APPENDICES

Appendix A - Social Vulnerability Ranking

Table A - 96. ATSDR Social Vulnerability Ranking by County

Top 12 in both indices
Top 12 in CDC SVI
Top 12 in Indiana SVI

	Indiana SV Index, Key Factors					CDC SVI Themes				
County Name	Population 65+	Households Below Poverty	Population 5+ with Limited English	Disabled Persons	Indiana SV RANK	SVI Socio-economic Theme Rank	SVI Housing/ Disability Theme Rank	SVI Minority/ Language Theme Rank	SVI Housing/ Transportation Theme Rank	CDC SVI Overall Rank
Aitkin	29.2%	13.1%	0.5%	18.0%	2		25	71	33	26
Anoka	11.3%	7.2%	4.0%	9.8%	79	74	69	11	54	56
Becker	18.7%	12.3%	1.5%	12.2%	46	38	21	35	38	33
Beltrami	14.0%	16.8%	0.3%	12.0%	49	4	13	45	1	2
Benton	13.1%	15.8%	0.9%	13.1%	47	18	15	61	2	9
Big Stone	25.6%	15.2%	1.1%	16.2%	3	44	38	75	30	50
Blue Earth	12.5%	17.5%	1.8%	9.6%	56	22	87	33	14	38
Brown	19.7%	9.5%	1.7%	10.1%	67	71	75	57	42	67
Carlton	15.9%	12.0%	0.7%	11.6%	66	30	44	47	19	23
Carver	9.6%	4.8%	2.6%	6.8%	87	87	83	32	79	86
Cass	23.2%	14.9%	0.4%	16.0%	9	13	7	49	51	20
Chippewa	19.7%	11.7%	2.8%	13.5%	29	52	39	13	70	49
Chisago	13.3%	6.3%	0.8%	11.7%	81	68	74	68	52	73
Clay	12.4%	13.1%	1.7%	9.8%	73	61	82	31	9	42
Clearwater	19.0%	16.2%	1.5%	16.3%	8	2	4	26	16	3
Cook	23.6%	12.6%	1.2%	11.8%	31	81	79	44	53	75
Cottonwood	22.1%	15.8%	2.3%	14.1%	7	9	14	14	46	10
Crow Wing	20.1%	11.6%	0.4%	14.0%	42	65	10	79	57	61
Dakota	11.6%	7.1%	4.5%	8.7%	80	79	59	8	69	65
Dodge	13.0%	6.5%	1.2%	8.1%	83	84	45	48	82	81
Douglas	21.1%	10.6%	0.4%	12.7%	50	82	71	82	61	82
Faribault	22.5%	13.2%	2.2%	12.7%	17	42	40	38	74	57
Fillmore	20.0%	12.1%	2.6%	12.0%	34	35	46	59	45	43
Freeborn	21.1%	11.4%	2.7%	13.9%	20	20	9	15	34	12
Goodhue	17.9%	10.9%	1.4%	11.0%	61	64	64	43	24	47
Grant	22.9%	9.8%	0.9%	13.7%	37	49	30	72	77	71
Hennepin	12.2%	11.5%	7.5%	9.7%	48	50	84	4	10	32
Houston	19.2%	10.8%	0.4%	10.5%	68	69	76	83	75	84
Hubbard	22.8%	10.6%	0.6%	14.8%	30	28	29	70	64	52
Isanti	13.9%	7.3%	0.3%	13.0%	78	43	33	74	63	63
Itasca	20.4%	12.5%	0.4%	16.0%	21	19	27	67	27	25
Jackson	20.0%	11.3%	1.0%	9.7%	62	73	67	62	86	83
Kanabec	18.1%	13.2%	0.8%	17.3%	16	6	19	76	55	28
Kandiyohi	16.9%	12.1%	4.5%	11.5%	36	34	32	6	18	13
Kittson	23.2%	11.8%	0.5%	14.5%	22	70	34	77	47	68
Koochiching	20.9%	17.3%	1.0%	16.3%	5	10	12	66	37	17
Lac qui Parle	24.5%	8.7%	0.5%	14.7%	33	78	43	85	81	85
Lake	24.5%	11.8%	0.5%	13.2%	26	67	60	73	40	66
Lake of the Woods	21.3%	8.9%	0.1%	12.3%	59	32	73	78	49	62
Le Sueur	15.6%	8.6%	2.2%	10.2%	77	57	68	29	73	69

	Indiana SV Index, Key Factors					CDC SVI Themes				
County Name	Population 65+	Households Below Poverty	Population 5+ with Limited English	Disabled Persons	Indiana SV RANK	SVI Socio-economic Theme Rank	SVI Housing/ Disability Theme Rank	SVI Minority/ Language Theme Rank	SVI Housing/ Transportation Theme Rank	CDC SVI Overall Rank
Lincoln	24.9%	12.0%	0.4%	13.6%	19	55	26	87	85	77
Lyon	14.0%	13.2%	3.9%	10.2%	55	37	62	12	12	22
Mahnomen	16.5%	21.8%	0.7%	13.3%	11	1	2	30	13	1
Marshall	19.6%	8.4%	1.0%	12.2%	65	47	65	52	72	70
Martin	21.5%	11.5%	1.7%	14.0%	25	54	5	64	39	37
McLeod	17.1%	8.3%	2.4%	11.3%	69	63	42	27	67	59
Meeker	17.6%	10.2%	2.1%	11.1%	60	58	50	51	60	60
Mille Lacs	17.4%	12.3%	0.4%	15.5%	40	12	3	56	17	8
Morrison	17.1%	13.3%	0.7%	12.4%	51	15	23	69	29	24
Mower	17.6%	12.6%	5.9%	12.6%	15	8	6	5	31	6
Murray	23.5%	9.4%	1.7%	13.4%	32	46	53	58	84	72
Nicollet	13.4%	10.6%	2.0%	11.0%	74	62	77	25	23	44
Nobles	15.2%	13.9%	16.4%	10.5%	1	3	20	1	36	5
Norman	21.7%	12.5%	1.5%	11.2%	41	33	54	28	26	29
Olmsted	13.6%	8.6%	5.0%	9.6%	71	77	55	7	15	36
Otter Tail	22.0%	11.5%	2.0%	13.6%	24	60	58	46	35	48
Pennington	16.1%	11.6%	1.3%	12.9%	57	56	36	55	28	40
Pine	17.8%	15.3%	1.3%	17.6%	10	5	41	39	22	11
Pipestone	20.1%	14.3%	2.6%	12.8%	18	17	11	19	50	16
Polk	17.0%	13.8%	2.1%	13.0%	35	27	56	20	11	18
Pope	22.7%	10.4%	0.5%	13.7%	39	75	61	86	65	80
Ramsey	12.7%	14.0%	10.0%	11.5%	12	21	48	2	4	7
Red Lake	18.4%	11.0%	0.6%	12.5%	58	39	24	65	43	41
Redwood	20.7%	10.8%	1.9%	13.0%	38	24	18	34	59	34
Renville	19.9%	10.8%	1.4%	11.6%	53	48	63	36	58	55
Rice	13.6%	10.4%	4.2%	9.7%	70	29	80	9	3	14
Rock	19.9%	12.2%	1.8%	11.5%	43	51	37	63	68	64
Roseau	15.2%	10.0%	1.5%	10.5%	75	66	51	50	25	46
Scott	8.9%	5.6%	4.4%	7.2%	85	85	81	10	83	79
Sherburne	9.5%	7.7%	1.5%	8.5%	84	80	52	54	62	74
Sibley	17.3%	9.8%	4.1%	10.8%	54	40	47	17	80	54
St. Louis	16.8%	15.4%	0.9%	14.4%	28	26	49	53	6	21
Stearns	13.0%	12.3%	3.2%	10.6%	63	23	72	16	8	19
Steele	15.5%	10.9%	2.5%	11.0%	64	59	31	24	20	30
Stevens	16.7%	16.3%	2.4%	12.1%	27	31	85	21	41	45
Swift	20.9%	12.4%	1.7%	14.1%	23	36	8	40	48	31
Todd	18.8%	13.6%	3.8%	13.5%	14	11	28	22	44	15
Traverse	25.9%	10.4%	0.9%	18.8%	6	53	35	42	56	51
Wabasha	18.6%	7.8%	0.3%	11.2%	76	83	78	84	78	87
Wadena	21.8%	16.0%	0.8%	17.5%	4	7	1	80	7	4
Waseca	15.8%	7.8%	2.3%	11.9%	72	41	70	23	21	35
Washington	12.2%	5.8%	2.7%	8.6%	82	86	66	18	76	78
Watonwan	19.0%	11.2%	8.9%	10.4%	13	25	22	3	87	39
Wilkin	18.1%	12.0%	0.3%	14.5%	44	72	16	81	32	58
Winona	14.6%	14.6%	2.0%	11.3%	52	16	86	37	5	27
Wright	10.7%	6.7%	1.2%	8.2%	86	76	57	60	66	76
Yellow Medicine	20.0%	11.9%	1.2%	12.2%	45	45	17	41	71	53

Appendix B – State Disaster Assistance Program Summary

Table B-97. Financial Summary-State Public Assistance Program.
Table B-98. State Disaster Declaration Log of Open Declarations.

Table B-97. Financial Summary-State Public Assistance Program.

Disaster	Applicants	Obligated	State Share Paid To Date
2014-SD-001			
Morrison	5	$368,748.50	$276,560.62
2014-SD-002			
Washington	9	$590,936.19	$443,202.16
Dakota	13	$1,931,748.21	$1,448,811.16
2014 Totals		**$2,891,432.90**	**$2,168,573.94**
MN-2015-003			
Martin	5	$76,978.59	$57,733.95
2015-SD-004			
Cass	7	$1,472,123.15	$1,104,092.37
Crow Wing	12	$883,099.43	$662,324.61
Todd	4	$44,308.78	$33,239.08
2015-SD-005			
Pennington	1	$79,397.54	$59,548.16
2015 Totals		**$2,555,907.49**	**$1,916,938.17**
2016-SD-006			
Blue Earth	7	$479,956.67	$359,967.50
Nicollet	4	$83,808.43	$62,856.33
2016-SD-007			
Itasca	9	$69,770.69	$43,290.52
Leech Lake Band of Ojibwe	1	$49,060.74	$36,795.56
2016-SD-008			
Aitkin	22	$530,477.61	$395,008.43
Benton	7	$127,951.18	$95,963.39
Carlton	17	$751,467.67	$563,600.75
Crow Wing	15	$490,936.49	$368,202.39
Kanabec	22	$486,499.90	$364,874.94
Meeker	5	$218,013.38	$163,510.05
Mille Lacs	10	$353,364.54	$265,023.41
Morrison	10	$292,263.74	$219,197.81
Pine	18	$3,944,616.80	$1,099,326.03
Traverse	3	$15,871.24	$11,903.43
2016-SD-009			
Chippewa	1	$61,143.98	$40,339.50
Yellow Medicine	4	$254,572.04	$172,308.51
Upper Sioux Community	1	$55,165.21	$41,025.00

Disaster	Applicants	Obligated	State Share Paid To Date
2016-SD-010			
Aitkin	9	$415,414.98	$311,561.25
Beltrami	3	$199,236.63	$149,427.48
Boise Forte	1	$54,530.39	$40,897.79
Cass	13	$427,921.51	$320,941.16
Clearwater	11	$349,968.16	$262,566.13
Crow Wing	7	$110,823.59	$83,117.71
Fond du Lac Band	1	$115,561.69	$86,671.27
Lake	4	$192,605.40	$144,454.05
Leech Lake Band	1	$23,440.09	$17,580.07
St. Louis	18	$3,526,511.38	$2,644,883.57
2016-SD-011			
Cass	9	$171,500.34	$128,625.27
Crow Wing	12	$200,839.84	$150,629.89
2016-SD-012			
Renville	14	$370,351.73	$277,763.80
Wabasha	13	$260,379.21	$195,284.42
2016-SD-013			
Norman	3	$54,141.40	$40,606.06
2016 Totals		**$14,738,166.65**	**$9,158.203.47**
2017-SD-014			
Freeborn	3	$620,097.91	$378,950.77
2017-SD-015			
Kittson	12	$147,002.61	$110,251.97
2017-SD-016			
Big Stone	2	$23,343.36	$17,507.52
Stevens	3	$31,874.46	$23,905.85
2017-SD-017			
Winona	4	$207,360.67	$35,747.11
2017-SD-018			
Anoka	7	$828,992.81	$151,856.86
2017-SD-019			
Becker	9	$450,942.09	$338,206.60
Clay	4	$105,065.52	$78,799.15
Norman	6	$112,414.06	$84,310.55
2017-SD-020			
Clearwater	4	$93,111.20	$69,833.36
2017-SD-021			
Redwood	4	$427,109.96	$126,993.23
Renville	8	$962,873.64	$179,930.38
2017-SD-022			

Disaster	Applicants	Obligated	State Share Paid To Date
Cass	7	$73,142.48	$54,856.86
Crow Wing	9	$319,897.92	$239,923.58
2017-SD-023			
Redwood	1	$42,000.00	$0.00
Renville	3	$345,118.41	$253,963.81
2017-SD-024			
St. Louis	4	$2,834,840.00	$38,170.75
2017 Totals		**$7,625,187.10**	**$2,183,208.35**
2018-SD-025			
Nobles	4	$54,410.65	$25,660.64
Rock	5	$681,143.64	$506,665.32
St. Louis	1	$675,000.00	$15,957.68
2018-SD-026			
Lac qui Parle	3	$84,351.22	$62,750.29
Marshall	13	$197,720.92	$69,438.34
2018-SD-027			
Ramsey		$1,022,360.00	$0.00
2018-SD-028			
Fillmore		$233,500.00	$0.00
Red Lake		$44,140.00	$21,564.00
2018-SD-029			
Houston		$705,818.00	$297,281.09
Koochiching		$76,272.00	$0.00
2018-SD-030		$128,175.00	$5,856.06
Aitkin			
2018-SD-031		$127,735.00	$0.00
Cook			
2018-SD-032			
Faribault		$40,665.00	$0.00
Goodhue		$382,084.00	$72,332.16
Le Sueur		$500,018.00	$0.00
Martin		$385,777.00	$0.00
Renville		$59,460.00	$0.00
Rice		$2,787,754.00	$23,475.00
Steele		$580,207.00	$2,962.50
Waseca		$117,361.00	$0.00
Prairie Island Indian Community		$42,102.00	$0.00
2018 Totals		**$8,916,054.43**	**$1,103,943.08**

Table B-98. State Disaster Declaration Log of Open Declarations.

Declaration	Disaster Type	Incident Period	Declaration Date	POP Expiration	Status
2016-SD-008 Aitkin Benton Carlton Crow Wing Kanabec Meeker Mille Lacs Morrison Pine Traverse	Severe Thunderstorms and High Winds	July 9-11, 2016	30-Aug-16	February 28,2018	Open
2017-SD-014 Freeborn County	Severe Storms and Tornadoes	6-Mar-17	12-Apr-17	12-Oct-18	Open
2017-SD-015 Kittson	Spring Flooding	March 27-April 13, 2017	4-May-17	4-Nov-18	12/28/2018: Under Closeout Review
2017-SD-017 Winona	Severe Storms and Flooding	28-Jun	24-Jul-17	24-Jan-19	12/28/2018: Under Closeout Review
2017-SD-018 Anoka	Severe Storms and Hail	11-Jun	31-Jul-17	31-Jan-19	Open
2017-SD-019 Becker Clay Norman	Severe Storms and Tornadoes	July 11-12	7-Aug-17	7-Feb-19	Open
2017-SD-021 Redwood Renville	Severe Storms, Tornadoes, and Flooding	16-Aug	27-Sep-17	27-Mar-19	Open
2017-SD-022 Cass Crow Wing	Severe Storms and Tornadoes	September 19-20	25-Oct-17	25-Apr-19	Open
2017-SD-023 Redwood Renville	Severe Storms and Flooding	2-Oct-17	3-Nov-17	3-May-19	Open
2017-SD-024 St. Louis	Severe Winter Storm	27-Oct-17	27-Nov-17	27-May-19	Open
2018-SD-025 Nobles Rock St. Louis	Severe Winter Storms and Flooding	April 13–May 04, 2018	25-May-18	25-Nov-19	Open

Declaration	Disaster Type	Incident Period	Declaration Date	POP Expiration	Status
2018-SD-026 Lac qui Parle Marshall	Flooding	April 21-May 17, 2018	30-May-18	30-Nov-19	Open
2018-SD-027 Ramsey	Slope Failure	28-Apr-18	11-Jul-18	11-Jan-20	Open
2018-SD-028 Fillmore Red Lake	Severe Storm and Flooding	June 9-10, 2018	19-Jul-18	19-Jan-20	Open
2018-SD-029 Houston Koochiching	Torrential Rains and Flooding	August 27-28, 2018	2-Oct-18	2-Apr-20	Open
2018-SD-030 Aitkin	Strong winds and hail	August 31-September 2, 2018	18-Oct-18	18-Apr-20	Open
2018-SD-031 Cook	Severe windstorm	October 3-4, 2018	6-Nov-18	6-May-20	Open
2018-SD-032 Faribault Goodhue Le Sueur Martin Renville Rice Steele Waseca Prairie Island Indian Community	Severe thunderstorms	September 18-20, 2018	3-Dec-18	3-Jun-20	Open

Table C-99. Jurisdictional Ranking of Natural Hazards in HMPs

Jurisdiction	Flooding	Tornadoes	Wind Storms	Wildfire	Hail	Dam Failure	Drought	Earthquakes	Extreme Cold	Extreme Heat	Erosion	Land Subsidence	Lightning	Winter Storms
Aitkin	M	H	M	M			M		L	L				M
Anoka	L	M		M										L
Becker	M	L	L	L	M	L	L			L	L	L	L	M
Beltrami	L			L					L	M				
Benton	M	H	H	L		L			M	M	M		H	H
Big Stone	M	M/H	L/M	L/M	L/M	L	L		M	L/M			L/M	M
Blue Earth	L	M	M	L	M		L	L	M	M	M	L	M	M
Boise Forte	H	H	H	H	H	L	M		M	M	L	L	H	H
Brown	H	H	M	M		L	M		L	M		L		M
Carlton	M			H		L	M		M	M				H
Carver	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Cass	L	M	L/M	L	L/M	L	L	NA	L/M	L				L/M
Chippewa	L	M	M	L	M	L	M		M	M			M	M
Chisago	M	L	M	H	M				L	M			M	L
City of Rochester	M	M	M	L	M		L	L	M	L/M	M	L	M	M
City of St. Paul	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Clay	M	H	H	H			M					L		H
Clearwater	L			L					L	H				
Cook	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Cottonwood	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Crow Wing	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Dakota	M	H		L		L	M		M	M				M
Dodge	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Douglas	M	H	M	L	H	M	M	M	M	M	H		L	M
Faribault	H	H	H	L	H	L	L		M	M	M	M	H	H
Fillmore	M		M	M	M	L			L	L			M	M
Fond Du Lac	M	M	M	H	M	L	M		M	M			M	H
Freeborn	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Goodhue	M	M	L	L	L	H	L	L	L	L	L	L	L	L
Grant	H	H	H	M	H	L	L		M	M	L	L	H	H
Hennepin	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*

Jurisdiction	Flooding	Tornadoes	Wind Storms	Wildfire	Hail	Dam Failure	Drought	Earthquakes	Extreme Cold	Extreme Heat	Erosion	Land Subsidence	Lightning	Winter Storms
Houston	H		M	M			M					M	M	M
Hubbard	M	H	H	H	H	L	L		M	M	L	L	H	M
Isanti	M	H	H	M	H		M		M	M			H	H
Itasca	M	M	M	M		M	M		M	M				H
Jackson	M	H	M	M	M		M		M	M			M	H
Kanabec	M	H	H			M	M	M	M	M				M
Kandiyohi	M	M	H	L	M	L	L	L	M	M				M
Kittson	M	L	L	M	L	M	L			L	L	L	L	M
Koochiching	M		M		M				H	M	M		M	M
Lac Qui Parle	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Lake	M	L	M	H	H	L	M	L	M	M				H
Lake of the Woods	L		L	H	L				L	L				L
Leech Lake Band of Ojibwe	H	H	H	H	L	L	M	L	H	H	L	L	L	H
Le Sueur	M	H	M	L	M		M	M	M	M	M	M	M	M
Lincoln	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Lower Sioux	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Lyon	M		L	L	L	L	M	L	H	L			L	H
Mahnomen	M		H	M	H				L	H			H	L
Marshall	H	L	L	L	L	L		L		L		L	L	M
Martin	L	M	M	L	M		L		L	L			M	M
McLeod	M/H	M	L	L	L	L	L	L	M	L	L		L	L
Meeker	M/H	M	L	L	L	L	L	L	M	L	L		L	L
Mille Lacs	M/H	H	H	L/M	H		L		H	H			H	H
Mille Lacs Band of Ojibwe	L	H	H	H	H	L	L	L	M	M	L	L	H	H
Morrison	H	M	M	H	M	L	M	L	L	L	L		L	M
Mower	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Murray	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Nicollet	L	M	L	L	M	L	M	L	M	M		L	M	M
Nobles	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Norman	H	H	H		H		M					L	H	H
Olmsted	H	M	M	L	M	L	L		M	M	M	M	M	H
Otter Tail	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Pennington	M	M	L	L	M	L	L			L	M	L	L	M
Pine	L	M	M	L						M				M
Pipestone	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Polk	H	H	M	M	L	M	H			L	L	L	L	M
Pope	M/H	M	M	L	M	L	M	L	M	M	M	M	L	M

Jurisdiction	Flooding	Tornadoes	Wind Storms	Wildfire	Hail	Dam Failure	Drought	Earthquakes	Extreme Cold	Extreme Heat	Erosion	Land Subsidence	Lightning	Winter Storms
Prairie Island Indian comm	M/H	M/H	L/M	M	L/M	M/H	L		L	L		M	L/M	L/M
Ramsey	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Red Lake	M	H	M	L	M	L	L			L	L	L	L	
Redwood	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Renville	M	H	M	L	M		M	L	M	M		L	H	H
Rice	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Rock	M	H	H	L	M	L	M	L	H	M			M	H
Roseau	H	M	L	M	M	M	L			L	M	L	L	M
Scott	H	H	H	M	M	M	M	L	M	M	L	L	H	H
Sherburne	M	H		L	M	L	M		M	M			M	H
Sibley	H	H	M	M	M	L	M	L	M	M	M	L	M	M
St. Louis	M	L	H	H	H	L	M	L	M	M			H	H
Stearns	M						M							L
Steele	H	H	H	L	H	L	L		M	M	H	H	H	H
Stevens	M	H		L	H	L	L	L	M	H			H	M
Swift	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Todd	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Traverse	H	M	M	M	M		L	L						M
U of M	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Upper Sioux Com.	M	M	H	L	H	L	L		H	H			H	H
Wabasha	M	H	H	L	H	L	M		M	M	M	L	H	H
Wadena	H	M	H	H	M	L	M	L	M	L			L	M
Waseca	H	H	H		H	M	M	L					H	H
Washington	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Watonwan	M	M	M	M	M		M		H					H
White Earth Res.	H		L	H		L	M	L	M	M	L	L	L	H
Wilkin	H	H	H	M	H	L	M		M	M	L	L	H	H
Winona	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
Wright	H	H	H	M			M	L	M	M		L	H	H
Yellow Medicine	M	M		L		L	L							L

Appendix D – FEMA flood mapping products available or in progress for each county

Table D- 100. FEMA flood mapping products available or in progress for each county.

Jurisdiction *City, Tribal, and University Jurisdictions do not have separate Flood Map statuses	Model available for county level HAZUS modeling	DFIRM Status	RiskMAP Status	Flood Risk Products
Aitkin County	Q3	Work Maps in Progress	Multiple Watershed Production Schedules Risk MAP Watershed Production	
Anoka County	DFIRM	Final Maps Issued	Ongoing Project Coordination Risk MAP Action Discovery Risk MAP Watershed Production	
Becker County	H&H	No Maps	No activity	
Beltrami County	H&H	No Maps	No activity	None
Benton County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Big Stone County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Blue Earth County	DFIRM	Preliminary Maps Issued	Ongoing Project Coordination Levee Pjysical Map Revision	Changes Since Last Firm
Brown County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Carlton County	H&H	Preliminary Maps In Progress	Multiple Watershed Production Schedules Risk MAP Watershed Production	
Carver County	DFIRM	Preliminary Maps Issued	Multiple Watershed Production Schedules Risk MAP Action Discovery Risk MAP Watershed Production	Changes Since Last Firm
Cass County	H&H	No Maps	Ongoing Project Coordination	
Chippewa County	Q3	Preliminary Maps In Progress	Ongoing Project Coordination	
Chisago County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Clay County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Clearwater County	H&H	No Maps	No activity	None
Cook County	H&H	No Maps	Coastal Regulatory Product	
Cottonwood County	DFIRM	Work Maps in Progress	Ongoing Project Coordination	Changes Since Last Firm
Crow Wing County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Dakota County	DFIRM	Final Maps Issued	Ongoing Project Coordination Levee Pjysical Map Revision Provisionally accredited levee Risk MAP Action Discovery Risk MAP Watershed Production	
Dodge County	H&H	Work Maps in Progress	Ongoing Project Coordination Risk MAP Action Discovery	Flood Risk Map Flood Risk Database Flood Risk Report Changes Since Last Firm Flood Depth Grids Flood Risk Assessment Areas of Mitigation Action
Douglas County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Faribault County	H&H	Paper or No Maps	No activity	

Jurisdiction *City, Tribal, and University Jurisdictions do not have separate Flood Map statuses	Model available for county level HAZUS modeling	DFIRM Status	RiskMAP Status	Flood Risk Products
Fillmore County	DFIRM	Preliminary Maps Issued	Preliminary Map County Risk MAP Discovery Risk MAP Action Discovery	
Freeborn County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Goodhue County	DFIRM	Final Maps Issued	Ongoing Project Coordination Risk MAP Discovery Risk MAP Action Discovery	
Grant County	Q3	Paper or No Maps	No activity	
Hennepin County	DFIRM	Final Maps Issued	Ongoing Project Coordination Risk MAP Action Discovery Risk MAP Watershed Production	
Houston County	DFIRM	Preliminary Maps Issued	Preliminary Map County Provisionally accredited levee Risk MAP Discovery Risk MAP Action Discovery	
Hubbard County	H&H	No Maps	No activity	
Isanti County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Itasca County	H&H	Preliminary Maps In Progress	Multiple Watershed Production Schedules Risk MAP Watershed Production	
Jackson County	H&H	Paper or No Maps	No activity	
Kanabec County	H&H	Paper or No Maps	No activity	
Kandiyohi County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Kittson County	DFIRM	Final Maps Issued	Effective County (Risk MAP)	
Koochiching County	H&H	Work Maps in Progress	Ongoing Project Coordination	
Lac qui Parle County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Lake County	H&H	No Maps	Ongoing Project Coordination Coastal Regulatory Product	
Lake of the Woods County	DFIRM	Work Maps in Progress	Ongoing Project Coordination	Changes Since Last Firm
Le Sueur County	DFIRM	Work Maps in Progress	Ongoing Project Coordination Risk MAP Discovery	
Lincoln County	Q3	Work Maps in Progress	Ongoing Project Coordination	Changes Since Last Firm
Lyon County	DFIRM	Final Maps Issued	Effective County (Map Mod) Levee Physical Map Revision	
Mahnomen County	DFIRM	Final Maps Issued	Effective County (Risk MAP)	
Marshall County	DFIRM	Preliminary Maps Issued	Preliminary Map County Levee Physical Map Revision	
Martin County	H&H	Paper or No Maps	No activity	None
McLeod County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Meeker County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Mille Lacs County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Morrison County	DFIRM	Work Maps in Progress	Ongoing Project Coordination	

Jurisdiction *City, Tribal, and University Jurisdictions do not have separate Flood Map statuses	Model available for county level HAZUS modeling	DFIRM Status	RiskMAP Status	Flood Risk Products
Mower County	DFIRM	Final Maps Issued	Effective County (Map Mod) Risk MAP Action Discovery	
Murray County	Q3	Paper or No Maps	No activity	None
Nicollet County	DFIRM	Preliminary Maps Issued	Ongoing Project Coordination Levee Pjysical Map Revision Provisionally accredited levee	Changes Since Last Firm
Nobles County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Norman County	DFIRM	Final Maps Issued	Effective County (Risk MAP) Provisionally accredited levee	
Olmsted County	DFIRM	Final Maps Issued	Ongoing Project Coordination Provisionally accredited levee Risk MAP Discovery Risk MAP Action Discovery	
Otter Tail County	H&H	No Maps	No activity	None
Pennington County	DFIRM	Preliminary Maps In Progress	Ongoing Project Coordination	
Pine County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Pipestone County	DFIRM	Work Maps in Progress	Ongoing Project Coordination	Changes Since Last Firm
Polk County	DFIRM	Preliminary Maps Issued	Ongoing Project Coordination	
Pope County	Q3	Preliminary Maps In Progress	Ongoing Project Coordination	
Ramsey County	DFIRM	Final Maps Issued	Ongoing Project Coordination Levee Pjysical Map Revision Risk MAP Action Discovery Risk MAP Watershed Production	
Red Lake County	DFIRM	Preliminary Maps In Progress	Ongoing Project Coordination	
Redwood County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Renville County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Rice County	DFIRM	Final Maps Issued	Ongoing Project Coordination Risk MAP Discovery	
Rock County	DFIRM	Work Maps in Progress	Ongoing Project Coordination	
Roseau County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Scott County	Q3	Preliminary Maps Issued	Ongoing Project Coordination	
Sherburne County	DFIRM	Final Maps Issued	Ongoing Project Coordination	
Sibley County	Q3	Paper or No Maps	No activity	
St. Louis County	Q3	Work Maps in Progress	Multiple Watershed Production Schedules Coastal Regulatory Product Risk MAP Watershed Production	Flood Risk Map Flood Risk Database Flood Risk Report Changes Since Last Firm Flood Depth Grids Flood Risk Assessment Areas of Mitigation Interest
Stearns County	DFIRM	Final Maps Issued	Effective County (Map Mod)	

