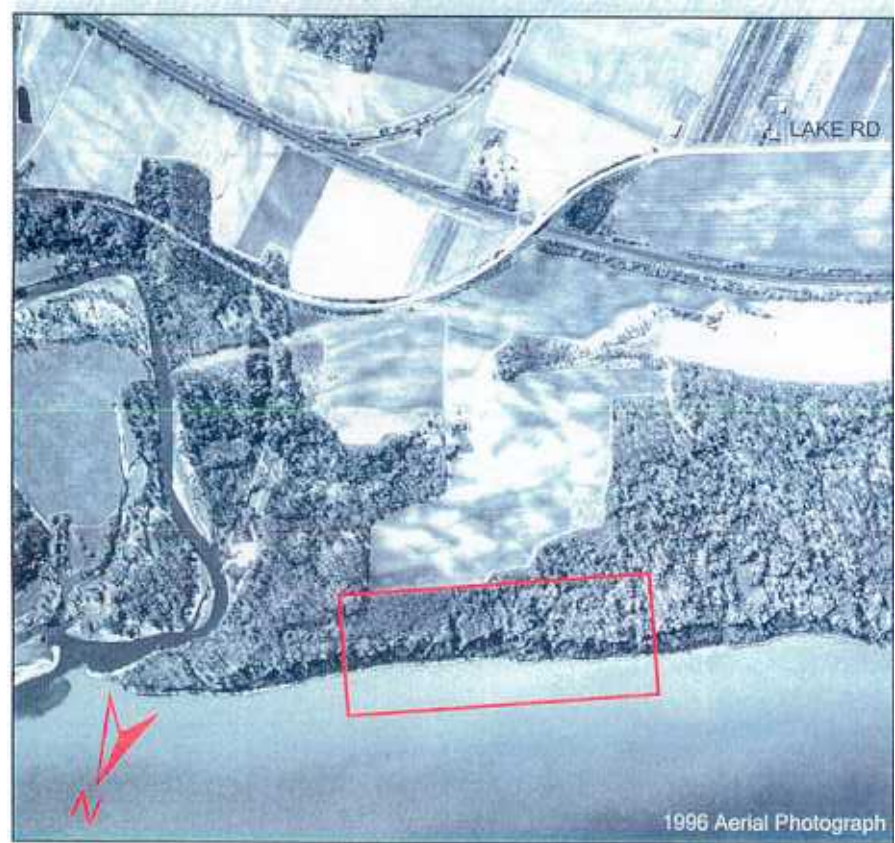
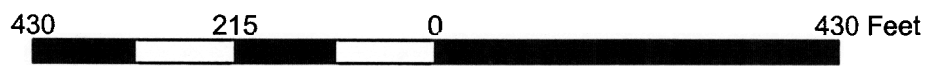
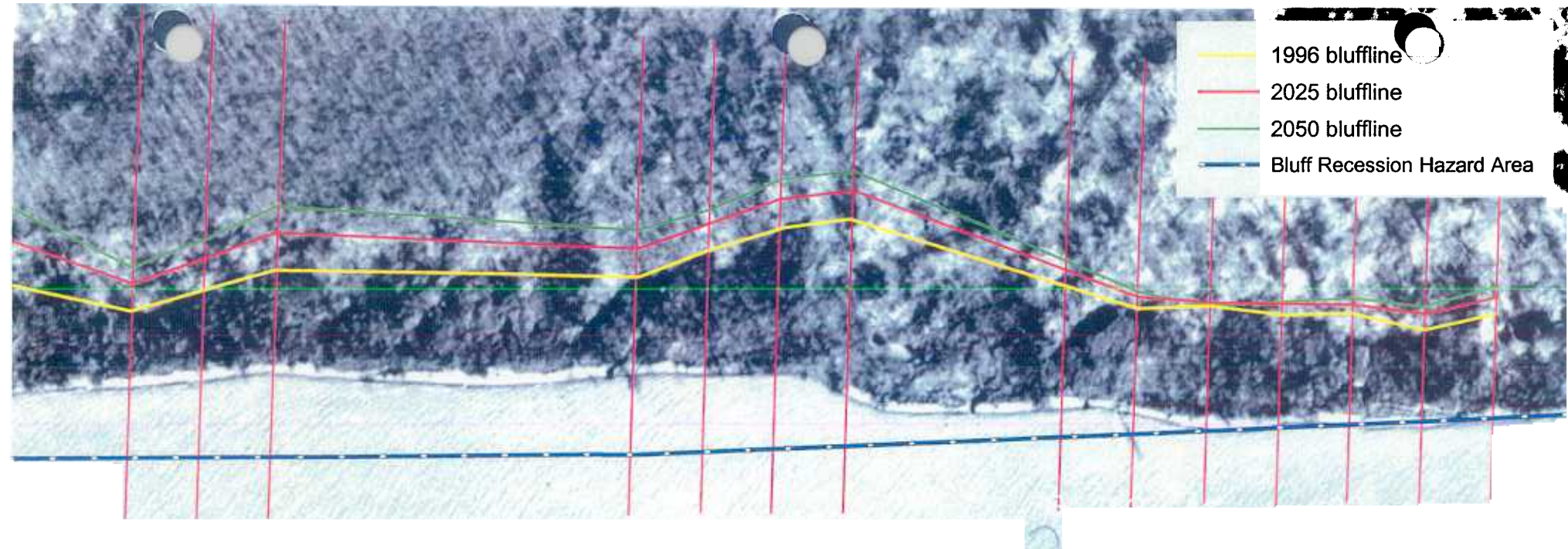


