S. St. Vrain at Berry Ridge	100210		--	--	0.906	0.158
Arvada/Blunn Reservoir	100227		1.00	1.00	1.00	--
Havana Pond	100237		0.973	0.954	0.974	0.968
Westerly Creek Dam	100247		0.995	0.995	0.995	0.992

**--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	Smoky	Blue Mt.	Lee Hill	Gold Hill	Magnolia	TOTAL
Jan	0	44,501	44,636	44,783	39,007	0	172,927
Feb	0	58,543	56,150	61,160	57,764	0	233,617
Mar	346	73,198	69,604	77,968	65,323	0	286,439
Apr	595	73,711	69,568	79,215	72,310	0	295,399
May	5,259	78,694	72,340	86,297	77,174	0	319,764

Table 7. Messages Received by Time Slot (Concentrator and A2 Self Reports)

Tot	West Cr. (6001)		Smoky (6502)				Blue Mt. (6503)				Lee Hill (6505)			Gold Hill (6506)			Magnolia (6507)				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
47972	1330	83140	17733	2017	96558	12749	3551	1505	21611	5888	373	25716	861	154	70	16	84	48	39		
65742	2235	33612	3812	73	20183	331	31	14	25706	202	23	32000	92	20	14	24	16	6	24		
53102	1961	40563	1810	73	57744	1348	92	122	69545	1525	143	84879	776	76	67	57	42	63	42		
819,605	166,816	5,526	157,315	23,355	2,163	174,485	14,428	3,674	1,641	116,862	7,615	539	142,595	1,729	250	151	97	142	117	105	

The following tables summarize the system-wide latency of ALERT2 self-reports (Table 8 and Table 9). The latency is computed as the difference in seconds between the reception time of an ALERT2 self-report at the base station and the report time stamp issued by the transmitter.

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

Statistical Parameter	Value	Comments
Mean	38.14	The average time it took a report from the field to reach the base
Minimum	3	The minimum time it took for a report to go from the field to the base
Maximum	205	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							
Minimum	5	3	3	3							
Maximum	35,209	3,706	43,089	205							

The large latency (205 seconds) was observed from Sellers Gulch at Haystack Road going through the West Creek repeater. Large latencies were also observed from ETG @ Hampden and Blackstone going through Smoky and Blue Mt.

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							
700	2330	4270	2330	310							
2330	4870	2790	430	2360							
4240	3010	4240	5720	430							
3010	1660	4870	2970	4470							
4870	4240	3010	2360	4870							

*- 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	143.07	Only the 1-mm rain sensors were included in the analysis
Median	142	Only the 1-mm rain sensors were included in the analysis
Standard deviation	34.51	Only the 1-mm rain sensors were included in the analysis
Mean plus three standard deviations	246.58	Only the 1-mm rain sensors were included in the analysis
Mean minus two standard deviations	74.1	Only the 1-mm rain sensors were included in the analysis
Minimum total count	2	Wx-Brighton Ditch (1570) – second month in a row....clogged funnel
Maximum total count	290	Cannon Mountain (4270)
Sensors showing NO rain for the month	0	None
Sensors greater than 3 SD (over reporting)		Cannon Mt. (4270) and Hansen (4330)..check double-mass plots
Sensors less than 2 SD (under reporting)		Englewood Dam (1600), Dakan Rd (2980), Guy Hill Ranch (310), Horseshoe Park Drop (710), Wx-Brighton Ditch (1570), Slaughterhouse Gulch (1620)

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	35.54
2015	9.88	24.42	20.78	69.75	143.07								

*- 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
Guy Hill Ranch	310	Heavy rain periods with some missed tips
Slaughterhouse Gulch	1620	Heavy rain periods with some missed tips
Haskins Gulch Confluence	2820	Heavy rain periods with some missed tips
Castle Rock WX	2750	WET to investigate in June

D. Sensor-by-Sensor Incrementing Count Summary

The system-wide reception rate of incrementing, 1-mm tip reports for the month was approximately 93 percent. A total of 24,421 incrementing reports were received and a total of 26,181 reports were expected. The total loss of incrementing reports for the month was approximately 7 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							
700	4470	4470	4240	1620							
4750	700	2340	430	2330							
4330	2320	100140	100140	430							
2790	4330	1520	2330	2230							
4870	4870	1100	1620	4470							

*-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)	245	409	0
Total reports from unknown IDs	946	1,574	0
Unknown IDs with only a single received report (potential noise)	142	270	0
Total reports from all IDs – RecData Log entire month	499,841	345,191	319,764
Unknown reports as a fraction of total reports	0.19%	0.46%	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							

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%							

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	
1430	80	1430	133	
2283	59	3003	93	Block 3000 and 3003 at Castle Rock WX Repeater
2274	54	3000	79	
623	58	623	59	Possibly coming from Quincy Highline
2271	53	2283	58	
2272	53	3071	55	
1339	46	1339	54	

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
Bear Creek @ Lowell (1530)	5	6	2	1	15							
Pine Cliff Road (2810)	4	5	6	4	2							
Haskins Gulch (2820)	0	0	0	0	64							
Wx-West Creek (3020)	0	0	10	4	13							
Wx-Castle Rock (2750)	0	0	5	2	30							
Shop Creek (1710)	0	0	3	1	1							
A2-Newlin Gulch (3070)	0	0	0	6	35							

Table 20. Level Sensors with the Most Invalid Reports

Sensor ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ferril Lake (1383)	666	667	725	720	261							
Kelly Dam (413)	0	0	0	0	61							
A2-Lena @ Nolte Pond (1023)	na	545	745	738	0							
Piney at Liverpool (953)	0	0	228	232	26							
Flying J (853)	0	0	52	60	60							
Sanderson at Xavier (1343)	0	0	31	7	15							
Little Narrows (4473)	33	208	2	8	11							
SPR at Dartmouth (1629)				49	58							
Murphy Creek GC (873)	0	0	0	0	36							
Marston Lake North (1523)	0	0	0	0	20							

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.

