

Memo

Date: May 8, 2015
To: Kevin Stewart
From: Markus Ritsch
Subject: April 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 April 1 through April 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 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								
Concentrator	366,229	405,210	443,612	458,979								
ALERT2	172,927	233,617	286,836	295,399								
TOTAL	755,617	880,112	998,999	1,036,684	0	0	0	0	0	0	0	0
Conc+A2	539,156	638,827	730,448	754,378								
Conc/Leg	1.69	1.68	1.65	1.63								
DataChron	529,216	564,798	652,811	702,865								

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						
Concentrator	366,229	405,210	443,612	458,979						
ALERT2	172,927	233,617	286,836	295,399						
NS5B (Greenhouse)										
Legacy	244,232	241,143	268,417	262,549						
Concentrator	409,951	405,875	444,660	430,407						
ALERT2	191,784	234,150	289,044	275,955						
Diff (NS5a-NS5b)										
Legacy (Digi One)	-27,771	142	134	19,757						
Concentrator (B2010)	-43,722	-665	-1048	28,572						
ALERT2 (B2010)	-18,857	-533	-2208	19,444						
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 large. A network outage was experienced this month at Greenhouse Data which explains the large difference in received reports.

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).

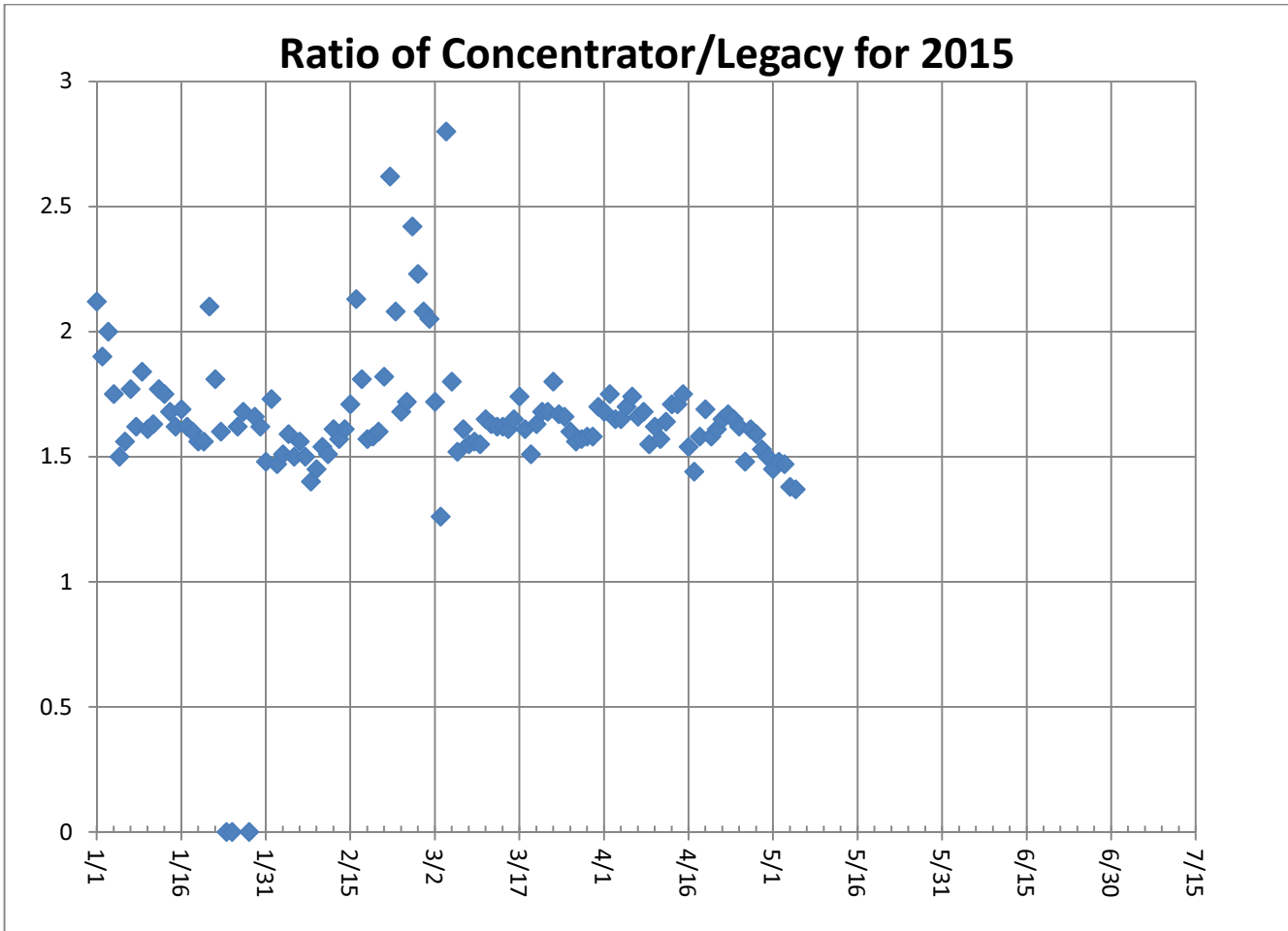


Figure 1. Daily Ratio of Concentrator Reports to Legacy Reports

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 early May.

A. Continuous Operation of Base Receiver/Decoder

The ns5 base stations were NOT in continuous operation for the entire month. Network issues between the decoders at Diamond Hill and Greenhouse Data were identified on April 26th.