Girard Township and Lake City Borough, PA

Bluff Recession Hazard Area Maps

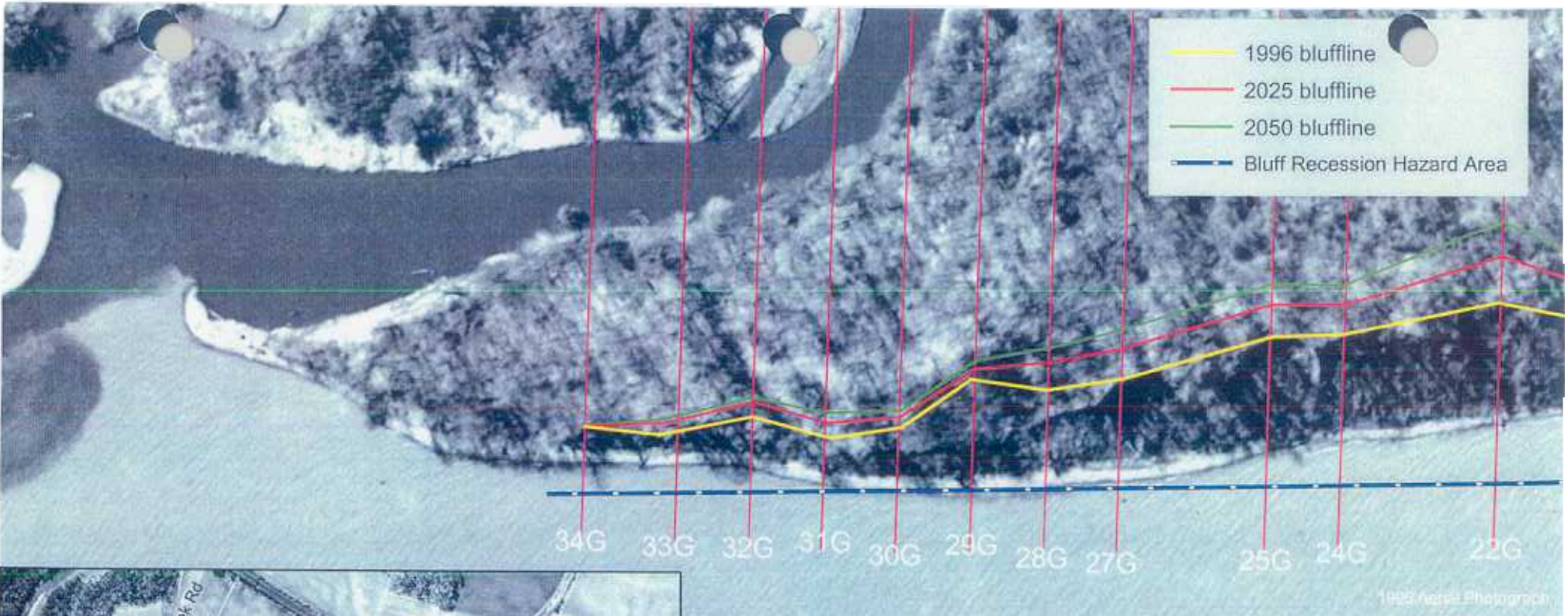


Transect	1	2	3	4	5	6	7
predicted recession by 2025	28.8	22.1	13.2	27.4	0.0	17.4	29.5
predicted recession by 2050	45.0	32.5	16.0	42.4	0.0	23.8	46.4
recession rate (ft/yr)	0.7	0.4	0.1	0.6	0.0	0.3	0.7

Transect	8	9	10	11	12	13	14
predicted recession by 2025			41.3	40.2	35.7	39.0	
predicted recession by 2050			68.4	66.2	57.8	64.0	
recession rate (ft/yr)	discard	discard	1.1	1.0	0.9	1.0	discard

Transect	15	16	17	18	19	20	21
predicted recession by 2025				51.4	42.3	36.6	
predicted recession by 2050				87.1	70.2	59.5	
recession rate (ft/yr)	discard	discard	discard	1.4	1.1	0.9	discard

5 No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area



- 1996 bluffline
- 2025 bluffline
- 2050 bluffline
- - - Bluff Recession Hazard Area

34G 33G 32G 31G 30G 29G 28G 27G 25G 24G 22G

1999 Aerial Photograph



Transect	22	23	24	25	26	27	28
predicted recession by 2025	65.1		41.8	43.8		39.5	33.5
predicted recession by 2050	112.6		69.2	72.9		65.0	53.8
recession rate (ft/yr)	1.9	discard	1.1	1.2	discard	1.0	0.8

Transect	29	30	31	32	33	34	35
predicted recession by 2025	12.8	13.0	15.3	22.2	16.3	0.0	
predicted recession by 2050	15.3	15.6	19.9	32.7	21.8	0.0	
recession rate (ft/yr)	0.1	0.1	0.2	0.4	0.2	0.0	discard

Transect	36	37	38	39	40	41
predicted recession by 2025						
predicted recession by 2050						
recession rate (ft/yr)	discard	discard	discard	discard	discard	discard