Sensor ID	Name	Trigger	Alarm Date	Alarm Value
1660	SPR at Henderson Precipitation	Plains 1 hour rainfall	5/4/2015 18:52	1.02
4330	Hansen Precipitation-BO	Boulder County 1 hour rainfall	5/4/2015 22:00	1.02
4860	Fairview Peak Precipitation-BO	Boulder County 1 hour rainfall	5/4/2015 22:44	1.00
2970	Rampart Range Road Precipitation-DG	2970 Rampart Range Road 0.2" in 30 Minutes Rainfall	5/8/2015 13:30	0.24
320	Sports Complex Precipitation-JF-Arvada	Jefferson County 10 minute rainfall	5/8/2015 14:06	0.51
100	Carr Street Precipitation-JF-Arvada	Jefferson County 10 minute rainfall	5/8/2015 14:10	0.51
320	Sports Complex Precipitation-JF-Arvada	Jefferson County 1 hour rainfall	5/8/2015 14:15	1.02
4270	Cannon Mountain Precipitation-BO	Boulder County 10 minute rainfall	5/9/2015 8:56	0.51
2970	Rampart Range Road Precipitation-DG	2970 Rampart Range Road 0.2" in 30 Minutes Rainfall	5/10/2015 13:45	0.24

General System Analysis

Database Name

P:\A207-UDFCD-Data-Analysis\2015\05-2015\Novastar_extract_2015May.mdb

Summarize

First Date in Database

4/30/15 11:59 PM

Total Days

31.0

Last Date in Database

5/31/15 11:59 PM

Total Hours

744.0

Total Records Analyzed

499,841

Records by Group	Concentrator	Percent	Legacy	Percent	A2	Percent
Wind Data	159,344	31.88%	100,562	29.13%	78,484	24.54%
Temperature	71,482	14.30%	41,978	12.16%	34,916	10.92%
Relative Humidity	66,411	13.29%	41,438	12.00%	34,893	10.91%
Water Level	66,202	13.24%	62,480	18.10%	47,841	14.96%
Barometric Pressure	36,534	7.31%	21,224	6.15%	0	0.00%
Precipitation	35,598	7.12%	28,967	8.39%	27,513	8.60%
Battery Voltage	28,461	5.69%	15,757	4.56%	28,630	8.95%
Solar Radiation	10,699	2.14%	10,801	3.13%	0	0.00%
Fuel Moisture	6,120	1.22%	5,769	1.67%	0	0.00%
Fuel Temperature	6,022	1.20%	5,814	1.68%	0	0.00%
Wind Direction	4,522	0.90%	0	0.00%	0	0.00%
Repeater Status Report	2,746	0.55%	3,421	0.99%	0	0.00%
Soil Moisture	2,733	0.55%	2,857	0.83%	0	0.00%
Unknown	946	0.19%	1,574	0.46%	0	0.00%
ET-Hourly	735	0.15%	733	0.21%	0	0.00%
Hayman Battery	420	0.08%	0	0.00%	0	0.00%
12Hr Status Report	394	0.08%	395	0.11%	2,914	0.91%
Not Used	290	0.06%	278	0.08%	868	0.27%
Handar 585 ALARM Status	62	0.01%	65	0.02%	0	0.00%
Repeater Pass List	44	0.01%	550	0.16%	0	0.00%
GPS Lock	40	0.01%	96	0.03%	8,232	2.57%
ET-Daily	31	0.01%	31	0.01%	0	0.00%
Solar Power	4	0.00%	5	0.00%	0	0.00%
ALERT/A2 Testing	1	0.00%	1	0.00%	0	0.00%
ALERT Msgs Received	0	0.00%	191	0.06%	0	0.00%
ALERT Msgs Transmitted	0	0.00%	203	0.06%	0	0.00%
Wind Chill	0	0.00%	1	0.00%	8,733	2.73%
Peak Wind	0	0.00%	0	0.00%	34,860	10.90%
Dew Point Temperature	0	0.00%	0	0.00%	8,741	2.73%
Flasher Status	0	0.00%	0	0.00%	1,691	0.53%
GPS Status	0	0.00%	0	0.00%	1,448	0.45%
Total	499,841	100.00%	345,191	100.00%	319,764	100.00%

Traffic Loading Summary

	Concentrator		Legacy		A2	
Alert Reports	499,841		345,191		319,764	
Average Daily Traffic	15,620		11,135		9,993	
Average Hourly Traffic	651		464		416	
Median Hourly Traffic	638	hour beginning	431	hour beginning	410	hour beginning
Peak Hourly Traffic	1,424	May 9, 6:00 PM	1,179	May 9, 6:00 PM	672	May 8, 2:00 PM
2nd Max	1,303	May 8, 1:00 PM	994	May 8, 11:00 PM	668	May 8, 11:00 PM
3rd Max	1,251	May 9, 5:00 PM	969	May 19, 3:00 AM	655	
4th Max	1,227	May 10, 11:00 AM	959	May 8, 1:00 PM	647	May 8, 9:00 AM
5th Max	1,207	May 19, 3:00 AM	947	May 10, 11:00 AM	643	May 9, 6:00 PM