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
4850	Porphyry Mtn	Poor timer performance
2330	Morrison	Poor timer performance and poor event performance
430	Utah Park	Poor timer performance and poor event performance
100150	A2-Sellers Gulch at Haystack	Poor event performance
4240	Sunset	Poor event performance
100140	A2-Upper Sellers Gulch	Poor event performance
2812, 2814 2811	Unknown IDs	Pine Cliff Road (2810)
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		0.889	0.902	0.977	0.374
Murphy Creek (10019)	870		0.931	0.917	0.932	0.918
Maple Grove (10013)	1000		0.995	0.940	0.988	0.988
Lena @ Nolte Pond (10025)	1020		0.986	0.984	0.986	0.961
Newlin Gulch	3070	--	0.920	0.370	0.640	0.550
Heritage Regional Park	3090		0.576	0.474	0.927	0.905
Lower Left Hand (10018)	4453		0.986	--	0.982	0.008
Magnolia	6602		0.971	0.968	0.992	0.970
Blackstone**	100100		0.127	0.110	0.124	0.142
ETG @ Hampden**	100110		0.143	0.103	0.145	0.136
Upper Sellers	100140	0.789				
Haystack Road	100150	0.761				
Sand Cr at Colfax	100160		0.985	0.908	0.993	0.974
James Creek	100177		0.130	--	0.989	0.920
S. St. Vrain at Berry Ridge	100210		--	--	0.962	0.399
Arvada/Blunn Reservoir***	100227		0.193	0.191	0.193	0.135
Havana Pond	100237		0.990	0.982	0.982	0.990
Westerly Creek Dam	100247		0.990	0.985	0.986	0.976

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

*** -strange APDUID count from this site.....WET to visit in May

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)	Magnolia (6507)	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

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	
53,363	2,157	68,818	8,260	1,263	82,373	5,758	1,246	818	15,788	4,779	687	25,218	988	573	709	827	809	768	876		
76,418	1,609	47,260	4,293	162	13,087	310	214	141	26,576	478	234	31,282	213	199	224	249	362	400	535		
44,244	955	32,711	2,157	471	37,923	3,012	1,358	1,172	60,815	2,987	1,513	71,128	2,445	1,532	1,854	1,788	2,183	1,827	1,979		
754,378	174,025	4,721	148,789	14,710	1,896	133,383	9,080	2,818	2,131	103,179	8,244	2,434	127,628	3,646	2,304	2,787	2,864	3,354	2,995	3,390	

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	44.04	The average time it took a report from the field to reach the base
Minimum	3	
Maximum	43,089	Large latency observed on April 2, April 4, April 17 from Arvada/Blunn

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								
Minimum	5	3	3								
Maximum	35,209	3,706	43,089								

The large latencies (43,089) were observed from the Arvada/Blunn Reservoir site. This site had a faulty AL200 encoder which was replaced toward the end of April.

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								
700	2330	4270	2330								
2330	4870	2790	430								
4240	3010	4240	5720								
3010	1660	4870	2970								
4870	4240	3010	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	69.75	Only the 1-mm rain sensors were included in the analysis
Median	71	Only the 1-mm rain sensors were included in the analysis
Standard deviation	22.13	Only the 1-mm rain sensors were included in the analysis
Mean plus three standard deviations	136.15	Only the 1-mm rain sensors were included in the analysis
Minimum total count	3	Wx-Brighton Ditch (1570)
Maximum total count	128	Geer Canyon (4250)
Sensors showing NO rain for the month	0	None
Sensors greater than 3 SD (over reporting)	0	None

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									

*- 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
A2-Sellers Gulch at Haystack Road	100150	A2 configuration was modified toward the end of the month to improve performance
A2-Upper Sellers Gulch	100140	A2 configuration was modified toward the end of the month to improve performance
Sunset	4240	
Utah Park	430	

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 12,345 incrementing reports were received and a total of 13,253 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								
700	4470	4470	4240								
4750	700	2340	430								
4330	2320	100140	100140								
2790	4330	1520	2330								
4870	4870	1100	1620								

*-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)	282	357	0
Total reports from unknown IDs	1,007	858	0
Unknown IDs with only a single received report (potential noise)	170	256	0
Total reports from all IDs – RecData Log entire month	458,979	282,306	295,399
Unknown reports as a fraction of total reports	0.22%	0.30%	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								

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%								

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	
2812	62	2272	59	Unknown IDs coming from Pine Cliff Road (2810)
2811	59	2274	59	Unknown IDs coming from Cub Creek below Blue (2270)
2814	59	2271	58	
2271	57	623	55	
2272	57	2283	50	
2274	57	1430	21	
623	55	2229	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
Bear Creek @ Lowell (1530)	5	6	2	1								
Pine Cliff Road (2810)	4	5	6	4								
Wx-West Creek (3020)	0	0	10	4								
Wx-Castle Rock (2750)	0	0	5	2								
Shop Creek (1710)	0	0	3	1								
A2-Newlin Gulch (3070)	0	0	0	6								

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								
A2-Lena @ Nolte Pond (1023)	na	545	745	738								
A2-Westerly Cr Dam (100247)	0	0	325	0								
A2-ETG@Hampden (100117)	0	0	286	12								
Piney at Liverpool (953)	0	0	228	232								
Flying J (853)	0	0	52	60								
Sanderson at Xavier (1343)	0	0	31	7								
Leyden Reservoir (203)	0	0	17	0								
Little Narrows (4473)	33	208	2	8								
SPR at Dartmouth (1629)				49								
Bear Cr below Cub (2233)				40								

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.

4340	Riverside Precipitation-BO	Boulder County 10 minute rainfall	4/7/2015 13:42
2970	Rampart Range Road Precipitation-DG	2970 Rampart Range Road 0.2" in 30 Minutes Rainfall	4/17/2015 15:30
4090	Magnolia Precipitation-BO	FMC-BA 0.50" in 30 Min Rainfall	4/17/2015 16:53
4090	Magnolia Precipitation-BO	Boulder County 10 minute rainfall	4/17/2015 16:54
2970	Rampart Range Road Precipitation-DG	2970 Rampart Range Road 0.2" in 30 Minutes Rainfall	4/18/2015 12:30
200	Leyden Reservoir Precipitation-JF-Arvada	Jefferson County 10 minute rainfall	4/23/2015 14:22

