

APPENDIX C: DATA FROM BOULDER WARNING SYSTEM SURVEY

	Pop A	Pop B	Total
1. What does the term “100 year flood “ mean to you?			
Flood that has a 1% chance of occurring in any year	88(55%)	63(41%)	151(48%)
Flood that occurs every hundred years	58(36%)	69(45%)	127(40%)
Don’t Know	12(8%)	18(12%)	30(10%)
Other	2(1%)	5(3%)	7(2%)
			(n=315)
2. Is your residence in the 100-year floodplain?			
Yes	124(77%)	101(65%)	225(71%)
No	14(9%)	1(1%)	15(5%)
Don’t Know	22(14%)	53(34%)	77(24%)
Other	0		0
			(n=317)
3. What does a “flash flood watch” mean to you?			
Flash flooding is possible	138(85%)	129(83%)	267(85%)
Flooding occurring or is imminent	18(11%)	17(11%)	35(11%)
Don’t know	7(4%)	9(6%)	16(5%)
Other	0	0	0
			(n=318)
4. What does a “flash flood warning” mean to you?			
Flash flooding is possible	39(24%)	50(32%)	89(28%)
Flooding is occurring or is imminent	120(74%)	101(65%)	221(70%)
Don’t know	3(2%)	3(2%)	6(2%)
Other	0	1(1%)	1(1%)
			(n=317)

	Pop A	Pop B	Total
5. Do you pay attention to environmental factors that may indicate a flash flood?			
Yes	113(70%)	106(68%)	219(69%)
No	37(23%)	37(24%)	74(23%)
Don't know	11(7%)	6(4%)	17(5%)
Other	0	6(4%)	6(2%)
			(n=316)
6. Do you agree with the following?			
“my home is at risk form a flash flood”			
Strongly agree	48(30%)	29(19%)	77(24%)
Agree	64(40%)	89(57%)	153(49%)
Neither	24(15%)	15(10%)	39(12%)
Disagree	21(13%)	19(12%)	40(13%)
Strongly Disagree	3(2%)	4(3%)	7(2%)
“my life is at risk from a flash flood”			
Strongly agree	24(15%)	10(6%)	34(11%)
Agree	50(31%)	54(35%)	104(33%)
Neither	38(24%)	34(22%)	72((23%)
Disagree	39(24%)	52(33%)	91(29%)
Strongly disagree	10(6%)	6(4%)	16(5%)
			(n=316)
7. Which is a more serious flood event?			
100-year flood	80(51%)	68(44%)	148(47%)
20-year flood	28(18%)	34(22%)	62(20%)
Don't know	50(32%)	54(35%)	104(33%)
			(n=314)

	Pop A	Pop B	Total
8.From where have you obtained info about flash floods? (check all that apply)			
Television	95(59%)	88(56%)	183(58%)
Radio	57(35%)	21(14%)	76(24%)
Newspaper	42(26%)	26(17%)	68(22%)
Flyer sent to your home	63(39%)	81(52%)	144(46%)
The Weather Channel	29(18%)	36(23%)	65(21%)
Internet	16(10%)	14(9%)	30(9%)
Other	26(16%)	41(26%)	67(21%)
(Pop B -Family Housing Material 16(10%))			(n=319)
9.Have you ever looked for <u>additional</u> information (other than what has been sent to your home) about flooding?			
Yes	26(16%)	18(12%)	44(14%)
No	134(83%)	138(88%)	272(86%)
Don't know	1(.5%)	0	1(0)
Other	1(.5%)	0	1(0)
			(n=319)
10. Where do you look for local weather conditions? (Check all that apply)			
Newspaper	87(54%)	74(47%)	161(51%)
Television	109(68%)	128(82%)	237(75%)
The Weather Channel	79(49%)	96(62%)	175(56%)
Telephone information line	9(5%)	6(4%)	15(5%)
Internet	77(48%)	99(63%)	176(56%)
Radio	81(51%)	62(40%)	143(45%)
NOAA Radio	7(4%)	4(3%)	11(3%)
Other	19(12%)	3(2%)	22(7%)
(POP A -conditions outside 7 – 4%)			(n=319)