Rain Timer Performance

Analyze Rain Sensors

Rain Sensors	Description	Rcv	Timer	Exp	Performance
2330	Morrison	28	15:13	64	44%
310	Guy Hill Ranch	31	12:37	64	48%
2360	Indian Hills	37	14:21	64	58%
430	Utah Park	39	15:33	64	61%
4470	Little Narrows	39	13:21	64	61%
4870	SBC @ SB Road	39	13:12	64	61%
1620	Slaughterhouse Glch	40	13:03	64	63%
2230	Bear Cr below Cub	41	13:03	64	64%
3010	WX-EPC at Hwy 105	43	12:48	64	67%
2790	Wx-W. Cherry Creek	45	12:00	64	70%
4570	St. Antons	45	13:07	64	70%
1660	SPR at Henderson	46	14:04	64	72%
2370	Red Rocks Park	46	12:30	64	72%
4510	Pinewood Springs	46	12:29	64	72%
2350	Idledale	47	13:03	64	73%
3050	East/West Trailhead	47	13:46	64	73%
3040	CC @ Russelville Road Precip	48	12:00	64	75%
4330	Hansen Rain	49	13:44	64	77%
2270	Cub Cr below Blue	50	11:58	64	78%
1350	Chatfield COE	51	12:49	64	80%
1480	Third Creek at DIA	51	14:10	64	80%
1530	Bear Creek @ Lowell	51	12:20	64	80%
1710	Shop Creek	51	12:49	64	80%
2850	Cherry Cr bl Bayou Glch	51	13:20	64	80%
4180	Gold Lake	51	11:57	64	80%
1640	SPR at Union Ave.	52	13:33	64	81%
2320	Choke Cherry Resvr	52	12:29	64	81%
2980	Dakan Rd	52	12:46	64	81%
1040	Lena @ U.S. Hwy 6	53	12:23	64	83%
1920	Wx-Brighton	53	12:21	64	83%
4290	Red Hill	53	12:28	64	83%
100140	A2-Upper Sellers Gulch Precip	624		744	84%
210	Leyden Confluence	54	12:21	64	84%
620	Quincy/Highline	54	12:44	64	84%
650	Iliff Pond	54	12:49	64	84%
1010	Denver West	54	13:30	64	84%
1520	Wx-Marston Lake North	54	11:32	64	84%
2310	Genesee Village	54	12:27	64	84%
2940	Willow Creek - DougCnty	54	12:31	64	84%
110	Ralston Reservoir	55	11:58	64	86%
200	Leyden Reservoir	55	11:36	64	86%
440	Fire Station #7	55	12:18	64	86%
1300	Hidden Lake	55	11:58	64	86%
1420	Wx-Diamond Hill	55	12:00	64	86%
4010	Crescent	55	12:22	64	86%
4750	Wx-Louisville Lake	55	12:00	64	86%
4790	Wx-Button Rock	55	12:00	64	86%
4850	Porphory Mtn	55	13:02	64	86%
1340	Sanderson at Xavier	107	5:15	124	86%
120	West Woods	56	12:23	64	88%
150	Nott Creek	56	12:23	64	88%
220	Upper Leyden	56	12:00	64	88%
300	Van Bibber Park	56	11:58	64	88%
630	Temple Pond at DTC	56	12:20	64	88%

940	Aurora Regional Pond	56	11:47	64	88%
1060	Heritage Square	56	11:57	64	88%
1310	LDC at 64th	56	12:37	64	88%
1440	Wx-Elbert	56	12:00	64	88%
1500	Powers Park	56	12:20	64	88%
1700	Cherry Cr @ Champa	56	12:02	64	88%
2840	Sulphur Gulch	56	12:44	64	88%
3030	WX-Bingham Lake Park	56	12:45	64	88%
4250	Geer Canyon	56	11:57	64	88%
330	Van Bibber @ Hwy 93	57	11:57	64	89%
700	Toll Gate @ 6th	57	12:20	64	89%
810	Granby Ditch @ 6th	57	12:17	64	89%
1550	Lakewood CC	57	12:20	64	89%
1600	Englewood Dam	57	12:21	64	89%
2250	Rosedale	57	11:57	64	89%
2280	Kinney Peak	57	12:23	64	89%
2730	Wx-Salisbury Park	57	12:21	64	89%
3080	Tallman Gulch	57	12:40	64	89%
4340	Riverside	57	11:57	64	89%
4360	Justice Center	57	12:25	64	89%
100150	-Sellers Gulch at Haystack Pre	667		744	90%
510	Virginia Court	58	11:57	64	91%
540	Parker/Mississippi	58	12:18	64	91%
750	Wx-Quincy Reservoir	58	11:57	64	91%
830	Side Creek Park	58	12:15	64	91%
840	Fire Station 12	58	12:17	64	91%
850	Flying J	58	12:20	64	91%
1030	NREL/S. Table Mtn.	58	12:40	64	91%
1050	Jeffco Fairgrounds	58	12:20	64	91%
1320	SPR at 3rd Ave	58	12:16	64	91%
1360	Denver Zoo	58	12:00	64	91%
1370	West Metro FS13	58	11:36	64	91%
1460	Wx-Urban Farm	58	12:00	64	91%
1720	Cherry Cr @ Steele	58	12:18	64	91%
1900	Niver Detention	58	12:53	64	91%
2340	El Rancho	58	11:57	64	91%
2880	Happy Canyon at N Surrey Dr	58	12:19	64	91%
2900	Russelville Gulch-Douglas	58	12:00	64	91%
4080	Twin Sisters	58	12:23	64	91%
4310	Johnny Park	58	11:57	64	91%
4710	Wx-Ward C-1	58	12:00	64	91%
4810	Shanahan Ridge	58	12:24	64	91%
4860	Fairview Peak	58	12:00	64	91%
140	Wx-Blue Mountain	59	12:24	64	92%
500	Havana Park	59	12:16	64	92%
600	Harvard Gulch Park	59	12:17	64	92%
820	ETG @ Buckley	59	11:57	64	92%
2260	Brook Forest	59	11:58	64	92%
2710	Wx-Highlands Ranch WTP	59	12:00	64	92%
2860	CC at Stroh Rd	59	12:18	64	92%
2910	East Cherry Cr-Douglas	59	12:25	64	92%
2920	Vest Cherry Head-Douglas Cnt	59	12:55	64	92%
2930	Wx-Spring Valley Rd-DougCnty	59	12:00	64	92%
3090	A2-Highland Heritage Park	59	12:37	64	92%
4050	Walker Ranch	59	11:58	64	92%
4270	Cannon Mountain	59	11:57	64	92%
4350	Conifer Hill	59	11:57	64	92%
4490	Apple Valley	59	12:18	64	92%
4770	Wx-Cal-Wood Ranch	59	12:00	64	92%