General System Analysis

Database Name

P:\A207-UDFCD-Data-Analysis\2015\04-2015\Novastar_extract_2015Apr.mdb

First Date in Database
Last Date in Database

4/1/15 12:00 AM
4/30/15 11:59 PM

Total Days
Total Hours

30.0
720.0

Summarize

Total Records Analyzed

458,979

Records by Group	Concentrator	Percent	Legacy	Percent	A2	Percent
Wind Data	181,623	40%	100,890	36%	74,699	25%
Temperature	69,989	15%	37,918	13%	33,224	11%
Relative Humidity	62,100	14%	37,848	13%	33,184	11%
Barometric Pressure	34,498	8%	20,420	7%	0	0%
Battery Voltage	28,392	6%	13,778	5%	25,968	9%
Water Level	25,033	5%	22,964	8%	45,415	15%
Precipitation	22,308	5%	17,932	6%	20,093	7%
Solar Radiation	10,376	2%	10,376	4%	0	0%
Fuel Moisture	5,790	1%	5,628	2%	0	0%
Fuel Temperature	5,773	1%	5,668	2%	0	0%
Wind Direction	4,851	1%	0	0%	0	0%
Soil Moisture	2,800	1%	2,804	1%	0	0%
Repeater Status Report	2,575	1%	3,198	1%	0	0%
Unknown	1,007	0%	858	0%	0	0%
ET-Hourly	720	0%	713	0%	0	0%
12Hr Status Report	385	0%	386	0%	2,841	1%
Hayman Battery	287	0%	0	0%	0	0%
Not Used	278	0%	273	0%	1,016	0%
Repeater Pass List	61	0%	538	0%	0	0%
Handar 585 ALARM Status	60	0%	59	0%	0	0%
GPS Lock	36	0%	0	0%	8,404	3%
ET-Daily	31	0%	29	0%	0	0%
ALERT Msgs Received	0	0%	10	0%	0	0%
ALERT Msgs Transmitted	0	0%	8	0%	0	0%
Solar Power	5	0%	6	0%	0	0%
ALERT/A2 Testing	1	0%	2	0%	0	0%
Dew Point Temperature	0	0%	0	0%	8,392	3%
Wind Chill	0	0%	0	0%	8,388	3%
Flasher Status	0	0%	0	0%	645	0%
Peak Wind	0	0%	0	0%	33,130	11%
Total	458,979	100%	282,306	100%	295,399	100%

Traffic Loading Summary

	Concentrator		Legacy		A2	
Alert Reports	458,979		282,306		295,399	
Average Daily Traffic	15,299		9,410		9,847	
Average Hourly Traffic	637		392		410	
Median Hourly Traffic	627	hour beginning	381	hour beginning	396	hour beginning
Peak Hourly Traffic	1,204	Apr 17, 12:00 PM	830	Apr 17, 11:00 AM	574	Apr 18, 1:00 PM
2nd Max	1,189	Apr 17, 11:00 AM	779	Apr 17, 10:00 AM	573	Apr 27, 12:00 AM
3rd Max	1,013	Apr 26, 12:00 PM	754	Apr 26, 12:00 PM	561	
4th Max	997	Apr 17, 10:00 AM	740	Apr 17, 12:00 PM	558	Apr 30, 4:00 PM
5th Max	995	Apr 17, 1:00 PM	738	Apr 26, 9:00 AM	555	Apr 18, 10:00 AM

Rain Timer Performance

Analyze Rain Sensors

Rain Sensors	Description	Rcv	Timer	Exp	Performance
4850	Porphory Mtn	26	10:35	60	43%
2330	Morrison	29	0:37	60	48%
430	Utah Park	32	17:24	60	53%
5720	Four Mile Creek	34	14:08	60	57%
2970	Rampart Range Rd-Satellite	288		480	60%
2360	Indian Hills	39	14:57	60	65%
100150	A2-Sellers Gulch at Haystack Precip	41	3:11	60	68%
1710	Shop Creek	43	15:10	60	72%
5730	West Creek	43	12:24	60	72%
4510	Pinewood Springs	44	13:50	60	73%
5860	Cedar Mountain	47	11:45	60	78%
310	Guy Hill Ranch	48	12:15	60	80%
4790	Wx-Button Rock	48	14:40	60	80%
4870	SBC @ SB Road	48	14:32	60	80%
5740	Trail Creek	48	10:58	60	80%
5880	Hackett Mountain	48	12:20	60	80%
1620	Slaughterhouse Glch	49	12:56	60	82%
4180	Gold Lake	49	14:37	60	82%
5810	Stump Bump	49	11:53	60	82%
2320	Choke Cherry Resvr	50	13:05	60	83%
4470	Little Narrows	50	12:37	60	83%
2310	Genesee Village	51	12:16	60	85%
2790	Wx-W. Cherry Creek	51	13:34	60	85%
2980	Dakan Rd	51	12:50	60	85%
4270	Cannon Mountain	51	13:37	60	85%
4330	Hansen Rain	51	14:10	60	85%
150	Nott Creek	52	12:56	60	87%
1040	Lena @ U.S. Hwy 6	52	12:51	60	87%
1480	Third Creek at DIA	52	13:29	60	87%
2280	Kinney Peak	52	13:30	60	87%
2370	Red Rocks Park	52	13:32	60	87%
1440	Wx-Elbert	53	13:05	60	88%
2340	El Rancho	53	11:57	60	88%
2350	Idledale	53	12:46	60	88%
2940	Willow Creek - DougCnty	53	13:10	60	88%
1060	Heritage Square	54	12:49	60	90%
1350	Chatfield COE	54	12:32	60	90%
1530	Bear Creek @ Lowell	54	12:40	60	90%
2240	Cold Sprg Glch conf	54	12:51	60	90%
2850	Cherry Cr bl Bayou Glch	54	12:32	60	90%
3080	Tallman Gulch	54	12:32	60	90%
4220	Fling's	54	12:53	60	90%
4290	Red Hill	54	12:30	60	90%
120	West Woods	55	12:48	60	92%
410	Kelly Dam	55	12:29	60	92%
1400	Upper Sloan Det.	55	12:30	60	92%
1520	Wx-Marston Lake North	55	12:00	60	92%
1550	Lakewood CC	55	13:06	60	92%
2880	Happy Canyon at N Surrey Dr	55	12:32	60	92%
2890	Spruce Mt - Douglas	55	12:32	60	92%
2910	East Cherry Cr-Douglas	55	12:00	60	92%
3030	WX-Bingham Lake Park	55	12:50	60	92%
3090	A2-Highland Heritage Park	55	12:49	60	92%
4080	Twin Sisters	55	12:51	60	92%