No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area



- 1996 bluffline
- 2025 bluffline
- 2050 bluffline
- Bluff Recession Hazard Area

6G 55G 54G 53G 52G 51G 50G 49G 48G

1996 Aerial Photograph



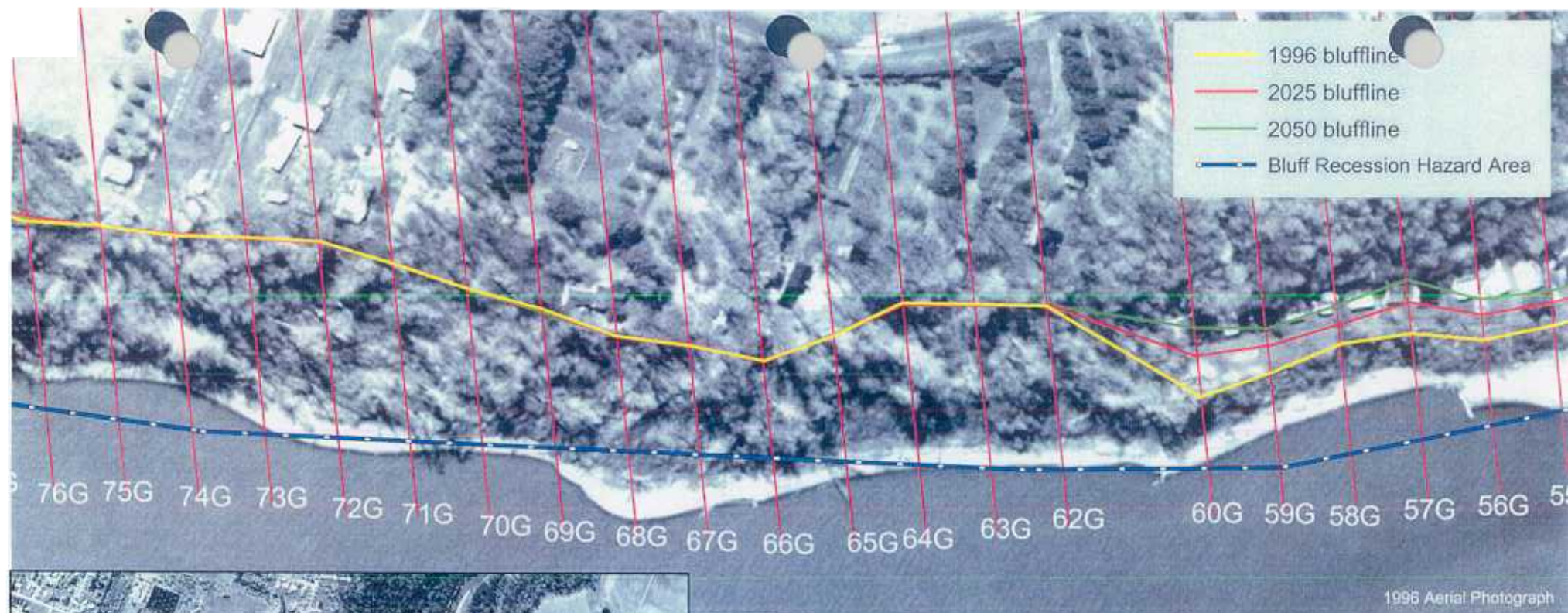
North Coast Rd

1996 Aerial Photograph

Transect	42	43	44	45	46	47	48
predicted recession by 2025							0.0
predicted recession by 2050							0.0
recession rate (ft/yr)	discard	discard	discard	discard	discard	discard	0.0

Transect	49	50	51	52	53	54	55
predicted recession by 2025	0.0	0.0	21.3	18.3	52.1	27.0	30.3
predicted recession by 2050	0.0	0.0	31.1	25.5	89.4	43.5	47.9
recession rate (ft/yr)	0.0	0.0	0.4	0.3	1.5	0.7	0.7

No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area

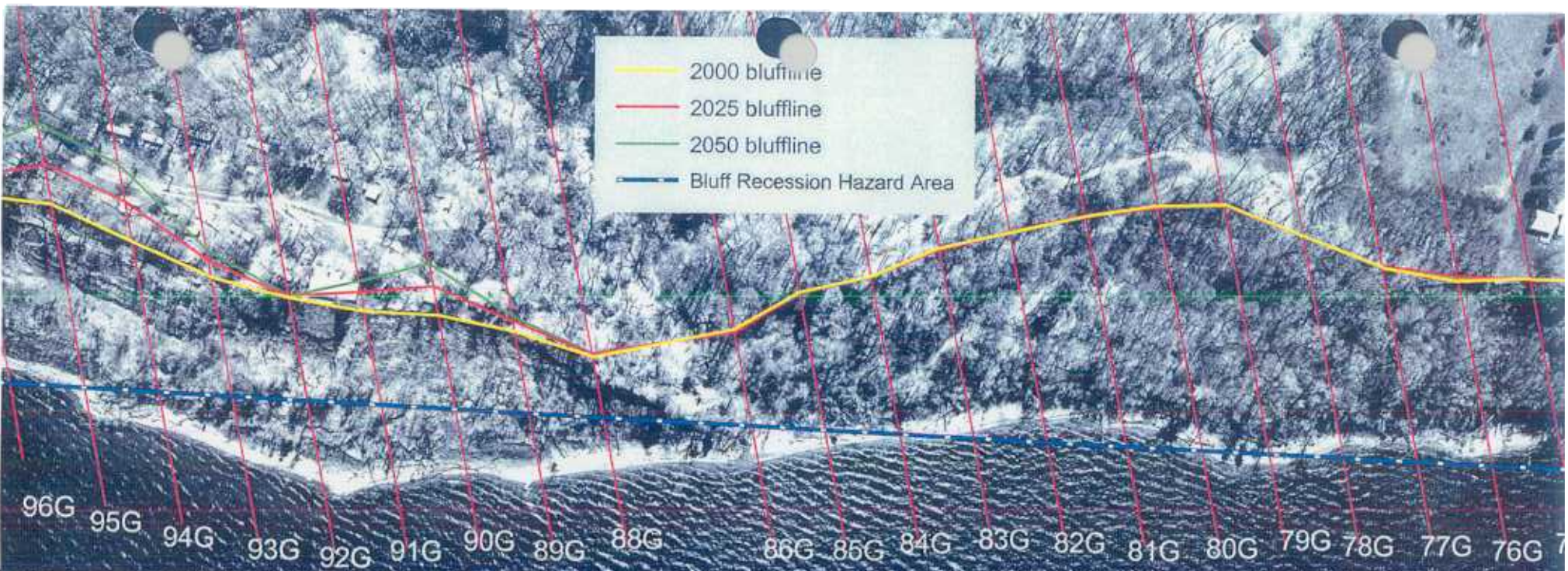


Transect	56	57	58	59	60	61	62
predicted recession by 2025	34.3	43.2	28.6	37.9	55.2		0.0
predicted recession by 2050	56.7	73.5	54.7	61.9	95.3		0.0
recession rate (ft/yr)	0.9	1.2	1.0	1.0	1.6	discard	0.0