4830	SBC @ San Souci	59	11:58	64	92%
2820	Haskins Gulch Conf	86	7:59	93	92%
420	Expo Park	60	11:57	64	94%
520	Jewell Detention	60	12:17	64	94%
530	Fire Station #19	60	11:57	64	94%
640	Goldsmith @ Eastman	60	11:57	64	94%
710	Horseshoe Park Drop	60	12:14	64	94%
730	No Name @ Quincy	60	12:15	64	94%
760	Mission Viejo Park	60	11:57	64	94%
1100	Louisville Rec Ctr	60	11:59	64	94%
1110	Gunbarrel	60	11:58	64	94%
1200	Broomfield 3207	60	11:59	64	94%
1400	Upper Sloan Det.	60	11:36	64	94%
1800	Sand Creek Park	60	12:16	64	94%
2210	Wx-Hiwan G.C.	60	12:23	64	94%
2240	Cold Sprg Glch conf	60	11:57	64	94%
2870	Cottonwood (Apache)	60	12:00	64	94%
2890	Spruce Mt - Douglas	60	12:27	64	94%
2960	Indian Creek	60	12:00	64	94%
2990	Wx-Tomah Rd-DougCnty	60	12:26	64	94%
4030	Red Garden	60	11:58	64	94%
4070	Bear Peak	60	11:57	64	94%
4100	Filter Plant	60	11:59	64	94%
4140	Logan Mill	60	11:57	64	94%
4190	Slaughterhouse	60	12:25	64	94%
4200	Lazy Acres	60	12:23	64	94%
4220	Fling's	60	12:21	64	94%
4230	Golden Age	60	11:57	64	94%
4320	Lee Hill Rain 2012	60	12:23	64	94%
4520	Eagle Ridge	60	12:00	64	94%
4530	Winiger Ridge	60	11:30	64	94%
4820	Doudy Draw	60	11:57	64	94%
100100	A2-Blackstone Precip	60	12:20	64	94%
100110	A2-ETG @ Hampden Precip	60	12:18	64	94%
410	Kelly Dam	61	11:57	64	95%
720	Confluence Pond	61	11:58	64	95%
800	Sable Ditch @ 18th	61	11:57	64	95%
900	Wx-Aurora Reservoir	61	12:00	64	95%
920	Wx-Aurora Town Hall	61	12:00	64	95%
2810	Pine Cliff Road	61	12:00	64	95%
3020	Wx-West Creek WX	61	11:34	64	95%
3060	Fire Sta 47	61	12:00	64	95%
4020	Rio Grande	61	11:57	64	95%
4040	Martin Gulch	61	11:57	64	95%
4060	Lakeshore	61	11:57	64	95%
4170	Pine Brook	61	11:57	64	95%
4300	Big Elk Park	61	11:57	64	95%
4730	Wx-Sugarloaf	61	12:00	64	95%
4840	SBC@S Boulder Ditch	61	12:17	64	95%
4880	Whispering Pines	61	11:57	64	95%
320	Sports Complex	62	12:01	64	97%
950	Piney at Liverpool	62	11:57	64	97%
970	Pump Sta 3	62	12:00	64	97%
1570	Wx-Brighton Ditch	62	11:36	64	97%
4110	Betasso	62	11:58	64	97%
4130	Swiss Peaks	62	11:58	64	97%
4150	Gold Hill	62	11:57	64	97%
4160	Sunshine	62	11:57	64	97%
4240	Sunset	62	11:58	64	97%

4260	Taylor Mountain	62	11:36	64	97%
4550	Boulder Jail	62	11:57	64	97%
4090	Magnolia	63	11:42	64	98%
6601	A2-Magnolia WX-Precip	92	7:40	93	99%
1000	A2-Maple Grove Resv.	737		744	99%
100210	South St Vrain at Berry Rain (not	739		744	99%
100230	A2-Havana Pond Precip	740		744	99%
100160	A2-Sand Creek at Colfax Precip	741		744	100%
100240	A2-Westerly Cr Dam Precip	741		744	100%
870	A2-Murphy Creek GC	742		744	100%
2750	Wx-Castle Rock	93	8:02	93	100%
2970	Rampart Range Rd-Satellite	371		371	100%
100	A2-Carr Street	747		744	100%
3070	A2-Newlin Gulch Precip	127	5:48	124	102%
610	Harvard @ Jackson	66	10:12	64	103%
2950	DC Public Works	101	8:27	93	109%
5720	Four Mile Creek	50	12:00	64	78%
5730	West Creek	59	12:24	64	92%
5740	Trail Creek	57	12:25	64	89%
5810	Stump Bump	61	12:00	64	95%
5860	Cedar Mountain	60	12:00	64	94%
5880	Hackett Mountain	61	12:00	64	95%
5900	Horse Creek-Satellite	8765		64	100%
5940	Log Jumper	8	12:00	64	13%