4820	Doudy Draw	55	13:03	60	92%
110	Ralston Reservoir	56	12:50	60	93%
220	Upper Leyden	56	12:00	60	93%
750	Wx-Quincy Reservoir	56	12:14	60	93%
800	Sable Ditch @ 18th	56	12:29	60	93%
840	Fire Station 12	56	12:45	60	93%
900	Wx-Aurora Reservoir	56	12:30	60	93%
940	Aurora Regional Pond	56	12:14	60	93%
1370	West Metro FS13	56	12:46	60	93%
1720	Cherry Cr @ Steele	56	12:28	60	93%
1920	Wx-Brighton	56	12:15	60	93%
2730	Wx-Salisbury Park	56	12:16	60	93%
2960	Indian Creek	56	12:16	60	93%
3010	WX-EPC at Hwy 105	56	12:18	60	93%
4030	Red Garden	56	12:50	60	93%
6601	A2-Magnolia WX-Precip	56	8:00	60	93%
5900	Horse Creek-Satellite	449		480	94%
300	Van Bibber Park	57	12:13	60	95%
320	Sports Complex	57	12:28	60	95%
330	Van Bibber @ Hwy 93	57	12:29	60	95%
420	Expo Park	57	12:28	60	95%
500	Havana Park	57	11:57	60	95%
600	Harvard Gulch Park	57	12:25	60	95%
630	Temple Pond at DTC	57	11:57	60	95%
830	Side Creek Park	57	12:29	60	95%
850	Flying J	57	12:14	60	95%
920	Wx-Aurora Town Hall	57	12:00	60	95%
1300	Hidden Lake	57	12:13	60	95%
1320	SPR at 3rd Ave	57	12:13	60	95%
1360	Denver Zoo	57	12:15	60	95%
1460	Wx-Urban Farm	57	12:31	60	95%
1640	SPR at Union Ave.	57	11:57	60	95%
1700	Cherry Cr @ Champa	57	12:14	60	95%
1900	Niver Detention	57	12:26	60	95%
2270	Cub Cr below Blue	57	11:58	60	95%
2710	Wx-Highlands Ranch WTP	57	12:15	60	95%
2820	Haskins Gulch Conf	57	12:32	60	95%
2860	CC at Stroh Rd	57	12:13	60	95%
2920	West Cherry Head-Douglas Cnty	57	12:16	60	95%
2930	Wx-Spring Valley Rd-DougCnty	57	12:30	60	95%
3040	CC @ Russelville Road Precip	57	12:16	60	95%
3050	East/West Trailhead	57	12:00	60	95%
3060	Fire Sta 47	57	12:34	60	95%
4020	Rio Grande	57	11:57	60	95%
4040	Martin Gulch	57	12:14	60	95%
4300	Big Elk Park	57	12:50	60	95%
4490	Apple Valley	57	11:59	60	95%
4520	Eagle Ridge	57	12:16	60	95%
4570	St. Antons	57	12:16	60	95%
4710	Wx-Ward C-1	57	12:00	60	95%
4830	SBC @ San Souci	57	12:13	60	95%
4860	Fairview Peak	57	12:36	60	95%
140	Wx-Blue Mountain	58	12:00	60	97%
210	Leyden Confluence	58	12:29	60	97%
510	Virginia Court	58	12:12	60	97%
610	Harvard @ Jackson	58	11:57	60	97%
620	Quincy/Highline	58	12:14	60	97%
640	Goldsmith @ Eastman	58	12:13	60	97%
700	Toll Gate @ 6th	58	12:00	60	97%

710	Horseshoe Park Drop	58	12:12	60	97%
720	Confluence Pond	58	11:58	60	97%
730	No Name @ Quincy	58	12:12	60	97%
760	Mission Viejo Park	58	11:57	60	97%
820	ETG @ Buckley	58	12:12	60	97%
1030	NREL/S. Table Mtn.	58	12:13	60	97%
1050	Jeffco Fairgrounds	58	12:13	60	97%
1100	Louisville Rec Ctr	58	11:59	60	97%
1310	LDC at 64th	58	12:27	60	97%
1600	Englewood Dam	58	12:13	60	97%
1660	SPR at Henderson	58	12:00	60	97%
2250	Rosedale	58	12:14	60	97%
2870	Cottonwood (Apache)	58	12:00	60	97%
2900	Russelville Gulch-Douglas	58	12:16	60	97%
2950	DC Public Works	58	12:00	60	97%
2990	Wx-Tomah Rd-DougCnty	58	12:00	60	97%
3020	Wx-West Creek WX	58	12:00	60	97%
4050	Walker Ranch	58	12:14	60	97%
4090	Magnolia	58	12:15	60	97%
4150	Gold Hill	58	12:15	60	97%
4190	Slaughterhouse	58	12:11	60	97%
4310	Johnny Park	58	12:14	60	97%
4320	Lee Hill Rain 2012	58	12:14	60	97%
4530	Winiger Ridge	58	12:31	60	97%
4750	Wx-Louisville Lake	58	12:15	60	97%
4770	Wx-Cal-Wood Ranch	58	12:16	60	97%
100110	A2-ETG @ Hampden Precip	58	12:00	60	97%
540	Parker/Mississippi	59	12:12	60	98%
650	Iliff Pond	59	11:59	60	98%
810	Granby Ditch @ 6th	59	11:57	60	98%
1010	Denver West	59	11:42	60	98%
1110	Gunbarrel	59	11:58	60	98%
1200	Broomfield 3207	59	11:59	60	98%
1800	Sand Creek Park	59	11:58	60	98%
2210	Wx-Hiwan G.C.	59	11:43	60	98%
2750	Wx-Castle Rock	59	11:45	60	98%
2840	Sulphur Gulch	59	11:59	60	98%
4010	Crescent	59	11:41	60	98%
4070	Bear Peak	59	11:57	60	98%
4130	Swiss Peaks	59	11:59	60	98%
4160	Sunshine	59	11:58	60	98%
4170	Pine Brook	59	11:57	60	98%
4200	Lazy Acres	59	11:59	60	98%
4230	Golden Age	59	12:11	60	98%
4250	Geer Canyon	59	12:13	60	98%
4260	Taylor Mountain	59	11:41	60	98%
4340	Riverside	59	11:41	60	98%
4360	Justice Center	59	12:14	60	98%
4550	Boulder Jail	59	11:57	60	98%
100100	A2-Blackstone Precip	59	12:00	60	98%
100140	A2-Upper Sellers Gulch Precip	59	6:56	60	98%
100230	A2-Havana Pond Precip	709		720	98%
3070	A2-Newlin Gulch Precip	119	6:00	120	99%
100210	A2-South St Vrain at Berry Rain (not used)	718		720	100%
100	A2-Carr Street	719		720	100%
870	A2-Murphy Creek GC	719		720	100%
1000	A2-Maple Grove Resv.	719		720	100%
100160	A2-Sand Creek at Colfax Precip	719		720	100%
100240	A2-Westerly Cr Dam Precip	719		720	100%