	Pop A	Pop B	Total
11. How often do you look for local weather forecasts?			
Several times per day	14(9%)	4(3%)	18(6%)
Daily	54(34%)	55(35%)	109(35%)
Several times per week	40(25%)	56(36%)	96(30%)
Weekly	11(9%)	2(1%)	13(4%)
Occasionally	34(21%)	34(22%)	68(22%)
Never	7(4%)	3(2%)	10(3%)
Other	7(4%)	2(1%)	9(3%)
			(n=323)
12. How often do you watch the weather channel?			
Several times per day	6(4%)	1(1%)	7(2%)
Daily	10(6%)	14(9%)	24(18%)
Several times per week	17(11%)	36(23%)	53(17%)
Weekly	8(5%)	7(4%)	15(5%)
Occasionally	59(37%)	64(41%)	123(39%)
Never	61(38%)	33(21%)	94(30%)
Other	3(2%)	1(1%)	4(1%)
			(n=320)
13. (Population A only) Have you ever purchased flood insurance?			
Yes	30(18%)		
No	127(78%)		
Don't know	4(2%)		
Other	2(1%)		
	(n=163)		
If yes, do you have flood insurance now?			
Yes	27(17%)		
No	44(27%)		
Don't know	3(2%)		
Other	89(55%)		
	(n=163)		

	Pop A	Pop B	Total
13. (Population B only) To your knowledge, does CU Family/Staff Housing have an emergency plan in place in the event of a flash flood on Boulder Creek?			
Yes		95(61%)	
No		6(4%)	
Don't know		53(34%)	
Other		2(1%)	
If yes, Please tell us what the plan consists of?			
Have some idea		74(47%)	
Don't know		82(53%)	
		(n=156)	
14. (Population A only) Have you made any changes to your home to prepared for a flash flood?			
Yes	8(5%)		
No	149(91%)		
Don't know	4(2%)		
Other	2(1%)		
	(n=163)		
14. (Population B only) Do you have renters' insurance?			
Yes		44(28%)	
No		95(61%)	
Don't know		17(11%)	
		(n=156)	
15. Have you ever experienced a flash flood?			
Yes	35(21%)	11(7%)	46(15%)
No	124(76%)	145(93%)	269(84%)
Don't know	2(1%)	0	2(1%)
Other	2(1%)	0	2(1%)
			(n=319)

	Pop A	Pop B	Total
16. Do you have a family emergency plan for flash floods such as you might have developed for fire safety?			
Yes	27(17%)	18(11%)	45(14%)
No	131(80%)	129(83%)	260(83%)
Don't know	0	4(3%)	4(1%)
Other	4(2%)	4(3%)	2(1%)
			(n=311)
17. What would be the best way to contact you at the following time; (check all that apply)			
2:30a.m.			
Sirens	136(83%)	144(92%)	280(89%)
Call me	94(58%)	117(75%)	211(67%)
Television	19(12%)	21(14%)	40(13%)
Message at bottom of tv screen	12(7%)	16(10%)	28(9%)
Come to my door	75(46%)	72(46%)	147(47%)
E-mail	9(6%)	9(6%)	18(6%)
Cell phone	22(14%)	11(7%)	33(10%)
Pager	4(2%)	3(2%)	7(2%)
Local radio	26(16%)	12(8%)	38(12%)
NOAA Weather radio	6(4%)	3(2%)	9(3%)
Don't want to be warned	1(1%)	1(1%)	2(1%)
Other	5(3%)	0	5(2%)
			(n=319)