Transect	63	64	65	66	67	68	69
predicted recession by 2025	0.0	0.0	0.0	0.0	0.0	0.0	0.0
predicted recession by 2050	0.0	0.0	0.0	0.0	0.0	0.0	0.0
recession rate (ft/yr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Transect	70	71	72	73	74	75
predicted recession by 2025	0.0	0.0	0.0	0.0	0.0	0.0
predicted recession by 2050	0.0	0.0	0.0	0.0	0.0	0.0
recession rate (ft/yr)	0.0	0.0	0.0	0.0	0.0	0.0

Yellow No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area

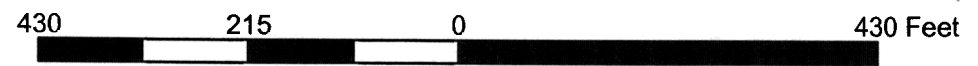
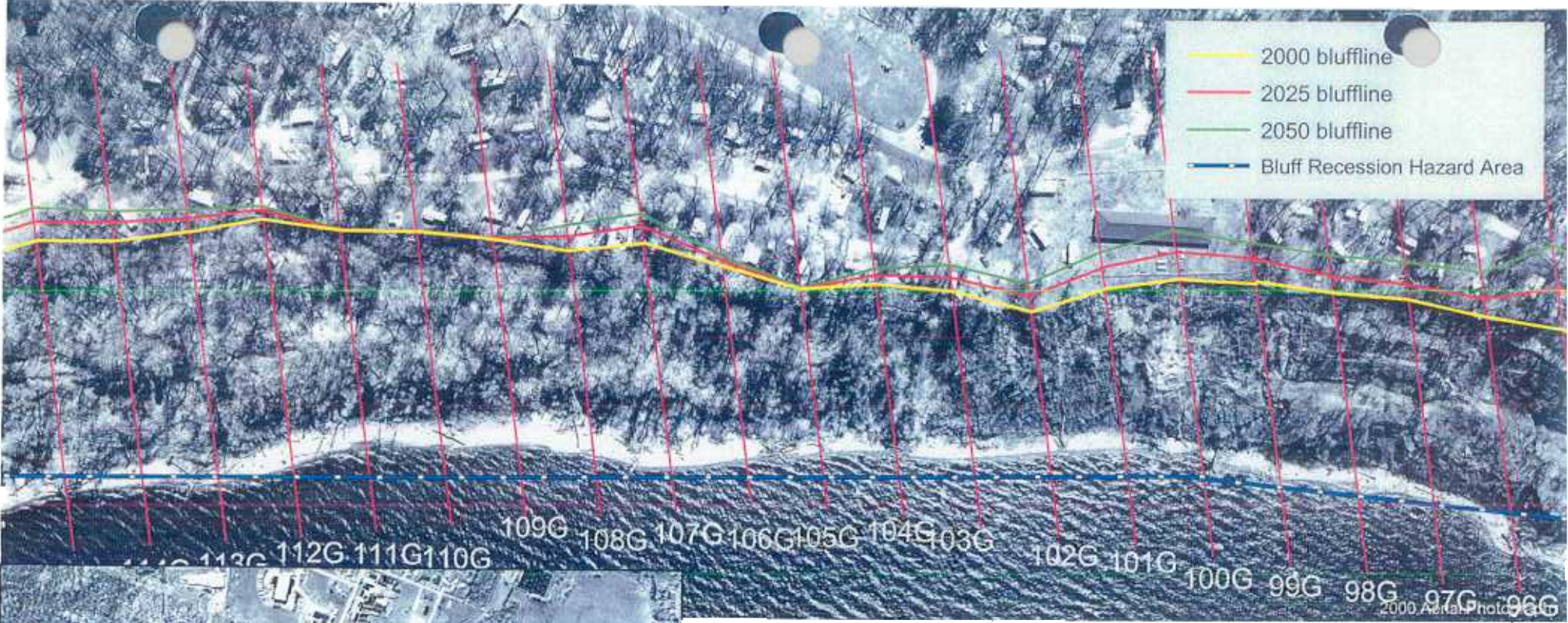


Transect	76	77	78	79	80	81	82
predicted recession by 2025	0.0	0.0	0.0	0.0	0.0	0.0	0.0
predicted recession by 2050	0.0	0.0	0.0	0.0	0.0	0.0	0.0
recession rate (ft/yr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Transect	83	84	85	86	87	88	89
predicted recession by 2025	0.0	0.0	0.0	0.0		0.0	13.4
predicted recession by 2050	0.0	0.0	0.0	0.0		0.0	21.7
recession rate (ft/yr)	0.0	0.0	0.0	0.0	discard	0.0	0.3

Transect	90	91	92	93	94	95
predicted recession by 2025	39.2	24.3	0.0	22.1	53.6	55.2
predicted recession by 2050	72.0	41.5	0.0	38.7	105.6	113.3
recession rate (ft/yr)	1.3	0.7	0.0	0.7	2.1	2.3