Jurisdiction *City, Tribal, and University Jurisdictions do not have separate Flood Map statuses	Model available for county level HAZUS modeling	DFIRM Status	RiskMAP Status	Flood Risk Products
Steele County	DFIRM	Final Maps Issued	Ongoing Project Coordination Risk MAP Discovery	
Stevens County	Q3	Preliminary Maps In Progress	Ongoing Project Coordination	
Swift County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Todd County	DFIRM	Final Maps Issued	Effective County (Map Mod)	
Traverse County	Q3	Paper or No Maps	No activity	
Wabasha County	Q3	Work Maps in Progress	Ongoing Project Coordination Risk MAP Discovery Risk MAP Action Discovery	
Wadena County	Q3	Paper or No Maps	No activity	
Waseca County	H&H	Work Maps In Progress	Ongoing Project Coordination Risk MAP Discovery	None
Washington County	DFIRM	Final Maps Issued	Ongoing Project Coordination Risk MAP Action Discovery Risk MAP Watershed Production	
Watonwan County	DFIRM	Work Maps in Progress	Ongoing Project Coordination	
Wilkin County	DFIRM	Final Maps Issued	Effective County (Risk MAP)	
Winona County	Q3	Preliminary Maps In Progress	Ongoing Project Coordination Risk MAP Discovery Risk MAP Action Discovery	Flood Risk Map Flood Risk Database Flood Risk Report Changes Since Last Firm Flood Depth Grids Flood Risk Assessment Areas of Mitigation Interest Multi-frequency Depth Grids
Wright County	Q3	Preliminary Maps Issued	Preliminary Map County	
Yellow Medicine County	DFIRM	Preliminary Maps Issued	Preliminary Map County Levee Physical Map Revision	

Table E-101. Statewide Flood Risk Assessment Results

County	Hazus Level	Flood-plain	Est Total Bldgs	Est Damaged Bldgs	Est Total Loss	Est Economic Loss	Est Bldg Loss
Aitkin	2018 Level 1	Q3	15,926	356	$3,281,000,000	$108,450,000	$42,320,000
Anoka	2018 Level 1	DFIRM	120,718	2,616	$39,560,000,000	$911,280,000	$352,420,000
Becker	2018 Level 1	H&H	18,640	21	$4,508,000,000	$14,990,000	$4,960,000
Beltrami	2018 Level 1	H&H	19,699	56	$5,110,000,000	$25,400,000	$10,100,000
Benton	2017 Level 2	DFIRM	12,875	213	$1,998,000,000	$20,590,000	$9,950,000
Big Stone	2016 Level 2	DFIRM	3,365	37	$244,000,000	$5,720,000	$2,730,000
Blue Earth	2018 Level 1	DFIRM	22,317	55	$7,474,000,000	$71,780,000	$28,620,000
Brown	2018 Level 1	DFIRM	11,555	21	$3,803,000,000	$77,980,000	$22,470,000
Carlton	2018 Level 1	H&H	15,708	86	$4,594,000,000	$73,650,000	$14,260,000
Carver	2018 Level 2	DFIRM	35,269	342	$9,907,000,000	$278,470,000	$49,440,000
Cass	2018 Level 1	H&H	25,573	140	$5,435,000,000	$43,530,000	$16,600,000
Chippewa	2018 Level 1	Q3	5,847	14	$1,585,000,000	$31,240,000	$8,610,000
Chisago	2018 Level 1	DFIRM	21,715	133	$6,284,000,000	$106,080,000	$32,910,000
Clay	2018 Level 1	DFIRM	20,426	687	$6,285,000,000	$260,400,000	$88,980,000
Clearwater	2018 Level 1	H&H	4,721	15	$1,039,000,000	$38,240,000	$5,070,000
Cook	2018 Level 2	H&H	5,676	1	$797,000,000	$4,240,000	$1,110,000
Cottonwood	2018 Level 2	DFIRM	5,785	99	$603,000,000	$51,740,000	$5,610,000
Crow Wing	2017 Level 2	DFIRM	37,225	455	$6,151,000,000	$106,180,000	$46,820,000
Dakota	2018 Level 1	DFIRM	139,948	528	$59,931,000,000	$316,340,000	$102,240,000
Dodge	2018 Level 1	H&H	8,167	4	$2,585,000,000	$10,550,000	$4,800,000
Douglas	2018 Level 1	DFIRM	19,539	21	$5,616,000,000	$8,670,000	$3,350,000
Faribault	2017 Level 2	H&H	7,651	32	$643,000,000	$7,080,000	$2,430,000
Fillmore	2018 Level 1	DFIRM	9,934	168	$2,732,000,000	$171,420,000	$53,210,000
Freeborn	2017 Level 2	DFIRM	13,934	57	$1,478,000,000	$16,050,000	$4,280,000

County	Hazus Level	Flood-plain	Est Total Bldgs	Est Damaged Bldgs	Est Total Loss	Est Economic Loss	Est Bldg Loss
Goodhue	2018 Level 1	DFIRM	19,795	140	$6,112,000,000	$149,890,000	$39,630,000
Grant	2017 Level 2	Q3	3,668	8	$355,000,000	$2,570,000	$980,000
Hennepin	2018 Level 1	DFIRM	382,315	3,489	$188,726,000,000	$2,733,110,000	$1,003,100,000
Houston	2018 Level 1	DFIRM	8,626	92	$2,456,000,000	$61,480,000	$27,390,000
Hubbard	2017 Level 2	H&H	13,976	80	$1,717,000,000	$14,750,000	$8,900,000
Isanti	2018 Level 1	DFIRM	15,317	215	$4,611,000,000	$169,260,000	$68,230,000
Itasca	2018 Level 1	H&H	27,510	102	$7,003,000,000	$77,070,000	$25,920,000
Jackson	2018 Level 1	H&H	4,934	18	$1,305,000,000	$9,140,000	$3,370,000
Kanabec	2018 Level 1	H&H	8,022	3	$2,073,000,000	$5,490,000	$2,180,000
Kandiyohi	2018 Level 1	DFIRM	19,079	182	$5,660,000,000	$46,100,000	$15,380,000
Kittson	2018 Level 1	DFIRM	2,660	36	$658,000,000	$45,230,000	$9,970,000
Koochiching	2018 Level 1 - 30m	H&H	7,761	132	$1,789,000,000	$104,850,000	$23,420,000
Lac qui Parle	2018 Level 2	DFIRM	3,764	78	$959,000,000	$21,340,000	$8,960,000
Lake	2018 Level 1 - 30m	H&H	7,751	14	$2,237,000,000	$20,930,000	$10,530,000
Lake of the Woods	2018 Level 1	DFIRM	3,812	91	$782,000,000	$22,450,000	$7,770,000
Le Sueur	2018 Level 1	DFIRM	12,319	162	$3,689,000,000	$68,300,000	$24,130,000
Lincoln	2018 Level 2	Q3	3,694	10	$350,000,000	$5,200,000	$1,430,000
Lyon	2018 Level 1	DFIRM	10,327	52	$3,304,000,000	$104,620,000	$20,480,000
Mahnomen	2018 Level 1	DFIRM	2,750	0	$620,000,000	$6,900,000	$1,200,000
Marshall	2018 Level 1	DFIRM	4,739	49	$1,187,000,000	$67,050,000	$12,910,000
Martin	2018 Level 1	H&H	10,039	10	$3,072,000,000	$13,110,000	$2,730,000
McLeod	2018 Level 1	DFIRM	15,639	139	$4,947,000,000	$94,950,000	$27,290,000
Meeker	2018 Level 1	DFIRM	11,089	48	$3,066,000,000	$39,230,000	$15,660,000
Mille Lacs	2018 Level 1	DFIRM	12,594	196	$3,123,000,000	$99,190,000	$26,380,000
Morrison	2018 Level 1	DFIRM	16,193	74	$4,536,000,000	$56,310,000	$19,250,000

County	Hazus Level	Flood-plain	Est Total Bldgs	Est Damaged Bldgs	Est Total Loss	Est Economic Loss	Est Bldg Loss
Mower	2018 Level 1	DFIRM	16,441	165	$4,606,000,000	$164,710,000	$40,450,000
Murray	2018 Level 2	Q3	4,590	21	$463,000,000	$26,910,000	$2,460,000
Nicollet	2018 Level 2	DFIRM	11,230	62	$2,360,000,000	$36,520,000	$7,460,000
Nobles	2018 Level 2	DFIRM	8,826	300	$1,136,000,000	$22,930,000	$6,350,000
Norman	2018 Level 1	DFIRM	3,517	174	$897,000,000	$71,390,000	$12,870,000
Olmsted	2017 Level 2	DFIRM	50,610	540	$12,182,000,000	$212,950,000	$89,110,000
Otter Tail	2018 Level 1	H&H	35,390	187	$8,763,000,000	$41,150,000	$10,270,000
Pennington	2018 Level 1	DFIRM	6,038	14	$1,642,000,000	$25,720,000	$7,910,000
Pine	2018 Level 1	DFIRM	17,199	156	$4,065,000,000	$61,110,000	$27,420,000
Pipestone	2018 Level 2	DFIRM	4,963	50	$600,000,000	$50,480,000	$2,700,000
Polk	2018 Level 1	DFIRM	13,450	375	$3,795,000,000	$235,600,000	$62,890,000
Pope	2018 Level 1	Q3	6,403	10	$1,724,000,000	$10,550,000	$4,710,000
Ramsey	2018 Level 2	DFIRM	153,950	1,542	$40,810,000,000	$907,550,000	$217,050,000
Red Lake	2018 Level 1	DFIRM	1,935	0	$513,000,000	$4,870,000	$1,860,000
Redwood	2018 Level 2	DFIRM	7,857	9	$982,000,000	$114,770,000	$2,770,000
Renville	2018 Level 1	DFIRM	7,921	0	$2,327,000,000	$112,640,000	$2,550,000
Rice	2018 Level 2	DFIRM	20,980	117	$4,454,000,000	$159,530,000	$19,750,000
Rock	2018 Level 1	DFIRM	4,152	11	$1,194,000,000	$15,830,000	$2,970,000
Roseau	2018 Level 1	DFIRM	7,429	106	$1,850,000,000	$66,830,000	$15,690,000
Scott	2015 Level 2	Q3	47,321	438	$11,250,000,000	$139,730,000	$69,470,000
Sherburne	2018 Level 1	DFIRM	31,739	257	$11,707,000,000	$90,840,000	$39,490,000
Sibley	2018 Level 1	Q3	6,852	26	$2,168,000,000	$20,720,000	$9,720,000
St. Louis	2018 Level 1	Q3	95,138	1,318	$29,735,000,000	$1,037,510,000	$365,540,000
Stearns	2018 Level 1	DFIRM	56,329	464	$20,620,000,000	$245,810,000	$83,080,000
Steele	2017 Level 2	DFIRM	13,846	130	$2,199,000,000	$33,740,000	$13,930,000
Stevens	2018 Level 1	Q3	3,946	6	$1,274,000,000	$23,700,000	$6,960,000

County	Hazus Level	Flood-plain	Est Total Bldgs	Est Damaged Bldgs	Est Total Loss	Est Economic Loss	Est Bldg Loss
Swift	2018 Level 1	DFIRM	4,887	45	$1,321,000,000	$32,820,000	$6,910,000
Todd	2018 Level 2	DFIRM	13,379	154	$1,140,000,000	$146,850,000	$7,560,000
Traverse	2018 Level 1	Q3	2,189	58	$556,000,000	$26,300,000	$7,360,000
Wabasha	2017 Level 2	Q3	10,140	107	$1,380,000,000	$34,630,000	$19,490,000
Wadena	2017 Level 2	Q3	6,769	27	$541,000,000	$12,080,000	$3,810,000
Waseca	2018 Level 2	H&H	7,586	55	$1,131,000,000	$17,810,000	$2,010,000
Washington	2018 Level 1	DFIRM	88,164	821	$36,070,000,000	$360,420,000	$128,700,000
Watonwan	2018 Level 1	DFIRM	4,893	24	$1,512,000,000	$19,600,000	$6,370,000
Wilkin	2017 Level 2	DFIRM	2,766	46	$319,000,000	$8,350,000	$3,840,000
Winona	2018 Level 2	Q3	16,921	270	$2,872,000,000	$495,780,000	$50,000,000
Wright	2015 Level 2	Q3	48,230	408	$8,020,000,000	$54,420,000	$28,260,000
Yellow Medicine	2018 Level 1	DFIRM	4,873	26	$1,374,000,000	$21,900,000	$8,280,000

Appendix F - Monetary Damages from Flooding

Table F- 102. Monetary Damages from Flooding

County	Injuries	Fatalities	Property Damage (ADJ 2016)	Crop Damage (ADJ 2016)	Total Damages
Aitkin	$236,700	$812,000	$6,203,640	$829,018	$8,081,358
Anoka	$236,700	$812,000	$24,861,988	$33,863,748	$59,774,436
Becker	$236,700	$812,000	$5,908,737	$10,577,132	$17,534,568
Beltrami	$236,700	$812,000	$18,860,960	$113,607,944	$133,517,604
Benton	$236,700	$18,212,000	$17,038,924	$6,103,094	$41,590,718
Big Stone	$236,700	$812,000	$16,000,242	$35,856,474	$52,905,416
Blue Earth	$236,700	$986,000	$36,310,062	$44,214,042	$81,746,804
Brown	$236,700	$986,000	$21,599,940	$35,138,034	$57,960,674
Carlton	$326,700	$812,000	$50,027,192	$829,018	$51,994,909
Carver	$266,400	$986,000	$34,699,981	$33,964,835	$69,917,216
Cass	$236,700	$812,000	$18,985,889	$113,573,370	$133,607,959
Chippewa	$236,700	$812,000	$23,017,621	$33,840,322	$57,906,643
Chisago	$236,700	$812,000	$11,031,443	$17,039	$12,097,182
Clay	$236,700	$812,000	$58,238,075	$12,124,895	$71,411,670
Clearwater	$236,700	$812,000	$19,902,694	$113,556,331	$134,507,726
Cook	$236,700	$812,000	$7,120,750	$1,032	$8,170,482
Cottonwood	$326,700	$812,000	$15,786,903	$33,942,390	$50,867,993
Crow Wing	$236,700	$812,000	$6,287,067	$830,667	$8,166,433
Dakota	$266,400	$6,612,000	$54,211,631	$33,963,545	$95,053,576
Dodge	$266,700	$812,000	$19,274,442	$34,343,223	$54,696,364
Douglas	$236,700	$812,000	$15,751,579	$1,714,428	$18,514,707
Faribault	$236,700	$986,000	$22,679,575	$38,469,235	$62,371,510
Fillmore	$236,700	$812,000	$84,862,839	$40,263,617	$126,175,156
Freeborn	$506,700	$6,786,000	$25,729,937	$39,116,067	$72,138,704
Goodhue	$326,700	$32,712,000	$31,624,263	$35,993,516	$100,656,479
Grant	$236,700	$812,000	$10,592,416	$17,039	$11,658,155
Hennepin	$356,400	$18,212,000	$32,154,114	$33,863,748	$84,586,262
Houston	$3,116,700	$18,850,000	$92,427,781	$47,469,299	$161,863,780
Hubbard	$236,700	$812,000	$18,779,806	$113,695,439	$133,523,945
Isanti	$236,700	$812,000	$11,995,680	$829,018	$13,873,397
Itasca	$236,700	$812,000	$18,695,583	$113,560,454	$133,304,736
Jackson	$236,700	$812,000	$15,607,800	$34,057,719	$50,714,219
Kanabec	$236,700	$812,000	$11,897,757	$829,018	$13,775,475
Kandiyohi	$236,700	$812,000	$21,138,865	$33,840,322	$56,027,887
Kittson	$236,700	$812,000	$30,515,081	$115,880,222	$147,444,004
Koochiching	$236,700	$812,000	$4,593,693	$1,032	$5,643,425
Lac qui Parle	$236,700	$812,000	$23,069,600	$33,840,322	$57,958,622
Lake	$236,700	$12,412,000	$6,865,970	$0	$19,514,670
Lake of the Woods	$416,700	$812,000	$5,762,013	$0	$6,990,713
Le Sueur	$236,700	$6,786,000	$22,138,948	$33,941,409	$63,103,058
Lincoln	$236,700	$812,000	$6,587,127	$119,445	$7,755,272

County	Injuries	Fatalities	Property Damage (ADJ 2016)	Crop Damage (ADJ 2016)	Total Damages
Lyon	$236,700	$6,612,000	$16,102,987	$33,942,390	$56,894,078
Mahnomen	$236,700	$812,000	$5,238,772	$10,299,859	$16,587,331
Marshall	$236,700	$812,000	$37,598,792	$114,091,968	$152,739,460
Martin	$236,700	$986,000	$22,503,341	$39,569,473	$63,295,514
McLeod	$236,700	$986,000	$21,868,303	$34,128,382	$57,219,385
Meeker	$236,700	$812,000	$11,854,736	$17,039	$12,920,474
Mille Lacs	$236,700	$812,000	$12,310,695	$829,018	$14,188,413
Morrison	$236,700	$812,000	$19,356,760	$1,714,428	$22,119,888
Mower	$236,700	$6,612,000	$22,079,187	$37,110,575	$66,038,461
Murray	$236,700	$812,000	$15,932,209	$33,942,390	$50,923,299
Nicollet	$236,700	$6,786,000	$31,760,229	$34,128,382	$72,911,311
Nobles	$236,700	$812,000	$18,376,253	$33,940,119	$53,365,073
Norman	$236,700	$812,000	$60,838,027	$60,706,506	$122,593,234
Olmsted	$236,700	$29,812,000	$267,198,168	$34,363,261	$331,610,129
Otter Tail	$236,700	$812,000	$6,765,950	$1,214,420	$9,029,071
Pennington	$236,700	$812,000	$19,470,493	$113,612,366	$134,131,558
Pine	$236,700	$812,000	$7,242,528	$829,018	$9,120,246
Pipestone	$236,700	$812,000	$13,010,069	$9,049,582	$23,108,351
Polk	$236,700	$812,000	$924,412,915	$979,905	$926,441,520
Pope	$236,700	$812,000	$21,074,475	$33,840,322	$55,963,497
Ramsey	$356,400	$812,000	$29,758,630	$33,863,748	$64,790,778
Red Lake	$236,700	$812,000	$6,070,930	$168,104	$7,287,734
Redwood	$236,700	$812,000	$22,550,711	$34,057,719	$57,657,131
Renville	$236,700	$12,586,000	$22,039,441	$35,530,677	$70,392,818
Rice	$236,700	$986,000	$25,733,955	$33,941,409	$60,898,064
Rock	$236,700	$812,000	$15,807,686	$9,047,311	$25,903,696
Roseau	$236,700	$812,000	$278,336,066	$16,639	$279,401,405
Scott	$356,400	$6,786,000	$35,175,692	$33,964,835	$76,282,926
Sherburne	$236,700	$812,000	$13,867,873	$21,128	$14,937,701
Sibley	$236,700	$986,000	$24,542,312	$33,941,409	$59,706,421
St. Louis	$326,700	$812,000	$17,977,030	$5,155	$19,120,884
Stearns	$326,700	$812,000	$21,366,810	$21,128	$22,526,638
Steele	$236,700	$986,000	$59,942,957	$47,646,711	$108,812,368
Stevens	$236,700	$812,000	$21,069,820	$33,840,322	$55,958,843
Swift	$236,700	$812,000	$21,300,965	$33,840,322	$56,189,987
Todd	$236,700	$2,745,314	$14,942,088	$1,714,428	$19,638,529
Traverse	$236,700	$812,000	$13,330,777	$1,920,257	$16,299,734
Wabasha	$236,700	$21,750,000	$51,285,231	$36,329,613	$109,601,544
Wadena	$236,700	$812,000	$4,542,055	$124,041	$5,714,796
Waseca	$236,700	$986,000	$21,652,568	$33,941,409	$56,816,677
Washington	$266,400	$812,000	$24,587,119	$33,863,748	$59,529,266
Watonwan	$236,700	$986,000	$24,913,900	$33,941,409	$60,078,009
Wilkin	$236,700	$812,000	$71,149,364	$728,079	$72,926,143
Winona	$236,700	$42,050,000	$79,617,806	$36,459,147	$158,363,653

County	Injuries	Fatalities	Property Damage (ADJ 2016)	Crop Damage (ADJ 2016)	Total Damages
Wright	$236,700	$812,000	$50,376,322	$40,464	$51,465,486
Yellow Medicine	$236,700	$812,000	$22,693,507	$33,940,119	$57,682,326
Grand Total	**$24,851,100**	**$315,075,314**	**$3,528,465,113**	**$2,579,896,231**	**$6,448,287,759**

Table G-103. Repetitive Loss Structures
Table G-104. Severe Repetitive Loss Structures

Table G-103. Repetitive Loss Structures

State Name	Community Name	Comm Nbr	County Name	Total Paid
MINNESOTA	BECKER COUNTY *	270639	BECKER COUNTY	$76,404.70
MINNESOTA	SPRINGFIELD, CITY OF	270038	BROWN COUNTY	$189,688.92
MINNESOTA	MOORHEAD, CITY OF	275244	CLAY COUNTY	$117,209.01
MINNESOTA	MOORHEAD, CITY OF	275244	CLAY COUNTY	$166,614.77
MINNESOTA	MOORHEAD, CITY OF	275244	CLAY COUNTY	$93,812.52
MINNESOTA	LILYDALE, CITY OF	275241	DAKOTA COUNTY	$179,891.72
MINNESOTA	GOODHUE COUNTY *	270140	GOODHUE COUNTY	$28,446.19
MINNESOTA	TONKA BAY, CITY OF	270187	HENNEPIN COUNTY	$87,894.84
MINNESOTA	LA CRESCENT, CITY OF	275237	HOUSTON COUNTY	$52,576.43
MINNESOTA	LA CRESCENT, CITY OF	275237	HOUSTON COUNTY	$209,831.88
MINNESOTA	AUSTIN, CITY OF	275228	MOWER COUNTY	$80,446.04
MINNESOTA	AUSTIN, CITY OF	275228	MOWER COUNTY	$156,870.10
MINNESOTA	AUSTIN, CITY OF	275228	MOWER COUNTY	$108,513.81
MINNESOTA	AUSTIN, CITY OF	275228	MOWER COUNTY	$61,806.21
MINNESOTA	AUSTIN, CITY OF	275228	MOWER COUNTY	$21,217.26
MINNESOTA	AUSTIN, CITY OF	275228	MOWER COUNTY	$75,724.30
MINNESOTA	MOWER COUNTY *	270307	MOWER COUNTY	$148,866.27
MINNESOTA	MOWER COUNTY *	270307	MOWER COUNTY	$45,354.83
MINNESOTA	POLK COUNTY *	270503	POLK COUNTY	$43,032.78
MINNESOTA	SHAKOPEE, CITY OF	270434	SCOTT COUNTY	$17,100.00
MINNESOTA	SHAKOPEE, CITY OF	270434	SCOTT COUNTY	$17,100.00
MINNESOTA	DULUTH, CITY OF	270421	ST. LOUIS COUNTY	$111,948.22
MINNESOTA	OWATONNA, CITY OF	270463	STEELE COUNTY	$244,218.91
MINNESOTA	TRAVERSE COUNTY*	270621	TRAVERSE COUNTY	$10,397.21
MINNESOTA	HAMMOND, CITY OF	270485	WABASHA COUNTY	$39,511.16
MINNESOTA	AFTON, CITY OF	275226	WASHINGTON COUNTY	$105,734.93
MINNESOTA	AFTON, CITY OF	275226	WASHINGTON COUNTY	$86,814.96
MINNESOTA	LAKELAND, CITY OF	275238	WASHINGTON COUNTY	$99,196.53
MINNESOTA	LAKELAND, CITY OF	275238	WASHINGTON COUNTY	$22,056.81
				$2,698,281.31

Table G-104. Severe Repetitive Loss Structures

State Name	Community Name	Comm Nbr	County Name	Total Paid
MINNESOTA	CHIPPEWA COUNTY *	270066	CHIPPEWA COUNTY	$25,053.39
MINNESOTA	MOORHEAD, CITY OF	275244	CLAY COUNTY	$155,855.30
MINNESOTA	CLAY COUNTY *	275235	CLAY COUNTY	$301,896.55
MINNESOTA	CLAY COUNTY *	275235	CLAY COUNTY	$44,631.42
MINNESOTA	BURNSVILLE, CITY OF	270102	DAKOTA COUNTY	$107,883.82
MINNESOTA	LILYDALE, CITY OF	275241	DAKOTA COUNTY	$1,062,099.63
MINNESOTA	ALBERT LEA, CITY OF	270135	FREEBORN COUNTY	$276,952.66
MINNESOTA	PINE ISLAND, CITY OF	270145	GOODHUE COUNTY	$123,932.97
MINNESOTA	GOODHUE COUNTY *	270140	GOODHUE COUNTY	$28,446.19
MINNESOTA	LE SUEUR, CITY OF	270248	LE SUEUR COUNTY	$105,049.28
MINNESOTA	MARSHALL COUNTY*	270638	MARSHALL COUNTY	$76,328.32
MINNESOTA	MARSHALL COUNTY*	270638	MARSHALL COUNTY	$189,556.84
MINNESOTA	WARREN, CITY OF	270274	MARSHALL COUNTY	$38,708.21
MINNESOTA	AUSTIN, CITY OF	275228	MOWER COUNTY	$67,616.11
MINNESOTA	MOWER COUNTY *	270307	MOWER COUNTY	$49,271.88
MINNESOTA	MOWER COUNTY *	270307	MOWER COUNTY	$104,632.89
MINNESOTA	AUSTIN, CITY OF	275228	MOWER COUNTY	$205,491.46
MINNESOTA	AUSTIN, CITY OF	275228	MOWER COUNTY	$306,346.29
MINNESOTA	MOWER COUNTY *	270307	MOWER COUNTY	$183,270.12
MINNESOTA	AUSTIN, CITY OF	275228	MOWER COUNTY	$229,898.19
MINNESOTA	EAST GRAND FORKS, CITY OF	275236	POLK COUNTY	$39,815.00
MINNESOTA	POLK COUNTY *	270503	POLK COUNTY	$21,708.55
MINNESOTA	SHAKOPEE, CITY OF	270434	SCOTT COUNTY	$437,809.40
MINNESOTA	SIBLEY COUNTY *	270620	SIBLEY COUNTY	$456,697.53
MINNESOTA	WABASHA, CITY OF	270490	WABASHA COUNTY	$188,614.27
MINNESOTA	LAKELAND, CITY OF	275238	WASHINGTON COUNTY	$231,464.92
MINNESOTA	LAKELAND, CITY OF	275238	WASHINGTON COUNTY	$94,343.93
				$5,153,375.12

Table H-105. Essential Facilities in 1% Annual Chance Flood Boundary.