	Pop A	Pop B	Total
11:00a.m.			
Sirens	132(81%)	141(90%)	273(87%)
Call me	91(56%)	109(70%)	200(63%)
Television	63(39%)	55(35%)	118(37%)
Message at bottom of tv screen	44(27%)	49(31%)	93(30%)
Come to my door	57(35%)	75(48%)	132(42%)
E-mail	31(19%)	57(37%)	88(28%)
Cell phone	20(12%)	23(15%)	43(14%)
Pager	5(3%)	5(3%)	10(3%)
Local radio	64(39%)	35(22%)	99(31%)
NOAA Weather radio	10(6%)	4(3%)	14(4%)
Don't want to be warned	1(1%)	0	1(0)
Other	6(4%)	0	6(2%)
			(n=319)
5:00p.m.			
Sirens	138(85%)	141(90%)	279(89%)
Call me	96(59%)	112(72%)	208(66%)
Television	72(44%)	75(48%)	147(47%)
Message at bottom of tv screen	53(33%)	68(44%)	121(38%)
Come to my door	63(39%)	79(51%)	142(45%)
E-mail	19(12%)	40(26%)	59(19%)
Cell phone	20(12%)	23(15%)	43(14%)
Pager	8(5%)	4(3%)	12(4%)
Local radio	61(37%)	34(22%)	95(30%)
NOAA Weather radio	9(5%)	4(3%)	13(4%)
Don't want to be warned	1(1%)	0	1(0)
Other	7(4%)	0	7(2%)
			(n=319)

	Pop A	Pop B	Total
18. Realizing it is difficult to accurately predict flash floods, which would you prefer?			
More warnings	125(77%)	121(78%)	246(78%)
Fewer warnings	24(15%)	23(15%)	47(15%)
Other	12(7%)	12(8%)	24(8%)
			(n=317)
19. Do you think 1 or 2 false alarms for flash flooding would reduce your confidence in future warnings?			
Yes	54(33%)	56(36%)	110(35%)
No	86(53%)	72(46%)	158(50%)
Don't know	16(10%)	25(16%)	41(13%)
Other	7(4%)	3(2%)	10(3%)
			(n=319)
20. Have you ever seen the sign "Climb to Safety in Case of Flash Flood"?			
Yes	137(84%)	111(71%)	248(79%)
No	20(12%)	41(26%)	61(19%)
Don't know	2(1%)	2(1%)	4(1%)
Other	4(2%)	2(1%)	6(2%)
			(n=319)
21. Have you heard about the "Big Thompson Flood" in Colorado?			
Yes	105(64%)	54(35%)	159(50%)
No	54(33%)	96(62%)	150(48%)
Don't know	1(1%)	3(2%)	4(1%)
Other	3(2%)	3(2%)	6(2%)
			(n=319)
22. Have you had discussions with your neighbors about the threat of flash flooding?			
Yes	36(22%)	21(13%)	57(18%)
No	124(76%)	134(86%)	258(82%)
Don't know	4(1%)	1(1%)	5(1%)

	Pop A	Pop B	Total
23. You are at the Boulder Public Library and hear the sirens saying that flash flooding is imminent, what do you do? (check all that apply)			
Leave immediately and drive away	37(23%)	38(24%)	75(24%)
Leave immediately and walk away	53(33%)	39(25%)	92(29%)
Go look at the creek	16(10%)	15(10%)	31(10%)
Call someone	11(7%)	22(14%)	33(10%)
Seek information from the library staff	59(36%)	86(55%)	145(46%)
Go to top floor	64(39%)	70(45%)	134(43%)
Do what others are doing	21(13%)	31(20%)	52(17%)
Nothing	0	0	0
Other	9(6%)	3(2%)	12(4%)
			(n=319)
24. You are at work and it is quitting time. It is raining hard and you see the streets are somewhat flooded, what do you do?			
Leave and drive away	37(23%)	40(26%)	77(24%)
Leave and walk away	15(9%)	25(16%)	42(13%)
Wait for conditions to improved	91(56%)	82(53%)	173(55%)
Other	27(17%)	16(10%)	43(14%)
			(n=319)