No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area

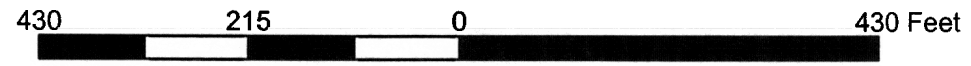
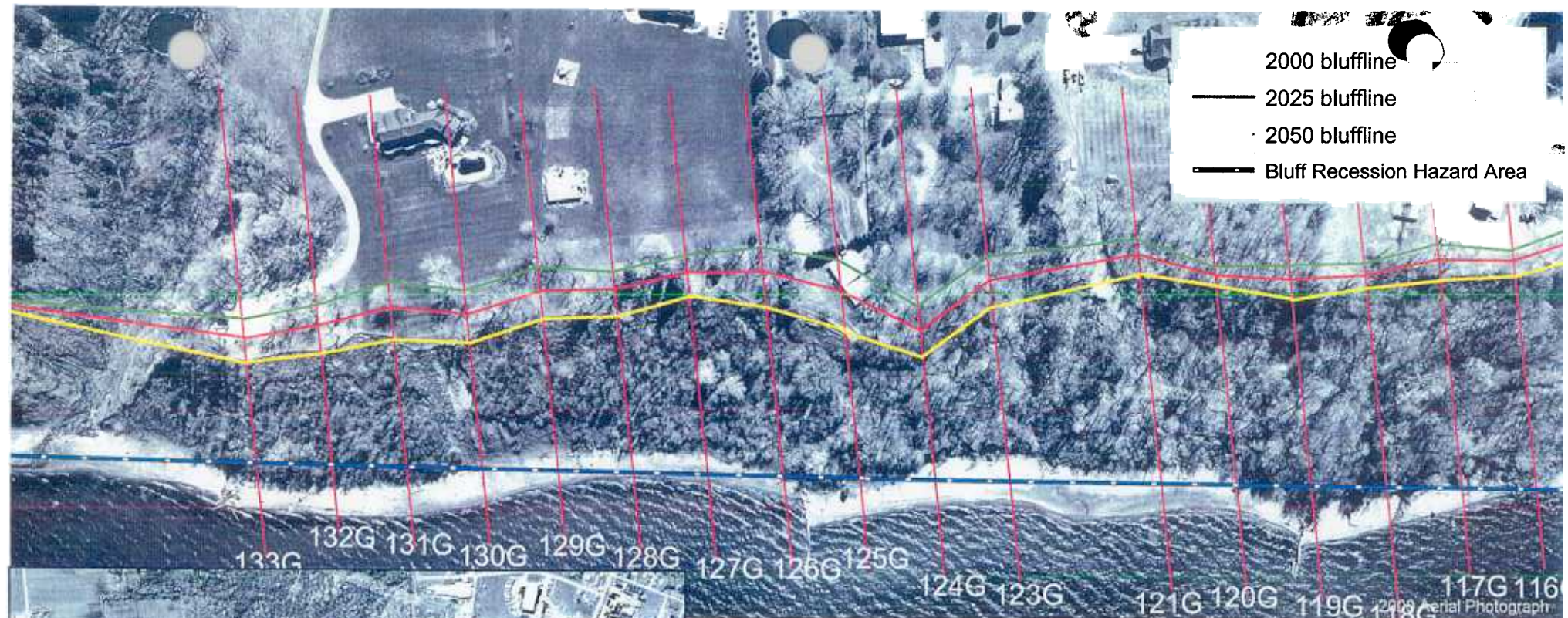


Transect	96	97	98	99	100	101	102
predicted recession by 2025	26.4	22.2	22.8	30.3	35.3	27.5	21.9
predicted recession by 2050	59.3	51.4	50.5	50.7	64.5	48.0	38.8
recession rate (ft/yr)	1.3	1.2	1.1	0.8	1.2	0.8	0.7

Transect	103	104	105	106	107	108	109
predicted recession by 2025	20.9	11.5	0.0	10.6	22.3	18.1	0.0
predicted recession by 2050	37.1	21.7	0.0	15.3	39.0	31.9	0.0
recession rate (ft/yr)	0.6	0.4	0.0	0.2	0.7	0.6	0.0

Transect	110	111	112	113	114	115
predicted recession by 2025	0.0	0.0	13.9	22.6	23.5	35.0
predicted recession by 2050	0.0	0.0	21.7	39.2	40.6	63.9
recession rate (ft/yr)	0.0	0.0	0.3	0.7	0.7	1.2

No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area



Transect	116	117	118	119	120	121	122
predicted recession by 2025	27.8	27.7	18.7	26.6	20.5	37.3	
predicted recession by 2050	49.7	49.2	31.5	45.8	35.0	68.7	
recession rate (ft/yr)	0.9	0.9	0.5	0.8	0.6	1.3	discard

Transect	123	124	125	126	127	128	129
predicted recession by 2025	35.5	38.0	52.1	45.8	43.2	34.2	37.2
predicted recession by 2050	65.0	69.9	98.2	80.1	80.4	61.3	68.6
recession rate (ft/yr)	1.2	1.3	1.8	1.4	1.5	1.1	1.3

Transect	130	131	132	133	134	135	136
predicted recession by 2025	37.6	42.6	36.0	31.0			
predicted recession by 2050	69.5	76.0	62.8	56.0			
recession rate (ft/yr)	1.3	1.3	1.1	1.0	discard	discard	discard