	Estimated Total Facilities					Estimated Flooded Facilities				
County	Police	Fire	Schools	Hospitals*	Total	Police	Fire	Schools	Hospitals*	Total
Aitkin	4	11	8	3	26	0	1	0	0	1
Anoka	11	30	97	8	146	0	0	0	0	0
Becker	9	10	16	5	40	0	0	0	0	0
Beltrami	6	9	32	6	53	0	0	0	0	0
Benton	3	3	14	3	23	0	0	0	0	0
Big Stone	2	6	7	4	19	0	0	0	0	0
Blue Earth	9	13	27	6	55	0	0	0	0	0
Brown	6	6	18	7	37	0	0	0	0	0
Carlton	6	13	19	4	42	0	0	0	0	0
Carver	2	13	50	4	69	0	0	0	0	0
Cass	10	14	18	2	44	0	0	1	0	1
Chippewa	3	5	6	4	18	0	0	0	0	0
Chisago	5	11	15	5	36	0	0	0	1	1
Clay	6	10	25	4	45	0	0	0	0	0
Clearwater	3	7	5	2	17	0	0	0	0	0
Cook	4	12	6	1	23	0	0	0	0	0
Cottonwood	4	5	9	5	23	0	0	0	0	0
Crow Wing	12	14	22	5	53	0	0	0	0	0
Dakota	12	28	132	13	185	0	0	0	0	0
Dodge	3	6	10	2	21	0	0	0	0	0
Douglas	5	12	22	6	45	0	0	0	0	0
Faribault	6	11	8	3	28	0	0	0	0	0
Fillmore	6	11	14	6	37	0	0	0	0	0
Freeborn	3	16	13	5	37	0	0	0	0	0
Goodhue	7	7	24	10	48	0	0	0	0	0
Grant	3	6	8	2	19	0	0	0	0	0
Hennepin	49	82	458	73	662	1	0	4	1	6
Houston	6	7	16	4	33	0	0	0	0	0
Hubbard	4	5	9	2	20	0	0	0	0	0
Isanti	4	5	17	2	28	0	0	1	0	1
Itasca	8	19	20	6	53	1	1	0	0	2
Jackson	4	5	9	3	21	0	0	0	0	0
Kanabec	2	2	4	2	10	0	0	0	0	0
Kandiyohi	3	11	15	5	34	0	0	0	0	0
Kittson	3	5	7	2	17	0	0	0	0	0
Koochiching	6	7	11	3	27	0	2	1	1	4
Lac qui Parle	3	7	5	4	19	0	0	0	0	0
Lake	3	4	4	3	14	0	0	0	0	0
Lake of the Woods	3	3	3	2	11	0	0	0	0	0
Le Sueur	7	8	13	2	30	0	0	0	0	0

	Estimated Total Facilities					Estimated Flooded Facilities				
County	Police	Fire	Schools	Hospitals*	Total	Police	Fire	Schools	Hospitals*	Total
Lincoln	5	5	9	3	22	0	0	0	0	0
Lyon	6	11	19	5	41	0	0	0	0	0
Mahnomen	2	3	7	1	13	0	0	0	0	0
Marshall	1	10	11	2	24	0	1	0	0	1
Martin	7	9	17	4	37	0	0	0	0	0
McLeod	7	8	21	4	40	0	0	0	0	0
Meeker	4	6	10	4	24	0	0	0	0	0
Mille Lacs	6	5	15	3	29	0	0	0	0	0
Morrison	6	11	17	4	38	0	0	0	0	0
Mower	6	9	23	5	43	0	0	0	0	0
Murray	3	8	6	3	20	0	0	0	0	0
Nicollet	3	6	21	3	33	0	0	0	0	0
Nobles	3	10	14	4	31	0	0	0	1	1
Norman	4	8	6	4	22	0	1	0	0	1
Olmsted	4	11	63	11	89	0	1	0	1	2
Otter Tail	10	17	28	12	67	0	0	0	0	0
Pennington	3	3	8	4	18	0	0	0	0	0
Pine	2	13	13	3	31	0	0	0	0	0
Pipestone	2	5	12	3	22	1	0	0	0	1
Polk	6	13	23	6	48	0	0	0	0	0
Pope	3	6	6	3	18	0	0	0	0	0
Ramsey	24	37	235	39	335	0	0	1	0	1
Red Lake	1	3	5	0	9	0	0	0	0	0
Redwood	6	13	15	8	42	0	0	0	0	0
Renville	11	10	9	6	36	0	0	0	0	0
Rice	6	5	29	5	45	0	0	0	0	0
Rock	1	7	7	4	19	0	0	0	0	0
Roseau	7	6	8	3	24	0	0	0	0	0
Scott	8	11	46	6	71	0	1	0	1	2
Sherburne	4	9	29	4	46	0	0	0	0	0
Sibley	7	7	15	4	33	0	0	1	0	1
St. Louis	30	97	82	24	233	2	2	0	3	7
Stearns	14	26	75	9	124	0	0	0	0	0
Steele	3	4	16	3	26	0	0	0	0	0
Stevens	4	4	8	2	18	0	0	0	0	0
Swift	3	7	5	3	18	0	0	0	0	0
Todd	5	9	12	4	30	0	0	0	0	0
Traverse	3	4	4	3	14	0	2	0	0	2
Wabasha	5	7	12	2	26	0	2	0	0	2
Wadena	5	4	12	4	25	0	0	0	0	0
Waseca	4	4	11	4	23	0	0	0	0	0
Washington	12	23	87	9	131	0	0	0	0	0
Watonwan	3	8	10	4	25	0	0	0	2	2
Wilkin	2	6	8	2	18	0	1	0	0	1

	Estimated Total Facilities					Estimated Flooded Facilities				
County	Police	Fire	Schools	Hospitals*	Total	Police	Fire	Schools	Hospitals*	Total
Winona	5	15	29	5	54	0	1	1	0	2
Wright	4	17	51	9	81	0	0	0	1	1
Yellow Medicine	6	8	11	3	28	0	1	0	0	1

Appendix I – State-Owned Structures and Values in 1% Annual Chance Flood Boundary

Table I-106. State-owned Structures and Values in 1% Annual Chance Flood Boundary

Agency	Building Name	County	Current Replacement Value
Department of Human Services	220th Street - Scandia	WASHINGTON	$587,865
MN DNR	Lanesboro Hatch Pole Shed Raceway	FILLMORE	$3,154,282
MN DNR	Dalbo WMA HeatColdStorage	ISANTI	$3,076,376
MN DNR	WW WMA Crystal Springs Fish Hatchry	WINONA	$1,482,323
MN DNR	Carlos Avery Game Farm Office	ANOKA	$1,310,535
MN DNR	Waskish Fish Hatchery	BELTRAMI	$1,111,119
MN DNR	F-MC SP Picnic Area Sanitation	FILLMORE	$997,904
MN DNR	Whitewater SP Spors Residence	WINONA	$980,501
MN DNR	Lanesboro Fish Hatchery Office	FILLMORE	$904,248
MN DNR	Big Bog SRA South Contact Station	BELTRAMI	$888,261
MN DNR	Whitewater SP Sanitation	WINONA	$876,308
MN DNR	WWSP Gooseberry Glen CG Sanitation	WINONA	$842,244
MN DNR	Carlos Av Game Farm Research Office	ANOKA	$726,063
MN DNR	Whitewater WMA Intermediate Hatchry	WINONA	$672,891
MN DNR	Park Rapids Fisheries Office	HUBBARD	$655,723
MN DNR	Littlefork Office	KOOCHICHING	$632,223
MN DNR	Carlos Avery Game Farm Residence	ANOKA	$619,346
MN DNR	WWSP Group Camp Dining Hall	WINONA	$615,598
MN DNR	Whitewater WMA Residence	WINONA	$592,293
MN DNR	Lake City Office	WABASHA	$591,461
MN DNR	Lake City Shop	WABASHA	$577,403
MN DNR	McCarthy Beach Side Lk CG San Bldg	ST. LOUIS	$561,474
MN DNR	WWSP Group Camp Sanitation	WINONA	$546,904
MN DNR	Whitewater WMA Raceway Shelter 2	WINONA	$541,765
MN DNR	Pike River Fish Hatchery	ST. LOUIS	$531,164
MN DNR	Fort Snelling SP Contact Station	HENNEPIN	$516,476
MN DNR	Badoura SF Cold Storage Ike's Bldg	HUBBARD	$486,688
MN DNR	Lk Ver-Sdn SP Verm Ridge CG San	ST. LOUIS	$477,812
MN DNR	Fort Snelling SP Shop	HENNEPIN	$468,381
MN DNR	Littlefork Heat/Cold Storage	KOOCHICHING	$449,538
MN DNR	Split Rock Creek SP Bath House	PIPESTONE	$409,193
MN DNR	Carlos Avery Game Farm Cold Storage	ANOKA	$404,419
MN DNR	Carlos Avery Game Farm Garage	ANOKA	$397,299
MN DNR	Lake Vermillion Cook Boathouse	ST. LOUIS	$384,842
MN DNR	Upper Sioux Agency SP Yellw Med San	YELLOW MEDICINE	$368,673
MN DNR	Dalbo WMA Cold Storage	ISANTI	$358,188
MN DNR	WWSP North Picnic Area Interp Unocc	WINONA	$354,509
MN DNR	Big Bog SRA South Unit Office	BELTRAMI	$353,070
MN DNR	Whitewater WMA Raceway Shelter 9	WINONA	$339,765
MN DNR	Minneopa SP Quonset	BLUE EARTH	$336,142
MN DNR	Lanesboro Hatchery Raceway Shel 1	FILLMORE	$335,443
MN DNR	Bemidji Hatchery	BELTRAMI	$334,571
MN DNR	Fort Snelling SP Shop Cold Storage	HENNEPIN	$334,220

Agency	Building Name	County	Current Replacement Value
MN DNR	Grygla Office	MARSHALL	$333,554
MN DNR	Lanesboro Hatchery Raceway Shel 2	FILLMORE	$325,931
MN DNR	Littlefork Shop	KOOCHICHING	$321,485
MN DNR	Lake Ver-Sdn SP Blue Heron Cabin	ST. LOUIS	$319,824
MN DNR	Waskish Garage	BELTRAMI	$315,350
MN DNR	WOB SP Riverway CG Sanitation	WASHINGTON	$303,177
MN DNR	Big Bog SRA South Unit Sanitation	BELTRAMI	$301,728
MN DNR	Whitewater WMA Raceway Shelter 4	WINONA	$298,094
MN DNR	Whitewater WMA Raceway Shelter 6	WINONA	$298,094
MN DNR	Lac Qui Parle SP Lower CG Map Shel	CHIPPEWA	$296,764
MN DNR	Littlefork Cold Storage	KOOCHICHING	$262,009
MN DNR	Red River SRA River Hgts Sanitation	POLK	$255,132
MN DNR	Carlos Avery Game Farm Cold Storage	ANOKA	$247,592
MN DNR	Myre-Big Isl SP Big Isl CG San Bldg	FREEBORN	$246,642
MN DNR	Park Rapids Fisheries Hatchery	HUBBARD	$235,665
MN DNR	Fort Snelling SP Picnic Shelter 2	DAKOTA	$219,163
MN DNR	Carlos Avry Wildlife Science Center	ANOKA	$217,354
MN DNR	Lac Qui Parle SP Low CG Pic Shel 2	CHIPPEWA	$212,368
MN DNR	Lanesboro Hatchery Spring House	FILLMORE	$204,013
MN DNR	Fort Snelling SP Picnic San 3	DAKOTA	$196,038
MN DNR	Fort Snelling SP Picnic San 2	DAKOTA	$191,534
MN DNR	Fort Snelling SP Picnic San 1	DAKOTA	$190,311
MN DNR	Fort Snelling SP Beach Sanitation	HENNEPIN	$186,291
MN DNR	Fort Snelling SP Picnic Shelter 1	DAKOTA	$184,509
MN DNR	Red River SRA River Hgts Pic Shel 2	POLK	$178,505
MN DNR	Red River SRA Sherlock Pk South San	POLK	$177,175
MN DNR	Red River SRA Sherlock Pk North San	POLK	$177,175
MN DNR	Red River SRA Sherlock Pk Bathhouse	POLK	$177,175
MN DNR	Red River SRA River Hgts Pic Shel 2	POLK	$170,192
MN DNR	Fort Snelling SP Beach Bath House	HENNEPIN	$166,673
MN DNR	Namakan Lake Cabin	ITASCA	$161,180
MN DNR	WOB SP Picnic Area Sanitation	WASHINGTON	$157,134
MN DNR	WOB SP Picnic Area Picnic Shelter 2	WASHINGTON	$157,119
MN DNR	WOB SP Beach Area Picnic Shelter 3	WASHINGTON	$157,119
MN DNR	Carlos Avery Game Farm Cold Storage	ANOKA	$151,486
MN DNR	Lac Qui Parle SP Lower CG Sanitatio	CHIPPEWA	$147,878
MN DNR	Carlos Avery Game Farm Garage	ANOKA	$145,622
MN DNR	WOB SP Beach Area Sanitation	WASHINGTON	$136,294
MN DNR	Lac Qui Parle SP Lower CG Bathhouse	CHIPPEWA	$132,831
MN DNR	Old Mill SP Historic Cabin	MARSHALL	$132,266
MN DNR	Duluth Fisheries 2-Stall Garage	ST. LOUIS	$131,726
MN DNR	WOB SP Picnic Area Picnic Shelter 1	WASHINGTON	$130,475
MN DNR	Whitewater WMA Raceway Shelter 12	WINONA	$116,701
MN DNR	WWSP Group Camp Cabin 2	WINONA	$115,427
MN DNR	Gooseberry Falls SP Pump House	LAKE	$115,381
MN DNR	LQParle WMA Watson Picnic Shelter 2	CHIPPEWA	$114,314
MN DNR	WWSP Group Camp Infirmary	WINONA	$113,770
MN DNR	WWSP Group Camp Cabin 7	WINONA	$112,500

Agency	Building Name	County	Current Replacement Value
MN DNR	LaSalle Lake SRA Lone Wolf Cabin	HUBBARD	$109,055
MN DNR	WWSP Group Camp Cabin 4	WINONA	$107,838
MN DNR	WWSP Group Camp Cabin 3	WINONA	$104,188
MN DNR	WWSP Group Camp Cabin 1	WINONA	$103,051
MN DNR	Fort Snelling SP Beach Concession	HENNEPIN	$98,636
MN DNR	Carlos Av Game Farm Brooder House	ANOKA	$95,706
MN DNR	Afton SP Picnic Shelter 1	WASHINGTON	$94,251
MN DNR	Whitewater SP Spors Garage	WINONA	$90,695
MN DNR	Floodwood River Garage	CROW WING	$89,340
MN DNR	LQParle SP Horse Camp Picnic Shel 1	CHIPPEWA	$87,168
MN DNR	Lake Ver-Sdn SP Arms N Low Pic Shel	ST. LOUIS	$86,384
MN DNR	McCarthy Bch Side Lk CG Vault Concr	ST. LOUIS	$85,782
MN DNR	Glendalough SP Walk-in CG Cabin 3	OTTER TAIL	$81,526
MN DNR	Red River SRA River Hgts Pic Shel 2	POLK	$80,922
MN DNR	La Crescent Boat House	HOUSTON	$80,434
MN DNR	Warroad Boathouse	ROSEAU	$79,896
MN DNR	Jay Cooke SP CG Gabbro Cabin	CARLTON	$76,858
MN DNR	Carlos Avery Game Farm Spring House	ANOKA	$76,425
MN DNR	Old Mill SP Historic Flour Mill	MARSHALL	$74,752
MN DNR	Lake Minnetonka Boat House	HENNEPIN	$72,799
MN DNR	Big Bog SRA South Picnic Shelter 2	BELTRAMI	$71,288
MN DNR	Big Bog SRA South Camper Cabin 2	BELTRAMI	$70,885
MN DNR	Big Bog SRA South Camper Cabin 5	BELTRAMI	$70,885
MN DNR	Lanesboro Hatchery Generator Shed	FILLMORE	$69,758
MN DNR	Beaver Creek Valley SP Cabin	HOUSTON	$68,379
MN DNR	Whitewater WMA Spring House	WINONA	$66,949
MN DNR	Otter Tail Lk Pleasure Park Storage	OTTER TAIL	$65,874
MN DNR	Lanesboro Hatchery Coverall Shelter	FILLMORE	$63,748
MN DNR	Wabasha Boat House	WABASHA	$63,621
MN DNR	Woodland WMA Montrose Shed	WRIGHT	$61,659
MN DNR	Big Bog SRA South Camper Cabin 1	BELTRAMI	$60,988
MN DNR	Big Bog SRA South Camper Cabin 4	BELTRAMI	$57,390
MN DNR	Pike River Hatchery Cold Storage	ST. LOUIS	$54,400
MN DNR	Carley SP Picnic Area Shelter 1	WINONA	$52,271
MN DNR	Upper Sioux Agency SP Contact Sta	YELLOW MEDICINE	$49,480
MN DNR	WWSP Cedar Hill CG Cabin	WINONA	$49,057
MN DNR	Winona Boat House	WINONA	$45,303
MN DNR	Lac Qui Parle WMA Watson Sanitation	CHIPPEWA	$44,680
MN DNR	Littlefork Oil House	KOOCHICHING	$43,983
MN DNR	RJDorer SF Kruger Picnic Shelter 1	WABASHA	$43,570
MN DNR	Red Wing Boat House	GOODHUE	$43,440
MN DNR	Big Bog SRA South Unit Pump House	BELTRAMI	$40,507
MN DNR	Wannaska Garage	ROSEAU	$38,455
MN DNR	RR ST Petersn/Lanesb Riv Acc Vault	FILLMORE	$34,771
MN DNR	RR ST Peterson River Access Vault	FILLMORE	$34,771
MN DNR	RR ST Whalan Trail Men's Vault	FILLMORE	$34,771
MN DNR	RR ST Whalan Trail Women's Vault	FILLMORE	$34,771
MN DNR	RR ST Brightdale Mgmt Unit Vault	FILLMORE	$34,771

Agency	Building Name	County	Current Replacement Value
MN DNR	Hastings Boat House	WASHINGTON	$31,976
MN DNR	Lake Ver-Sdn SP Blue Heron Shed	ST. LOUIS	$30,453
MN DNR	RJDorer SF Kruger Picnic Shelter 1	WABASHA	$30,409
MN DNR	Upper Sioux Agency SP Riversd Vault	YELLOW MEDICINE	$29,507
MN DNR	Lanesboro Hatch Gazebo Spring House	FILLMORE	$28,859
MN DNR	Wild River Sunrise Vault Concrete	CHISAGO	$27,945
MN DNR	Crane Lake Handberg Vault Concrete	ST. LOUIS	$27,165
MN DNR	RJDorer SF Kruger Picnic Shelter 1	WABASHA	$26,813
MN DNR	Big Bog SRA South Fish Cleaning Hse	BELTRAMI	$26,409
MN DNR	Waskish Cold Storage	BELTRAMI	$24,168
MN DNR	Upper Sioux Agency SP Wood Shed	YELLOW MEDICINE	$23,023
MN DNR	Whitewater WMA Cold Storage	WINONA	$22,986
MN DNR	LQParle WMA Watson Picnic Shelter 1	CHIPPEWA	$22,553
MN DNR	Upper Sioux Agency SP Vault Toilet	YELLOW MEDICINE	$20,936
MN DNR	RJDorer Zumbro Btm M Vault Toilet	WABASHA	$20,792
MN DNR	RJDorer Zumbro Btm F Vault Toilet	WABASHA	$20,792
MN DNR	RJDorer Zumbro Btm U Vault Toilet	WABASHA	$20,792
MN DNR	RJDorer SF Kruger Vault Toilet	WABASHA	$20,412
MN DNR	RJDorer SF Kruger Vault Toilet	WABASHA	$20,412
MN DNR	Grand Portage SP Recycle Center	COOK	$20,313
MN DNR	Beaver Creek Valley SP Vault Toilet	HOUSTON	$19,960
MN DNR	CWSF Greer Lk CG Fish Cleaning Hse	CROW WING	$19,921
MN DNR	Sakatah Lake SP Picnic Area Vault	LE SUEUR	$19,437
MN DNR	WWSP Goosebery Glen CG Vault Toilet	WINONA	$19,423
MN DNR	Carley SP Picnic Area Vault Toilet	WINONA	$19,255
MN DNR	RR ST South Branch Adirondack	FILLMORE	$18,300
MN DNR	Lac Qui Parle SP Lower CG Pumphouse	CHIPPEWA	$17,779
MN DNR	Lake Shetek SP Pump House	MURRAY	$17,316
MN DNR	Garden Island SRA Lodging House	LAKE OF THE WOOD	$16,517
MN DNR	Finland Oil House	LAKE	$16,411
MN DNR	MN Valley SRA CG Site11 Wmn L Vault	SCOTT	$16,334
MN DNR	MN Valley SRA CG Site11 Men R Vault	SCOTT	$16,334
MN DNR	MN Valley SRA CG Site24 Wmn R Vault	SCOTT	$16,334
MN DNR	Lake Bronson SP Vault Toilet	KITTSON	$16,050
MN DNR	LQParle SP Horse Camp Vault Toilet	CHIPPEWA	$15,759
MN DNR	Big Bog SRA South Campground Vault	BELTRAMI	$15,594
MN DNR	Big Bog SRA South New Lakesde Vault	BELTRAMI	$15,594
MN DNR	Lake Shetek SP Vault Toilet	MURRAY	$15,529
MN DNR	Buffalo River SP Group Camp Vault	CLAY	$15,352
MN DNR	Itasca SP ADA Vault Toilet	CLEARWATER	$15,352
MN DNR	St Croix SP Head Rapids Canoe Vault	PINE	$15,240
MN DNR	Cloquet SF Indian Lk CG Vault Toil	LAKE	$15,220
MN DNR	Red River SRA Sherlock Park Vault	POLK	$15,150
MN DNR	Red River SRA Sherlock Park Vault	POLK	$15,150
MN DNR	Split Rock Creek SP Picnic Vault	PIPESTONE	$15,104
MN DNR	Whitewater SP Vault Toilet	WINONA	$14,697
MN DNR	WOB SP Riverway CG Vault Toilet	WASHINGTON	$14,529
MN DNR	WOB SP Riverway CG S13 Vault Toilet	WASHINGTON	$14,529

Agency	Building Name	County	Current Replacement Value
MN DNR	MN Valley SRA CG Site24 Men L Vault	SCOTT	$14,158
MN DNR	Whitewater SP Vault Toilet	WINONA	$13,951
MN DNR	MN Valley SRA Grp CG Picnic Vault	SCOTT	$13,927
MN DNR	St Croix SP Big Eddy Canoe Vault	PINE	$13,861
MN DNR	Pike River Hatchery Ice House	ST. LOUIS	$13,578
MN DNR	Buffalo River SP Pioneer Camp Vault	CLAY	$13,185
MN DNR	Lanesboro Hatchery Cold Storage	FILLMORE	$12,922
MN DNR	Finland SF Finland CG Vault Toilet	LAKE	$12,684
MN DNR	Cross Lake Vault Toilet	PINE	$12,062
MN DNR	Duluth Fisheries Cold Storage	ST. LOUIS	$12,047
MN DNR	Wild River SP Vault Toilet	CHISAGO	$11,667
MN DNR	Frontenac SP Sand Pt Trl Adirondack	WABASHA	$11,664
MN DNR	GWash SF Bear Lk CG S2 Vault Toilet	ST. LOUIS	$11,587
MN DNR	WOB Riverside Group CG Vault Toilet	WASHINGTON	$11,499
MN DNR	WOB Riverside Group CG Vault Toilet	WASHINGTON	$11,499
MN DNR	Thief Lake WMA Office Picnic Shel 1	MARSHALL	$11,062
MN DNR	F-MC SP Main CG Vault Toilet	FILLMORE	$11,061
MN DNR	Finland SF Eckbeck CG Men's Vault	LAKE	$10,928
MN DNR	Finland SF Eckbeck CG Women's Vault	LAKE	$10,928
MN DNR	Finland SF Eckbeck CG Men's Vault	LAKE	$10,928
MN DNR	WWSP South Picnic Area Vault Toilet	WINONA	$10,856
MN DNR	WWSP South Picnic Area Vault Toilet	WINONA	$10,856
MN DNR	Lake Louise SP Horse CG Vault Toil	MOWER	$10,788
MN DNR	Duluth Fisheries Wood Shed	ST. LOUIS	$10,360
MN DNR	Big Fork R Johnson's Lnd Vault Toil	KOOCHICHING	$10,199
MN DNR	Big Fork R Sturgeon R Vault Toilet	KOOCHICHING	$10,199
MN DNR	Big Fork R Benn Lynn Vault Toilet	KOOCHICHING	$10,199
MN DNR	Crane Lake Handberg Sanitation	ST. LOUIS	$10,089
MN DNR	Pike River Hatchery Vault Toilet	ST. LOUIS	$9,994
MN DNR	Lake Bronson Lakeside CG Vault Toil	KITTSON	$9,872
MN DNR	RR ST North of Peterson Adirondack	FREEBORN	$9,732
MN DNR	Big Bog SRA South Old Lakesde Vault	BELTRAMI	$9,657
MN DNR	Wild River SP Concession	CHISAGO	$9,623
MN DNR	WOB SP Picnic Area Vault Toilet	WASHINGTON	$9,504
MN DNR	WOB SP Picnic Area Vault Toilet	WASHINGTON	$9,504
MN DNR	St Croix SP Sand Crk Canoe Vault	PINE	$8,266
MN DNR	MN Valley SRA Grp CG Picnic Vault	SCOTT	$8,231
MN DNR	Lac Qui Parle SP Lower CG Vault	CHIPPEWA	$8,116
MN DNR	Lac Qui Parle SP Lower CG Vault	CHIPPEWA	$8,116
MN DNR	Lac Qui Parle SP Vault Toilet	CHIPPEWA	$7,970
MN DNR	Spicer Pump House	KANDIYOHI	$7,626
MN DNR	Itasca SP HW Mens Vault Near Picnic	CLEARWATER	$7,624
MN DNR	Itasca SP HW Wmn Vault Near Picnic	CLEARWATER	$7,624
MN DNR	Wild River SP Adirondack	CHISAGO	$6,315
MN DNR	Fort Snelling SP Cold Storage Barn	HENNEPIN	$5,017
MN DNR	Namakan Lake Cold Storage	ST. LOUIS	$4,713
MN DNR	Big Bog SRA South Unit Pump House	BELTRAMI	$4,348
MN DNR	Big Bog SRA South Changing House	BELTRAMI	$3,895

Agency	Building Name	County	Current Replacement Value
MN DNR	Lake Vermillion Peterson Vault	ST. LOUIS	$3,272
MN DNR	Namakan Lake Oil House	ST. LOUIS	$1,825
MN DNR	Flandrau SP Rustic Double Vault	BROWN	$0
MN DOT	OAKDALE - SALT/SAND STORAGE	WASHINGTON	$1,592,024
MN DOT	LITTLEFORK - TRUCK STATION	KOOCHICHING	$1,349,593
MN DOT	BENSON - TRUCK STATION	SWIFT	$1,224,644
MN DOT	LITTLEFORK - SALT/SAND STORAGE	KOOCHICHING	$324,990
MN DOT	LAKE CITY - EQUIP STORAGE	GOODHUE	$258,995
MN DOT	BENSON - SALT/SAND STORAGE	SWIFT	$200,345
MN DOT	LITTLEFORK - MISC STORAGE	KOOCHICHING	$197,821
MN DOT	BENSON - POLE STORAGE BLDG	SWIFT	$150,901
MN DOT	KNIFE RIVER - REST AREA	ST. LOUIS	$109,339
MN DOT	CROSS RIVER - REST AREA	COOK	$102,390
MN DOT	WORTHINGTON WS - WS MISC STORAGE	NOBLES	$98,942
MN DOT	HAWLEY - EMERGENCY GENERATOR	CLAY	$46,612
MN DOT	HAWLEY - LIFT STATION	CLAY	$44,066
MN DOT	ST CLOUD - MISC STORAGE	STEARNS	$27,280
MN DOT	BRECKENRIDGE - BRINE BUILDING	WILKIN	$27,231
MN DOT	HENNING - BRINE BUILDING	OTTER TAIL	$27,164
Historical Society	James J. Hill House	RAMSEY	$21,539,309
Iron Range Resource	IRRRB Delta Bldg.	ST. LOUIS	$0
Iron Range Resource	IRRRB Larex Bldg.	ITASCA	$0
Military Affairs	AASF And TACC	RAMSEY	$23,014,302
Military Affairs	WWTP- Control Building	MORRISON	$0
Military Affairs	Haz Mat Stg Bldg	RAMSEY	$0

Appendix J – Wildfire Ten-year Normalized Costs by County

Table J-107. Wildfire Ten-year Normalized Costs by County.