200	Leyden Reservoir	60	11:43	60	100%
440	Fire Station #7	60	11:57	60	100%
520	Jewell Detention	60	11:43	60	100%
530	Fire Station #19	60	11:57	60	100%
950	Piney at Liverpool	60	11:36	60	100%
970	Pump Sta 3	60	11:45	60	100%
1420	Wx-Diamond Hill	60	11:45	60	100%
1500	Powers Park	60	11:57	60	100%
2260	Brook Forest	60	11:58	60	100%
4060	Lakeshore	60	11:58	60	100%
4110	Betasso	60	11:42	60	100%
4240	Sunset	60	11:26	60	100%
4840	SBC@S Boulder Ditch	60	11:52	60	100%
4880	Whispering Pines	60	11:57	60	100%
2810	Pine Cliff Road	61	11:21	60	102%
4100	Filter Plant	61	11:43	60	102%
4350	Conifer Hill	61	11:11	60	102%
4730	Wx-Sugarloaf	61	11:56	60	102%
4810	Shanahan Ridge	61	11:57	60	102%
4140	Logan Mill	62	11:22	60	103%
1570	Wx-Brighton Ditch	63	11:12	60	105%
2230	Bear Cr below Cub	64	10:28	60	107%
1340	Sanderson at Xavier	66	10:12	60	110%

Rain Event Performance		Reports Received	Reports Received	12,345	Analyze Rain Sensors						0	<<show stations with zero rain (1=yes, 0=no)					
		Systemwide Avg	Total Tips	13,253													
		93.15%	Data Loss	6.85%													
Description	Sensor	Performance	1-tips	2-tips	3-tips	4-tips	5-tips	6-tips	>6-tips	Rcv	Exp	Miss	Hold	Bucket			
A2-Sellers Gulch at Haystack Precip	100150	13%	1	1	0	0	1	1	0	2	4	32	28	0	0.03937		
Sunset	4240	59%	52	0	0	0	1	0	0	1	53	90	37	0	0.03937	Mean 69.75263	
Utah Park	430	64%	39	3	3	0	0	0	0	1	45	70	25	0	0.03937	Median 71	
A2-Upper Sellers Gulch Precip	100140	65%	51	2	1	0	1	0	0	2	55	84	29	0	0.03937	St. Dev 22.133	
Morrison	2330	66%	42	17	4	0	0	0	0	1	63	95	32	0	0.03937	Mean plus 136.1516	
Slaughterhouse Glch	1620	71%	51	7	0	0	0	0	0	1	58	82	24	0	0.03937	Min 3	
Idledale	2350	74%	22	5	0	0	0	1	0	0	28	38	10	0	0.03937	Max 128	
Dakan Rd	2980	74%	38	21	0	0	0	0	0	0	59	80	21	0	0.03937		
Harvard Gulch Park	600	76%	11	1	0	1	0	0	0	0	13	17	4	0	0.03937		
Little Narrows	4470	77%	70	10	1	3	1	0	0	0	85	110	25	1	0.03937		
Horse Creek-Satellite	5900	79%	43	1	1	0	0	0	0	1	45	57	12	0	0.03937		
Pinewood Springs	4510	79%	68	11	4	1	0	0	0	0	84	106	22	0	0.03937		
Leyden Reservoir	200	80%	30	4	1	1	0	0	0	0	36	45	9	0	0.03937		
SPR at Union Ave.	1640	80%	46	8	3	0	0	0	0	0	57	71	14	0	0.03937		
Wx-Button Rock	4790	81%	67	11	4	0	0	0	0	0	82	101	19	0	0.03937		
Third Creek at DIA	1480	83%	29	3	0	0	1	0	0	0	33	40	7	1	0.03937		
Bear Cr below Cub	2230	83%	61	9	1	0	1	0	0	0	72	87	15	0	0.03937		
SPR at Henderson	1660	83%	41	6	2	0	0	0	0	0	49	59	10	0	0.03937		
Red Rocks Park	2370	83%	78	7	1	0	0	0	0	1	86	103	17	0	0.03937		
Hansen Rain	4330	84%	63	8	1	0	1	0	0	0	73	87	14	0	0.03937		