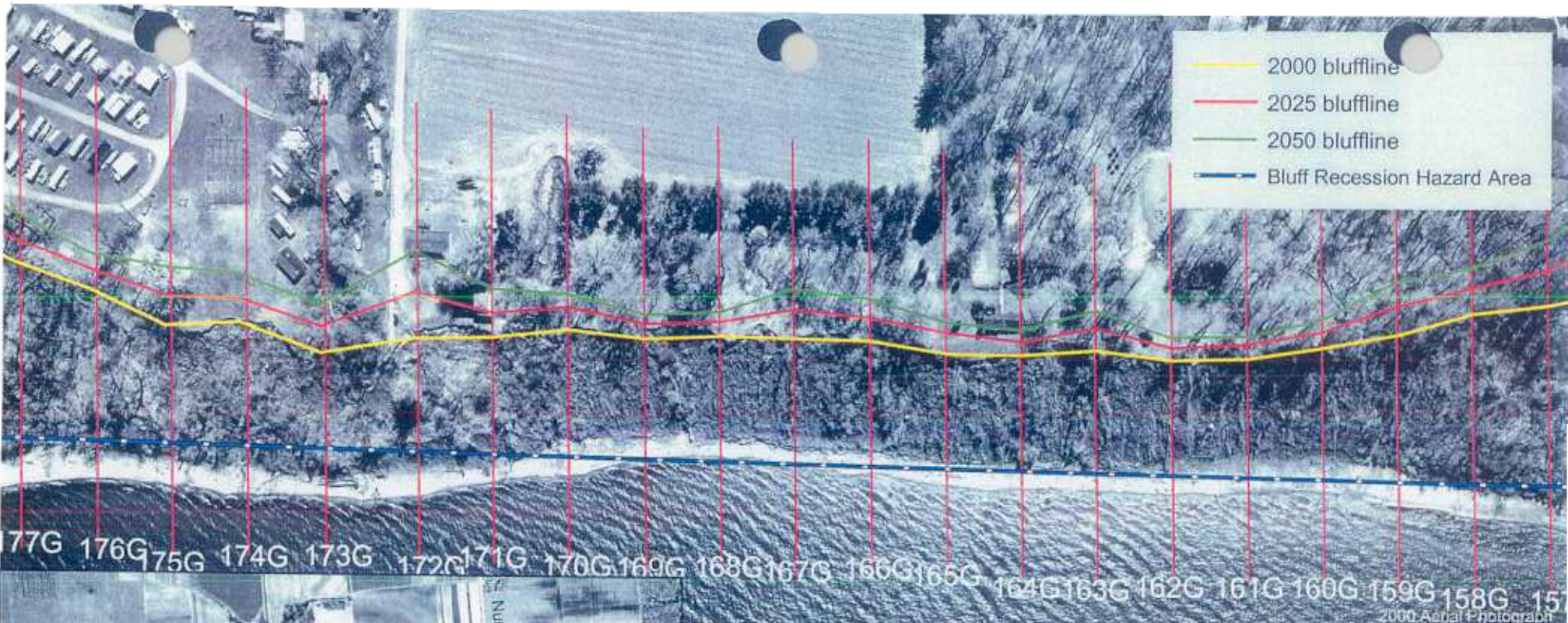


Transect	137	138	139	140	141	142	143
predicted recession by 2025	0.0	0.0	0.0	0.0	0.0	0.0	0.0
predicted recession by 2050	0.0	0.0	0.0	0.0	0.0	0.0	0.0
recession rate (ft/yr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Transect	144	145	146	147	148	149	150
predicted recession by 2025	45.2	25.4	17.0	30.5	35.5	27.8	26.4
predicted recession by 2050	85.7	44.1	32.2	55.0	63.8	49.5	45.2
recession rate (ft/yr)	1.6	0.7	0.6	1.0	1.1	0.9	0.8

Transect	151	152	153	154	155	156
predicted recession by 2025	47.1	51.6	57.5	59.2	68.8	69.7
predicted recession by 2050	83.0	96.5	105.1	105.6	128.3	126.7
recession rate (ft/yr)	1.4	1.7	1.9	1.9	2.4	2.2

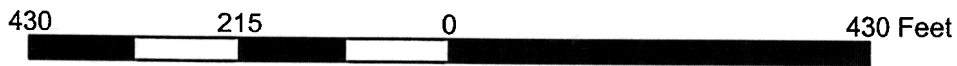
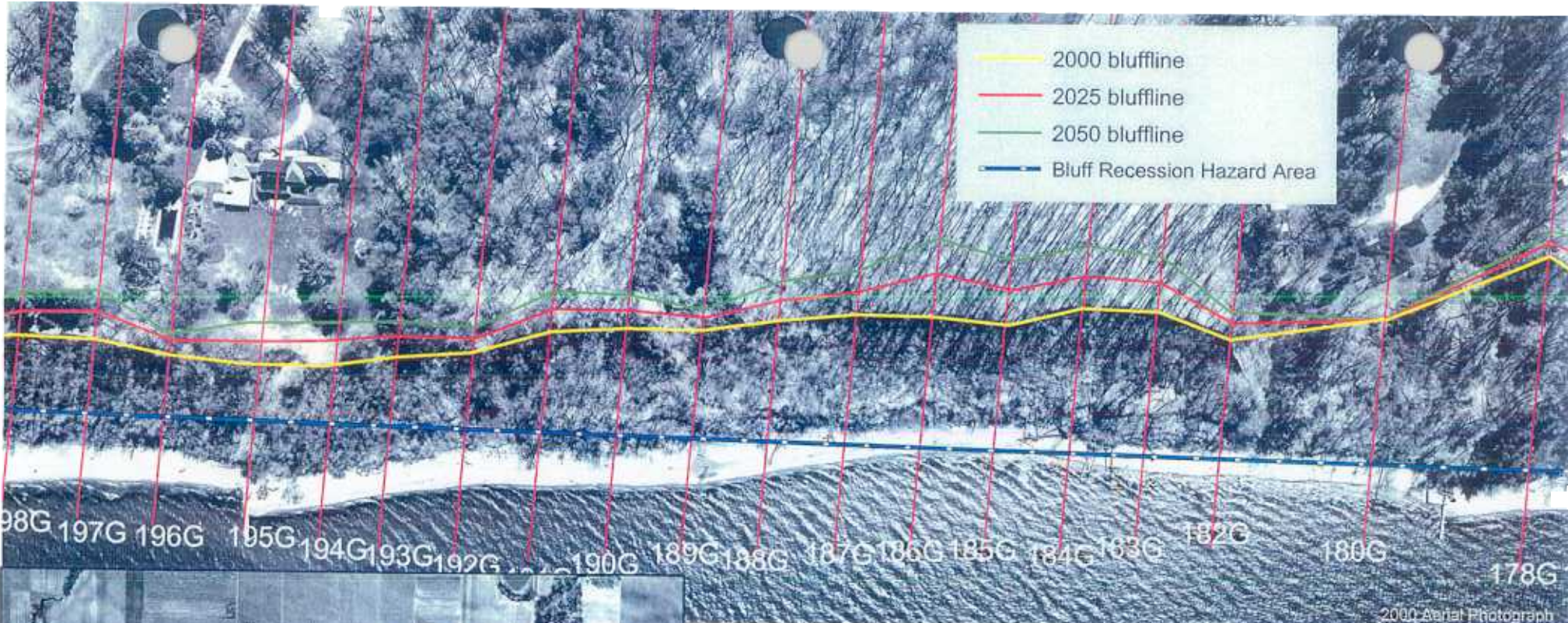
Yellow No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area