County	Avg. Fires/ Year	Avg. Acres/ Fire	Avg. Acres/ Year	Avg. Cost/ Acre	2007-2017 Total Cost	1996-2006 Total Cost	Normalized Cost
Becker	38	32	1208	$525	$6,341,990	$108,320	$3,225,155
Aitkin	36	19	678	$779	$5,278,417	$422,884	$2,850,651
Crow Wing	48	2	114	$731	$831,772	$1,942,638	$1,387,205
Sherburne	32	1	37	$2,178	$802,193	$1,816,862	$1,309,528
St. Louis	129	3	417	$368	$1,533,692	$646,321	$1,090,007
Marshall	30	111	3344	$38	$1,255,550	$225,970	$740,760
Pine	64	4	236	$233	$550,465	$804,028	$677,247
Anoka	22	19	428	$49	$209,100	$1,134,742	$671,921
Roseau	34	210	7114	5	$339,550	$779,940	$559,745
Itasca	45	3	130	$78	$101,079	$714,259	$407,669
Cass	48	5	255	$37	$93,560	$599,149	$346,355
Isanti	24	3	75	$375	$283,260	$357,944	$320,602
Beltrami	45	86	3897	$7	$254,998	$260,098	$257,548
Lake	11	5	49	$644	$318,250	$168,540	$243,395
Kittson	35	151	5360	$4	$205,250	$241,605	$223,428
Carlton	34	2	52	$306	$158,560	$277,137	$217,849
Morrison	45	10	464	$19	$87,300	$346,385	$216,843
Hubbard	21	6	122	$176	$214,106	$217,424	$215,765
Wadena	18	14	248	$94	$233,397	$110,465	$171,931
Hennepin	1	32	36	$154	$55,100	$276,200	$165,650
Carver	0	69	14	0	0	$325,000	$162,500
Kanabec	27	5	127	$29	$36,107	$225,694	$130,901
Koochiching	18	4	77	$62	$47,411	$206,831	$127,121
Blue Earth	1	13	7	$3,462	$225,000	$1,500	$113,250
Otter Tail	12	13	152	$81	$123,920	$93,694	$108,807
Benton	21	4	91	$138	$125,140	$71,460	$98,300
Todd	9	32	297	9	$28,150	$167,715	$97,933
Mahnomen	33	23	750	$22	$166,400	$5,470	$85,935
Chisago	11	4	44	$20	$8,800	$158,066	$83,433
Cook	2	0	1	$45	$250	$154,100	$77,175
Pennington	6	91	521	$21	$111,250	$29,750	$70,500
Lake of the Woods	24	14	329	$12	$38,149	$86,115	$62,132
Mille Lacs	19	11	202	$16	$32,956	$65,900	$49,428
Polk	5	135	690	$12	$85,100	$11,500	$48,300
Houston	5	6	32	$2	$500	$86,848	$43,674
Clearwater	21	9	183	$28	$51,440	$32,784	$42,112
Douglas	4	8	30	$17	$5,150	$75,100	$40,125
Brown	1	11	12	$541	$67,450	$200	$33,825
Fillmore	2	4	6	$3	$200	$58,950	$29,575

County	Avg. Fires/ Year	Avg. Acres/ Fire	Avg. Acres/ Year	Avg. Cost/ Acre	2007-2017 Total Cost	1996-2006 Total Cost	Normalized Cost
Wabasha	2	2	4	$171	$7,500	$46,750	$27,125
Goodhue	2	4	9	$449	$40,100	0	$20,050
Kandiyohi	0	16	6	0	0	$31,850	$15,925
Pope	2	25	58	$35	$20,700	$6,540	$13,620
Winona	5	3	15	$1	$200	$20,475	$10,338
Dakota	0	55	22	0	0	$20,000	$10,000
Grant	1	76	53	$30	$16,000	$3,200	$9,600
Ramsey	0	12	5	$312	$15,250	$500	$7,875
Big Stone	0	28	9	$48	$4,100	$10,000	$7,050
Martin	0	33	10	$133	$13,300	0	$6,650
Wright	2	17	27	$34	$9,150	$1,600	$5,375
Lyon	1	45	23	$44	$10,000	0	$5,000
Washington	4	3	11	$4	$500	$8,100	$4,300
Clay	1	207	249	0	60	$5,000	$2,530
Nicollet	1	8	6	$88	$5,000	0	$2,500
Meeker	0	115	35	$12	$4,000	$665	$2,333
Mower	0	0	0	0	0	$4,000	$2,000
Yellow Medicine	0	13	5	$75	$4,000	0	$2,000
Freeborn	0	2	0	$1,042	$2,500	0	$1,250
Stearns	1	78	85	1	$500	$2,000	$1,250
Lac Qui Parle	1	36	18	0	0	$2,400	$1,200
Stevens	0	0	0	0	0	$2,000	$1,000
Chippewa	0	23	5	0	0	$1,200	$600
Le Sueur	0	400	40	$3	$1,000	0	$500
Olmsted	1	2	1	$41	$500	0	$250
Scott	0	122	24	0	0	$500	$250
Murray	0	123	12	$2	$200	0	$100
Cottonwood	0	0	0	0	0	0	0
Dodge	0	0	0	0	0	0	0
Faribault	0	0	0	0	0	0	0
Jackson	0	0	0	0	0	0	0
Lincoln	0	0	0	0	0	0	0
McLeod	0	8	3	0	0	0	0
Nobles	0	0	0	0	0	0	0
Norman	1	647	582	0	0	0	0
Pipestone	0	7	1	0	0	0	0
Red Lake	0	20	2	0	0	0	0
Redwood	0	0	0	0	0	0	0
Renville	0	1	0	0	0	0	0
Rice	0	123	25	0	0	0	0
Rock	0	18	4	0	0	0	0
Sibley	0	21	6	0	0	0	0
Steele	0	27	3	0	0	0	0

County	Avg. Fires/ Year	Avg. Acres/ Fire	Avg. Acres/ Year	Avg. Cost/ Acre	2007-2017 Total Cost	1996-2006 Total Cost	Normalized Cost
Swift	0	19	4	0	0	0	0
Traverse	0	0	0	0	0	0	0
Waseca	0	30	6	0	0	0	0
Watonwan	0	0	0	0	0	0	0
Wilkin	0	333	67	0	0	0	0

Table K-108. Windstorm Vulnerability Ranking

County	Building Exposure in Millions	Avg Annual Count	Expected Annual Count	Vulnerability Rank
Hennepin	$171,961	4.10	1.87	1
Saint Louis	$28,176	3.02	2.40	2
Dakota	$53,322	1.92	1.67	3
Stearns	$18,983	2.02	2.16	4
Wright	$15,132	2.29	1.96	5
Anoka	$39,560	1.71	1.26	6
Otter Tail	$8,543	1.98	1.97	7
Washington	$31,565	1.71	1.14	8
Goodhue	$6,112	1.50	1.88	9
Ramsey	$67,354	1.48	0.49	10
Olmsted	$18,572	2.81	1.13	11
Scott	$16,486	1.74	1.12	12
Rice	$7,985	0.95	1.35	13
Carver	$12,432	1.92	1.14	14
Cass	$5,334	1.21	1.46	15
Blue Earth	$7,474	1.08	1.29	16
Sherburne	$10,154	1.11	1.11	17
Itasca	$6,650	1.44	1.26	18
Kandiyohi	$5,660	1.13	1.28	19
Morrison	$4,269	1.31	1.33	20
Polk	$3,776	1.40	1.37	21
Fillmore	$2,732	1.13	1.47	22
McLeod	$4,947	2.35	1.25	23
Mower	$4,606	1.16	1.26	24
Winona	$6,291	0.87	1.13	25
Renville	$2,015	1.08	1.53	26
Freeborn	$4,079	1.06	1.28	27
Crow Wing	$9,695	1.37	0.88	28
Aitkin	$3,085	0.77	1.28	29
Sibley	$1,975	1.06	1.39	30
Meeker	$3,066	0.94	1.25	31
Pine	$3,602	0.68	1.15	32
Le Sueur	$3,516	0.84	1.15	33
Chisago	$6,284	0.82	0.92	34
Isanti	$4,611	0.90	1.01	35
Martin	$2,895	1.23	1.13	36
Clay	$6,285	1.03	0.84	37
Faribault	$2,033	0.76	1.19	38
Nicollet	$4,423	1.37	0.93	39
Todd	$2,838	0.87	1.08	40
Becker	$4,526	0.56	0.91	41
Nobles	$2,313	0.98	1.12	42
Steele	$4,841	0.53	0.85	43
Brown	$3,640	1.03	0.95	44
Douglas	$5,616	1.50	0.76	45
Beltrami	$5,048	0.68	0.79	46

Wabasha	$2,640	1.05	1.01	47
Redwood	$2,034	1.42	1.07	48
Mille Lacs	$3,123	0.71	0.89	49
Jackson	$1,289	0.77	1.09	50
Houston	$2,456	0.63	0.91	51
Lyon	$3,304	0.65	0.79	52
Benton	$4,577	1.10	0.65	53
Dodge	$2,390	0.52	0.81	54
Marshall	$1,190	0.56	0.95	55
Cottonwood	$1,456	0.69	0.90	56
Waseca	$2,307	0.87	0.77	57
Pope	$1,724	0.81	0.80	58
Murray	$1,231	0.52	0.88	59
Swift	$1,291	0.73	0.86	60
Yellow Medicine	$1,345	0.81	0.83	61
Carlton	$4,309	0.45	0.46	62
Lac qui Parle	$959	0.92	0.83	63
Hubbard	$3,384	0.42	0.49	64
Rock	$1,169	0.68	0.78	65
Chippewa	$1,545	0.79	0.67	66
Watonwan	$1,461	0.74	0.68	67
Kanabec	$1,883	0.77	0.61	68
Koochiching	$1,767	0.55	0.58	69
Pipestone	$1,184	0.48	0.65	70
Norman	$894	0.55	0.70	71
Stevens	$1,274	0.68	0.62	72
Wilkin	$850	0.71	0.67	73
Lake	$2,106	0.32	0.40	74
Lincoln	$812	0.44	0.61	75
Grant	$823	0.50	0.59	76
Wadena	$1,697	0.52	0.42	77
Roseau	$1,865	0.55	0.35	78
Big Stone	$797	0.52	0.51	79
Traverse	$539	0.39	0.55	80
Pennington	$1,646	0.34	0.31	81
Clearwater	$1,021	0.37	0.39	82
Kittson	$659	0.74	0.39	83
Mahnomen	$620	0.29	0.30	84
Cook	$1,591	0.08	0.07	85
Lake of the Woods	$784	0.24	0.21	86
Red Lake	$515	0.32	0.24	87

SOURCE: (CEMHS, 2018) (FEMA HAZUS, 2018)

Appendix L – Tornado Vulnerability Ranking

Table L-109.Tornado Vulnerability Ranking

County	Building Exposure in Millions	Historical Annual Storm Count	Expected Annual Storm Count	Vulnerability Rank
Otter Tail	$8,542.94	0.84	0.6	1
Hennepin	$171,960.81	0.4	0.17	2
Saint Louis	$28,175.81	0.37	0.31	3
Stearns	$18,983.40	0.37	0.33	4
Dakota	$53,322.27	0.26	0.17	5
Polk	$3,775.99	0.55	0.42	6
Anoka	$39,560.16	0.26	0.12	7
Ramsey	$67,353.65	0.1	0.05	8
Becker	$4,525.62	0.24	0.34	9
Clay	$6,285.45	0.44	0.3	10
Washington	$31,565.50	0.15	0.12	11
Wright	$15,131.96	0.32	0.19	12
Olmsted	$18,571.54	0.27	0.17	13
Cass	$5,334.32	0.32	0.29	14
Blue Earth	$7,473.82	0.37	0.25	15
Freeborn	$4,078.73	0.53	0.28	16
Beltrami	$5,048.05	0.18	0.24	17
Goodhue	$6,112.42	0.13	0.23	18
Scott	$16,486.44	0.08	0.11	19
Kandiyohi	$5,659.53	0.39	0.23	20
Mower	$4,606.31	0.27	0.24	21
Crow Wing	$9,694.62	0.23	0.15	22
Rice	$7,984.93	0.16	0.17	23
Carver	$12,432.29	0.15	0.11	24
Marshall	$1,190.38	0.24	0.31	25
Faribault	$2,032.56	0.21	0.28	26
Morrison	$4,269.17	0.21	0.21	27
Martin	$2,894.61	0.11	0.25	28
Douglas	$5,615.56	0.21	0.18	29
Sherburne	$10,153.91	0.03	0.12	30
Itasca	$6,649.96	0.1	0.16	31
Renville	$2,014.96	0.27	0.26	32
Nobles	$2,313.07	0.32	0.25	33
Todd	$2,837.61	0.11	0.23	34
Fillmore	$2,731.64	0.11	0.23	35
Winona	$6,290.75	0.11	0.14	36
Redwood	$2,034.17	0.31	0.23	37
Steele	$4,840.52	0.29	0.15	38
McLeod	$4,946.79	0.16	0.15	39
Aitkin	$3,085.10	0.18	0.19	40
Lyon	$3,303.89	0.15	0.18	41
Pine	$3,601.93	0.05	0.17	42
Brown	$3,640.28	0.15	0.16	43
Jackson	$1,289.23	0.18	0.24	44
Meeker	$3,066.28	0.1	0.17	45
Chisago	$6,284.35	0.13	0.1	46
Nicollet	$4,423.02	0.18	0.13	47
Le Sueur	$3,515.53	0.16	0.15	48

Norman	$893.88	0.16	0.23	49
Hubbard	$3,383.53	0.18	0.15	50
Wilkin	$849.98	0.19	0.23	51
Isanti	$4,610.94	0.15	0.11	52
Sibley	$1,975.28	0.19	0.17	53
Murray	$1,231.19	0.27	0.2	54
Yellow Medicine	$1,344.69	0.23	0.19	55
Cottonwood	$1,456.08	0.15	0.18	56
Waseca	$2,306.59	0.19	0.15	57
Benton	$4,576.92	0.15	0.09	58
Pope	$1,723.80	0.21	0.17	59
Mille Lacs	$3,123.32	0.13	0.12	60
Wabasha	$2,640.47	0.06	0.13	61
Swift	$1,291.06	0.24	0.18	62
Dodge	$2,389.84	0.11	0.14	63
Houston	$2,455.91	0.1	0.13	64
Lac qui Parle	$959.45	0.1	0.19	65
Rock	$1,169.30	0.1	0.17	66
Chippewa	$1,544.92	0.16	0.15	67
Carlton	$4,308.93	0.08	0.06	68
Roseau	$1,865.36	0.26	0.13	69
Pipestone	$1,184.47	0.11	0.14	70
Watonwan	$1,461.23	0.18	0.13	71
Stevens	$1,273.67	0.11	0.13	72
Grant	$822.66	0.23	0.15	73
Kittson	$659.00	0.26	0.16	74
Clearwater	$1,020.61	0.18	0.13	75
Wadena	$1,696.66	0.23	0.1	76
Lincoln	$812.17	0.19	0.14	77
Pennington	$1,646.46	0.1	0.1	78
Kanabec	$1,882.63	0.1	0.08	79
Lake	$2,105.51	0.1	0.06	80
Koochiching	$1,766.88	0.05	0.08	81
Traverse	$539.42	0.15	0.13	82
Big Stone	$797.34	0.06	0.1	83
Mahnomen	$619.85	0.13	0.11	84
Lake of the Woods	$783.83	0.1	0.07	85
Red Lake	$514.66	0.13	0.07	86
Cook	$1,590.82	0	0.01	87

SOURCE: (CEMHS, 2018) (FEMA HAZUS, 2018)

Appendix M – Hailstorm Vulnerability Ranking

Table M-110. Hailstorm Vulnerability Ranking

County	Building Exposure in Millions	Avg Annual Count*	Expected Annual Count	Vulnerability Rank
Hennepin	$171,961	2.79	1.2	1
Otter Tail	$8,543	2.13	2.11	2
Saint Louis	$28,176	2.1	1.61	3
Stearns	$18,983	1.69	1.67	4
Dakota	$53,322	1.4	1.09	5
Wright	$15,132	1.55	1.38	6
Anoka	$39,560	1.27	0.81	7
Polk	$3,776	1.77	1.65	8
Washington	$31,565	0.74	0.73	9
Ramsey	$67,354	1.18	0.31	10
Goodhue	$6,112	0.81	1.24	11
Cass	$5,334	0.98	1.28	12
Olmsted	$18,572	2.06	0.77	13
Becker	$4,526	1.13	1.29	14
Clay	$6,285	1.87	1.15	15
Scott	$16,486	1.4	0.73	16
Beltrami	$5,048	1.31	1.18	17
Blue Earth	$7,474	0.85	0.97	18
Carver	$12,432	0.92	0.76	19
Rice	$7,985	0.95	0.91	20
Sherburne	$10,154	0.58	0.78	21
Kandiyohi	$5,660	1.05	0.98	22
Morrison	$4,269	1.06	1.05	23
Itasca	$6,650	0.71	0.88	24
Crow Wing	$9,695	0.9	0.67	25
Mower	$4,606	0.84	0.93	26
Renville	$2,015	0.73	1.14	27
Freeborn	$4,079	0.81	0.92	28
Marshall	$1,190	0.69	1.23	29
McLeod	$4,947	1.08	0.84	30
Fillmore	$2,732	0.69	1.02	31
Pine	$3,602	0.77	0.9	32
Winona	$6,291	0.56	0.71	33
Nobles	$2,313	0.97	0.99	34
Martin	$2,895	0.97	0.92	35
Todd	$2,838	0.6	0.93	36
Aitkin	$3,085	0.35	0.89	37
Meeker	$3,066	0.95	0.88	38
Chisago	$6,284	0.53	0.63	39
Douglas	$5,616	1.02	0.65	40
Sibley	$1,975	0.74	0.95	41
Le Sueur	$3,516	0.55	0.78	42
Isanti	$4,611	0.6	0.7	43
Faribault	$2,033	0.89	0.91	44
Redwood	$2,034	0.87	0.91	45
Steele	$4,841	0.34	0.63	46
Nicollet	$4,423	0.81	0.65	47
Lyon	$3,304	1.11	0.72	48
Brown	$3,640	0.66	0.69	49

Mille Lacs	$3,123	0.56	0.69	50
Jackson	$1,289	0.65	0.91	51
Hubbard	$3,384	0.66	0.64	52
Norman	$894	0.68	0.93	53
Benton	$4,577	1.02	0.51	54
Wabasha	$2,640	0.58	0.64	55
Murray	$1,231	0.44	0.8	56
Yellow Medicine	$1,345	0.58	0.75	57
Koochiching	$1,767	0.95	0.69	58
Cottonwood	$1,456	0.47	0.72	59
Pope	$1,724	0.66	0.68	60
Wilkin	$850	0.89	0.81	61
Waseca	$2,307	0.74	0.6	62
Dodge	$2,390	0.52	0.59	63
Swift	$1,291	0.53	0.72	64
Lac qui Parle	$959	0.82	0.76	65
Rock	$1,169	0.55	0.72	66
Houston	$2,456	0.32	0.54	67
Roseau	$1,865	1.34	0.6	68
Carlton	$4,309	0.48	0.34	69
Chippewa	$1,545	0.71	0.59	70
Clearwater	$1,021	0.52	0.64	71
Pipestone	$1,184	0.63	0.61	72
Kanabec	$1,883	0.56	0.47	73
Stevens	$1,274	0.61	0.53	74
Watonwan	$1,461	0.71	0.5	75
Lincoln	$812	0.55	0.6	76
Kittson	$659	0.94	0.6	77
Wadena	$1,697	0.6	0.42	78
Grant	$823	0.4	0.54	79
Pennington	$1,646	0.4	0.39	80
Traverse	$539	0.44	0.53	81
Big Stone	$797	0.5	0.48	82
Lake	$2,106	0.19	0.28	83
Mahnomen	$620	0.45	0.48	84
Lake of the Woods	$784	0.44	0.39	85
Red Lake	$515	0.61	0.3	86
Cook	$1,591	0.08	0.04	87

SOURCE: (NOAA NCEI, 2018) (FEMA HAZUS, 2018)

Appendix N – Local Planning Capabilities

Table N-111. Planning Capabilities Referenced in Local Plans.

Table N-112. Local Policy and Staff Capabilities Referenced in Local Plans

Table N-111. Planning Capabilities Referenced in Local Plans.

		Planning Capabilities referenced in Plan										
		Emergency Response/Management Plan	Water / Watershed Management Plan	Comprehensive Plan	Land-use Plan	Pandemic or Public Health Incident Response Plan	National Flood Insurance Program (NFIP)	Wellhead Protection Plan	Capital Improvement Plan	Contingency Plan	Fire Plan	Forest Management Plan
County	Expiration											
Percentage of all jurisdictions with capability		88%	91%	73%	56%	44%	89%	48%	51%	25%	40%	8%
Percentage of counties with capability		88%	94%	76%	55%	42%	93%	48%	54%	25%	36%	6%
Aitkin	Jan-2020		X			X	X				X	X
Anoka	Aug-2019	X	X	X	X	X	X		X		X	
Becker	Jan-2022	X	X	X	X		X		X	X	X	
Beltrami	Sep-2018	X	X	X	X	X	X		X		X	
Benton	Jan-2023	X	X	X	X		X	X	X			X
Big Stone	Dec-2020		X	X								
Blue Earth	Sep-2018	X	X		X	X	X	X	X	X	X	
Boise Forte	Jul-2023	X				X				X	X	
Brown	Aug-2018	X	X	X	X	X	X	X	X			
Carlton	Aug-2019	X	X	X	X	X	X	X	X		X	
Cass	Apr-2020	X	X	X	X	X	X		X	X	X	X
Chippewa	Dec-2020	X	X	X	X	X	X	X	X	X	X	
Chisago	Nov-2022	X	X	X			X			X	X	
City of Rochester	Jun-2022	X	X	X	X	X	X	X	X	X	X	X
Clay	Nov-2018	X	X	X	X		X		X	X		
Clearwater	Oct-2018	X	X	X		X	X	X	X	X		X
Dakota	Mar-2022	X	X	X		X	X	X	X			
Douglas	Feb-2021	X	X	X	X	X	X	X	X	X	X	
Faribault	Feb-2023	X	X	X	X		X	X	X			
Fillmore	Jan-2023	X		X	X		X					
Fond Du Lac	Nov-2021	X	X		X			X			X	X
Goodhue	Dec-2021	X	X	X			X		X			
Grant	Oct-2022	X	X	X			X	X	X			
Houston	Jul-2022		X	X					X			
Hubbard	Aug-2022	X	X	X			X		X			

Isanti	Jan-2021	X	X	X			X	X				
Itasca	May-2020		X				X		X		X	
Jackson	Jun-2021	X	X	X	X	X	X	X	X			
Kanabec	May-2022	X	X	X		X	X	X			X	
Kandiyohi	Jul-2019	X	X	X	X	X	X					
Kittson	Jul-2021	X	X		X		X					
Koochiching	Oct-2020	X	X		X		X				X	
Lake	Nov-2022	X	X	X	X	X					X	
Lake of the Woods	Sep-2018	X	X	X	X		X		X			
Leech Lake Band of Ojibwe	Apr-2021		X				X				X	
LeSueur	Apr-2020	X	X	X	X	X	X	X	X			
Lyon	Jul-2022	X	X	X	X	X	X		X	X	X	
Mahnomen	Jun-2019		X	X	X		X		X		X	
Marshall	Sep-2021	X	X				X					
Martin	Aug-2018	X	X	X	X		X					
McLeod	Apr-2020	X	X	X	X	X	X		X			
Meeker	Mar-2021	X	X	X	X	X	X		X			
Mille Lacs	Dec-2022	X	X	X		X	X	X		X	X	
Mille Lacs Band of Ojibwe	Nov-2022	X		X	X	X		X	X			
Morrison	Apr-2021	X	X		X		X	X				
Mower	Oct-2021	X	X		X	X				X		
Nicollet	May-2018	X	X	X	X		X					
Norman	Sep-2018	X	X			X	X			X		
Olmsted	Oct-2022	X	X	X	X		X	X	X	X		
Pennington	Feb-2022	X	X	X			X	X		X	X	
Pine	Oct-2018	X	X			X	X	X			X	
Polk	May-2021	X	X		X		X				X	
Pope	Jul-2021	X	X		X	X	X		X			
Prairie Island Indian comm	Nov-2019	X			X		X				X	
Red Lake	Oct-2021	X	X	X			X	X	X			
Renville	Mar-2020		X	X	X	X		X				
Rock	Aug-2019	X	X	X	X	X	X	X				
Roseau	Mar-2022	X	X	X			X		X			
Scott	Oct-2021	X	X	X			X		X			
Sherburne	Sep-2018	X		X			X			X		
Sibley	Oct-2020	X					X		X			
St. Louis	Aug-2018	X					X	X		X	X	
Stearns	Dec-2022	X	X	X			X	X				
Steele	Jul-1905	X	X	X			X	X	X			
Stevens	May-2020	X	X	X	X	X	X	X			X	
Traverse	Jul-2020	X	X				X	X				
Upper Sioux Com.	Nov-2020	X	X	X		X	X	X			X	
Wabasha	Oct-2022	X	X				X	X	X			
Wadena	Apr-2021	X	X	X	X		X	X				
Waseca	Mar-2018		X	X	X		X					

Watonwan	Mar-2020		X	X			X					
White Earth Res.	Jul-2018	X	X	X	X	X	X					
Wilkin	Feb-2023	X	X	X			X	X				
Wright	May-2021	X	X	X			X	X	X		X	
Yellow Medicine	Dec-2020	X	X	X	X	X	X	X	X	X	X	

Table N-112. Local Policy and Staff Capabilities Referenced in Local Plans.

		Local Policy Capabilities referenced in Plan						Staff listed in Plan							
		Land Use, Planning, & Zoning Ordinance	Floodplain & Soil Erosion Ordinance	Building Code	Subdivision Ordinance	Methamphetamine Lab Ordinance	Fire Code	Emergency Mgmt. Director	Mapping Specialist (GIS)	Public Health Coordinator/Department	Sheriff/Police Department	MN Department of Natural Resources	Soil and Water Conservation District	Public Works / Utility	Schools
County	Expiration														
Percentage of all jurisdictions with capability		93%	80%	68%	47%	25%	29%	100%	36%	80%	79%	25%	47%	63%	60%
Percentage of counties with capability		97%	84%	69%	52%	25%	28%	100%	36%	84%	82%	27%	51%	66%	64%
Aitkin	Jan-2020	X	X	X				X			X			X	X
Anoka	Aug-2019	X	X	X	X			X	X		X			X	
Becker	Jan-2022	X	X	X				X		X	X	X	X		X
Beltrami	Sep-2018	X	X	X		X		X		X	X	X	X	X	X
Benton	Jan-2023	X	X	X	X			X	X	X	X	X	X	X	X
Big Stone	Dec-2020	X	X	X				X		X	X	X	X		
Blue Earth	Sep-2018	X	X	X	X			X	X	X	X	X	X	X	
Boise Forte	Jul-2023						X	X		X	X			X	
Brown	Aug-2018	X	X	X	X		X	X	X	X	X	X			
Carlton	Aug-2019	X	X	X	X		X	X	X	X	X	X		X	X
Cass	Apr-2020	X	X	X			X	X		X	X			X	X
Chippewa	Dec-2020	X	X	X				X		X	X	X	X	X	X
Chisago	Nov-2022	X		X	X		X	X		X					X
City of Rochester	Jun-2022	X	X	X				X	X	X	X	X	X	X	X
Clay	Nov-2018	X	X	X			X	X	X	X				X	X
Clearwater	Oct-2018	X	X	X		X		X		X			X		
Dakota	Mar-2022	X	X	X	X		X	X	X		X		X	X	
Douglas	Feb-2021	X	X	X	X	X	X	X		X	X	X	X	X	X
Faribault	Feb-2023	X	X					X		X	X				X
Fillmore	Jan-2023	X		X	X			X		X	X		X	X	X
Fond Du Lac	Nov-2021	X	X	X			X	X						X	
Goodhue	Dec-2021	X	X	X	X			X	X				X	X	X
Grant	Oct-2022	X	X		X			X			X		X		X

Houston	Jul-2022	X	X		X			X		X	X				
Hubbard	Aug-2022	X	X		X			X		X	X	X	X	X	X
Isanti	Jan-2021	X	X	X	X			X		X	X			X	X
Itasca	May-2020		X	X	X			X	X	X	X	X	X	X	X
Jackson	Jun-2021	X	X	X	X	X		X	X		X		X	X	
Kanabec	May-2022	X	X			X		X		X	X	X	X		X
Kandiyohi	Jul-2019	X	X	X			X	X		X	X				
Kittson	Jul-2021	X	X	X	X			X		X			X		X
Koochiching	Oct-2020	X	X		X	X		X		X	X	X	X	X	
Lake	Nov-2022	X		X	X	X		X		X	X	X		X	X
Lake of the Woods	Sep-2018	X	X	X				X		X	X		X	X	X
Leech Lake Band of Ojibwe	Apr-2021	X		X				X			X				
LeSueur	Apr-2020	X	X	X			X	X	X	X	X			X	
Lyon	Jul-2022	X	X			X	X	X	X	X	X			X	
Mahnomen	Jun-2019	X	X	X				X		X	X	X	X	X	X
Marshall	Sep-2021	X						X		X	X			X	X
Martin	Aug-2018	X	X	X			X	X		X	X			X	
McLeod	Apr-2020	X	X		X	X		X	X	X			X		X
Meeker	Mar-2021	X	X	X	X	X	X	X		X	X		X	X	X
Mille Lacs	Dec-2022	X	X	X		X		X		X	X				X
Mille Lacs Band of Ojibwe	Nov-2022							X	X						
Morrison	Apr-2021	X	X	X	X			X	X	X	X	X	X	X	X
Mower	Oct-2021	X	X	X				X		X	X	X	X	X	X
Nicollet	May-2018	X	X		X		X	X		X	X				X
Norman	Sep-2018	X	X	X			X	X	X	X	X			X	X
Olmsted	Oct-2022	X	X	X	X			X	X	X			X	X	X
Pennington	Feb-2022	X	X	X	X		X	X		X			X		X
Pine	Oct-2018	X	X	X		X		X		X	X			X	X
Polk	May-2021	X		X	X			X		X	X			X	
Pope	Jul-2021	X	X		X	X		X		X	X			X	X
Prairie Island Indian comm	Nov-2019	X		X		X	X	X							
Red Lake	Oct-2021	X		X				X			X		X	X	X
Renville	Mar-2020	X				X		X		X	X			X	
Rock	Aug-2019	X	X					X		X	X				
Roseau	Mar-2022	X	X	X				X		X	X		X		X
Scott	Oct-2021	X	X	X	X			X	X	X	X				
Sherburne	Sep-2018	X	X	X	X			X			X				
Sibley	Oct-2020	X	X					X	X	X	X			X	X
St. Louis	Aug-2018	X		X	X			X	X	X	X	X	X	X	
Stearns	Dec-2022	X					X	X		X	X				X
Steele	Jul-1905	X	X		X		X	X	X					X	
Stevens	May-2020	X	X	X		X		X	X	X	X		X	X	X

Traverse	Jul-2020	X	X					X					X		X
Upper Sioux Com.	Nov-2020		X			X		X		X	X				
Wabasha	Oct-2022	X	X		X			X	X	X					
Wadena	Apr-2021	X	X	X	X	X	X	X		X	X				X
Waseca	Mar-2018			X				X	X	X	X			X	
Watonwan	Mar-2020	X						X			X		X	X	
White Earth Res.	Jul-2018	X	X	X				X	X	X					X
Wilkin	Feb-2023	X	X		X			X		X	X		X	X	
Wright	May-2021	X	X		X	X	X	X	X	X			X	X	X
Yellow Medicine	Dec-2020	X	X	X				X		X	X			X	X

Table O-113. Local Plan Status.