	Pop A	Pop B	Total
25. (Note: Population A is Boulder High, Population B is CU Family Housing Children's Center) You have a child at Boulder High/CU Family Housing Children's Center and you think a flash flood is going to occur, what do you do? (check all that apply)			
Assume he/she is safe	17(10%)	23(15%)	40(13%)
Assume the school has a plan	67(41%)	62(40%)	129(41%)
Call the school	83(51%)	104(67%)	187(59%)
Go pick up child	25(15%)	78(50%)	103(33%)
Call child on cell phone	25(15%)	15(10%)	39(12%)
Expect child to drive to safety on own	3(2%)	0	3(1%)
Expect child to walk to safety on own	15(9%)	0	15(5%)
Call 911 for advice	17(10%)	17(11%)	34(11%)
Other	22(13%)	7(4%)	29(9%)
			(n=319)
26. If you <u>do</u> have a child at Boulder High, does he/she know what to do?			
Yes	5(3%)	8(5%)	13(4%)
No	11(7%)	27(17%)	38(12%)
Don't know	6(4%)	9(6%)	15(5%)
Does not apply	137(84%)	112(72%)	249(79%)
			(n=315)
27. You are driving and come to an intersection covered in water up to the middle of your tires, what do you do?			
Drive through	34(21%)	31(20%)	65(21%)
Go 5 minutes out of the way	94(58%)	105(67%)	209(66%)
Pull over	28(17%)	18(12%)	46(15%)
Other	12(7%)	6(4%)	18(6%)
			(n=319)

	Pop A	Pop B	Total
28. Would it be helpful to have an automatic road barrier at the intersection of Broadway and Canyon (like at a railroad crossing) to warn about dangerous driving conditions due to flash flooding?			
Yes	90(55%)	94(60%)	184(58%)
No	38(23%)	21(13%)	59(19%)
Don't know	29(18%)	38(24%)	67(21%)
Other	6(4%)	3(2%)	9(3%)
			(n=319)
29. If you received a call from the Boulder City/County Office of Emergency Management that told you flash flooding is imminent and to "get 10 feet higher than you are now," what would you do? (check all that apply)			
Go upstairs in your home	32(20%)		
Go upstairs to a higher apartment	42(26%)	102(65%)	144(46%)
Leave and travel by foot	48(29%)	18(12%)	66(21%)
Leave and travel by car	37(23%)	33(21%)	70(22%)
Call a friend/family member to ask for advice	12(7%)	8(5%)	20(6%)
Call City/County offices to ask for advice	10(6%)	10(6%)	20(6%)
Look at creek before making a decision	5(3%)	8(5%)	13(4%)
Nothing	14(9%)	6(4%)	20(6%)
Don't know	11(7%)	5(3%)	16(5%)
Other	4(2%)	6(4%)	10(3%)
Call resident advisor 31(20%)			(n=319)
30. Would your pet(s) delay evacuation or cause you not to evacuate your home?			
Yes	42(26%)	6(4%)	48(15%)
No	39(24%)	31(20%)	70(22%)
Don't know	6(4%)	5(3%)	11(3%)
N/A	82(50%)	114(73%)	196(62%)

	Pop A	Pop B	Total
31. Prior to this survey, did you know Boulder has a warning siren along Boulder Creek to warn about emergencies including flash flooding?			
Yes	113(69%)	117(75%)	230(73%)
No	52(32%)	39(25%)	91(29%)
			(n=321)
32. Prior to this survey, did you know Boulder has an automated emergency call system that will call your home in the event of a neighborhood emergency such as a flash flood?			
Yes	63(39%)	34(22%)	97(31%)
No	112(69%)	121(77%)	233(72%)
			(n=330)
33. How many telephone lines are at this address? (not including cell phones)			
0	13(8%)	0	13(4%)
1	133(82%)	153(98%)	286(91%)
2	11(7%)	3(2%)	14(4%)
3	6(3%)	0	6(2%)
			(n=319)
34. How many telephone lines have voice mail or an answering machine?			
0	16(10%)	21(13%)	37(12%)
1	136(83%)	135(86%)	271(86%)
2	5(3%)	0	5(1%)
3	4(2%)	0	4(1%)
35. How many people at this address have a cell phone?			
0	78(48%)	96(62%)	174(55%)
1	67(41%)	44(28%)	111(35%)
2	15(9%)	16(10%)	31(10%)
3	7(4%)	0	7(2%)