Rain Event Performance		Reports Received	Reports Received	24,421	Analyze Rain Sensors						0	<<show stations with zero rain (1=yes, 0=no)					
		Systemwide Avg	Total Tips	26,181													
		93.28%	Data Loss	6.72%													
Description	Sensor	Performance	1-tips	2-tips	3-tips	4-tips	5-tips	6-tips	>6-tips	Rcv	Exp	Miss	Hold	Bucket			
Guy Hill Ranch	310	46%	24	4	3	1	0	0	0	3	32	69	37	0	0.03937		
Slaughterhouse Glch	1620	61%	48	2	0	1	0	0	0	3	51	83	32	0	0.03937	Mean 143.0656	
Morrison	2330	66%	74	25	11	1	1	1	0	113	172	59	0	0.03937	Median 142		
Utah Park	430	68%	66	10	3	2	0	0	0	1	81	120	39	0	0.03937	St. Dev 34.5046	
Bear Cr below Cub	2230	70%	92	16	9	2	0	0	0	1	119	169	50	0	0.03937	Mean plus 3 SD 246.5794	
Little Narrows	4470	75%	117	22	5	6	0	0	0	0	150	200	50	0	0.03937	Mean minus 2 SD 74.05638	
Bear Creek @ Lowell	1530	79%	101	23	2	1	0	1	1	128	163	35	0	0.03937	Min 2		
SPR at Henderson	1660	79%	87	25	3	0	0	0	0	0	115	146	31	0	0.03937	Max 290	
Pinewood Springs	4510	79%	122	30	1	0	2	0	0	0	155	195	40	0	0.03937		
Wx-Button Rock	4790	81%	109	15	3	2	1	0	0	0	130	161	31	0	0.03937		
Chatfield COE	1350	83%	92	12	3	0	1	0	0	0	108	130	22	0	0.03937		
Cannon Mountain	4270	83%	220	17	2	2	0	0	0	1	241	290	49	2	0.03937		
Haskins Gulch Conf	2820	84%	108	3	0	0	0	0	0	4	111	132	21	0	0.03937		
Red Rocks Park	2370	84%	122	17	5	0	0	0	0	0	144	171	27	0	0.03937		
Denver Zoo	1360	84%	117	18	4	0	0	0	0	0	139	165	26	0	0.03937		
Idledale	2350	84%	119	18	1	2	0	0	0	0	140	166	26	0	0.03937		
Third Creek at DIA	1480	85%	73	13	1	0	0	0	0	0	87	102	15	0	0.03937		
Dakan Rd	2980	85%	53	11	0	0	0	0	0	0	64	75	11	0	0.03937		
Van Bibber Park	300	85%	95	15	2	0	0	0	0	0	112	131	19	0	0.03937		
Leyden Reservoir	200	86%	105	14	3	0	0	0	0	0	122	142	20	1	0.03937		
Jeffco Fairgrounds	1050	86%	98	17	1	0	0	0	0	0	116	135	19	0	0.03937		
Indian Hills	2360	86%	115	11	5	0	0	0	0	0	131	152	21	0	0.03937		
Choke Cherry Resvr	2320	86%	133	17	2	1	0	0	0	0	153	177	24	0	0.03937		
Wx-W. Cherry Creek	2790	86%	141	14	4	1	0	0	0	0	160	185	25	0	0.03937		
LDC at 64th	1310	87%	138	14	5	0	0	0	0	0	157	181	24	0	0.03937		
Upper Sloan Det.	1400	87%	112	13	3	0	0	0	0	0	128	147	19	0	0.03937		
Heritage Square	1060	88%	128	9	2	1	1	0	0	0	141	161	20	0	0.03937		
Lakewood CC	1550	88%	108	15	1	0	0	0	0	0	124	141	17	0	0.03937		