Jurisdiction	Jurisdiction Type	Plan Status	Plan Approval Date	Expiration Date	Planning Grant	Grant Number
City of Rochester	City	Approved	6/27/2017	6/26/2022		
City of St. Paul	City	Expired	4/17/2013	4/17/2018	PDM	FY16
City of Warren	City	Expired	9/27/2012	9/27/2017		
Aitkin County	County	Approved	1/9/2015	1/9/2020	HMGP	Funding from DR1941
Anoka County	County	Approved	8/4/2014	8/4/2019		
Becker County	County	Approved	1/23/2017	1/23/2022	HMGP	DR-4069
Beltrami County	County	Approved	9/25/2013	9/25/2018	PDM	FY17
Benton County	County	Approved	1/17/2018	1/16/2023	HMGP	DR-4182
Big Stone County	County	Approved	12/23/2015	12/23/2020		
Blue Earth County	County	Approved	9/17/2013	9/17/2018	PDM	FY17
Brown County	County	Approved	8/13/2013	8/13/2018	PDM	FY17
Carlton County	County	Approved	8/4/2014	8/4/2019		
Carver County	County	Expired	10/17/2012	10/17/2017	PDM	FY16
Cass County	County	Approved	4/6/2015	4/6/2020		
Chippewa County	County	Approved	12/23/2015	12/23/2020		
Chisago County	County	Approved	11/13/2017	11/12/2022	HMGP	DR-4131
Clay County	County	Approved	11/20/2013	11/20/2018	PDM	FY17
Clearwater County	County	Approved	10/31/2013	10/31/2018	PDM	FY17
Cook County	County	Plan in Progress			HMGP	DR-4290
Cottonwood County	County	Expired	8/30/2011	8/30/2016	PDM	FY16
Crow Wing County	County	Pending			HMGP	DR-4182
Dakota County	County	Approved	1/31/2017	1/31/2022		
Dodge County	County	Expired	2/1/2013	2/1/2018		
Douglas County	County	Approved	2/9/2016	2/9/2021	HMGP	DR-4069
Faribault County	County	Pending			HMGP	DR-4182
Fillmore County	County	Approved	1/25/2018	1/24/2023	HMGP	DR-4182
Freeborn County	County	Pending			HMGP	DR-4182
Goodhue County	County	Approved	12/29/2016	12/29/2021	HMGP	DR-4182
Grant County	County	Approved	10/11/2017	10/10/2022	HMGP	DR-4182
Hennepin County	County	Pending				
Houston County	County	Approved	7/17/2017	7/16/2022		
Hubbard County	County	Approved	12/21/2017	12/20/2022	HMGP	DR-4182
Isanti County	County	Approved	1/11/2016	1/11/2021		
Itasca County	County	Approved	5/11/2015	5/11/2020	HMGP	Funding from DR-1941
Jackson County	County	Approved	6/30/2016	6/30/2021		
Kanabec County	County	Approved	5/8/2017	5/8/2022	HMGP	DR-4113
Kandiyohi County	County	Approved	7/2/2014	7/2/2019		
Kittson County	County	Approved	7/18/2016	7/18/2021		
Koochiching County	County	Approved	10/30/2015	10/30/2020	HMGP	DR-4069
Lac qui Parle County	County	Expired	10/31/2011	10/31/2016		

Lake County	County	Pending				
Lake of the Woods County	County	Approved	9/17/2013	9/17/2018	PDM	FY17
Le Sueur County	County	Approved	4/21/2015	4/21/2020	HMGP	Funding from DR-1941
Lincoln County	County	Expired	7/15/2011	7/15/2016	PDM	FY16
Lyon County	County	Approved	7/17/2017	7/16/2022	HMGP	DR-4131
Mahnomen County	County	Approved	6/30/2014	6/29/2019		
Marshall County	County	Approved	9/13/2016	9/13/2021	HMGP	DR-4069
Martin County	County	Approved	8/13/2013	8/13/2018	PDM	FY17
McLeod County	County	Approved	4/21/2015	4/21/2020	HMGP	DR-4069
Meeker County	County	Approved	3/24/2016	3/24/2021		
Mille Lacs County	County	Approved	12/11/2017	12/10/2022	HMGP	DR-4131
Morrison County	County	Approved	2/12/2016	2/12/2021		
Mower County	County	Approved	10/24/2016	10/24/2021		
Murray County	County	Expired	2/16/2012	2/16/2017	PDM	FY16
Nicollet County	County	Expired	5/24/2013	5/24/2018	PDM	FY16
Nobles County	County	Approved	4/5/2018	4/4/2023	PDM	FY16
Norman County	County	Approved	9/25/2013	9/25/2018	PDM	FY17
Olmsted County	County	Approved	10/12/2017	10/11/2022	HMGP	DR-4182
Otter Tail County	County	Expired	8/21/2008	8/21/2013		
Pennington County	County	Approved	2/7/2017	2/7/2022	HMGP	DR-4069
Pine County	County	Approved	10/31/2013	10/31/2018		
Pipestone County	County	Expired	9/28/2010	9/28/2015	PDM	FY16
Polk County	County	Approved	5/26/2016	5/26/2021		
Pope County	County	Approved	7/11/2016	7/11/2021		
Ramsey County	County	Expired	12/3/2012	12/3/2017	PDM	FY16
Red Lake County	County	Approved	10/24/2016	10/24/2021	HMGP	DR-4067
Redwood County	County	Expired	3/28/2012	3/28/2017	PDM	FY16
Renville County	County	Approved	3/17/2015	3/17/2020	HMGP	Funding from DR-4009
Rice County	County	Expired	5/22/2012	5/22/2017	PDM	FY16
Rock County	County	Approved	8/28/2014	8/28/2019		
Roseau County	County	Approved	3/23/2017	3/23/2022		
Scott County	County	Approved	10/24/2016	10/24/2021	HMGP	DR-4131
Sherburne County	County	Approved	9/25/2013	9/25/2018	PDM	FY17
Sibley County	County	Approved	10/21/2015	10/21/2020	HMGP	DR-4069
St. Louis County	County	Approved	8/2/2013	8/2/2018	PDM	FY17
Stearns County	County	Approved	12/12/2017	12/11/2022		
Steele County	County	Pending			HMGP	DR-4182
Stevens County	County	Approved	5/11/2015	5/11/2020		
Swift County	County	Expired	3/8/2012	3/8/2017	PDM	FY16
Todd County	County	Expired	4/15/2013	4/15/2018	PDM	FY16
Traverse County	County	Approved	7/1/2015	7/1/2020	HMGP	DR-1982
Wabasha County	County	Approved	9/20/2017	9/19/2022	HMGP	DR-4182
Wadena County	County	Approved	4/15/2016	4/15/2021		
Waseca County	County	Expired	3/26/2013	3/26/2018	PDM	FY16
Washington County	County	Expired	11/8/2012	11/8/2017		

Watonwan County	County	Approved	3/4/2015	3/4/2020		
Wilkin County	County	Approved	2/27/2018	2/26/2023	HGMP	DR-4182
Winona County	County	Expired	11/8/2012	11/8/2017	PDM	FY16
Wright County	County	Approved	5/10/2016	5/10/2021		
Yellow Medicine County	County	Approved	12/23/2015	12/23/2020	HMGP	DR-4116
Bois Forte Band of Chippewa Indian (St. Louis County)	Tribe	Pending				
Fond du lac Band of Lake Superior Chippewa (Carlton County)	Tribe	Approved	11/29/2016	11/28/2021		
Grand Portage Band of Lake Superior Chippewa (Cook County)	Tribe	Plan in Progress				
Leech Lake Band of the Ojibwe	Tribe	Approved	4/4/2016	4/4/2021		
Mille Lacs Band of Ojibwe	Tribe	Approved	11/16/2017	11/15/2022		
Prairie Island Indian Community	Tribe	Approved	11/3/2014	11/3/2019		
Red Lake Band of Chippewa Indians	Tribe	Plan in Progress			PDM	FY16
Upper Sioux Indian Community	Tribe	Approved	11/15/2015	11/15/2020		
White Earth Nation	Tribe	Approved	7/17/2013	7/17/2018		
University of Minnesota (System Wide)	University	Approved	12/15/2016	12/15/2021		

Appendix P – 2014-2019 Update on Goals and Strategies

Table P-114. 2014-2019 Update on Goals and Strategies.

HAZARD/MITIGATION STRATEGY	UPDATE SINCE APPROVAL OF 2014 PLAN
All Natural Hazards/ Property Protection	Workshops to assist applicants with application development and the BCA were held as part of DR-4182 and DR-4290. Trainings will be held for DR-4390.
All Natural Hazards Public/Education and Awareness:	Silver Jackets federal, state and local agencies participate in Winter Hazard Awareness Week held every November and Severe Weather Hazard Awareness Week conducted every April. Local media broadcast messages for one week to get the public in tune with potential hazards that may affect their lives for the coming season. The "Turn Around, Don't Drown" program was discussed by the Silver Jackets for the inclusion in messages to the public.
Flood/Prevention:	HSEM's mitigation program works in conjunction with MN DNR's NFIP program to implement RiskMAP in the state. The meetings with local jurisdictions underline the importance of the flood ordinances and attaining CRS certification.
Flood/Property Protection:	<u>Acquisition / Demolition</u> DR-4069 - Pine County; twenty-six properties DR-4069 - City of Duluth; seven properties DR-4069 - City of Barnum; DR-4131 - Pine County; two properties DR-4182 – City of Newport; two properties DR-4182 - Brown County; one property DR-4290 - Sibley County; funds have been awarded to demolish a commercial property <u>Acquisition / Demolition and Elevations</u> DR-4182 – City of Waterville; one acquisition/demolition is complete and two elevations are in progress. <u>Stormwater</u> DR-4182 - City of Worthington; a nine acre retention pond and upgrade of two culverts is nearing completion. The total cost of the project is approximately $5 million.
Flood/Public Education and Awareness:	Recovery and mitigation staff participate in Public Assistance and Individual Assistance Preliminary Damage Assessments for DR-4182 and DR-4290 and in Disaster Recovery Centers for DR-4182. They also participate in applicant meetings for DR-4182, DR-4290 and DR-4390. The public, local jurisdictions, and county emergency managers were engaged and all aspects of hazard mitigation were discussed. Some of these discussions led to application development for HMA funding.

HAZARD/MITIGATION STRATEGY	UPDATE SINCE APPROVAL OF 2014 PLAN
Flood/Emergency Services:	The Silver Jackets worked with the City of St. Paul to provide on-line inundation mapping when a stream gauge was moved. HSEM works with the MN DNR on stream gauges.
Tornado/Prevention:	Operation and maintenance plans are required when a safe room is funded by HMA. Coordination between the property owner and local responders is necessary to ensure the life and safety of all involved.
Tornado/Property Protection:	DR-4069 – Safe rooms were constructed in the cities of Forest Lake, Scandia, Rochester, Melrose and Stearns County DR-4113 - Safe rooms were constructed using funds in the cities of Dayton and Melrose, and Stearns County DR-4182 Two safe rooms are under construction for a Camp Wilderness Boy Scout Camp in Hubbard County. DR-4290 Dower Lake safe room is under review.
Tornado/Public Education and Awareness:	Under DR-1941 5% Initiative, warning sirens were installed in the cities of Evansville, Forest Lake and Kerkoven. Currently, funding for warning sirens is made available when jurisdictions are applying for HMA funding.
Wildfire/Prevention:	MN DNR's FireWise program is promoted when discussing wildfire risks with county Emergency Management Directors.
Wildfire/Property Protection:	Defensible space accompanied the installation of fire resistant roofs on structures in Lake County. Sixty-six installations were funded by DR-4113 and DR-4131.
Windstorm/Structural Improvements:	The safe rooms cited under the tornado goal also serve the public when there windstorms occur.
Winter Storms/Structural Improvements:	The Mille Lacs Band of Ojibwe installed 3 generators for the community shelter using DR-4069 5% Initiative funds. The cities of Oakdale and St. Paul Park installed generators for their fire stations under the DR-4131 5% Initiative funds. Adrian used the DR-4113 5% Initiative funds to fund drinking water service from wells.
Lightening/Structural Improvements:	The City of Woodbury used from the DR-4113 5% Initiative to install a lightening prediction and warning system. The equipment was installed at a sports complex with over thirty outdoor fields and a golf course. A similar system funded by DR-4290 5% Initiative funds will be installed at the National Sports Center at Blaine in early 2019. The center hosts the largest youth soccer tournament every July with approximately 20,000 people on campus at any one time.

HAZARD/MITIGATION STRATEGY	UPDATE SINCE APPROVAL OF 2014 PLAN
Erosion/Landslide/Mudslide/Structure and Infrastructure Projects	The following projects are acquisition/demolition of structures in immediate threat: DR-4131 - Scott County: one residence DR-4131 - Redwood Falls; two businesses and one residence DR-4182 - Brown County; four residences (Note: One property was deeded to the MN DNR as a wildlife reserve.) DR-4290 Red Lake Falls: two residences 4290 Waseca County; one residence funded but not yet acquired The following project is a stormwater solution to a structure that was in immediate threat: Erosion in a ravine due to the forces of stormwater were threatening a residence in Chanhassen. DR-4182 funded solution was to install stormwater structures and direct the water through pipe to a stream at the foot of the ravine. The contours of the ravine were restored and erosion resistant ground covering installed.
Erosion/Landslide/Mudslide/Structure and Infrastructure Projects	The Statewide Landslide Inventory funded by the Legislative-Citizen Commission on Minnesota Resources (LCCMR) brings together academia, federal and state agencies, and county emergency management to locate areas vulnerable geologic failure. This information will be helpful in planning projects and communities.

Buzz Newsletter from April 2018

The BUZZ

Special Edition - Update
April 2018

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FEDERAL AGENCY PROGRAMS REFERENCE

Welcome to the third Special Edition of the Silver Jackets Newsletter. This edition has been updated to provide a reference of federal agency programs, services, and tools that interagency Silver Jackets teams can use to achieve their flood risk management goals.

This Special Edition is intended to complement discussions and information delivered at the 2018 Interagency Flood Risk Management Community of Practice Training Seminars in Indianapolis, Indiana, on May 1 - 4, 2018.

We hope that this consolidated information will be useful and serve as a catalyst to increase interagency coordination and collaboration among state and federal agencies and improve the combined efficiency and effectiveness of agencies. Our ultimate goal is to enhance our collective capacity to deliver integrated and adaptive approaches to flood risk management.

Please contact IWR.SilverJackets@usace.army.mil to be directed to an agency representative for any of the programs described in this Special Edition.

At a Glance Summary Table

Agency	When Can Agency Provide Assistance?			
	Preparation	*Response*	*Mitigation*	*Recovery*
DOT	✓	✓	✓	✓
EPA	✓	✓	✓	✓
FEMA	✓	✓	✓	✓
HUD	✓		✓	✓
NASA	✓	✓	✓	✓
NOAA NWS	✓	✓	✓	✓
NOAA OCM	✓		✓	✓
NRCS			✓	✓
USACE	✓	✓	✓	✓
USFWS	✓		✓	✓
USGS	✓	✓	✓	✓

Agency Mission

The U. S. Department of Transportation (DOT) serves the United States by ensuring a fast, safe, efficient, accessible, and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future.

When Can We Help?	Preparation ✓	Response ✓	Recovery ✓	Mitigation ✓
Who Can We Help?	State Agencies, Tribes, Local Governments, and Communities			

Programs and Services

Program or Service	Funding
MAP-21, THE MOVING AHEAD FOR PROGRESS IN THE 21ST CENTURY ACT (P.L. 112-141) **FAST ACT, FIXING AMERICA'S SURFACE TRANSPORTATION ACT (P.L. 114-94)** Provides authority to provide funds to state, local, and tribal governments for the development of transportation systems.	• 80-100 percent federally funded • Cost sharing depends on transportation mode, state versus local, and regular program versus emergency.
EMERGENCY RELIEF PROGRAM Establishes policy and provides program guidance for the administration of emergency funds for the repair or reconstruction of federal-aid highways, which are found to have suffered serious damage by natural disasters over a wide area or serious damage from catastrophic failures.	• State match generally varies from 10 to 20 percent, depending on class of federal-aid highway. • No state match required for emergency repairs accomplished within 180 days of disaster to restore essential travel. • No state match required for repair of roads on federal lands.

Other Resources and Tools

FHWA Hydraulic Documents: http://www.fhwa.dot.gov/engineering/hydraulics/library_listing.cfm

- HDS 2 – Highway Hydrology: Provides information on hydrologic approaches, methods, and assumptions applied in design and analysis of highway drainage structures.
- HDS 4 – Introduction to Highway Hydraulics: Provides an introduction to highway hydraulic and hydrologic techniques, such as fundamental hydraulic concepts, open channel flow principles and design applications, closed conduit principles and design applications, and an overview of energy dissipaters.
- HDS 7 – Hydraulic Design of Safe Bridges: Provides technical information and guidance on the hydraulic analysis and design of bridges, with consideration of safety, optimization of costs, and limiting impacts to property and the environment.
- HEC 17 - Highways in the River Environment – Floodplains, Extreme Events, Risk and Resilience: Provides technical guidance and methodologies on how to consider/incorporate floodplain management, risk, extreme events, resilience, and adaptation considerations when addressing highway planning and design within the riverine environment.
- HEC 25 – Highways in a Coastal Environment Vol. 1: Provides guidance for the analysis, planning, design, and operation of highways in the coastal environment. The focus is on roads potentially impacted by coastal tides and waves during storm events.
- HEC 25 – Highways in a Coastal Environment Vol. 2: Provides methods for assessing the vulnerability of coastal transportation facilities to extreme events and climate change.

Other Resources and Tools

National Highway Institute (NHI) Training Courses Transportation related hydraulic and hydrologic training courses offered by the Federal Highway Administration (FHWA). For more information, visit http://www.fhwa.dot.gov/engineering/hydraulics/training.cfm.
FHWA-FEMA Flood Risk Management Workshop A one-day course providing training to state and local transportation agencies on FHWA regulations and policy; FEMA regulations and policy, including Letters of Map Revisions; and the steps to comply with these regulations.

Other Websites

- DOT Headquarters: http://www.dot.gov
- FHWA Hydraulics Website: http://www.fhwa.dot.gov/engineering/hydraulics

Agency Mission

The mission of the Environmental Protection Agency (EPA) is to protect human health and the environment.

When Can We Help?	Preparation ✔	Response ✔	Recovery ✔	Mitigation ✔
Who Can We Help?	State Agencies, Tribes, Local Governments, Communities, and Individuals			

Programs and Services

Program or Service	Funding
DRINKING WATER AND CLEAN WATER STATE REVOLVING LOAN FUNDS Federal/state partnership where states provide loans for wide range of water quality and public health projects, including storm water management, infrastructure improvements at publicly owned wastewater and drinking water treatment facilities, water conservation reuse, emergency back-up power, and planning and design. Loans may be used to increase a utility's resiliency to disasters. • *Drinking Water State Revolving Fund (SRF)* – http://water.epa.gov/grants_funding/dwsrf/index.cfm • *Clean Water State Revolving Fund (SRF)* - http://water.epa.gov/grants_funding/cwsrf/cwsrf_index.cfm	• Low interest loans. • States are required to match EPA funding • Assistance recipients are not required to match, although they must have dedicated source of repayment.
WATER INFRASTRUCTURE AND FINANCE AND INNOVATION ACT LOAN FUNDS (WIFIA) New federal loan and guarantee program to accelerate investment in our nation's water infrastructure. Authorizes EPA to provide long-term, low-cost loans at U.S. Treasury Rates for projects of regional and national significance. For more information: www.epa.gov/wifia.	• $20 million: Minimum project size for large communities. • $5 million: Minimum project size for small communities • 49 percent: Maximum portion of project that WIFIA can fund.
WATER FINANCE CLEARINGHOUSE Provides one-stop-shop for all things water finance. Easily navigable web-based portal helps communities locate information and resources to assist with making informed decisions for drinking water, wastewater, and stormwater infrastructure needs. Includes two searchable data sets: 1) available funding sources for water infrastructure and 2) resources, such as reports, web links, webinars, etc. on financing mechanisms and approaches to help communities access capital to meet water infrastructure needs. For more information: www.epa.gov/wfc.	Technical assistance
CLEAN WATER ACT – SECTION 319 Provides grants to states, tribes, and territories for development of programs to reduce pollution from unregulated and diffuse sources (nonpoint sources), such as agricultural and urban runoff. Grants can be used to reduce runoff and monitor and evaluate progress and may include wetland restoration and improved stormwater management. Recipients must have an approved watershed plan in place in accordance with CWA 319. For more information: https://www.epa.gov/nps/319-grant-program-states-and-territories.	• Federal share may not exceed 60 percent implementation cost. • Non-federal share must be from non-federal sources and must be at least 40 percent for entire grant (CWA section 319(h)(3); 40 CFR 35.265).

Program or Service	Funding
SMART GROWTH/SUSTAINABLE COMMUNITIES PROGRAM Provides technical assistance through Building Blocks Program to strengthen local capacity to implement sustainable approaches, including presentations and exercises to facilitate discussion on a priority topic, leading to agreed-upon actions. Assistance has been provided to 45 states through 150 projects. In 2016, 25 communities will receive technical assistance using one of five sustainability tools. The *Flood Resilience for Riverine and Coastal Communities* tool helps communities prepare for flooding or sea level rise and plan for disaster resilience. A useful report generated under this program, *Disaster Recovery And Long-Term Resilience Planning In Vermont*, is listed in the Other Resources and Tools table below. For more information: https://www.epa.gov/smartgrowth.	Technical assistance
LOW IMPACT DEVELOPMENT AND GREEN INFRASTRUCTURE Provides resources and training materials to implement stormwater management practices and programs to reduce runoff and protect water quality, including design and planning guides; case studies; examples of regulatory and non-regulatory policy approaches; and descriptions of EPA's past assistance projects, archived webinars, and upcoming technical assistance and webinars. For more information: https://www.epa.gov/green-infrastructure and https://www.epa.gov/nps/urban-runoff-low-impact-development.	Technical assistance
EPA DISASTER RESPONSE AND RECOVERY OPERATIONS Response and recovery are two separate but coordinated phases of disaster relief that may overlap. Response - Carries out actions under the National Oil and Hazardous Substances Pollution Contingency Plan and the National Response Framework. Typically conducted on a weeks to months timeframe for any large scale events. Addresses immediate health and safety needs of the affected community. Recovery - Carries out actions under the National Disaster Recovery Framework. Process can last years and focuses on long-term restoration of places and communities affected by disaster. Depending on nature of disaster, over 20 EPA programs may become involved in disaster recovery operations. For more information: https://www.epa.gov/homeland-security/epas-role-disaster-recovery	Varies

Other Resources and Tools

Healthy Watershed Assessment and Protection: Data, Tools, Methods, References
Tools for rapid, large-scale identification of landscape, biotic, hydrologic, and geomorphic conditions; chemical and physical characteristics; ecological processes, e.g., energy and material flow and natural disturbance regimes. Enables states to prioritize protection efforts. Approach is also being used to determine water security. The *Watershed Index Online* component is a data library and comparative analysis tool. For more information: https://www.epa.gov/hwp/healthy-watersheds-assessment-overview and https://www.epa.gov/wsio.

Other Resources and Tools

Flood Resilience: A Basic Guide For Water and Wastewater Utilities
A web-based guide to assist utilities with assessing flood threats, determining flooding vulnerability of utility assets, identifying/evaluating mitigation measures, and developing mitigation implementation plans. The guide includes training videos, worksheets, and resource aids. Developed with FEMA, state agencies, and water/wastewater utilities. For more information: http://water.epa.gov/infrastructure/watersecurity/.

Recovery Potential Screening (RPS)
Technical tools and methods to help government and private programs compare watersheds and plan for greater likelihood of restoration and protection success. For more information: https://www.epa.gov/rps

Hazard Mitigation and Emergency Response for Water and Wastewater Utilities
Tools and guidance to support utility preparedness and recovery. Encourages water and wastewater utilities to work with their local mitigation planners to implement priority projects using FEMA or other source funding. Provides an overview of the mitigation process, along with practical examples of mitigation projects to address the impacts of earthquakes, tornados, floods, drought, wildfires, and power outages. For more information: https://www.epa.gov/waterutilityresponse.

Tabletop Exercise Tool For Water Systems: Emergency Preparedness, Response & Climate Resiliency
CD-ROM with resources to plan and facilitate tabletop exercises. Simplifies process of planning and conducting tabletop exercises, and provides resources that aid in development of customized scenario-driven, discussion-based tabletop exercises. Contains 15 all-hazard scenarios. Consistent with U.S. Department of Homeland Security's Homeland Security Exercise and Evaluation Program, Water/Wastewater Agency Response Network, and Incident Command System. For more information: http://water.epa.gov/infrastructure/watersecurity/techtools/ttx.cfm.

Report – Disaster Recovery and Long-Term Resilience Planning In Vermont
Report and planning checklist to help communities prepare, respond, and recover from floods. The checklist suggests strategies, such as conserving land in flood-prone areas; directing new development to safer areas; and using green infrastructure approaches, including rain garden installation, to manage stormwater. For more information: www.epa.gov/smartgrowth/sgia_communities.htm#rec1.

Emergency Response On-Scene Coordinator Training Resources
EPA and external training on hazardous materials and disaster emergency response and related topics. For more information: http://epaosc.org/main/training.aspx.

Creating Resilient Water Utilities (CRWU), Climate Resilience Evaluation and Awareness Tool (CREAT)
EPA's CRWU initiative assists water sector utilities (drinking water, wastewater, and stormwater) in becoming Climate Ready. CRWU offers a unique suite of practical and easy-to-use tools and resources to promote a clear understanding of climate science, risks, and pertinent adaptation options. CRWU resources, including Adaptation Strategies Guide, Extreme Events Workshop Planner, and CREAT, translate complex climate projections into actionable science in understandable formats to assist in building more resilient water sector infrastructure. Users of CREAT can estimate risks, such as extreme weather, sea level rise, and shifting precipitation patterns. For more information: https://www.epa.gov/crwu.

Climate Ready Estuaries, "Being Prepared For Climate Change: A Workbook For Developing Risk-Based Adaptation Plans"
Guide for conducting risk-based climate change vulnerability assessments and developing adaptation action plans. Workbook helps users identify, analyze, and prioritize climate change risks to what their organizations are trying to accomplish. In developing an action plan, the workbook guides users to address their most pressing risks and identify potential adaptation actions. For more information: https://www.epa.gov/cre.

Climate Ready Estuaries, "Synthesis of Adaptation Options for Coastal Areas"
This guide provides a brief introduction to key physical impacts of climate change on estuaries and a review of on-the-ground adaptation options available to coastal managers to reduce their systems' vulnerability to climate change impacts. For more information: https://www.epa.gov/cre/synthesis-adaptation-options-coastal-areas

Other Resources and Tools

Contingency Planning and Area Contingency Planning Handbook The 1990 Oil Pollution Act (OPA) requires preparation of response plans for certain facilities that store oil. EPA prepared the implementation regulations. Area Contingency Plans are required by the Clean Water Act with EPA as the designated lead for inland. Program information, including a reference guide to assist with development of Area Contingency Plans for environmental emergencies, is available at www.epa.gov/oil-spills-prevention-and-preparedness-regulations/area-contingency-planning.
The Watershed Academy Located in EPA's Office of Water. Provides training and information about watershed implementation approaches. Self-paced training modules, webcast seminars, and live training courses provide current information from national experts across a broad range of watershed topics. For more information: http://water.epa.gov/learn/training/wacademy/index.cfm.
How's My Waterway – Mobile App A mobile web app and website that helps people find information about the condition of their local waterways using a smart phone, tablet, or desktop computer. Map option offers a view of the search area with waters color-coded by assessment status. This information can be useful in identifying flood risk management alternatives that may also benefit impaired waters or protect healthy waters. For more information: www.epa.gov/waterdata/hows-my-waterway.
Water Data and Tools This site aggregates EPA water data and tools including integrated analysis, ambient water quality, watershed plan building, and financing. For more information: https://www.epa.gov/waterdata.
Integrated Climate and Land-Use Scenarios (ICLUS) Explores future changes in human population, housing density, and impervious surface for the United States. Example study of its use in projecting future flood damages is "Estimates of present and future flood risk in the conterminous United States," Environmental Research Letters, Volume 13, Number 3 (http://iopscience.iop.org/article/10.1088/1748-9326/aaac65). For more information: https://www.epa.gov/iclus.

Other Websites

- EPA: http://epa.gov
- On-Scene Coordinators Emergency Response: http://epaosc.org/

Agency Mission

The Federal Emergency Management Agency (FEMA) supports citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.