Upper Sloan Det.	1400	84%	53	8	2	0	0	0	0	0	63	75	12	0	0.03937		
Guy Hill Ranch	310	84%	23	3	1	0	0	0	0	0	27	32	5	0	0.03937		
Cherry Cr @ Champa	1700	85%	38	4	2	0	0	0	0	0	44	52	8	0	0.03937		
Bear Creek @ Lowell	1530	85%	71	9	1	1	0	0	0	0	82	96	14	0	0.03937		
Boulder Jail	4550	86%	80	3	1	0	0	0	0	1	84	98	14	0	0.03937		
SBC @ SB Road	4870	87%	76	13	0	0	0	0	0	0	89	102	13	0	0.03937		
A2-Havana Pond Precip	100230	88%	27	0	0	0	1	0	0	0	28	32	4	1	0.03937		
Chatfield COE	1350	88%	62	5	2	0	0	0	0	0	69	78	9	0	0.03937		
Indian Hills	2360	89%	64	4	1	1	0	0	0	0	70	79	9	0	0.03937		
Choke Cherry Resvr	2320	89%	65	5	2	0	0	0	0	0	72	81	9	0	0.03937		
Cannon Mountain	4270	89%	51	5	1	0	0	0	0	0	57	64	7	0	0.03937		
Wx-W. Cherry Creek	2790	89%	36	5	0	0	0	0	0	0	41	46	5	0	0.03937		
Lena @ U.S. Hwy 6	1040	89%	81	9	1	0	0	0	0	0	91	102	11	0	0.03937		
Riverside	4340	89%	72	1	0	0	2	0	0	0	75	84	9	0	0.03937		
Denver Zoo	1360	89%	60	8	0	0	0	0	0	0	68	76	8	0	0.03937		
Wx-Ward C-1	4710	90%	40	5	0	0	0	0	0	0	45	50	5	0	0.03937		
El Rancho	2340	90%	49	6	0	0	0	0	0	0	55	61	6	0	0.03937		
SPR at 3rd Ave	1320	90%	67	6	1	0	0	0	0	0	74	82	8	0	0.03937		
Eagle Ridge	4520	90%	59	7	0	0	0	0	0	0	66	73	7	0	0.03937		
Genesee Village	2310	91%	89	5	1	1	0	0	0	0	96	106	10	0	0.03937		
Happy Canyon at N Surrey Dr	2880	91%	62	5	1	0	0	0	0	0	68	75	7	0	0.03937		
Upper Leyden	220	91%	65	5	1	0	0	0	0	0	71	78	7	0	0.03937		
Quincy/Highline	620	91%	65	7	0	0	0	0	0	0	72	79	7	0	0.03937		
West Metro FS13	1370	91%	84	9	0	0	0	0	0	0	93	102	9	0	0.03937		
Expo Park	420	91%	50	2	0	1	0	0	0	0	53	58	5	0	0.03937		
Heritage Square	1060	92%	62	4	1	0	0	0	0	0	67	73	6	0	0.03937		
Sanderson at Xavier	1340	92%	73	5	1	0	0	0	0	0	79	86	7	1	0.03937		
Wx-Brighton	1920	92%	53	5	0	0	0	0	0	0	58	63	5	0	0.03937		
Leyden Confluence	210	92%	66	6	0	0	0	0	0	0	72	78	6	0	0.03937		
ETG @ Buckley	820	92%	44	4	0	0	0	0	0	0	48	52	4	0	0.03937		
Haskins Gulch Conf	2820	92%	79	5	1	0	0	0	0	0	85	92	7	0	0.03937		
Broomfield 3207	1200	92%	56	5	0	0	0	0	0	0	61	66	5	0	0.03937		
Four Mile Creek	5720	93%	35	1	1	0	0	0	0	0	37	40	3	0	0.03937		
Goldsmith @ Eastman	640	93%	46	4	0	0	0	0	0	0	50	54	4	1	0.03937		
Denver West	1010	93%	81	7	0	0	0	0	0	0	88	95	7	0	0.03937		
Indian Creek	2960	93%	82	7	0	0	0	0	0	0	89	96	7	0	0.03937		
Virginia Court	510	93%	47	4	0	0	0	0	0	0	51	55	4	0	0.03937		
Flying J	850	93%	24	2	0	0	0	0	0	1	26	28	2	0	0.03937		
Pump Sta 3	970	93%	24	2	0	0	0	0	0	0	26	28	2	0	0.03937		
Magnolia	4090	93%	89	1	1	0	1	0	0	0	92	99	7	1	0.03937		
Jeffco Fairgrounds	1050	93%	73	6	0	0	0	0	0	0	79	85	6	0	0.03937		
Sports Complex	320	93%	64	3	1	0	0	0	0	0	68	73	5	0	0.03937		