	Pop A	Pop B	Total
36. Do one or more of these cell phones have the ability to check the weather forecast?			
Yes	11(7%)	11(7%)	22(7%)
No	41(25%)	31(20%)	72(23%)
Don't know	41(25%)	25(16%)	66(21%)
N/A	70(43%)	89(57%)	159(50%)
Other	2(1%)	0	2(1%)
			(n=321)
37. How many people at this address have pagers?			
0	156(96%)	152(97%)	308(98%)
1	7(4%)	4(3%)	11(3%)
2	1(1%)	0	1(0)
3	2(1%)	0	2(1%)
			(n=322)
38. Can one or more of these pagers check the weather forecast?			
Yes	1(1%)	1(1%)	2(1%)
No	8(5%)	21(13%)	29(9%)
Don't know	8(5%)	4(3%)	12(4%)
N/A	146(90%)	130(83%)	276(86%)
Other	2(1%)	0	2(1%)
			(n=321)
39. Is there currently cable or satellite service at your address?			
Cable	101(62%)	149(96%)	250(79%)
Satellite	4(2%)	1(1%)	5(1%)
Neither	57(35%)	5(3%)	62(20%)
Don't know	1(1%)	2(1%)	3(1%)
Other	3(2%)	0	3(1%)
			(n=323)
40. Is there Internet access at your this residence?			
Yes	115(71%)	151(97%)	266(84%)
No	48(29%)	5(3%)	53(17%)

	Pop A	Pop B	Total
41. Do you use the Internet to check for weather information?			
Yes	115(71%)	89(57%)	204(66%)
No	48(29%)	57(37%)	105(34%)
			(n=309)
42. Do you or others at this address use the Internet at other locations such as at work or at school?			
Yes	117(71%)	152(97%)	269(85%)
No	35(21%)	4(3%)	39(12%)
Don't know	9(5%)	0	9(3%)
Other	4(2%)	0	4(1%)
			(n=321)
43. Do you have a radio that has NOAA weather ability?			
Yes	8(5%)	6(4%)	14(4%)
No	71(43%)	66(42%)	137(43%)
Don't know	85(52%)	83(53%)	168(53%)
Other	1(1%)	1(1%)	2(1%)
			(n=321)
If yes, is it plugged in?			
Yes	7(4%)	4(3%)	11(3%)
No	4(2%)	2(1%)	6(2%)
Don't know	7(4%)	0	7(2%)
Other	147(89%)	150(96%)	297(94%)
			(n=321)
44. Is anyone at this address a ham radio operator?			
Yes	1(1%)	0	1(0)
No	153(93%)	150(96%)	303(96%)
Don't know	10(6%)	6(4%)	16(5%)
Other	1(1%)	0	1(0)
			(n=321)

	Pop A	Pop B	Total
45. Does at this residence have a police/fire scanner?			
Yes	6(4%)	0	6(2%)
No	155(94%)	152(97%)	307(97%)
Don't know	2(1%)	4(3%)	6(2%)
			(n=319)
46. How often do you have the radio on when driving?			
Always	32(20%)	33(21%)	65(21%)
Most of the time	51(31%)	50(32%)	101(32%)
Sometimes	43(26%)	39(25%)	82(26%)
Rarely	10(6%)	20(13%)	30(9%)
Never	9(6%)	5(3%)	14(4%)
Other	18(11%)	10(6%)	28(9%)
			(n=320)
47. (Population A only) Do you own or rent your residence?			
Own	47(28%)---		
Rent	118(72%)	---	
	(n=165)		
48. Does everyone at your residence speak English?			
Yes	156(96%)	145(93%)	301(96%)
No	6(4%)	11(7%)	17(5%)
			(n=318)
49. What is your gender?			
Female	84(51%)	85(55%)	169(54%)
Male	79(48%)	71(45%)	150(47%)
			(n=319)
50. What is your age group?			
18-25	58(36%)	40(26%)	98(31%)
26-35	47(29%)	91(58%)	138(44%)
36-45	16(10%)	19(12%)	35(11%)
46-55	21(13%)	4(3%)	25(8%)
56-65	8(5%)	1(1%)	9(3%)
66-75	6(4%)	0	6(2%)
76 +	6(4%)	0	6(2%)
			(n=317)