St. Antons	4570	88%	112	8	3	1	0	0	0	0	124	141	17	0	0.03937		
Leyden Confluence	210	88%	134	18	1	0	0	0	0	0	153	173	20	0	0.03937		
Eagle Ridge	4520	88%	129	15	2	0	0	0	0	0	146	165	19	0	0.03937		
West Metro FS13	1370	89%	117	13	2	0	0	0	0	0	132	149	17	0	0.03937		
Sports Complex	320	89%	119	12	1	1	0	0	0	0	133	150	17	1	0.03937		
West Woods	120	89%	122	11	3	0	0	0	0	0	136	153	17	0	0.03937		
Shop Creek	1710	89%	86	8	2	0	0	0	0	0	96	108	12	0	0.03937		
Sanderson at Xavier	1340	89%	128	16	1	0	0	0	0	0	145	163	18	0	0.03937		
Quincy/Highline	620	89%	108	12	0	1	0	0	0	0	121	136	15	0	0.03937		
SBC @ SB Road	4870	89%	130	14	2	0	0	0	0	0	146	164	18	0	0.03937		
Lena @ U.S. Hwy 6	1040	89%	116	12	2	0	0	0	0	0	130	146	16	0	0.03937		
SPR at Union Ave.	1640	89%	118	12	2	0	0	0	0	0	132	148	16	0	0.03937		
Iliff Pond	650	89%	101	6	2	1	0	0	0	0	110	123	13	0	0.03937		
Wx-Elbert	1440	90%	146	14	2	0	0	0	0	0	162	180	18	1	0.03937		
Nott Creek	150	90%	104	13	0	0	0	0	0	0	117	130	13	0	0.03937		
Ralston Reservoir	110	90%	125	12	0	1	0	0	0	0	138	153	15	0	0.03937		
Denver West	1010	90%	119	11	0	1	0	0	0	0	131	145	14	0	0.03937		
El Rancho	2340	91%	114	9	2	0	0	0	0	0	125	138	13	0	0.03937		
Hidden Lake	1300	91%	134	8	2	1	0	0	0	0	145	160	15	0	0.03937		
Powers Park	1500	91%	130	10	2	0	0	0	0	0	142	156	14	0	0.03937		
NREL/S. Table Mtn.	1030	91%	105	8	0	1	0	0	0	0	114	125	11	0	0.03937		
Genesee Village	2310	91%	162	13	2	0	0	0	0	0	177	194	17	0	0.03937		
Wx-Diamond Hill	1420	91%	124	11	1	0	0	0	0	0	136	149	13	0	0.03937		
Cub Cr below Blue	2270	92%	111	6	1	1	0	0	0	0	119	130	11	0	0.03937		
Parker/Mississippi	540	92%	96	6	0	1	0	0	0	0	103	112	9	0	0.03937		
Fire Station 12	840	92%	86	6	1	0	0	0	0	0	93	101	8	0	0.03937		
Kelly Dam	410	92%	100	9	0	0	0	0	0	0	109	118	9	0	0.03937		
Wx-Brighton	1920	92%	115	5	1	1	0	0	0	0	122	132	10	0	0.03937		
Wx-Urban Farm	1460	93%	103	9	0	0	0	0	0	0	112	121	9	0	0.03937		
Upper Leyden	220	93%	130	9	1	0	0	0	0	0	140	151	11	0	0.03937		
Lakeshore	4060	93%	110	3	0	2	0	0	0	0	115	124	9	0	0.03937		
Wx-Blue Mountain	140	93%	130	11	0	0	0	0	0	0	141	152	11	0	0.03937		
Gold Lake	4180	93%	132	9	1	0	0	0	0	0	142	153	11	0	0.03937		
Confluence Pond	720	93%	87	7	0	0	0	0	0	0	94	101	7	0	0.03937		
Red Hill	4290	93%	180	8	1	0	1	0	0	0	190	204	14	0	0.03937		