Transect	157	158	159	160	161	162	163
predicted recession by 2025	47.5	34.5	38.4	22.4	17.5	16.8	30.0
predicted recession by 2050	87.2	59.0	70.8	40.2	29.5	30.6	53.9
recession rate (ft/yr)	1.6	1.0	1.3	0.6	0.4	0.5	1.0

Transect	164	165	166	167	168	169	170
predicted recession by 2025	17.4	25.4	30.3	36.8	18.1	19.2	28.6
predicted recession by 2050	33.2	43.5	54.7	65.3	32.4	32.5	47.3
recession rate (ft/yr)	0.7	0.7	0.9	1.1	0.5	0.5	0.7

Transect	171	172	173	174	175	176	177
predicted recession by 2025	32.6	59.3	35.5	30.4	40.2	26.7	35.3
predicted recession by 2050	62.0	113.5	64.1	62.8	74.4	47.4	64.6
recession rate (ft/yr)	1.3	2.8	1.2	1.3	1.4	0.8	1.2

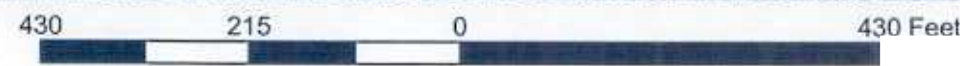
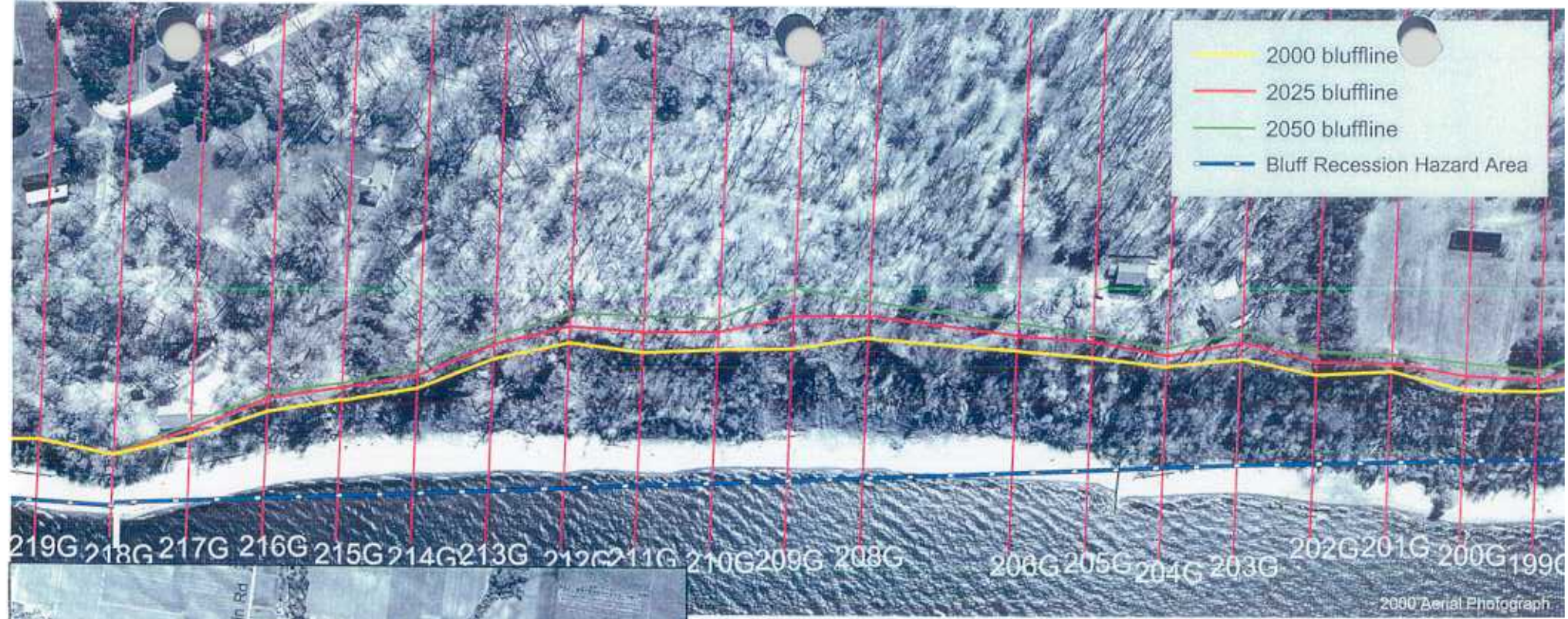