	Pop A	Pop B	Total
51. Are you a CU student or faculty/staff?			
Student	50(32%)	112(72%)	162(51%)
Faculty/staff	6(4%)	22(14%)	28(9%)
Neither	90(58%)	19(12%)	109(35%)
Other	9(6%)	3(2%)	12(4%)
			(n=311)
52. What is your highest education level?			
Some high school	11(6%)	0	11(3%)
Completed high school	15(9%)	3(2%)	18(6%)
Some college	58(34%)	26(17%)	84(27%)
Bachelor's	40(23%)	19(12%)	59(19%)
Grad studies	46(27%)	108(69%)	154(49%)
			(n=326)
53. How long have you lived at your present address?			
Under 6 months	38(23%)	36(23%)	74(23%)
6-11 months	22(13%)	25(16%)	47(15%)
1-3 years	60(36%)	80(51%)	140(44%)
4-6 years	11(7%)	11(7%)	22(7%)
7+ years	34(21%)	2(1%)	36(11%)
			(n=319)
54. How long will you continue to live at this address?			
Under 6 months	26(15%)	16(10%)	42(13%)
6-11 months	41(24%)	36(23%)	77(24%)
1-3 years	60(35%)	96(62%)	156(49%)
4-6 years	9(5%)	8(5%)	17(5%)
7+ years	37(21%)	0	37(12%)
			(n=329)
55. (Population A only) What type of home do you live in?			
House	51(31%)		
Apartment	97(59%)		
Mobile home	1(1%)		
Condo	6(4%)		
Townhouse	2(1%)		
Duplex	8(5%)		
	(n=165)		

	Pop A	Pop B	Total
55. (Population B Only) What floor do you live on?			
1 st		60(38%)	
2 nd		56(36%)	
3 rd		34(22%)	
4 th		6(4%)	
		(n=156)	
56. (Population B Only) What complex do you live in?			
Athens		34(22%)	
Marine		22(14%)	
Newton Court		51(33%)	
Smiley		42(27%)	
Other		7(4%)	
		(n=156)	
56.How many people live at this address?			
1	75(46%)	14(9%)	89(28%)
2	55(34%)	80(51%)	135(43%)
3	15(9%)	33(21%)	48(15%)
4	12(7%)	22(14%)	34(11%)
5	2(1%)	7(4%)	9(3%)
6+	5(3%)	0	5(2%)
			(n=319)
57.How many people at your address are over 18?			
1	81(49%)	21(13%)	102(32%)
2	62(37%)	135(87%)	197(62%)
3	7(4%)		7(2%)
4	7(4%)		7(2%)
5	3(2%)		3(1%)
6+	6(4%)		6(2%)
			(n=319)

	Pop A	Pop B	Total
58. What is your usual mode of transportation?			
Bike	30(18%)	41(26%)	71(22%)
Walk	70(42%)	88(56%)	158(50%)
Bus	43(26%)	38(24%)	81(26%)
Car	83(50%)	74(47%)	157(50%)
SUV	16(10%)	5(3%)	21(7%)
Truck	8(5%)	3(2%)	11(3%)
Motorcycle	9(5%)	2(1%)	11(3%)
Other	1(1%)	0	1(0)
			(n=319)
59. How often are you around Boulder Creek in the summer?			
Several times per day	23(14%)	47(30%)	70(22%)
Daily	49(30%)	41(26%)	90(29%)
Several times per week	35(21%)	41(26%)	76(24%)
Weekly	19(12%)	8(5%)	27(9%)
Occasionally	28(17%)	18(11%)	46(15%)
Never	5(3%)	1(1%)	6(2%)
Other	5(3%)	0	5(2%)
			(n=320)
60. Is there anyone at this address who would have trouble hearing or comprehending a flood warning?			
Yes	16(10%)	27(17%)	43(14%)
No	148(90%)	128(82%)	276(87%)
Don't know	1(1%)	1(1%)	2(1%)
			(n=321)