Cherry Cr @ Champa	1700	93%	80	6	0	0	0	0	0	86	92	6	0	0.03937
SPR at 3rd Ave	1320	94%	150	9	1	0	0	0	0	160	171	11	0	0.03937
Sand Creek Park	1800	94%	95	7	0	0	0	0	0	102	109	7	0	0.03937
Cherry Cr bl Bayou Glch	2850	94%	115	6	1	0	0	0	0	122	130	8	0	0.03937
Van Bibber @ Hwy 93	330	94%	131	9	0	0	0	0	0	140	149	9	0	0.03937
Cold Sprg Glch conf	2240	94%	146	10	0	0	0	0	0	156	166	10	0	0.03937
Aurora Regional Pond	940	94%	73	5	0	0	0	0	0	78	83	5	0	0.03937
Kinney Peak	2280	94%	137	9	0	0	0	0	0	146	155	9	0	0.03937
Wx-Marston Lake North	1520	94%	125	6	1	0	0	0	0	132	140	8	0	0.03937
Brook Forest	2260	95%	149	5	2	0	0	0	0	156	165	9	0	0.03937
Shanahan Ridge	4810	95%	181	11	0	0	0	0	0	192	203	11	0	0.03937
Wx-Ward C-1	4710	95%	150	7	1	0	0	0	0	158	167	9	0	0.03937
Virginia Court	510	95%	102	6	0	0	0	0	0	108	114	6	0	0.03937
Toll Gate @ 6th	700	95%	102	6	0	0	0	0	0	108	114	6	0	0.03937
Rio Grande	4020	95%	138	6	1	0	0	0	0	145	153	8	0	0.03937
Expo Park	420	95%	103	6	0	0	0	0	0	109	115	6	0	0.03937
CC @ Russelville Road Precip	3040	95%	156	7	1	0	0	0	0	164	173	9	0	0.03937
Happy Canyon at N Surrey Dr	2880	95%	140	8	0	0	0	0	0	148	156	8	0	0.03937
Fire Station #19	530	95%	123	7	0	0	0	0	0	130	137	7	0	0.03937
Fling's	4220	95%	126	5	1	0	0	0	0	132	139	7	0	0.03937
Harvard Gulch Park	600	95%	130	7	0	0	0	0	0	137	144	7	0	0.03937
Mission Viejo Park	760	95%	93	5	0	0	0	0	0	98	103	5	0	0.03937
Winger Ridge	4530	95%	132	5	1	0	0	0	0	138	145	7	0	0.03937
Russelville Gulch-Douglas	2900	95%	154	8	0	0	0	0	0	162	170	8	0	0.03937
Geer Canyon	4250	95%	198	10	0	0	0	0	0	208	218	10	0	0.03937
Slaughterhouse	4190	96%	162	8	0	0	0	0	0	170	178	8	0	0.03937
Harvard @ Jackson	610	96%	81	4	0	0	0	0	0	85	89	4	0	0.03937
Granby Ditch @ 6th	810	96%	102	5	0	0	0	0	0	107	112	5	0	0.03937
Hansen Rain	4330	96%	247	10	1	0	0	0	0	258	270	12	0	0.03937
Willow Creek - DougCnty	2940	96%	147	7	0	0	0	0	0	154	161	7	0	0.03937
Conifer Hill	4350	96%	149	5	1	0	0	0	0	155	162	7	0	0.03937
Martin Gulch	4040	96%	149	7	0	0	0	0	0	156	163	7	0	0.03937
Riverside	4340	96%	128	6	0	0	0	0	0	134	140	6	0	0.03937
Flying J	850	96%	107	5	0	0	0	0	0	112	117	5	0	0.03937
Crescent	4010	96%	130	6	0	0	0	0	0	136	142	6	0	0.03937
Rosedale	2250	96%	141	6	0	0	0	0	0	147	153	6	0	0.03937
SBC @ San Souci	4830	96%	143	6	0	0	0	0	0	149	155	6	0	0.03937
Temple Pond at DTC	630	96%	127	5	0	0	0	0	0	132	137	5	0	0.03937
Broomfield 3207	1200	96%	153	6	0	0	0	0	0	159	165	6	0	0.03937
Taylor Mountain	4260	96%	131	3	1	0	0	0	0	135	140	5	0	0.03937
Goldsmith @ Eastman	640	96%	106	4	0	0	0	0	0	110	114	4	0	0.03937
Jewell Detention	520	97%	107	4	0	0	0	0	0	111	115	4	0	0.03937
Walker Ranch	4050	97%	111	4	0	0	0	0	0	115	119	4	0	0.03937
Johnny Park	4310	97%	141	5	0	0	0	0	0	146	151	5	0	0.03937
Wx-Spring Valley Rd-DougCnty	2930	97%	199	5	1	0	0	0	0	205	212	7	0	0.03937
Wx-Quincy Reservoir	750	97%	115	4	0	0	0	0	0	119	123	4	0	0.03937
Wx-Cal-Wood Ranch	4770	97%	152	3	1	0	0	0	0	156	161	5	0	0.03937
A2-Upper Sellers Gulch Precip	100140	97%	123	2	1	0	0	0	0	126	130	4	0	0.03937
Wx-Highlands Ranch WTP	2710	97%	126	4	0	0	0	0	0	130	134	4	0	0.03937
Rampart Range Rd-Satellite	2970	97%	131	2	1	0	0	0	0	134	138	4	0	0.03937
Wx-Aurora Town Hall	920	97%	163	5	0	0	0	0	0	168	173	5	0	0.03937
Filter Plant	4100	97%	131	4	0	0	0	0	0	135	139	4	0	0.03937
Lee Hill Rain 2012	4320	97%	165	3	1	0	0	0	0	169	174	5	0	0.03937
Sunshine	4160	97%	165	5	0	0	0	0	0	170	175	5	0	0.03937
Doudy Draw	4820	97%	165	5	0	0	0	0	0	170	175	5	0	0.03937
Pine Cliff Road	2810	97%	132	4	0	0	0	0	0	136	140	4	0	0.03937
Cottonwood (Apache)	2870	97%	142	4	0	0	0	0	0	146	150	4	0	0.03937
WX-Bingham Lake Park	3030	97%	110	3	0	0	0	0	0	113	116	3	0	0.03937
Havana Park	500	97%	111	3	0	0	0	0	0	114	117	3	0	0.03937
Piney at Liverpool	950	97%	111	3	0	0	0	0	0	114	117	3	0	0.03937
Golden Age	4230	97%	149	4	0	0	0	0	0	153	157	4	0	0.03937
Wx-West Creek WX	3020	98%	115	1	3	0	0	0	3	119	122	3	0	0.03937
Cherry Cr @ Steele	1720	98%	116	3	0	0	0	0	0	119	122	3	0	0.03937
Justice Center	4360	98%	156	4	0	0	0	0	0	160	164	4	0	0.03937
CC at Stroh Rd	2860	98%	124	3	0	0	0	0	0	127	130	3	0	0.03937
Bear Peak	4070	98%	168	4	0	0	0	0	0	172	176	4	0	0.03937
Side Creek Park	830	98%	84	2	0	0	0	0	0	86	88	2	0	0.03937
Sunset	4240	98%	132	1	1	0	0	0	0	134	137	3	0	0.03937