When Can We Help?	Preparation ✔	Response ✔	Recovery ✔	Mitigation ✔
Who Can We Help?	State Agencies, Tribes, Local Governments, Communities, and Individuals			

Programs and Services

Program or Service	Funding
HAZARD MITIGATION PLANNING Hazard mitigation is the effort to reduce loss of life and property by lessening the impact of disasters. It is most effective when implemented under a comprehensive, long-term mitigation plan. State, tribal, and local governments engage in hazard mitigation planning to identify risks and vulnerabilities associated with natural disasters and develop long-term strategies for protecting people and property from future hazard events. Mitigation plans are key to breaking the cycle of disaster damage, reconstruction, and repeated damage. Moreover, a FEMA-approved hazard mitigation plan is a condition for receiving certain types of nonemergency disaster assistance, including funding for mitigation projects.	FEMA's Hazard Mitigation Assistance (HMA) programs provide planning grants under the following programs: • Hazard Mitigation Grant Program (HMGP) • Pre-Disaster Mitigation (PDM) Program • Flood Mitigation Assistance (FMA) For more information on HMA planning grants, see HMGP, PDM, and FMA entries below or visit: https://www.fema.gov/hazard-mitigation-assistance. FEMA-approved mitigation plans are an eligibility requirement for certain FEMA assistance, including: • Public Assistance (PA) Categories C-G • Fire Management Assistance Grants (FMAG) • HMA – HMGP, PDM and FMA For more information on the hazard mitigation plan requirements, visit: https://www.fema.gov/hazard-mitigation-plan-requirement
RISK MAP (MAPPING, ASSESSMENT, PLANNING) Supports community resilience by providing data, building partnerships, and supporting long-term hazard mitigation planning. In particular, Risk MAP's Flood Risk Products work alongside regulatory products to provide flood risk information and support community's overall floodplain management and hazard mitigation strategies. For more information: http://www.fema.gov/risk-mapping-assessment-planning.	Federal appropriation funding

Program or Service	Funding
NATIONAL FLOOD INSURANCE PROGRAM (NFIP) Provides a means for property owners to financially protect themselves. Three components of this program are flood insurance, floodplain management, and flood hazard mapping. NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the program. Flood insurance protects building and contents. This is a federal program and rates are set. Mortgage lenders for all federal and federally-backed loans require flood insurance if property is in a Special Flood Hazard Area (SFHA). SFHA is land within the floodplain of a community subject to a 1 percent or greater chance of flooding in any given year, otherwise known as the 100-year flood. Rates depend on many factors, including age and type of home construction and building's level of risk. In order to qualify for flood insurance, a community must join the NFIP and agree to enforce sound floodplain management standards. For more information: http://www.fema.gov/national-flood-insurance-program.	Claims and expenses of the NFIP are funded by insurance premiums, not tax dollars.
NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMMUNITY RATING SYSTEM (CRS) Allows communities to earn flood insurance premium discounts for measures implemented at local level that reduce flood risk. These measures include 19 different activities, including public outreach, building code enforcement, floodplain management planning, and drainage system maintenance, specifically under Activity 330 Outreach Projects, Activity 450 Stormwater Management, Activity 540 Drainage System Maintenance, Activity 620 Levee Safety, and Activity 630 Dam Safety. CRS gives credit to communities that identify unique and significant flood hazards faced by the community and for floodplain management practices to manage these risks. For more information: http://www.fema.gov/national-flood-insurance-program-community-rating-system	FEMA provides flood insurance policy premium discounts for floodplain management measures implemented by communities that reduce flood risk and exceed Federal minimum NFIP requirements.
NATIONAL DAM SAFETY PROGRAM (NDSP) The Federal government has used the NDSP to protect Americans from dam failure for more than 30 years. A partnership of states, federal agencies, and other stakeholders that encourages individual and community responsibility for dam safety. Provides training for dam safety officials, conducts research related to dam safety, and provides grants to states. States use NDSP funds for the following types of activities: • Dam safety training for state personnel • Increasing number of dam inspections • Supporting and testing of emergency action plans • Timely review and issuance of permits • Improving coordination with state emergency preparedness officials • Identifying dams to be repaired or removed • Conducting dam safety awareness workshops, and creating dam safety videos and other outreach materials For more information: https://www.fema.gov/national-dam-safety-program.	Federal appropriation funding.

Program or Service	Funding
FLOOD MITIGATION ASSISTANCE (FMA) Created as part of the National Flood Insurance Reform Act of 1994 (42 U.S.C. 4101) with goal of reducing or eliminating claims under the NFIP. FEMA provides FMA funds to states and communities to implement measures that reduce or eliminate long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the NFIP. Three types of FMA grants are available: 1) Planning grants to prepare flood mitigation plans. Only NFIP-participating communities with FEMA approved Mitigation Plans can apply for FMA projects grants. 2) Project grants to implement measures to reduce flood losses, such as elevation, acquisition, or relocation of NFIP insured structures. States are encouraged to prioritize FMA funds for applications that include repetitive loss properties. These include structures with two or more losses each with a claim of at least $1,000 within any ten-year period since 1978. 3) Management cost grants for states to help administer FMA program. Up to 10 percent of project grants may be awarded to states for management cost. For more information: http://www.fema.gov/flood-mitigation-assistance-program.	• Maximum Federal share for FMA sub-applications per 42 U.S.C. 4104c is as follows: – $50,000 for state plans – $25,000 for local plans • Maximum 10 percent of awarded grant funds can be used by state emergency management agencies (EMA) for management costs. • Maximum 5 percent of awarded grant funds can be used by local EMA for management costs. (See FY 2014 Funding Opportunity Announcement). • Period of performance for FMA program begins with opening of application period and ends no later than 36 months from the selection date.
HAZARD MITIGATION GRANT PROGRAM (HMGP) Provides grants to state and local governments for planning and to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce loss of life and property due to natural disasters and enable mitigation measures to be implemented during immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Eligible recipients and/or subrecipients include state and local governments, Indian tribes or other tribal organizations, and private nonprofit organizations. Three types of grants are available: • Planning grants to prepare FEMA approved hazard mitigation plans and for planning related activities. • Project grants to implement measures to reduce losses • Management cost grants for states to help administer the HMGP program. For more information: http://www.fema.gov/hazard-mitigation-grant-program	• Available funding under a particular disaster declaration is limited. • Amount of HMGP funding available to applicant is based on estimated federal assistance, subject to sliding scale formula outlined in 44 CFR 206.432(b). • For states and tribes with Standard Mitigation Plan - up to 15 percent of first $2 billion of estimated aggregate amounts disaster assistance is available. See 44 CFR 206.432(b). • For states and tribes with Enhanced Mitigation Plans - eligible assistance is up to 20 percent for estimated aggregate amounts of disaster assistance. See 44 CFR 206.432(b). • FEMA can fund up to 75 percent of eligible costs for each project. • State or recipient must provide 25 percent cost share match. Can be combination of cash and in-kind sources. • Funding from other federal sources cannot be used for 25 percent share with one exception: funding provided to states under CDBG program from HUD can be used to meet the non-federal cost share requirement.

Program or Service	Funding
PRE-DISASTER MITIGATION PROGRAM (PDM) Provides grants to state, local, and tribal governments to implement and sustain cost-effective measures designed to reduce risk to individuals and property from natural hazards, while also reducing reliance on federal funding from future disasters. Authorized under Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Three types of grants are available: • Planning grants to prepare FEMA approved hazard mitigation assistance plans. • Project grants to implement measures to reduce losses, such as safe rooms; structural retrofits for wind and earthquake; or elevation, acquisition, or relocation of structures. • Management cost grants for states to help administer PDM program. Up to 10 percent of project grants may be awarded to states for management costs. For more information: https://www.fema.gov/pre-disaster-mitigation-grant-program.	• Maximum 10 percent of awarded grant funds can be used by state or recipient for management costs. • Maximum 5 percent of awarded grant funds can be used by local sub-recipients for management costs. • Period of performance begins with opening of application period and ends no later than 36 months from the selection date. • FEMA can fund up to 75 percent of eligible costs for each project. • Recipient or sub-recipient must provide 25 percent cost share match.
COMMUNITY ASSISTANCE PROGRAM - STATE SUPPORT SERVICES ELEMENT (CAP-SSSE) Funds designated state NFIP Coordinator office to provide technical assistance to communities in the NFIP and evaluate community performance in implementing NFIP floodplain management activities. CAP-SSSE helps to: • Ensure that NFIP flood loss reduction goals are met. • Build state and community floodplain management expertise and capability. • Leverage state knowledge and expertise in working with their communities. The National Flood Insurance Act of 1968 prohibits provision of flood insurance in a community unless that community adopts and enforces floodplain management measures that meet/exceed minimum criteria in 44 CFR Part 60.3. Measures can take the form of floodplain management ordinances, building codes, or zoning provisions. For more information: https://www.fema.gov/community-assistance-program-state-support-services-element.	• FEMA regional offices and the designated state agency negotiate a CAP-SSSE agreement that specifies activities and products to be completed by a state in return for CAP-SSSE funds. • Nonfederal cost share is 25 percent.
PUBLIC ASSISTANCE (PA) Under a Presidentially declared emergency or major disaster, PA provides supplemental federal disaster grant assistance for debris removal; emergency protective measures; and repair, replacement, or restoration of disaster-damaged, publicly-owned facilities and facilities of certain private nonprofit organizations. The program also encourages protection from future damage by providing assistance for hazard mitigation measures during the recovery process. For more information: https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit.	• Federal share is not less than 75 percent of eligible cost for emergency measures and permanent restoration. • Recipient (usually the state) determines how the nonfederal share (up to 25 percent) is split with sub-recipient. • Recipient must have FEMA-approved mitigation plan to be eligible for Categories C-G. More information on hazard mitigation plan requirements: https://www.fema.gov/hazard-mitigation-plan-requirement

Program or Service	Funding
INDIVIDUAL ASSISTANCE (IA) Under a Presidentially declared emergency or major disaster, IA provides financial assistance or direct services to those who have necessary expenses and serious needs if unable to meet the needs through other means. Up to the Individuals and Households Program (IHP) maximum is available in financial help (adjusted each year based on the Department of Labor Consumer Price Index). Flood insurance may be required. Forms of help include Housing Assistance (financial and/or direct assistance), and Other Needs Assistance (SBA-dependent or non-SBA-dependent). Generally, more than one type of IA assistance may be provided to the household. For more information: https://www.fema.gov/individual-assistance-program-tools.	• Funds are allocated from the President's Disaster Relief Fund for use in a designated emergency or major disaster. • Households receive assistance directly from FEMA or through disaster aid programs of other participating federal or state agencies.
NATIONAL HURRICANE PROGRAM (NHP) Since 1985, the NHP has truly been an interagency partnership program. FEMA supports NHP with significant contributions from its two federal agency partners: USACE and the NOAA/National Hurricane Center (NHC). The main NHP goals designed to meet requirements of the legislative mandate include: • Provide data, resources, and technical assistance to support hurricane evacuation and response planning. • Deliver comprehensive hurricane preparedness training to emergency managers (EMs) and partners. • Provide operational tools, information, and technical assistance to EMs to support hurricane evacuation and response decisions during hurricane approach. The NHP consists of eight major components to deliver the three program goals: • Sea, Lake, and Overland Surge from Hurricanes (SLOSH) Storm Surge Model Development and Products • Hurricane Evacuation Studies (HES) and Evacuation Planning • Hurricane Decision Support Tool (HURREVAC) • Hurricane Preparedness Training for Emergency Managers and Partners • Operational Decision Support and Technical Assistance (Hurricane Liaison Team) • Intergovernmental Hurricane Preparedness Coordination (ICCOH and NEMA Hurricane Subcommittee) • Technology Integration • Post-Storm Assessments of NHP Products and Services For more information: https://www.fema.gov/pdf/plan/ prevent/nhp /nhp_faqs.pdf	• FEMA receives specific NHP budget to conduct these mandated activities and has a national program manager at headquarters, as well as program managers at each region with hurricane risk. • USACE and NHC receive funding from FEMA to conduct NHP technical activities to execute program components and deliverables. USACE and NHC also contribute funding, staff time, and in-kind services from their agency budgets allowing the NHP to expand its scope. • USACE and NHC do not have specific NHP authorization or budget; therefore, the financial value of their contribution varies from year to year. Both agencies obtain resources to support the NHP from broader authorities and budgets that have competing interests.

Other Resources and Tools

Emergency Management Institute (EMI) Serves as the national focal point for development and delivery of emergency management training to minimize the impact of disasters by enhancing capabilities of federal, state, local, and tribal government officials; volunteer organizations; and public and private sectors. For more information http://training.fema.gov/EMI/.
NFIP Lender Training Opportunities Training for lenders is available in several modes, including instructor-led webinars, recorded webinars that can be viewed at your convenience, and live seminars scheduled as part of the programming at national lender conferences.
The Center for Domestic Preparedness (CDP) Identifies, develops, tests, and delivers training to states, local agencies, and tribal emergency response providers. They provide on-site and mobile training at the performance, management, and planning levels and facilitate training by the U.S. Department of Homeland Security. For more information https://cdp.dhs.gov/.

Other Websites

To learn about FEMA's extensive training, workshops, and informational opportunities, and stay informed about other events, such as conferences, testimonies, speeches, blogs, social media, news releases, situation reports, podcasts, and newsletters, visit www.fema.gov.

Agency Mission

The U.S. Department of Housing and Urban Development's (HUD) mission is to create strong, sustainable, inclusive communities and quality affordable homes for all. HUD is working to strengthen the housing market to bolster the economy and protect consumers, meet the need for quality affordable rental homes, utilize housing as a platform for improving quality of life, build inclusive and sustainable communities free from discrimination, and transform the way HUD does business.

When Can We Help?	Preparation ✔	Response	Recovery ✔	Mitigation ✔
Who Can We Help?	State Agencies, Tribes, Local Governments, and Communities			

Programs and Services

Program or Service	Funding
COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) Flexible program that provides communities with resources to address wide range of unique community development needs. One of the longest, continuously run programs at HUD, CDBG provides annual grants on a formula basis to 1209 general units of local government and states. Two program areas include: • **Entitlement Communities** - Allocates annual grants to larger cities and urban counties to develop viable communities by providing decent housing and a suitable living environment and expanding economic opportunities, principally for low- and moderate-income persons. • **State Administered CDBG** - Also known as the Small Cities CDBG program, states award grants to smaller units of general local government that carry out community development activities. Each state develops annual funding priorities and criteria for selecting projects. For more information: https://www.hudexchange.info/programs/cdbg/.	• Annual appropriation is allocated between states and local jurisdictions called "non-entitlement" and "entitlement" communities (central cities of Metropolitan Statistical Areas, cities with populations of at least 50,000, or qualified urban counties with population of 200,000 or more, excluding population of entitled cities). • States distribute funds to non-entitlement localities not qualified as entitlement communities. • Grant amount determined by a community needs formula that includes poverty extent, population, housing overcrowding, housing age, and population growth lag in relation to other metropolitan areas.
CDBG DISASTER RECOVERY ASSISTANCE Provides flexible grants to help cities, counties, and states recover from Presidentially-declared disasters, especially in low-income areas (subject to availability of supplemental appropriations). Congress may appropriate additional funding for CDBG and the HOME Investment Partnerships Program as Disaster Recovery grants to rebuild affected areas and provide crucial seed money to start the recovery process. Can help communities and neighborhoods that otherwise might not recover due to limited resources. Grants often supplement disaster programs of FEMA, Small Business Administration, and USACE. HOME Disaster Recovery grants can provide an important resource for providing affordable housing to disaster victims. For more information: https://www.onecpd.info/cdbg-dr/.	HUD generally awards noncompetitive, nonrecurring Disaster Recovery grants by a formula that considers disaster recovery needs unmet by other federal disaster assistance programs.

Other Websites

- HUD: http://www.hud.gov
- Floodplain Management: https://www.onecpd.info/environmental-review/floodplain-management
- Agency contact information for floodplain management and environmental requirements: https://www.onecpd.info/environmental-review/hud-environental-staff-contacts/

Agency Vision

The National Aeronautics and Space Administration (NASA) vision statement is "We reach for new heights and reveal the unknown for the benefit of humankind."

When Can We Help?	Preparation ✓	Response ✓	Recovery ✓	Mitigation ✓
Who Can We Help?	Federal / State Agencies, Tribes, Local Governments, Communities, and Individuals			

Programs and Services

Program or Service	Funding
NASA APPLIED SCIENCES PROGRAM: Promotes efforts to discover and demonstrate innovative and practical uses of Earth science data and knowledge. Supports and funds applied research and application projects that foster uses of Earth-observing satellite data and scientific knowledge by public and private sector organizations in their policy, business, and management decisions. Applications address disasters (see below), ecological forecasting, health and air quality, water resources, and wildfires. For more information: https://appliedsciences.nasa.gov/.	
NASA DISASTERS PROGRAM: Promotes the use of Earth observations to improve the prediction of, preparation for, response to, mitigation of, and recovery from natural and technological disasters, including floods, hurricanes and landslides. Uses space and aerial based assets to answer complex questions, help with predictions, and incorporate cutting edge technology into disaster support. Produces ready to use products and services to help emergency responders make decisions. Program is made up of a diverse team of people with science, emergency management, and disaster risk reduction experience. Utilizes earth observation capabilities and our research community to monitor our planet. Identifies those hot spots where may be able to assist with disaster response, recovery, mitigation, and preparedness by providing a cohesive and coordinated level of support. Data and products help communities to better understand how these and other hazards put economies and communities at risk, and can guide mitigation and planning to accelerate successful recovery and reduce risk. For more information: https://disasters.nasa.gov/.	All products and tools produced by the NASA Disasters Program are free and open, and available to anyone.

Other Resources and Tools

NASA Disasters Mapping Portal (Beta): Disasters Program data produced, including near real time automated and ad hoc products, are available on the mapping portal: https://maps.disasters.nasa.gov/arcgis/home/

Other Websites

NASA Homepage https://www.nasa.gov/

Agency Mission

The National Weather Service (NWS) is a line office of NOAA, an agency of the U.S. Department of Commerce. The NWS mission is to provide weather, water, and climate forecasts and warnings for the protection of life and property and enhancement of the national economy. NWS data and products form a national information database and infrastructure that can be used by other governmental agencies, the private sector, the public, and the global community.

When Can We Help?	Preparation ✔	Response ✔	Recovery ✔	Mitigation ✔
Who Can We Help?	Federal/State Agencies, Tribes, Local Governments, and Communities			

Programs and Services

Program or Service	Funding
ADVANCED HYDROLOGIC PREDICTION SERVICES (AHPS) Provides enhanced hydrologic information, products, and services through the infusion of new science and technology. River flooding and drought forecasts are prepared by hydrologists and hydro-meteorologists at the NWS 13 River Forecast Centers and 122 Weather Forecast Offices. River forecasts and observations are available at the AHPS website, as well as Precipitation Analysis, Long Range Flood Risk, Probabilistic Forecasts, and Flood Inundation Mapping (FIM). These products and services are provided to assist community leaders and emergency managers in making better life- and cost-saving decisions about evacuations and movement of property before flooding occurs. Please see AHPS User's Guide for description of the suite of graphical and numerical products. For more information: http://water.weather.gov/ahps/.	• 100 percent federally funded. • Sponsors asked to contribute $4,000 to help defray NWS FIM costs to host AHPS.
THE NATIONAL WATER MODEL (NWM) In August 2016, NOAA NWS Office of Water Prediction (OWP) released version 1.0 of the National Water Model (NWM) to enhance and expand NOAA's water flow forecasts, which previously had been available for approximately 4,000 river locations with stream gages predominantly operated by USGS. The new model expands forecasts to 2.7 million stream locations nationwide and leverages the full network of nearly 8,000 USGS stream gauges and NOAA's investment in atmospheric modeling. The NWM will provide high-resolution forecasts of soil moisture, surface runoff, snow water equivalent, and other parameters. Download a program brochure here: http://water.noaa.gov/documents/wm-national-water-model.pdf. Read more about this new cornerstone of the NOAA Water Initiative: http://water.noaa.gov/about/nwm. Learn how to access the information to help gage your watersheds: http://water.noaa.gov/documents/OWP-interface-PDD.pdf.	• 100 percent federally funded. • NWM output is freely available in various resolutions (1km, 250m, and along a point at a channel or reservoir).

Program or Service	Funding
WEATHER READY NATION (WRN) The WRN initiative is about helping our nation become more resilient to increasing extreme weather, water, and climate events. NOAA is working to keep these threats from becoming disasters with greater accuracy in forecasts and warnings, evolving services to community decision makers, and better ways to communicate risk to stakeholders and the public (https://www.weather.gov/wrn/). NOAA partners with emergency management officials, businesses, and the media to motivate individuals and communities to prepare for a potential weather disaster and take actions to save lives at home, in schools, and in the workplace. Help build a Weather-Ready Nation by becoming a WRN Ambassador and serving a pivotal role in affecting societal change by promoting WRN messages, collaborating with NOAA, sharing your success stories, and serving as an example. More information here: https://www.weather.gov/wrn/amb-tou.	• Educational materials, brochures, and videos are available for free from the website. • There is no cost for government, businesses, nonprofit and non-governmental organizations, and academia to become WRN Ambassadors.
NWS StormReady A voluntary program to provide guidance and incentive to communities interested in improving their hazardous weather operations. Once communities are recognized as StormReady, they can provide their StormReady recognition letter to their regional FEMA National Flood Insurance Program to determine if their activities will be acceptable for Community Rating System credits. Although there are no fees for StormReady recognition, a community may need to upgrade its emergency preparedness infrastructure to qualify for StormReady status. For more information: https://www.weather.gov/stormready/.	There is no application fee for StormReady recognition.

Other Resources and Tools

NWS Year-Round Weather Safety Campaigns The aim of National Seasonal Safety Campaigns is to build a Weather-Ready Nation, one that is prepared for extreme weather, water, and climate events. Each campaign includes seasonal resources, which provide information vital for staying safe. Materials include websites, articles, social media, infographics, videos, and other content about weather hazards most common during the current season. All subject content can be freely shared. Materials for each campaign can be found by clicking the buttons at the top of the Safety Campaign webpage: http://www.weather.gov/safetycampaign. The Flood Safety Awareness webpage, located at http://www.floodsafety.noaa.gov, was designed to inform users on how to stay safe in a flood event. If one knows what to do before, during, and after a flood, an informed individual can increase his/her chances of survival. This website provides access to an interactive flood map, information describing different types of flooding, educational material, and NWS resources about potentially dangerous flooding situations. Additional flood topics of interest include Turn Around Don't Drown, Historical State Flood Information, Flood Hazards, and NWS Flood Related Products. Information on technologies NWS uses to communicate weather and water hazards to the public, such as Wireless Emergency Alerts (WEA), NOAA Weather Radio (NWR) All Hazards, and Mobile Weather, are available under the Information Tab.
NOAA NWS AWARE For free NWS monthly publication geared to emergency management community, partners, and NWS staff. Visit https://www.weather.gov/publications/aware.

Other Resources and Tools

Precipitation Frequency Estimates
The Office of Water Prediction (OWP) is in charge of updating precipitation frequency (PF) estimates for various areas of the U.S. as Volumes of the NOAA Atlas 14. Estimates in a variety of formats, supplementary information, and documentation are available from the Precipitation Frequency Data Server (PFDS).
The PDFS has a map interface for users to point-and-click on a state to access NOAA Atlas 14 precipitation frequency estimates and associated information. Estimates and their confidence intervals are displayed directly as tables or graphs. Supplementary information, such as ASCII grids of estimates, associated temporal distributions of heavy rainfall, time series data at observation sites, cartographic maps, etc., are also available at http://hdsc.nws.noaa.gov/hdsc/pfds/index.html. Publications for states not covered by Atlas 14 can be found at http://www.nws.noaa.gov/oh/hdsc/currentpf.htm.

Snow Information
The OWP provides comprehensive snow observations, analyses, data sets, and map products for the nation and maintains the National Snow Observation Database, Airborne Snow Surveys, Satellite Snow Cover Mapping, Snow Modeling and Data Assimilation, Interactive Analytical Mapping Visualization Tools, Integrated Snow Datasets for Geospatial Applications, Applied Snow Research, and Interactive Snow Maps. Using the Interactive Snow Information interface, users can browse through a suite of snow information, including snow cover, snow depth, snowfall total for last 24 hours, and other timeframes to gain better insight into the snow water equivalent and cover and gage seasonal flood risks.
Information can be found at: https://www.nohrsc.noaa.gov/interactive/html/map.html

Other Websites

- NOAA NWS Main Webpage: http://www.weather.gov/
- NOAA NWS Office of Water Prediction: http://water.noaa.gov/
- NCEP Weather Prediction Center: http://www.wpc.ncep.noaa.gov/
- National Severe Storms Laboratory: https://www.nssl.noaa.gov/
- National Hurricane Center: http://www.nhc.noaa.gov/
- National Operational Hydrologic Remote Sensing Center: https://www.nohrsc.noaa.gov/
- National Centers for Environmental Information: : https://www.ncei.noaa.gov/
- River Forecast Centers: https://water.weather.gov/ahps/rfc/rfc.php
- Weather Forecast Offices: https://water.weather.gov/ahps/rfc/rfc.php
- NOAA NWS Flood Related Products: http://www.floodsafety.noaa.gov/products.shtml
- Historical State Flood Information: http://www.floodsafety.noaa.gov/map.shtml
- U.S. Natural Hazard Statistics: http://www.nws.noaa.gov/om/hazstats.shtml
- NOAA NWS Guide to Hydrologic Information on the Web: http://www.nws.noaa.gov/os/water/resources/Guide_to_Hydrologic_Information_Brochure.pdf
- FIM User Guide: http://water.weather.gov/ahps2/inundation/inundation_mapping_user_guide.pdf
- Flood Map Libraries and Development Guidelines: http://water.weather.gov/ahps/inundation.php

Agency Mission

The National Oceanic and Atmospheric Administration's (NOAA's) National Ocean Service (NOS) is the nation's most comprehensive ocean and coastal agency. NOS's mission is to provide science-based solutions through collaborative partnerships to address evolving economic, environmental, and social pressures on our oceans and coasts. Within NOS, NOAA's Office for Coastal Management (OCM) provides the technology, information, and management strategies used by local, state, and national organizations to address complex coastal issues.

When Can We Help?	Preparation ✓	Response	Recovery ✓	Mitigation ✓
Who Can We Help?	Serves and partners with the coastal management community, including state, local, tribal, and territorial governments; other federal agencies; and conservation and other partner organizations.			

Programs and Services

Program or Service	Funding
COASTAL ZONE MANAGEMENT PROGRAM Authorized by the Coastal Zone Management Act (CZMA) of 1972, the Program comprehensively addresses the nation's coastal issues through a voluntary partnership between the federal government and coastal and Great Lakes states and territories. OCM awards four types of funding to the nation's 34 state and territory coastal zone management programs to protect, restore, and responsibly develop coastal communities and resources. Funding categories include: • **Administrative Grants** - Funds to administer state/territorial coastal zone management programs under Section 306 of the CZMA. • **Coastal Resource Improvement Program** - Under Section 306A of the CZMA, state coastal zone management programs may spend up to half of their Section 306 funds on small-scale construction or land acquisition projects that enhance public access to the coast, facilitate redevelopment of urban waterfronts, or preserve and restore coastal resources. • **Coastal Zone Enhancement Grants** - Under Section 309 of the CZMA, OCM provides zero-match Coastal Zone Enhancement Program funds to state coastal zone management programs to enhance programs in one or more areas of national significance. • **Coastal Nonpoint Pollution Control Program (Technical Assistance)** Funds to help state coastal zone management programs implement Coastal Nonpoint Pollution Control Programs under Section 310 (Technical Assistance) of the CZMA. **For more information:** https://coast.noaa.gov/czm/	• Administrative Grants: 1:1 ratio federal-to-state matching funds. • Coastal Resource Improvement Program: 1:1 ratio federal-to-state matching funds (subset of 306 funding). • Coastal Zone Enhancement Grants: 100 percent federally funded. • Coastal Nonpoint Pollution Control Program: 1:1 ratio federal-to-state matching funds.

DIGITAL COAST A partnership-driven website that provides user-focused data, tools, trainings, and case studies designed for coastal managers and practitioners, including, but not limited to, floodplain managers, emergency managers, planners, and natural resource managers. Digital Coast Partners include: American Planning Association, Association of State Floodplain Managers, Coastal States Organization, National Association of Counties, National Estuarine Research Reserve Association, National States Geographic Information Council, NOAA OCM, The Nature Conservancy, and Urban Land Institute. Digital Coast Partners are eligible for project funds For more information: https://coast.noaa.gov/digitalcoast/. For information about a wide array of training opportunities available from NOAA and partner organizations, go to: https://coast.noaa.gov/digitalcoast/training/home.html. For access to dozens of tools that help turn data into helpful information, go to: https://coast.noaa.gov/digitalcoast/tools/.	• Program availability is dependent on annual appropriations. • Typical award amounts are highly variable and dependent on project objectives and scope. • Cost-sharing expected through cash or in-kind contributions.
NATIONAL ESTUARINE RESEARCH RESERVES NOAA provides funds to 29 state National Estuarine Research Reserves under Section 315 of the CZMA to operate and manage reserves. Funds support research, education, stewardship, system-wide monitoring, and graduate research fellowships at the reserves. Funding is also used to acquire land for reserves and construct reserve facilities as needed. For more information: https://coast.noaa.gov/nerrs/.	• 1:1 ratio federal-to-state matching funds for land acquisition projects. • 7:3 federal-to-state ratio funds for other operation, management, and construction activities.
COASTAL RESILIENCE GRANTS NOAA's National Ocean Service (through OCM) and NOAA Fisheries jointly manage a competitive grant program that funds projects that build resilience, including activities that protect life and property, safeguard people and infrastructure, strengthen the economy, or conserve and restore coastal and marine resources. In 2018, the program will support two categories of activities through the same funding opportunity: 1) **Strengthening Coastal Communities:** Activities that improve capacity of multiple coastal jurisdictions (states, counties, municipalities, territories, and tribes) to prepare and plan for, absorb impacts of, recover from, and/or adapt to extreme weather events and climate related hazards. 2) **Habitat Restoration:** Activities that restore habitat to strengthen the resilience of coastal ecosystems and decrease the vulnerability of coastal communities to extreme weather events and climate-related hazards. Eligible applicants include nonprofit organizations; institutions of higher education; regional organizations; private entities; and local, state, and tribal governments. For more information: https://coast.noaa.gov/resilience-grant/.	• Program availability is dependent on annual appropriations. • One year or multi-year awards up to three years. • Feasibility and design-only projects: $75,000 - $300,000; implementation or design and implementation projects: $250,000 - $1,000,000. • 2:1 federal-to-nonfederal contributions; cost-sharing expected through cash or in-kind contributions. • For 2018, NOAA will select proposals from high-scoring projects submitted but not funded in 2017.

Other Websites

NOAA National Ocean Service: http://oceanservice.noaa.gov/.