Cherry Cr @ Steele	1720	93%	64	3	1	0	0	0	0	0	68	73	5	0	0.03937
Jewell Detention	520	93%	52	4	0	0	0	0	0	0	56	60	4	0	0.03937
Ralston Reservoir	110	94%	67	5	0	0	0	0	0	0	72	77	5	0	0.03937
Russelville Gulch-Douglas	2900	94%	55	4	0	0	0	0	0	0	59	63	4	0	0.03937
Crescent	4010	94%	70	5	0	0	0	0	0	0	75	80	5	0	0.03937
Wx-Highlands Ranch WTP	2710	94%	72	3	1	0	0	0	0	0	76	81	5	0	0.03937
Lakewood CC	1550	94%	73	5	0	0	0	0	0	0	78	83	5	0	0.03937
Hidden Lake	1300	94%	44	3	0	0	0	0	0	0	47	50	3	0	0.03937
Aurora Regional Pond	940	94%	60	2	1	0	0	0	0	0	63	67	4	0	0.03937
Kelly Dam	410	94%	60	4	0	0	0	0	0	0	64	68	4	0	0.03937
Doudy Draw	4820	94%	90	6	0	0	0	0	0	0	96	102	6	0	0.03937
Stump Bump	5810	94%	45	3	0	0	0	0	0	0	48	51	3	1	0.03937
Cottonwood (Apache)	2870	94%	62	2	1	0	0	0	0	0	65	69	4	0	0.03937
NREL/S. Table Mtn.	1030	94%	80	5	0	0	0	0	0	0	85	90	5	0	0.03937
Cherry Cr bl Bayou Glch	2850	94%	65	2	1	0	0	0	0	0	68	72	4	0	0.03937
CC at Stroh Rd	2860	94%	64	4	0	0	0	0	0	0	68	72	4	0	0.03937
Spruce Mt - Douglas	2890	94%	33	0	1	0	0	0	0	0	34	36	2	0	0.03937
Twin Sisters	4080	95%	65	4	0	0	0	0	0	0	69	73	4	0	0.03937
Sand Creek Park	1800	95%	49	3	0	0	0	0	0	0	52	55	3	1	0.03937
Nott Creek	150	95%	67	4	0	0	0	0	0	0	71	75	4	0	0.03937
Rampart Range Rd-Satellite	2970	95%	84	5	0	0	0	0	0	0	89	94	5	0	0.03937
Havana Park	500	95%	51	3	0	0	0	0	0	0	54	57	3	0	0.03937
Red Hill	4290	95%	87	5	0	0	0	0	0	0	92	97	5	0	0.03937
Harvard @ Jackson	610	95%	72	2	1	0	0	0	0	0	75	79	4	0	0.03937
Van Bibber Park	300	95%	73	4	0	0	0	0	0	0	77	81	4	0	0.03937
Wx-Urban Farm	1460	95%	55	3	0	0	0	0	0	0	58	61	3	1	0.03937
Niver Detention	1900	95%	37	2	0	0	0	0	0	0	39	41	2	0	0.03937
Apple Valley	4490	95%	76	4	0	0	0	0	0	0	80	84	4	0	0.03937
Cedar Mountain	5860	95%	38	2	0	0	0	0	0	0	40	42	2	0	0.03937
Mission Viejo Park	760	95%	58	3	0	0	0	0	0	0	61	64	3	0	0.03937
WX-Bingham Lake Park	3030	95%	58	3	0	0	0	0	0	0	61	64	3	0	0.03937
Betasso	4110	95%	120	1	0	0	0	1	0	0	122	128	6	1	0.03937
Iliff Pond	650	95%	59	3	0	0	0	0	0	0	62	65	3	0	0.03937
Wx-Cal-Wood Ranch	4770	96%	64	3	0	0	0	0	0	0	67	70	3	0	0.03937
Trail Creek	5740	96%	44	0	1	0	0	0	0	0	45	47	2	0	0.03937
Walker Ranch	4050	96%	65	3	0	0	0	0	0	0	68	71	3	0	0.03937
Side Creek Park	830	96%	46	2	0	0	0	0	0	0	48	50	2	0	0.03937
East/West Trailhead	3050	96%	69	3	0	0	0	0	0	0	72	75	3	0	0.03937
Lakeshore	4060	96%	69	3	0	0	0	0	0	0	72	75	3	0	0.03937
Louisville Rec Ctr	1100	96%	70	3	0	0	0	0	0	0	73	76	3	0	0.03937
Wx-Diamond Hill	1420	96%	70	3	0	0	0	0	0	0	73	76	3	0	0.03937
Wx-Tomah Rd-DougCnty	2990	96%	94	4	0	0	0	0	0	0	98	102	4	0	0.03937
Wx-Marston Lake North	1520	96%	73	3	0	0	0	0	0	0	76	79	3	0	0.03937
Toll Gate @ 6th	700	96%	49	2	0	0	0	0	0	0	51	53	2	0	0.03937
Filter Plant	4100	96%	99	4	0	0	0	0	0	0	103	107	4	0	0.03937
Martin Gulch	4040	96%	101	4	0	0	0	0	0	0	105	109	4	0	0.03937
Pine Cliff Road	2810	96%	102	4	0	0	0	0	0	0	106	110	4	0	0.03937
West Woods	120	96%	77	3	0	0	0	0	0	0	80	83	3	0	0.03937
Wx-Elbert	1440	96%	26	1	0	0	0	0	0	0	27	28	1	0	0.03937
Lazy Acres	4200	97%	81	3	0	0	0	0	0	0	84	87	3	0	0.03937
Parker/Mississippi	540	97%	56	2	0	0	0	0	0	0	58	60	2	0	0.03937
Cold Sprg Glch conf	2240	97%	87	0	0	1	0	0	0	0	88	91	3	0	0.03937
Willow Creek - DougCnty	2940	97%	57	2	0	0	0	0	0	0	59	61	2	0	0.03937
Sulphur Gulch	2840	97%	61	2	0	0	0	0	0	0	63	65	2	0	0.03937
Van Bibber @ Hwy 93	330	97%	92	3	0	0	0	0	0	0	95	98	3	0	0.03937
Justice Center	4360	97%	101	3	0	0	0	0	0	0	104	107	3	0	0.03937
Hackett Mountain	5880	97%	34	1	0	0	0	0	0	0	35	36	1	0	0.03937
East Cherry Cr-Douglas	2910	97%	35	1	0	0	0	0	0	0	36	37	1	0	0.03937
Wx-Spring Valley Rd-DougCnty	2930	97%	37	1	0	0	0	0	0	0	38	39	1	0	0.03937
Shanahan Ridge	4810	97%	112	3	0	0	0	0	0	0	115	118	3	0	0.03937
Rio Grande	4020	97%	75	2	0	0	0	0	0	0	77	79	2	0	0.03937
West Creek	5730	98%	39	1	0	0	0	0	0	0	40	41	1	0	0.03937
Fire Station #19	530	98%	81	2	0	0	0	0	0	0	83	85	2	0	0.03937
Shop Creek	1710	98%	41	1	0	0	0	0	0	0	42	43	1	4	0.03937
West Cherry Head-Douglas Cnty	2920	98%	41	1	0	0	0	0	0	0	42	43	1	0	0.03937
Golden Age	4230	98%	42	1	0	0	0	0	0	0	43	44	1	0	0.03937
Confluence Pond	720	98%	44	1	0	0	0	0	0	0	45	46	1	0	0.03937