West Cherry Head-Douglas Cnty	2920	98%	220	5	0	0	0	0	0	225	230	5	0	0.03937
Indian Creek	2960	98%	133	3	0	0	0	0	0	136	139	3	0	0.03937
Lazy Acres	4200	98%	180	4	0	0	0	0	0	184	188	4	0	0.03937
Wx-Tomah Rd-DougCnty	2990	98%	135	3	0	0	0	0	0	138	141	3	0	0.03937
Gunbarrel	1110	98%	136	3	0	0	0	0	0	139	142	3	0	0.03937
Red Garden	4030	98%	184	4	0	0	0	0	0	188	192	4	0	0.03937
Twin Sisters	4080	98%	139	3	0	0	0	0	0	142	145	3	0	0.03937
No Name @ Quincy	730	98%	100	2	0	0	0	0	0	102	104	2	0	0.03937
Sulphur Gulch	2840	98%	102	2	0	0	0	0	0	104	106	2	0	0.03937
ETG @ Buckley	820	98%	104	2	0	0	0	0	0	106	108	2	0	0.03937
East Cherry Cr-Douglas	2910	98%	217	4	0	0	0	0	0	221	225	4	0	0.03937
Spruce Mt - Douglas	2890	98%	163	3	0	0	0	0	0	166	169	3	0	0.03937
Fire Sta 47	3060	98%	110	2	0	0	0	0	0	112	114	2	0	0.03937
Tallman Gulch	3080	98%	116	2	0	0	0	0	0	118	120	2	0	0.03937
A2-Havana Pond Precip	100230	98%	120	2	0	0	0	0	0	122	124	2	0	0.03937
Big Elk Park	4300	98%	121	2	0	0	0	0	0	123	125	2	0	0.03937
Niver Detention	1900	98%	122	2	0	0	0	0	0	124	126	2	0	0.03937
East/West Trailhead	3050	98%	126	2	0	0	0	0	0	128	130	2	0	0.03937
Horseshoe Park Drop	710	99%	65	1	0	0	0	0	0	66	67	1	0	0.03937
SBC@S Boulder Ditch	4840	99%	152	2	0	0	0	0	0	154	156	2	0	0.03937
Englewood Dam	1600	99%	76	1	0	0	0	0	0	77	78	1	0	0.03937
Apple Valley	4490	99%	153	2	0	0	0	0	0	155	157	2	0	0.03937
Wx-Hiwan G.C.	2210	99%	156	2	0	0	0	0	0	158	160	2	0	0.03937
Boulder Jail	4550	99%	156	2	0	0	0	0	0	158	160	2	0	0.03937
Betasso	4110	99%	162	2	0	0	0	0	0	164	166	2	0	0.03937
Wx-Aurora Reservoir	900	99%	88	1	0	0	0	0	0	89	90	1	0	0.03937
Pump Sta 3	970	99%	95	1	0	0	0	0	0	96	97	1	0	0.03937
Wx-Salisbury Park	2730	99%	99	1	0	0	0	0	0	100	101	1	0	0.03937
Wx-Castle Rock	2750	99%	116	1	0	0	0	0	7	117	118	1	0	0.03937
Sable Ditch @ 18th	800	99%	116	1	0	0	0	0	0	117	118	1	0	0.03937
Louisville Rec Ctr	1100	99%	118	1	0	0	0	0	0	119	120	1	0	0.03937
Fire Station #7	440	99%	124	1	0	0	0	0	0	125	126	1	0	0.03937
Pine Brook	4170	99%	142	1	0	0	0	0	0	143	144	1	0	0.03937
Wx-Louisville Lake	4750	99%	164	1	0	0	0	0	0	165	166	1	0	0.03937
A2-Carr Street	100	100%	187	0	0	0	0	0	0	187	187	0	2	0.03937
Magnolia	4090	100%	172	0	0	0	0	0	0	172	172	0	0	0.03937
Gold Hill	4150	100%	166	0	0	0	0	0	0	166	166	0	0	0.03937
Whispering Pines	4880	100%	156	0	0	0	0	0	0	156	156	0	0	0.03937
Wx-Sugarloaf	4730	100%	151	0	0	0	0	0	0	151	151	0	0	0.03937
Swiss Peaks	4130	100%	150	0	0	0	0	0	0	150	150	0	0	0.03937
Logan Mill	4140	100%	142	0	0	0	0	0	0	142	142	0	0	0.03937
A2-Newlin Gulch Precip	3070	100%	140	0	0	0	0	0	1	140	140	0	0	0.03937
A2-Highland Heritage Park	3090	100%	139	0	0	0	0	0	0	139	139	0	0	0.03937
A2-Maple Grove Resv.	1000	100%	132	0	0	0	0	0	0	132	132	0	0	0.03937
A2-Blackstone Precip	100100	100%	124	0	0	0	0	0	0	124	124	0	0	0.03937
A2-Murphy Creek GC	870	100%	121	0	0	0	0	0	0	121	121	0	0	0.03937
DC Public Works	2950	100%	120	0	0	0	0	0	0	120	120	0	0	0.03937
A2-Sellers Gulch at Haystack Precip	100150	100%	119	0	0	0	0	0	0	119	119	0	1	0.03937
A2-Sand Creek at Colfax Precip	100160	100%	119	0	0	0	0	0	0	119	119	0	0	0.03937
A2-Westerly Cr Dam Precip	100240	100%	111	0	0	0	0	0	0	111	111	0	0	0.03937
A2-ETG @ Hampden Precip	100110	100%	105	0	0	0	0	0	0	105	105	0	0	0.03937
Wx-Brighton Ditch	1570	100%	2	0	0	0	0	0	0	2	2	0	0	0.03937
		Total Tips	23022	1208	146	36	7	2	25	24421	26181	1760	8	
Four Mile Creek	5720	72%	54	7	3	2	2	0	2	68	95	27	0	0.03937
West Creek	5730	98%	119	2	0	0	0	0	0	121	123	2	0	0.03937
Trail Creek	5740	100%	121	0	0	0	0	0	0	121	121	0	0	0.03937
Stump Bump	5810	100%	123	0	0	0	0	0	0	123	123	0	0	0.03937
Cedar Mountain	5860	99%	129	1	0	0	0	0	0	130	131	1	0	0.03937
Hackett Mountain	5880	98%	127	3	0	0	0	0	0	130	133	3	0	0.03937
Horse Creek-Satellite	5900	94%	131	1	1	2	0	0	0	135	144	9	0	0.03937
Log Jumper	5940	100%	1	0	0	0	0	0	0	1	1	0	0	0.03937
WX-EPC at Hwy 105	3010	91%	346	30	3	0	0	0	4	379	415	36	1	0.01

2015 Monthly Peak Hour ALERT Radio Traffic Summary