United States Department of Agriculture

Natural Resources Conservation Service

Agency Mission

The USDA Natural Resources Conservation Service (NRCS) improves the health of our nation's natural resources while sustaining and enhancing the productivity of American agriculture. NRCS achieves this by providing voluntary assistance through strong partnerships with private landowners, managers, and communities to protect, restore, and enhance the lands and waters upon which people and the environment depend.

When Can We Help?	Preparation	Response	Recovery ✓	Mitigation ✓
Who Can We Help?	State Agencies, Tribes, Local Governments, and Communities			

Programs and Services

Program or Service	Funding
WATERSHED AND FLOOD PREVENTION OPERATIONS PROGRAM (WFPO) (Watershed Protection And Flood Prevention Act, Public Law 83-566 as amended) – Provides technical and financial assistance to states, local governments, and tribes to plan and implement authorized watershed project plans for the purpose of: • Watershed protection • Flood reduction • Water quality improvements • Soil erosion reduction • Rural, municipal, and industrial water supply • Irrigation water management • Sediment control • Fish and wildlife enhancement • Hydropower For more information: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/wfpo	• NRCS provides up to 100 percent of technical assistance costs. • Financial assistance cost share varies according to project purpose(s). • Construction costs for flood prevention purposes are 100 percent federally funded.
EMERGENCY WATERSHED PROTECTION PROGRAM (EWP) (Section 216 of Public Law 81-516 and 33 U.S.C. Section 701b and Section 403 of title IV of Public Law 95-334, the Agricultural Credit Act of 1978) – Provides assistance to help state and local governments carry out much needed recovery projects to address damage caused by floods, hurricanes, wildfires, and other natural disasters. Designed for installation of recovery measures, such as removing debris from stream channels, road culverts, and bridges or repairing levees. NRCS may purchase EWP easements on floodplain lands that have been impaired within the last 12 months or that have a history of repeated flooding to restore, protect, maintain, and enhance floodplain functions and values. With the exception of the purchase of floodplain easements, all projects must have a sponsor, such as city/county government, flood/water control districts, or soil/water conservation districts. It is not necessary for a national emergency to be declared to be eligible for assistance. For more information: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/	• Up to 75 percent of construction costs of emergency measures are federally funded (up to 90 percent within limited-resource areas). • Remaining costs must come from local sources and can be cash or in-kind services.

Program or Service	Funding
WATERSHED REHABILITATION PROGRAM (Watershed Protection and Flood Prevention Act Public Law 83-566, Watershed Rehabilitation Amendments of 2000) - Authorizes NRCS to provide technical and financial assistance to watershed project sponsors to: • Rehabilitate aging dams that protect lives, property, and infrastructure, such as drinking water in downstream rural communities. • Decommission dams to no longer pose threat to life and property. • Provide alternate methods (nonstructural) for flood reduction. For more information: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/wr/	• NRCS provides up to 100 percent of technical assistance costs. • NRCS provides 65 percent of total eligible project cost, up to 100 percent of construction costs.
AGRICULTURAL CONSERVATION EASEMENT PROGRAM (ACEP) (Farm Bill of 1985, as amended) - Provides financial and technical assistance to help conserve agricultural lands, wetlands, and their related benefits. The Wetland Reserve Easement component is a voluntary program offering landowners an opportunity to protect, restore, and enhance wetlands on their property and offers an opportunity to establish long-term conservation and wildlife practices and protection. Goal is to achieve the greatest wetland functions and values, along with optimum wildlife habitat, on every enrolled acre. In many cases, restoration and protection of wetlands reduces flood damages. For more information: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/.	For permanent wetland easements, NRCS pays 100 percent of easement value and up to 100 percent of restoration costs.
SNOW SURVEY AND WATER SUPPLY FORECASTING PROGRAM - Provides 12 western states and Alaska with information on future water supplies. NRCS field staff and cooperating partners collect and analyze data on depth and water equivalent of snowpack at more than 1,000 manual measurement sites and 885 automated stations (SNOTEL), using this information to estimate annual water availability, spring runoff, and summer streamflows. NRCS issues water supply forecasts for hundreds of points in the western United States near the first of the month between January and June each year and at other times as requested. For more information: http://www.wcc.nrcs.usda.gov/.	Information can be downloaded free of charge from website.

Other Resources and Tools

GeoObserver for Dams Developed by NRCS National Geospatial Center of Excellence, the web-based geospatial application allows the NRCS to add new dams, create reports, and export data within the National Inventory of Dams (NRCSID).
DamWatch Web-based dam monitoring tool helps NRCS project sponsors protect communities by providing real-time monitoring of 11,900 watershed program dams throughout the U.S. Alerts essential personnel when rainfall, snowmelt, and earthquakes threaten dams. Provides a one-stop source for critical documents, such as drawings, photographs, and emergency action plans.

Other Websites

NRCS headquarters: http://www.nrcs.usda.gov/wps/portal/nrcs/site/national/home/

US Army Corps of Engineers

Agency Mission

The USACE provides vital public engineering services in peace and war to strengthen our nation's security, energize the economy, and reduce risks from disasters.

When Can We Help?	Preparation ✓	Response ✓	Recovery ✓	Mitigation ✓
Who Can We Help?	State Agencies, Tribes, Local Governments, and Communities			

Programs and Services

Program or Service	Funding
NATIONAL FLOOD RISK MANAGEMENT PROGRAM (NFRMP) Program team works to increase capabilities across all aspects of USACE to improve decisions made internally and externally that affect the nation's flood risk, including the risk to life, the economy, and the natural environment. Convenes and facilitates dialogue at all levels of government and with other key interests, e.g., national organizations and private sector, to develop a national vision for flood risk management. For more information: http://www.iwr.usace.army.mil/Missions/Flood-Risk-Management/Flood-Risk-Management-Program/. ***Silver Jackets Program*** - Program under NFRMP to support agency collaboration and coordination with interagency, state-led flood risk and multiple hazard management teams. Provides resources and develops tools to support information sharing and networking, and promotes implementation of flood risk management efforts that improve flood risk awareness and result in actions to reduce risk. For more information: http://silverjackets.nfrmp.us/.	• Funds USACE staff to participate and support state Silver Jackets teams. • Information resources, including newsletters, webinars, and brochures, are available for free from program websites.
FLOODPLAIN MANAGEMENT SERVICE (FPMS) (Section 206, Flood Control Act of 1960, P.L. 86-645, as amended) - Provides technical assistance and planning guidance to federal agencies, states, local governments, other nonfederal entities, eligible tribes, and private sector to support effective floodplain management. May include obtaining, interpreting, or developing data about flood sources and types, flood depths and water surface elevations, floodwater velocity, flooding extent and duration, flood frequency, and obstruction of flood flows. May also include larger scale 'special studies' on all aspects of floodplain management planning, including floodplain mapping, dam break analyses, regulatory floodways studies, flood warning and emergency preparedness, and flood damage reduction studies. Allows for technical assistance only. Cannot conduct site-specific design or fund construction.	• Services to states, local governments, and eligible tribes are 100 percent federally funded. • Nonfederal sponsor may voluntarily contribute funds to expand scope of services per Section 202 of the Water Resources Development Act (WRDA) of 1999. • Services to federal agencies and the private sector are provided on a 100 percent cost recovery basis.

Program or Service	Funding
PLANNING ASSISTANCE TO STATES (PAS) (Section 22, WRDA 1974, as amended) - Assists states, local governments, tribes, and other nonfederal entities with preparation of comprehensive plans for development, utilization, and conservation of water and related resources of drainage basins, watersheds, or ecosystems. Provides technical assistance in support of state (or groups of states) water resources management and related land resources as identified in state water plans or hazard mitigation plans; preparedness, response and recovery plans; or plans associated with changing hydrologic conditions, climate change, long-term sustainability, and resilience. Studies are for project planning and may not include preparation of site-specific designs or fund construction.	• Cost shared at 50 percent federal, 50 percent nonfederal. Nonfederal sponsor's cost share may include cash and work-in-kind. • Limited to $5 million federal funds per state in a fiscal year. • Limited to $2 million federal funds per state per fiscal year for cooperative agreements with nonprofit organizations to assist rural and small communities. • Non-federal sponsor may voluntarily contribute fees in excess of 50 percent cost share.
SPECIFICALLY AUTHORIZED PROJECTS (INVESTIGATIONS) Requires specific authorization from Congress to study, design, and construct major flood risk management projects or other water-related studies/projects for ecosystem restoration, navigation and improvements, and watershed assessment. Generally for large scale projects that cost more than $10 million.	• Feasibility Study: Cost shared at 50 percent federal, 50 percent non-federal. • Design & Construction: Typically cost shared at 65 percent federal, 35 percent non-federal for flood risk management and ecosystem restoration projects. • Nonfederal sponsor's cost share may include cash and work-in-kind.
CONTINUING AUTHORITIES PROGRAM Authorizes feasibility study and construction for relatively small projects; usually requires no further congressional authorization to proceed to construction. • **Emergency Stream Bank and Shoreline Protection** (Section 14, Flood Control Act of 1946, as amended) - Allows emergency stream bank and shoreline protection to prevent damage to public facilities, such as roads, bridges, hospitals, schools, and water/sewage treatment plants. Maximum federal expenditures limited to $5 million. • **Small Beach Erosion Control** (Section 103, River and Harbor Act of 1962, as amended) – Provides protection or restoration of public shorelines by construction of revetments, groins, and jetties. Maximum federal expenditures limited to $10 million. • **Flood Damage Reduction** (Section 205, Flood Control Act of 1948, as amended) - Provides for construction/improvement of flood risk reduction works (levees, channels, and dams) for local flood protection. Non-structural alternatives may include measures such as installation of flood warning systems, raising and/or floodproofing structures, and relocation of flood-prone facilities. Maximum federal expenditures limited to $10 million.	• Feasibility Study: First $100,000 is federally funded. Remaining costs are shared at 50 percent federal, 50 percent nonfederal. • Design & Construction: Cost shared at 65 percent federal, 35 percent nonfederal. • Nonfederal sponsor's cost share may include cash and work-in-kind.

Program or Service	Funding
NATIONAL NONSTRUCTURAL COMMITTEE Promotes use of nonstructural methods for reducing life loss and minimizing property damage. Provides technical consultation on a full array of flood risk management measures from initial assessments and plan formulation through technical review. Offers tools and resources including publications, assessment tools, structure attribute table, nonstructural matrix, and National Flood Barrier Testing and Certification Program. Common types of assistance include: • Consultation on scope of work development • Conduct of nonstructural assessments and plan formulation • Workshops, webinars, and public meeting presentations • Quality assurance • Technical Review • Flood risk management behind levees and below dams For more information: http://www.usace.army.mil/Missions/Civil-Works/Project-Planning/nfpc/.	Services provided at a cost to USACE Districts, state agencies, local governments, Indian tribes, and other federal or nonfederal public agencies.
EMERGENCY PREPAREDNESS, RESPONSE AND RECOVERY (P.L. 84-99, as amended) - Provides preparedness, response and recovery assistance, including: • Emergency response training and exercises, inspection of nonfederal flood risk management projects, and technical assistance with development of response and hazard mitigation plans. • Immediate response and recovery assistance from flooding, including technical assistance, issuance of sandbags and/or pumps, construction of emergency measures, and initial repair and restoration of flood risk management projects. Opportunities for nonstructural project implementation may be considered in lieu of levee repair. All PL 84-99 efforts are supplemental to local, state, and tribal efforts. Reimbursement or grants are not authorized.	• Emergency readiness and response is 100 percent federally funded with some exceptions. • Post-flood repair activities are 100 percent federally funded for engineering and design. • If eligible, rehabilitation of federal flood and coastal storm risk management projects are 100 percent federally funded. • If eligible, rehabilitation of nonfederal flood risk management projects are cost shared at 80 percent federal - 20 percent nonfederal.
LEVEE SAFETY PROGRAM Program strives to ensure levees provide benefit to the nation by working with sponsors and stakeholders to assess, communicate, and manage risk to people, property, and the environment from inundation associated with levees. Maintains a national inventory of levee systems and makes the information available in the National Levee Database. Inspects, assesses, and communicates levee risk-related issues and concerns, holding life-safety paramount. Supports USACE and local decisions aimed at reducing flood risk. For more information: http://www.usace.army.mil/Missions/Civil-Works/Levee-Safety-Program/.	Generally, program services are funded under Inspection of Completed Works (ICW).

Program or Service	Funding
ENGINEER RESEARCH AND DEVELOPMENT CENTER (ERDC) Helps solve our nation's most challenging problems in civil and military engineering, geospatial sciences, water resources, and environmental science. Research and development capabilities include research in flood risk management and coastal systems, emergency management, water resources infrastructure, environmental restoration and regulation, and system-wide water resources, among others. Work is conducted in one of seven laboratories. Some research programs related to flood risk management include: • Flood and Coastal Storm Damage Reduction Program • Coastal and Ocean Data System (CODS) https://chl.erdc.dren.mil/cods-national-coastal-wave-climate/ • Ecosystem Management and Restoration Research Program • Regional Sediment Management Program https://rsm.usace.army.mil • Engineering with Nature https://ewn.el.erdc.dren.mil/ ERDC Laboratories conducting research related to flood risk management include: • Coastal & Hydraulics Laboratory http://www.erdc.usace.army.mil/Locations/CHL/ • Cold Region Research and Engineering Laboratory http://www.erdc.usace.army.mil/Locations/CRREL/ • Environmental Laboratory http://www.erdc.usace.army.mil/Locations/EL/ • Geotechnical & Structures Laboratory http://www.erdc.usace.army.mil/Locations/GSL/ • Information Technology Laboratory http://www.erdc.usace.army.mil/Locations/ITL/ For more information: http://www.erdc.usace.army.mil/.	Multiple partnering or funding mechanisms available. Can be federally funded, cost shared, or reimbursable, depending on research or development topic.
COLLABORATION AND PUBLIC PARTICIPATION CENTER OF EXPERTISE Promotes and implements collaborative approaches for effectively solving water resources challenges. Provides technical assistance on collaborative processes, builds USACE collaborative capacity, publishes reports on environmental conflict resolution and collaborative processes, and manages the USACE Public Participation and Risk Communication Community of Practice. Provides training in the use of collaborative tools and processes for use internally and with stakeholders. Provides consultation services and direct support for conflict diagnosis, public involvement process design, and facilitation and mediation. Develops innovative applications using technology for collaboration, pilots, and cutting-edge tools and approaches. For more information: http://www.iwr.usace.army.mil/About/Technical-Centers/CPCX-Conflict-Resolution-Public-Participation/	Services beyond one day of labor provided at cost.

Program or Service	Funding
COASTAL STORM RISK MANAGEMENT - NATIONAL PLANNING CENTER OF EXPERTISE Develops, maintains, and applies expertise in science and engineering technology in order to plan for coastal storm risk management of coastal resources. Provides advisory and consulting services on many coastal planning topics, including plan formulation, and coastal storm risk management for environmental restoration. Collaborates on critical issues facing our coastlines including climate change, resiliency and risk. Partners with other government agencies, non-profits and foreign governments. As leader of the USACE National Hurricane Program, coordinates with FEMA and NOAA to provide assistance and guidance on hurricane evacuation plans. Conducts hurricane mapping and analysis on vulnerability areas, transportation systems, and shelter spaces. For more information: http://www.nad.usace.army.mil/About/National-Centers-of-Expertise/Coastal-Storm-Risk-Management-Planning.	Can be federally funded, cost shared, or reimbursable, depending on services provide.
HYDROLOGIC ENGINEERING CENTER (HEC) Supports USACE by providing technical methods and guidance, water resources software and associated utilities, training, and workshops. Accomplishes research and development and performs technical assistance and special projects. Designated USACE Technical Center of Expertise in the areas of surface and groundwater hydrology, river hydraulics and sediment transport, hydrologic statistics and risk analysis, reservoir system analysis, planning analysis, real-time water management, and other closely associated technical subjects. For more information: http://www.hec.usace.army.mil/.	• Multiple partnering or funding mechanisms available. • Products developed are available to the public and may be freely downloaded from the HEC website. • Services provided at cost to USACE Districts, state agencies, local governments, and other federal or nonfederal public agencies.
INTERAGENCY AND INTERNATIONAL SUPPORT (IIS) Provides technical assistance to non-Department of Defense federal agencies, state and local governments, tribal nations, private U.S. firms, international organizations, and foreign governments, Provides engineering and construction services, environmental restoration and management services, research and development assistance, management of water and land related natural resources, relief and recovery work, and other management and technical services. For more information: http://www.usace.army.mil/Missions/Military-Missions/Interagency-International-Support/.	Most work is provided on 100 percent reimbursable basis.

Other Resources and Tools

The BUZZ Quarterly newsletter that serves as a forum to document and share Silver Jackets teams' successes, lessons learned, opportunities, and resources. Newsletter can be downloaded at http://silverjackets.nfrmp.us/Get-Involved/More-Information/Silver-Jackets-Newsletter.
Silver Jackets Webinars Informational and organizational webinars periodically offered to team members, internal and external to USACE. Recordings and PowerPoint presentations of past webinars are posted at http://silverjackets.nfrmp.us/Get-Involved/More-Information/Webinars-Presentations.

Other Resources and Tools

USACE Flood Risk Management – Silver Jackets Workshops Workshops organized to communicate policy, share team successes, identify challenges, and promote interagency collaboration and networking. Past workshop information is posted on the Silver Jackets website at http://silverjackets.nfrmp.us/Get-Involved/More-Information#workshops.
Geospatial Platform Provides shared and trusted USACE geospatial data, services, and applications for use by partner agencies and public. CorpsMap supports visualization and analysis of USACE infrastructure and real-time display of atmospheric, coastal, critical infrastructure, and watershed data. For more information: http://geoplatform-usace.opendata.arcgis.com/.
National Levee Database Searchable inventory of information about levees displayed in easy-to-use map interface. Includes locations and conditions information, reports, inspection summaries, and other records about levees in the USACE Levee Safety Program and a growing body of information on levees outside of the USACE program. Access the database at: http://nld.usace.army.mil/egis/f?p=471:1.
USACE Publications Repository for official USACE Engineering Regulations (ERs), Engineering Circulars (ECs), Engineering Manuals (EMs) and other official public documents. Documents can be downloaded here: http://www.publications.usace.army.mil/.

Other Websites

- USACE National Headquarters: http://www.usace.army.mil/.
- To find a USACE office near you: http://www.usace.army.mil/Locations/.

Agency Mission

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

When Can We Help?	Preparation ✓	Response	Recovery ✓	Mitigation ✓
Who Can We Help?	State, Tribal, and Local Governments, Other Federal Agencies, Nongovernmental Organizations, Universities, and Private Landowners			

Programs and Services

Program or Service	Funding
THE COASTAL PROGRAM Provides technical and financial assistance to partners to support fish and wildlife habitat restoration and improvement projects in priority coastal areas. Projects are developed collaboratively with partners and support landscape-scale conservation on public and private lands. Projects are selected based on national and regional strategic priorities. Hazard mitigation and disaster recovery frequently are co-benefits of Coastal Program projects. For more information: https://www.fws.gov/coastal/	• Typically provides approximately $7 million to partners to support priority projects • Technical and financial assistance is provided through cooperative agreements. • No minimum required match; however, strives to achieve a 1:1 cost-share, which can include in-kind contributions.
FISH PASSAGE PROGRAM Provides technical and financial assistance for flood risk mitigation planning, dam removal, culvert upgrades, and installation of fish ladders to enhance fish passage and hydrologic connectivity. For more information: https://www.fws.gov/fisheries/whatwedo/NFPP/nfpp.html	• Provides approximately $11 million in direct federal assistance to support priority projects. • No minimum required match; however, strives to achieve a 1:1 cost-share, which can include in-kind contributions.
COASTAL BARRIER RESOURCES ACT (CBRA) PROGRAM Maintains maps of the Coastal Barrier Resource System (CRBS) established by Congress. CBRA encourages conservation of hurricane prone, biologically rich coastal barriers by restricting federal expenditures that incentivize development, such as federal flood insurance. Areas within the CBRS can be developed provided that private developers or other nonfederal parties bear the full cost. For more information: https://www.fws.gov/CBRA/	•
NORTH AMERICAN WETLANDS CONSERVATION ACT (NAWCA) Provides matching grants to partners to implement wetlands conservation projects in the United States, Canada, and Mexico. Supports projects aiming to protect, restore, or enhance wetland and associated upland migratory bird habitats, benefiting priority species, including waterfowl, shorebirds, water birds, and land birds. For more information: https://www.fws.gov/birds/grants/north-american-wetland-conservation-act.php	• Standard Grant Program ($100,001 or more) and a Small Grants Program ($100,000 or less) • Match requirement: 1:1 • Two funding cycles per year • Projects are selected by the North American Wetlands Council and the Migratory Bird Conservation Commission

Program or Service	Funding
NATIONAL WETLANDS INVENTORY (NWI) NWI conducts wetland mapping and classification and publishes *the Status and Trends of Wetlands in the Conterminous United States* every five years. Available here : https://www.fws.gov/wetlands/	Provides nominal financial support for mapping and imagery interpretation through contracts and Cooperative Ecosystem Studies Units.

Other Resources and Tools

Wetlands Mapper Designed to deliver easy-to-use, map-like views of America's Wetland resources. Integrates digital map data along with other resource information to produce current information on status, extent, characteristics, and functions of wetlands, riparian, and deep water habitats. https://www.fws.gov/wetlands/data/Mapper.html.
Wetlands Status and Trends Project Comprises the monitoring component of the National Wetlands Inventory (NWI) program. Provides critical information on recent and historical changes in wetland and deep water habitat type and acreage. Can be accessed here: https://www.fws.gov/wetlands/status-and-trends/index.html.
CBRS Data Desktop /Mobile Viewer Use this mapper to view existing CBRS boundaries. Can be used to help property owners, local, state, and federal stakeholders, and others determine whether or not properties or project sites may be affected by CBRA. Data last modified Oct. 1, 2017 and available at https://www.fws.gov/CBRA/Maps/Mapper.html.

Other Websites

U.S. Fish and Wildlife Service Homepage: https://www.fws.gov/

Agency Mission

The U.S. Geological Survey (USGS) serves the nation by providing reliable scientific information to describe and understand the earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.

When Can We Help?	Preparation ✓	Response ✓	Recovery ✓	Mitigation ✓
Who Can We Help?	Federal, State, and Local Agencies and Tribes			

Programs and Services

Program or Service	Funding
GROUNDWATER AND STREAMFLOW INFORMATION PROGRAM (GWSIP) Supports USGS federal priority stream gages needed for flood-forecasting and flood response activities, including limited deployment of temporary rapid deployment stream gages (RDGs) needed to monitor water levels at crucial locations, flood-documentation studies, and flood inundation mapping. For more information: https://www.usgs.gov/science/mission-areas/water/groundwater-and-streamflow-information.	• 100 percent federally funded. • Other network gages are cooperatively funded.
NATIONAL WATER QUALITY PROGRAM (NWQP) Provides an understanding of water-quality conditions, whether conditions are getting better or worse over time, and how natural features and human activities affect those conditions. For more information: https://www.usgs.gov/science/mission-areas/water/national-water-quality-program.	100 percent federally funded.
WATER AVAILABILTY AND USE SCIENCE PROGRAM (WAUSP) Provides information and tools to support water resource management decisions. Seeks to provide historical data and to predict future scenarios on a daily time-step of water availability and use nationally at the 12-digit hydrologic unit code (HUC-12) scale, which average in size at 37 square miles,. For more information: https://www.usgs.gov/science/mission-areas/water/water-availability-and-use-science-program.	100 percent federally funded.
COOPERATIVE MATCHING FUNDS Provides federal funds to match offerings from some 1,600 local, state, and tribal agencies for select USGS streamgages and interpretive projects. Funds are allocated through the GWSIP, NWQP and WAUSP, and program priorities are informed through discussion with state and local partners.	As much as 50 percent federally funded.
COASTAL AND MARINE GEOLOGY PROGRAM (CMGP) Works with many and varied partners to ensure that our Nation has the information it needs to understand, restore, and protect healthy coastal and ocean resources and the communities who depend on them. For more information: https://marine.usgs.gov/.	100 percent federally funded.

Program or Service	Funding
NATURAL HAZARDS MISSION AREA Responsible for coordinating USGS response following disasters and overseeing the bureau's emergency management activities. Coordinates long-term planning to incorporate hazard science into many other program across the bureau, including floods, hurricanes, severe storms, and wildfires. For more information: https://www.usgs.gov/science/mission-areas/natural-hazards.	100 percent federally funded.
LANDSLIDE HAZARDS (WITHIN NATURAL HAZARDS) Focus is to reduce long-term losses from landslide hazards by improving our understanding of the causes of ground failure and suggesting mitigation strategies. Programs include monitoring of risks, predictions, and tracking landslides, including a "Did you see it" reporting application. For more information: https://www.usgs.gov/science/mission-areas/natural-hazards/landslide-hazards.	100 percent federally funded.

Other Resources and Tools

WaterWatch Maps and graphics that summarize current streamflow conditions and permits comparisons with past flood and drought flows and flow statistics. Available at https://waterwatch.usgs.gov.
WaterAlert Provides customized water texts and email notices whenever water conditions (streamflow, stage, and groundwater levels and water-quality conditions) meet user-defined thresholds. For more information: https://water.usgs.gov/wateralert/parameters.html.
USGS WaterNow Responds to text message containing USGS station number with current site conditions for user selected site. For more information: https://water.usgs.gov/waternow/.
USGS National Water-Information Systems (NWIS) Provides instantaneous and daily value data, monthly and annual statistics, and annual peak flows. For more information: https://waterdata.usgs.gov/.
Rapidly Deployable Networks In addition to long-term streamgages, the USGS hosts a cache of various sensors that can be deployed during a high-water event. These include temporary gages (transmitting), water level sensors (non-transmitting), wave sensors, meteorological stations, and others. Contact your local USGS office and visit https://water.usgs.gov/floods/resources/ for more information and https://water.usgs.gov/floods/FEV/ for flood-event network data (includes HWMs).
StreamStats Drainage-area delineations, basin characteristics, and streamflow statistics for gaged/ungaged locations, as well as other tools, available at https://water.usgs.gov/osw/streamstats/.
USGS Flood-Inundation Mapping Science Focuses efforts at state and local levels to help communities understand flood risks and make cost-effective mitigation decisions. The USGS partners with local communities to assist in the development and validation of flood inundation map libraries. Communities use these maps to help protect lives and property. For more information: https://water.usgs.gov/osw/flood_inundation/.
USGS Flood-Frequency Analysis Workshops Workshops organized to communicate evolving methodology in flood-frequency analysis. Workshops commonly hosted at meetings of the Association of State Floodplain Managers, the National Hydrologic Warning Council, and other professional societies and conferences. Contact your local USGS office to host or attend a workshop.

Other Resources and Tools

USGS Coastal Change Hazards Portal
Interactive on-line tool that provides information about historical or future potential storm impacts for a specific coastal area. Includes a feature to show potential susceptibility to sea level rise. Aids decision makers, organizations, or the general public to make decisions that involve emergency preparedness, ecosystem restoration, and where and how to develop coastal areas. Access the portal at https://marine.usgs.gov/coastalchangehazardsportal/

National Assessment of Shoreline Change Project
An analysis of historical shoreline changes along open-ocean, sandy shores of the coterminous United States and parts of Alaska and Hawaii. The primary goal is to develop standard methods for mapping and analyzing shoreline movement so that internally consistent updates can be periodically made to record shoreline erosion and accretion. A web mapping application provides a national map view of short- and long-term shoreline change evaluations and historical and modern shorelines. For more information: https://coastalmap.marine.usgs.gov/national/shorelc/

Other Websites

- USGS Water Mission Area: https://www.usgs.gov/water/
- USGS Office of Surface Water: https://water.usgs.gov/osw/
- USGS Office Locations: https://www.usgs.gov/connect/locations

Appendix R – PA Grant Program (CDFA Number 97.036), Funded Projects

Table R-115. All Public Assistance by State Agency Applicant, All Requests 1999-2019.
Table R-116. State Agency Public Assistance by Damage Category, 2014-2019.

Table R-115. All Public Assistance by State Agency Applicant, All Requests 1999-2019.