Powers Park	1500	98%	88	2	0	0	0	0	0	90	92	2	0	0.03937
Wx-Blue Mountain	140	98%	48	1	0	0	0	0	0	49	50	1	0	0.03937
Horseshoe Park Drop	710	98%	48	1	0	0	0	0	0	49	50	1	0	0.03937
Wx-Salisbury Park	2730	98%	51	1	0	0	0	0	0	52	53	1	0	0.03937
Wx-West Creek WX	3020	98%	52	1	0	0	0	0	0	53	54	1	0	0.03937
Big Elk Park	4300	98%	54	1	0	0	0	0	0	55	56	1	0	0.03937
Granby Ditch @ 6th	810	98%	55	1	0	0	0	0	0	56	57	1	0	0.03937
LDC at 64th	1310	98%	55	1	0	0	0	0	0	56	57	1	0	0.03937
Tallman Gulch	3080	98%	55	1	0	0	0	0	0	56	57	1	0	0.03937
Red Garden	4030	98%	115	2	0	0	0	0	0	117	119	2	0	0.03937
Wx-Quincy Reservoir	750	98%	59	1	0	0	0	0	0	60	61	1	0	0.03937
Fire Sta 47	3060	98%	61	1	0	0	0	0	0	62	63	1	0	0.03937
Swiss Peaks	4130	98%	63	1	0	0	0	0	0	64	65	1	0	0.03937
Taylor Mountain	4260	98%	63	1	0	0	0	0	0	64	65	1	0	0.03937
Gold Lake	4180	98%	64	1	0	0	0	0	0	65	66	1	0	0.03937
Fling's	4220	99%	65	1	0	0	0	0	0	66	67	1	0	0.03937
Slaughterhouse	4190	99%	67	1	0	0	0	0	0	68	69	1	0	0.03937
Johnny Park	4310	99%	67	1	0	0	0	0	0	68	69	1	0	0.03937
Conifer Hill	4350	99%	72	1	0	0	0	0	0	73	74	1	0	0.03937
Wx-Sugarloaf	4730	99%	75	1	0	0	0	0	0	76	77	1	0	0.03937
Winiger Ridge	4530	99%	76	1	0	0	0	0	0	77	78	1	0	0.03937
Wx-Louisville Lake	4750	99%	78	1	0	0	0	0	0	79	80	1	0	0.03937
A2-Carr Street	100	99%	79	1	0	0	0	0	0	80	81	1	0	0.03937
Rosedale	2250	99%	80	1	0	0	0	0	0	81	82	1	0	0.03937
Bear Peak	4070	99%	82	1	0	0	0	0	0	83	84	1	0	0.03937
Sunshine	4160	99%	83	1	0	0	0	0	0	84	85	1	0	0.03937
SBC @ San Souci	4830	99%	103	1	0	0	0	0	0	104	105	1	0	0.03937
Fire Station #7	440	100%	62	0	0	0	0	0	0	62	62	0	0	0.03937
Temple Pond at DTC	630	100%	81	0	0	0	0	0	0	81	81	0	0	0.03937
No Name @ Quincy	730	100%	50	0	0	0	0	0	0	50	50	0	0	0.03937
Sable Ditch @ 18th	800	100%	64	0	0	0	0	0	0	64	64	0	0	0.03937
Fire Station 12	840	100%	49	0	0	0	0	0	0	49	49	0	0	0.03937
A2-Murphy Creek GC	870	100%	53	0	0	0	0	0	0	53	53	0	0	0.03937
Wx-Aurora Town Hall	920	100%	35	0	0	0	0	0	0	35	35	0	0	0.03937
Piney at Liverpool	950	100%	62	0	0	0	0	0	0	62	62	0	0	0.03937
A2-Maple Grove Resv.	1000	100%	83	0	0	0	0	0	0	83	83	0	0	0.03937
Gunbarrel	1110	100%	72	0	0	0	0	0	0	72	72	0	0	0.03937
Wx-Brighton Ditch	1570	100%	3	0	0	0	0	0	0	3	3	0	0	0.03937
Englewood Dam	1600	100%	61	0	0	0	0	0	0	61	61	0	0	0.03937
Wx-Hiwan G.C.	2210	100%	75	0	0	0	0	0	0	75	75	0	0	0.03937
Brook Forest	2260	100%	85	0	0	0	0	0	0	85	85	0	0	0.03937
Cub Cr below Blue	2270	100%	18	0	0	0	0	0	0	18	18	0	0	0.03937
Kinney Peak	2280	100%	68	0	0	0	0	0	0	68	68	0	0	0.03937
Wx-Castle Rock	2750	100%	64	0	0	0	0	0	0	64	64	0	0	0.03937
DC Public Works	2950	100%	72	0	0	0	0	0	0	72	72	0	0	0.03937
CC @ Russelville Road Precip	3040	100%	38	0	0	0	0	0	0	38	38	0	0	0.03937
A2-Newlin Gulch Precip	3070	100%	67	0	0	0	0	0	0	67	67	0	0	0.03937
A2-Highland Heritage Park	3090	100%	78	0	0	0	0	0	0	78	78	0	0	0.03937
Logan Mill	4140	100%	93	0	0	0	0	0	0	93	93	0	0	0.03937
Gold Hill	4150	100%	71	0	0	0	0	0	0	71	71	0	0	0.03937
Pine Brook	4170	100%	77	0	0	0	0	0	0	77	77	0	0	0.03937
Geer Canyon	4250	100%	128	0	0	0	0	0	0	128	128	0	0	0.03937
Lee Hill Rain 2012	4320	100%	71	0	0	0	0	0	0	71	71	0	0	0.03937
St. Antons	4570	100%	67	0	0	0	0	0	0	67	67	0	0	0.03937
SBC@S Boulder Ditch	4840	100%	45	0	0	0	0	0	0	45	45	0	0	0.03937
Whispering Pines	4880	100%	84	0	0	0	0	0	0	84	84	0	0	0.03937
A2-Blackstone Precip	100100	100%	51	0	0	0	0	0	0	51	51	0	0	0.03937
A2-ETG @ Hampden Precip	100110	100%	46	0	0	0	0	0	0	46	46	0	0	0.03937
A2-Sand Creek at Colfax Precip	100160	100%	56	0	0	0	0	0	0	56	56	0	1	0.03937
A2-Westerly Cr Dam Precip	100240	100%	51	0	0	0	0	0	0	51	51	0	0	0.03937
Wx-Aurora Reservoir	900	100%	34	0	0	0	0	0	0	34	34	0	0	0.03937
		Total Tips	11701	560	59	12	11	2	12	12345	13253	908	15	
WX-EPC at Hwy 105	3010	90%	213	13	3	1	1	0	0	231	257	26	0	0.01
Porphyry Mtn	4850	88%	109	10	2	1	0	0	3	122	139	17	0	0.01
Fairview Peak	4860	97%	210	7	0	0	0	0	0	217	224	7	1	0.01
A2-Magnolia WX-Precip	6601	100%	76	0	0	0	0	0	0	76	76	0	0	0.01

2015 Monthly Peak Hour ALERT Radio Traffic Summary