Disaster Number	Declaration Date	Incident Type	Federal Share Obligated	Applicant Name *All project scopes were statewide except for Metropolitan Area Transit
4182	07/21/2014	Flood	$78,455.80	Metropolitan Airports Commission
1982	05/10/2011	Flood	$59,686.72	Metropolitan Airports Commission
1900	04/19/2010	Flood	$137,092.77	Metropolitan Airports Commission
1370	05/16/2001	Flood	$119,473.31	Metropolitan Airports Commission
			$394,708.60	**TOTAL**
4182	07/21/2014	Flood	$108,522.83	Metropolitan Council
1900	04/19/2010	Flood	$139,339.35	Metropolitan Council
1370	05/16/2001	Flood	$801,526.89	Metropolitan Council
4131	07/25/2013	Severe Storm(s)	$17,433.99	Metropolitan Area Transit*
1990	06/07/2011	Severe Storm(s)	$25,704.86	Metropolitan Council - Metro Transit
3278	08/21/2007	Other	$7,940.09	Metropolitan Council - Metro Transit
1982	05/10/2011	Flood	$429,750.05	Metropolitan Council Environmental Services
			$1,530,218.06	**TOTAL**
4182	07/21/2014	Flood	$149,719.93	Minnesota Dept. Of Military Affairs
4069	07/06/2012	Severe Storm(s)	$15,292.70	Minnesota Dept. Of Military Affairs
1990	06/07/2011	Severe Storm(s)	$754.46	Minnesota Dept. Of Military Affairs
1982	05/10/2011	Flood	$627,979.26	Minnesota Dept. Of Military Affairs
1941	10/13/2010	Severe Storm(s)	$113,906.82	Minnesota Dept. Of Military Affairs
1921	07/02/2010	Tornado	$48,790.05	Minnesota Dept. Of Military Affairs
1900	04/19/2010	Flood	$367,121.62	Minnesota Dept. Of Military Affairs
1830	04/09/2009	Severe Storm(s)	$1,542,436.09	Minnesota Dept. Of Military Affairs
1370	05/16/2001	Flood	$589,312.72	Minnesota Dept. Of Military Affairs
1333	06/27/2000	Severe Storm(s)	$67,807.50	Minnesota Dept. Of Military Affairs
1717	08/23/2007	Severe Storm(s)	$191,571.80	Minnesota Dept. Of Military Affairs
1648	06/05/2006	Flood	$132,251.12	Minnesota Dept. Of Military Affairs
1419	06/14/2002	Severe Storm(s)	$111,332.81	Minnesota Dept. Of Military Affairs
			$3,958,276.88	**TOTAL**
1941	10/13/2010	Severe Storm(s)	$6,940.88	Minnesota Department Of Administration
1900	04/19/2010	Flood	$11,491.88	Minnesota Department Of Administration
1830	04/09/2009	Severe Storm(s)	$23,438.18	Minnesota Department Of Administration
			$41,870.94	**TOTAL**
4182	07/21/2014	Flood	$75,000.00	Minnesota Department Of Corrections
1941	10/13/2010	Severe Storm(s)	$9,942.75	Minnesota Department Of Corrections
1921	07/02/2010	Tornado	$2,747.09	Minnesota Department Of Corrections
1717	08/23/2007	Severe Storm(s)	$15,696.86	Minnesota Department Of Corrections
4069	07/06/2012	Severe Storm(s)	$5,732.97	Minnesota Department Of Corrections - Moose Lake
4069	07/06/2012	Severe Storm(s)	$2,825.54	Minnesota Dept Of Corrections - Community Service
			$111,945.21	**TOTAL**
1941	10/13/2010	Severe Storm(s)	$950.78	Minnesota Department Of Education
1830	04/09/2009	Severe Storm(s)	$42,465.87	Minnesota Department Of Health
1717	08/23/2007	Severe Storm(s)	$20,860.21	Minnesota Department Of Health
			$63,326.08	**TOTAL**
1941	10/13/2010	Severe Storm(s)	$1,150.70	Minnesota Department Of Human Services
1830	04/09/2009	Severe Storm(s)	$2,678.00	Minnesota Department Of Human Services
1717	08/23/2007	Severe Storm(s)	$1,441.94	Minnesota Department Of Human Services
3278	08/21/2007	Other	$966.97	Minnesota Department Of Human Services

Disaster Number	Declaration Date	Incident Type	Federal Share Obligated	Applicant Name *All project scopes were statewide except for Metropolitan Area Transit
			$6,237.61	TOTAL
4290	11/02/2016	Flood	$315,972.54	Minnesota Department Of Natural Resources
4182	07/21/2014	Flood	$2,441,592.60	Minnesota Department Of Natural Resources
4131	07/25/2013	Severe Storm(s)	$46,898.00	Minnesota Department Of Natural Resources
4113	05/03/2013	Severe Storm(s)	$19,081.08	Minnesota Department Of Natural Resources
4069	07/06/2012	Severe Storm(s)	$3,410,204.87	Minnesota Department Of Natural Resources
4009	07/28/2011	Severe Storm(s)	$977,089.24	Minnesota Department Of Natural Resources
1982	05/10/2011	Flood	$63,571.38	Minnesota Department Of Natural Resources
1941	10/13/2010	Severe Storm(s)	$1,046,448.04	Minnesota Department Of Natural Resources
1921	07/02/2010	Tornado	$50,984.31	Minnesota Department Of Natural Resources
1900	04/19/2010	Flood	$88,385.84	Minnesota Department Of Natural Resources
1717	08/23/2007	Severe Storm(s)	$2,417,993.18	Minnesota Department Of Natural Resources
3278	08/21/2007	Other	$28,265.36	Minnesota Department Of Natural Resources
1569	10/07/2004	Severe Storm(s)	$45,895.85	Minnesota Department Of Natural Resources
1370	05/16/2001	Flood	$357,497.68	Minnesota Department Of Natural Resources
1333	06/27/2000	Severe Storm(s)	$244,380.79	Minnesota Dnr - Central Office
1283	07/28/1999	Severe Storm(s)	$869,768.70	Minnesota Dnr - Central Office
1288	08/26/1999	Severe Ice Storm	$24,384.08	Minnesota Dnr - Central Office / Region One
1772	06/25/2008	Severe Storm(s)	$44,905.88	Minnesota Department Of Natural Resources
1648	06/05/2006	Flood	$86,485.65	Mn Dept. Of Natural Resources - Region One
			$12,579,805.07	TOTAL
1830	04/09/2009	Severe Storm(s)	$1,495.04	Minnesota Dept Of Agriculture
1717	08/23/2007	Severe Storm(s)	$8,700.13	Minnesota Dept Of Agriculture
			$10,195.17	TOTAL
4290	11/02/2016	Flood	$39,814.42	Minnesota Dept. Of Transportation
4182	07/21/2014	Flood	$169,242.08	Minnesota Dept. Of Transportation
4131	07/25/2013	Severe Storm(s)	$87,301.47	Minnesota Dept. Of Transportation
4113	05/03/2013	Severe Storm(s)	$183,517.12	Minnesota Dept. Of Transportation
4069	07/06/2012	Severe Storm(s)	$14,770.28	Minnesota Dept. Of Transportation
4009	07/28/2011	Severe Storm(s)	$46,966.79	Minnesota Dept. Of Transportation
1941	10/13/2010	Severe Storm(s)	$26,465.36	Minnesota Dept. Of Transportation
1921	07/02/2010	Tornado	$40,756.07	Minnesota Dept. Of Transportation
1900	04/19/2010	Flood	$39,237.56	Minnesota Dept. Of Transportation
1830	04/09/2009	Severe Storm(s)	$247,512.20	Minnesota Dept. Of Transportation
1370	05/16/2001	Flood	$27,290.80	Minnesota Dept. Of Transportation
1333	06/27/2000	Severe Storm(s)	$15,393.39	Minnesota Dept. Of Transportation
1283	07/28/1999	Severe Storm(s)	$1,757.27	Minnesota Dept. Of Transportation
1717	08/23/2007	Severe Storm(s)	$750,280.28	Minnesota Dept. Of Transportation
3278	08/21/2007	Other	$254,295.73	Minnesota Dept. Of Transportation
			$1,944,600.82	TOTAL
1830	04/09/2009	Severe Storm(s)	$14,016.84	Minnesota Emergency Medical Regulatory Board
			$14,016.84	TOTAL
1333	06/27/2000	Severe Storm(s)	$3,128.33	Minnesota Historical Society
			$3,128.33	TOTAL
1717	08/23/2007	Severe Storm(s)	$286,742.83	Minnesota Pollution Control Agency
1419	06/14/2002	Severe Storm(s)	$147,217.99	Minnesota Pollution Control Agency
4069	07/06/2012	Severe Storm(s)	$28,803.42	Minnesota Pollution Control Agency
1941	10/13/2010	Severe Storm(s)	$45,296.84	Minnesota Pollution Control Agency
1830	04/09/2009	Severe Storm(s)	$25,992.68	Minnesota Pollution Control Agency
1333	06/27/2000	Severe Storm(s)	$37,583.26	Minnesota Pollution Control Agency
3278	08/21/2007	Other	$7,985.83	Minnesota Pollution Control Agency
			$579,622.85	TOTAL

Disaster Number	Declaration Date	Incident Type	Federal Share Obligated	Applicant Name *All project scopes were statewide except for Metropolitan Area Transit
1419	06/14/2002	Severe Storm(s)	$15,753.56	Minnesota State Building Codes And Standards
1333	06/27/2000	Severe Storm(s)	$4,674.75	Minnesota State Building Codes And Standards
			$20,428.31	**TOTAL**
1717	08/23/2007	Severe Storm(s)	$66,022.38	Mn Dept Of Public Safety-State Patrol Division
3278	08/21/2007	Other	$115,275.29	Mn Dept Of Public Safety-State Patrol Division
1648	06/05/2006	Flood	$1,092.17	Mn Dept Of Public Safety-State Patrol Division
4069	07/06/2012	Severe Storm(s)	$6,986.06	Mn Dept Of Public Safety-State Patrol Division
1830	04/09/2009	Severe Storm(s)	$108,933.08	Mn Dept Of Public Safety-State Patrol Division
			$298,308.98	**TOTAL**
1333	06/27/2000	Severe Storm(s)	$60,349.02	Minnesota Zoological Garden
			$60,349.02	**TOTAL**
1921	07/02/2010	Tornado	$2,703.67	Mn Dept Of Labor & Industry
1717	08/23/2007	Severe Storm(s)	$11,513.98	Mn Dept Of Labor & Industry
			$14,217.65	**TOTAL**
4182	07/21/2014	Flood	$578,294.66	University Of Minnesota
4131	07/25/2013	Severe Storm(s)	$153,641.54	University Of Minnesota
4069	07/06/2012	Severe Storm(s)	$1,160,547.53	University Of Minnesota
3278	08/21/2007	Other	$31,112.12	University Of Minnesota (Emergency Management)
			$1,923,595.85	**TOTAL**
1283	07/28/1999	Severe Storm(s)	$33,726.36	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
1288	08/26/1999	Severe Ice Storm	$78,277.62	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
1333	06/27/2000	Severe Storm(s)	$155,251.02	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
1370	05/16/2001	Flood	$37,715.41	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
1419	06/14/2002	Severe Storm(s)	$265,577.94	Mn. Dept. Of Public Safety - Div. Of Emerg. Mgmt
1569	10/07/2004	Severe Storm(s)	$91,521.27	Mn. Dept. Of Public Safety - Div. Of Emerg. Mgmt
1622	01/04/2006	Severe Storm(s)	$10,404.78	Mn. Dept. Of Public Safety - Div. Of Emerg. Mgmt
1648	06/05/2006	Flood	$110,884.71	Mn. Dept. Of Public Safety - Div. Of Emerg. Mgmt
1772	06/25/2008	Severe Storm(s)	$144,131.25	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
1830	04/09/2009	Severe Storm(s)	$5,257.70	Mn Dept Of Public Safety, Office Of Communications
1830	04/09/2009	Severe Storm(s)	$1,176,398.24	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
1900	04/19/2010	Flood	$424,959.27	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
1921	07/02/2010	Tornado	$455,663.53	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
1941	10/13/2010	Severe Storm(s)	$865,795.05	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
1982	05/10/2011	Flood	$701,735.49	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
1990	06/07/2011	Severe Storm(s)	$141,769.74	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
4009	07/28/2011	Severe Storm(s)	$392,813.75	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
4069	07/06/2012	Severe Storm(s)	$1,479,246.00	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
4113	05/03/2013	Severe Storm(s)	$270,013.00	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
4131	07/25/2013	Severe Storm(s)	$454,132.00	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
4182	07/21/2014	Flood	$1,394,378.44	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
4290	11/02/2016	Flood	$221,577.00	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
4390	09/05/2018	Flood	$542,061.10	Mn. Dept. Of Public Safety, Div. Of Emerg. Mgmt.
			$9,453,290.67	**TOTAL**

Table R-116. State Agency Public Assistance by Damage Category, 2014-2019.

Agency	Damage Category Code	Event Count	Sum of Total Eligible	Sum of Federal Share Obligated
MINNESOTA DEPT. OF MILITARY AFFAIRS	B - Protective Measures	16	$3,821,334.54	$2,866,000.93
Total		**16**	**$3,821,334.54**	**$2,866,000.93**
MINNESOTA DEPARTMENT OF ADMINISTRATION	B - Protective Measures	5	$55,827.90	$41,870.94
Total		**5**	**$55,827.90**	**$41,870.94**
MINNESOTA DEPARTMENT OF CORRECTIONS	B - Protective Measures	2	$16,919.79	$12,689.84
MINNESOTA DEPARTMENT OF CORRECTIONS	E - Public Buildings	1	$100,000.00	$75,000.00
Total		**3**	**$116,919.79**	**$87,689.84**
MINNESOTA DEPARTMENT OF CORRECTIONS - MOOSE LAKE	B - Protective Measures	1	$7,643.96	$5,732.97
Total		**1**	**$7,643.96**	**$5,732.97**
MINNESOTA DEPARTMENT OF EDUCATION	B - Protective Measures	1	$1,267.70	$950.78
Total		**1**	**$1,267.70**	**$950.78**
MINNESOTA DEPARTMENT OF HEALTH	B - Protective Measures	1	$56,621.16	$42,465.87
Total		**1**	**$56,621.16**	**$42,465.87**
MINNESOTA DEPARTMENT OF HUMAN SERVICES	B - Protective Measures	1	$3,570.67	$2,678.00
MINNESOTA DEPARTMENT OF HUMAN SERVICES	E - Public Buildings	2	$1,534.27	$1,150.70
Total		**3**	**$5,104.94**	**$3,828.70**
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	A - Debris Removal	36	$704,550.44	$528,412.87
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	B - Protective Measures	27	$281,440.97	$211,080.77
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	C - Roads and Bridges	36	$385,317.24	$288,987.97
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	D - Water Control Facilities	15	$1,976,978.00	$1,482,733.51
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	E - Public Buildings	70	$917,781.36	$688,336.14
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	G - Recreational or Other	136	$6,592,938.69	$4,944,704.10
Total		**320**	**$10,859,006.70**	**$8,144,255.36**
MINNESOTA DEPT OF CORRECTIONS - COMMUNITY SERVICE	A - Debris Removal	1	$1,482.44	$1,111.83
MINNESOTA DEPT OF CORRECTIONS - COMMUNITY SERVICE	B - Protective Measures	1	$2,284.95	$1,713.71
Total		**2**	**$3,767.39**	**$2,825.54**
MINNESOTA DEPT OF AGRICULTURE	B - Protective Measures	1	$1,993.39	$1,495.04
Total		**1**	**$1,993.39**	**$1,495.04**
MINNESOTA DEPT. OF TRANSPORTATION	A - Debris Removal	21	$407,091.44	$305,318.59
MINNESOTA DEPT. OF TRANSPORTATION	B - Protective Measures	20	$500,661.59	$375,496.22
MINNESOTA DEPT. OF TRANSPORTATION	E - Public Buildings	8	$233,272.15	$174,954.12
Total		**49**	**$1,141,025.18**	**$855,768.93**
MINNESOTA EMERGENCY MEDICAL REGULATORY BOARD	B - Protective Measures	1	$18,689.12	$14,016.84
Total		**1**	**$18,689.12**	**$14,016.84**
MINNESOTA HOMELAND SECURITY&EMERGENCY MGT	B - Protective Measures	1	$74,985.74	$56,239.31
Total		**1**	**$74,985.74**	**$56,239.31**
MINNESOTA POLLUTION CONTROL AGENCY	A - Debris Removal	1	$60,395.79	$45,296.84
MINNESOTA POLLUTION CONTROL AGENCY	B - Protective Measures	2	$73,061.47	$54,796.10
Total		**3**	**$133,457.26**	**$100,092.94**
MINNESOTA STATE COMMUNITY AND TECHNICAL COLLEGE	A - Debris Removal	1	$4,784.88	$3,588.66
MINNESOTA STATE COMMUNITY AND TECHNICAL COLLEGE	B - Protective Measures	3	$27,788.55	$20,841.42
MINNESOTA STATE COMMUNITY AND TECHNICAL COLLEGE	E - Public Buildings	17	$76,035.29	$57,026.47
MINNESOTA STATE COMMUNITY AND TECHNICAL COLLEGE	G - Recreational or Other	1	$24,942.18	$18,706.64
Total		**22**	**$133,550.90**	**$100,163.19**
MINNESOTA STATE UNIVERSITY	C - Roads and Bridges	1	$5,505.96	$4,129.47
MINNESOTA STATE UNIVERSITY	G - Recreational or Other	1	$2,502.00	$1,876.50
Total		**2**	**$8,007.96**	**$6,005.97**
MN DEPT OF LABOR & INDUSTRY	B - Protective Measures	1	$3,604.89	$2,703.67
Total		**1**	**$3,604.89**	**$2,703.67**

Agency	Damage Category Code	Event Count	Sum of Total Eligible	Sum of Federal Share Obligated
MN DEPT OF PUBLIC SAFETY, OFFICE OF COMMUNICATIONS	B - Protective Measures	1	$7,010.27	$5,257.70
Total		**1**	**$7,010.27**	**$5,257.70**
MN. DEPT. OF PUBLIC SAFETY, DIV. OF EMERG. MGMT.	B - Protective Measures	8	$239,981.30	$179,985.99
MN. DEPT. OF PUBLIC SAFETY, DIV. OF EMERG. MGMT.	E - Public Buildings	1	$1,342.68	$1,007.01
Total		**9**	**$241,323.98**	**$180,993.00**

U.S. Department of Homeland Security
FEMA Region V
536 South Clark Street, Floor 6
Chicago, IL 60605

FEMA

MAR 1 1 2019

Mr. Joe Kelly, Director
Homeland Security and Emergency Management
445 Minnesota St., Suite 223
St. Paul, MN, 55101

Dear Director Kelly,

As requested by Jennifer Nelson, State Hazard Mitigation Officer, FEMA has reviewed the 2019 Minnesota State Hazard Mitigation Plan and I am pleased to inform you that the state plan meets the criteria for a Standard State Hazard Mitigation Plan, as outlined in 44 CFR Part 201.4. I am prepared to approve the 2019 Minnesota State Hazard Mitigation Plan following formal adoption by your state.

Attached is FEMA's review of the plan. I encourage your staff to utilize the review to identify opportunities to improve the plan for future updates.

Congratulations on the development of the 2019 Minnesota State Hazard Mitigation Plan. I encourage you to arrange for the adoption of your plan to continue your state's eligibility for the Stafford Act disaster assistance programs, excluding emergency measures, after March 19, 2019. If you have any questions regarding this planning process, please contact Mary Beth Caruso, Mitigation Division Director, at 312-408-5455 or MaryBeth.Caruso@fema.dhs.gov.

Sincerely,

James K. Joseph
Regional Administrator

B.1 *Plan Review Tool Summary*

State: Minnesota	**Title and Date of Plan:** MN State Hazard Mitigation Plan 2019	**Date of Submission:** Final Draft Submitted on March 7, 2019
State Point of Contact (Name / Title): Jennifer Nelson, State Hazard Mitigation Officer		
Address: 444 Cedar St #223, St. Paul, MN, 55101		
Agency: Division of Homeland Security and Emergency Management		
Phone Number: (651) 201-7427	**E-Mail:** Jennifer.e.nelson@state.mn.us	

Date Received in FEMA Region: Full Draft Received by November 30, 2016	
FEMA Reviewer (Planning – Name / Title): Christine Meissner, Mitigation Planner	**Date:** 3/11/2019
FEMA Reviewer (HMA – Name / Title):	**Date:**
FEMA Reviewer (Name / Title):	**Date:**
FEMA Reviewer (Name / Title):	**Date:**
FEMA Approver (Name / Title):	**Date:**
Plan Status (Not Approved, Approvable Pending Adoption, Approved): Approved Pending Adoption	**Date:** 3/11/2019

SUMMARY	YES	NO
STANDARD STATE MITIGATION PLAN		
Does the plan meet the standard state mitigation plan requirements?	X	
REPETITIVE LOSS STRATEGY		
Does the plan include a Repetitive Loss Strategy? [see S6 / RL1; S8 / RL2; S9 / RL3; S10 / RL4; S13 / RL5; and S15 / RL6]	X	
ENHANCED STATE MITIGATION PLAN		
Does the plan meet the enhanced state mitigation plan requirements?	N/A	

B.2 Standard State Mitigation Plan Regulation Checklist

REGULATION CHECKLIST – STANDARD PLAN *M=Met; NM=Not Met	Location in Plan	M / NM*
STANDARD (S) STATE MITIGATION PLAN		
Planning Process		
S1. Does the plan describe the planning process used to develop the plan? [44 CFR §§201.4(b) and (c)(1)]	Section 2	M
S2. Does the plan describe how the state coordinated with other agencies and stakeholders? [44 CFR §§201.4(b) and (c)(1)]	Section 2	M
Required Revisions:		
Hazard Identification and Risk Assessment		
S3. Does the risk assessment include an overview of the type and location of all natural hazards that can affect the state? [44 CFR §201.4(c)(2)(i)]	Section 4, Appendix B, Appendix C	M
S4. Does the risk assessment provide an overview of the probabilities of future hazard events? [44 CFR §201.4(c)(2)(i)]	Section 4	M
S5. Does the risk assessment address the vulnerability of state assets located in hazard areas and estimate the potential dollar losses to these assets? [44 CFR §§201.4(c)(2)(ii) and 201.4(c)(2)(iii)]	Section 4, Appendices I and R	M
S6. Does the risk assessment include an overview and analysis of the vulnerability of jurisdictions to the identified hazards and the potential losses to vulnerable structures? [44 CFR §§201.4(c)(2)(ii) and 201.4(c)(2)(iii)]	Section 4 (and Section 3), Appendices A, E, H, J, K, L.	M
S7. Was the risk assessment revised to reflect changes in development? [44 CFR §201.4(d)]	Section 3	M
Required Revisions:		
Mitigation Strategy and Priorities		
S8. Does the mitigation strategy include goals to reduce / avoid long-term vulnerabilities from the identified hazards? [44 CFR §201.4(c)(3)(i)]	Section 5	M
S9. Does the plan prioritize mitigation actions to reduce vulnerabilities identified in the risk assessment? [44 CFR §§201.4(c)(3)(iii) and (iv)]	Section 5	M
S10. Does the plan identify current and potential sources of funding to implement mitigation actions and activities? [44 CFR §201.4(c)(3)(iv)]	Section 5 (Section 4-Plans and Programs in Place), Appendix Q	M
S11. Was the plan updated to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities? [44 CFR §201.4(d)]	Appendix P, All sections updated (see table 1 for summary)	M
Required Revisions:		
State Mitigation Capabilities		

S12. Does the plan discuss the evaluation of the state's hazard management policies, programs, capabilities, and funding sources to mitigate the hazards identified in the risk assessment? [44 CFR §201.4(c)(3)(ii)]	Section 5, Section 6	M
Required Revisions:		

REGULATION CHECKLIST – STANDARD PLAN ***M=Met; NM=Not Met**	**Location in Plan**	**M / NM***
Local Coordination and Mitigation Capabilities		
S13. Does the plan generally describe and analyze the effectiveness of local and tribal, as applicable, mitigation policies, programs, and capabilities? [44 CFR §201.4(c)(3)(ii)]	Section 6, Appendix N	M
S14. Does the plan describe the process to support the development of approvable local and tribal, as applicable, mitigation plans? [44 CFR§§201.3(c)(5) and 201.4(c)(4)(i)]	Section 6, Appendix O	M
S15. Does the plan describe the criteria for prioritizing funding? [44 CFR §201.4(c)(4)(iii)]	Section 6	M
S16. Does the plan describe the process and timeframe to review, coordinate and link local and tribal, as applicable, mitigation plans with the state mitigation plan? [44 CFR §§201.3(c)(6), 201.4(c)(2)(ii), 201.4(c)(3)(iii), and 201.4(c)(4)(ii)]	Section 6	M
Required Revisions:		
Plan Review, Evaluation, and Implementation		
S17. Is there a description of the method and schedule for keeping the plan current? [44 CFR §§201.4(c)(5)(i) and 201.4(d)]	Section 2	M
S18. Does the plan describe the systems for monitoring implementation and reviewing progress? [44 CFR §§201.4(c)(5)(ii) and 201.4(c)(5)(iii)]	Section 2	M
Required Revisions:		
Adoption and Assurances		
S19. Did the state provide documentation that the plan has been formally adopted? [44 CFR §201.4(c)(6)]	Pending	
S20. Did the state provide assurances? [44 CFR §201.4(c)(7)]	Section 1	M
Required Revisions:		
Repetitive Loss (RL) Strategy		
RL1. Did Element S6 (risk assessment) address RL and SRL properties? [44 CFR §§201.4(c)(2)(ii), 201.4(c)(2)(iii), and 201.4(c)(3)(v)]	Section 4, Section 5, Appendix G	M
RL2. Did Element S8 (mitigation goals) address RL and SRL properties? [44 CFR §§201.4(c)(3)(i) and 201.4(c)(3)(v)]	Section 5	M
RL3. Did Element S9 (mitigation actions) address RL and SRL properties? [44 CFR §§201.4(c)(3)(iii) and 201.4(c)(3)(v)]	Section 5	M
RL4. Did Element S10 (funding sources) address RL and SRL properties? [44 CFR §§201.4(c)(3)(iv) and 201.4(c)(3)(v)]	Section 5	M
RL5. Did Element S13 (local and tribal, as applicable, capabilities) address RL and SRL properties? [44 CFR §§201.4(c)(3)(ii) and	Section 6	M
RL6. Did Element S15 (prioritizing funding) address RL and SRL properties? [44 CFR §§201.4(c)(4)(iii) and 201.4(c)(3)(v)]	Section 6	M

Required Revisions:

B.3 Enhanced State Mitigation Plan Regulation Checklist

REGULATION CHECKLIST – ENHANCED PLAN *M=Met; NM=Not Met	Location in Plan	M / NM*
ENHANCED (E) STATE MITIGATION PLAN		
Meet Standard State Mitigation Plan Elements		
E1. Does the Enhanced plan include all elements of the standard state mitigation plan? [44 CFR §201.5(b)]	N/A	
Required Revisions:		
Integrated Planning		
E2. Does the plan demonstrate integration to the extent practicable with other state and/or regional planning initiatives and FEMA mitigation programs and initiatives? [44 CFR §201.5(b)(1)]	N/A	
Required Revisions:		
State Mitigation Capabilities		
E3. Does the state demonstrate commitment to a comprehensive mitigation program? [44 CFR §201.5(b)(4)]	N/A	
E4. Does the enhanced plan document capability to implement mitigation actions? [44 CFR §§201.5(b)(2)(i), 201.5(b)(2)(ii), and 201.5(b)(2)(iv)]	N/A	
E5. Is the state effectively using existing mitigation programs to achieve mitigation goals? [44 CFR §201.5(b)(3)]	N/A	
Required Revisions:		
HMA Grants Management Performance		
E6. With regard to HMA, is the state maintaining the capability to meet application timeframes and submitting complete project applications? [44 CFR §201.5(b)(2)(iii)(A)]	N/A	
E7. With regard to HMA, is the state maintaining the capability to prepare and submit accurate environmental reviews and benefit-cost analyses? [44 CFR§201.5(b)(2)(iii)(B)]	N/A	
E8. With regard to HMA, is the state maintaining the capability to submit complete and accurate quarterly progress and financial reports on time? [44 CFR §201.5(b)(2)(iii)(C)]	N/A	
E9. With regard to HMA, is the state maintaining the capability to complete HMA projects within established performance periods, including financial reconciliation? [44 CFR §201.5(b)(2)(iii)(D)]	N/A	
Required Revisions:		

B.4 Strengths and Opportunities for Improvement

STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT

INSTRUCTIONS: The purpose of the "**Strengths and Opportunities for Improvement**" section is for FEMA to provide more comprehensive feedback on the state mitigation plan to help the state advance mitigation planning. The intended audience is the state staff responsible for the mitigation plan update. FEMA will address the following topics:

1. Plan strengths, including specific sections in the plan that are above and beyond the minimum requirements; and
2. Suggestions for future improvements.

FEMA will provide feedback and include examples of best practices, when possible, as part of the *Plan Review Tool,* or, if necessary, as a separate document. The state mitigation plan elements are included below in italics for reference but should be deleted as the narrative summary is completed. FEMA is not required to provide feedback for each element.

Required revisions from the **Regulation Checklist** are not documented in the **Strengths and Opportunities for Improvement** section.

Results from the **Strengths and Opportunities for Improvement** section are not required for Plan Approval, but may inform discussions during the Program Consultation.

Describe the mitigation plan strengths, including areas that may exceed minimum requirements, and describe areas for future improvements to the mitigation plan.

- The 2019 MN State Hazard Mitigation Plan update integrates aspects of the work of the Interagency Climate Adaptation Team (ICAT), a state inter-agency working group addressing climate change adaptation; this type of integration greatly enhances state capability, by strengthening networking and coordination, data and information sharing, and identifying state-level actions and initiatives that promote both hazard mitigation and climate adaption.
- The 2019 MN State Hazard Mitigation Plan includes a coastal erosion and flooding section in the risk assessment, which reflects increasing risk for certain areas of the state, as noted in the most recent presidential declaration, MN-DR-4414.
- A recommendation from the 2014 state review tool was for the state to continue to improve its risk assessment of state-owned facilities. For the 2019 plan, HSEM obtained more comprehensive information and included PA data to convey risk/vulnerability through previous damage. The state should continue to document the impacts to state facilities and coordinate with other state agencies to obtain missing information to inform this assessment.
- Inclusion of ICAT climate adaptation recommendations greatly strengthens the mitigation strategy. It is recommended HSEM continue to work with their SJ and ICAT partners to align the mitigation strategy with state programs/policies/initiatives off all agencies involved in hazard mitigation, this alignment will help with tracking plan implementation and will better reflect the coordination and information sharing of the SJ meetings.