Transect	178	179	180	181	182	183	184
predicted recession by 2025	21.8		0.0		21.6	37.8	41.9
predicted recession by 2050	33.6		0.0		33.2	72.6	82.2
recession rate (ft/yr)	0.5	discard	0.0	discard	0.5	1.5	1.7

Transect	185	186	187	188	189	190	191
predicted recession by 2025	45.1	54.3	28.6	27.0	17.5	23.1	29.7
predicted recession by 2050	83.6	102.6	55.5	51.7	28.8	42.5	55.3
recession rate (ft/yr)	1.6	2.2	1.0	1.0	0.4	0.8	1.1

Transect	192	193	194	195	196	197	198
predicted recession by 2025	18.4	26.5	32.9	29.4	17.6	34.6	31.2
predicted recession by 2050	33.3	47.4	59.1	52.7	25.2	63.8	55.8
recession rate (ft/yr)	0.7	0.8	0.9	0.9	0.3	1.7	0.9

No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area

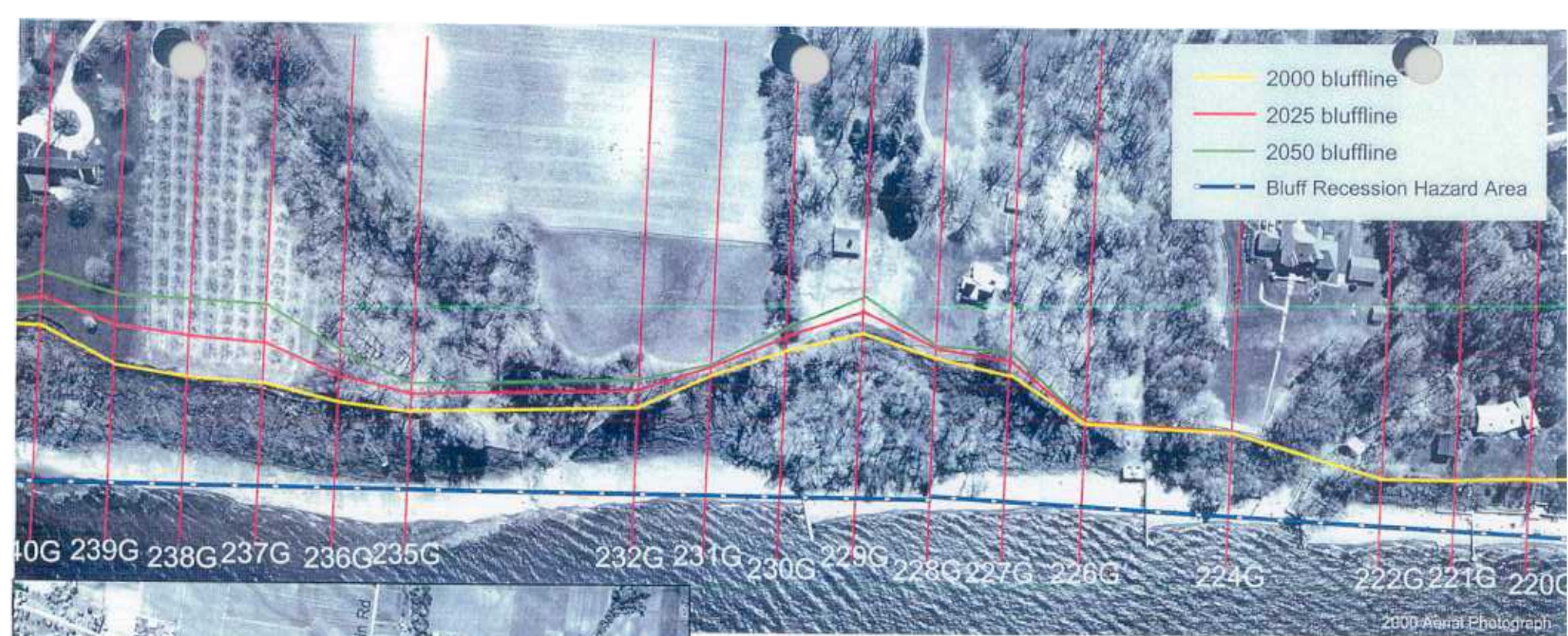


Transect	199	200	201	202	203	204	205
predicted recession by 2025	14.4	18.0	11.7	19.2	21.3	14.5	20.7
predicted recession by 2050	26.2	35.6	22.7	32.0	36.6	25.4	31.4
recession rate (ft/yr)	0.5	0.7	0.4	0.5	0.6	0.4	0.4

Transect	206	207	208	209	210	211	212
predicted recession by 2025	19.3		29.2	42.8	20.6	25.6	21.4
predicted recession by 2050	36.9		48.5	79.9	36.9	45.8	41.2
recession rate (ft/yr)	0.7	discard	0.8	1.5	0.7	0.8	0.8

Transect	213	214	215	216	217	218	219
predicted recession by 2025	20.2	17.1	15.9	17.2	0.0	0.0	0.0
predicted recession by 2050	30.5	30.2	22.0	24.4	0.0	0.0	0.0
recession rate (ft/yr)	0.4	0.5	0.2	0.3	0.0	0.0	0.0

No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area



- 2000 bluffline
- 2025 bluffline
- 2050 bluffline
- Bluff Recession Hazard Area

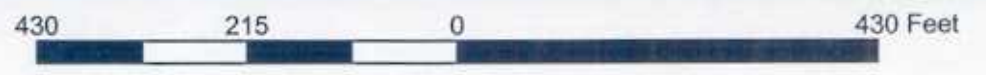
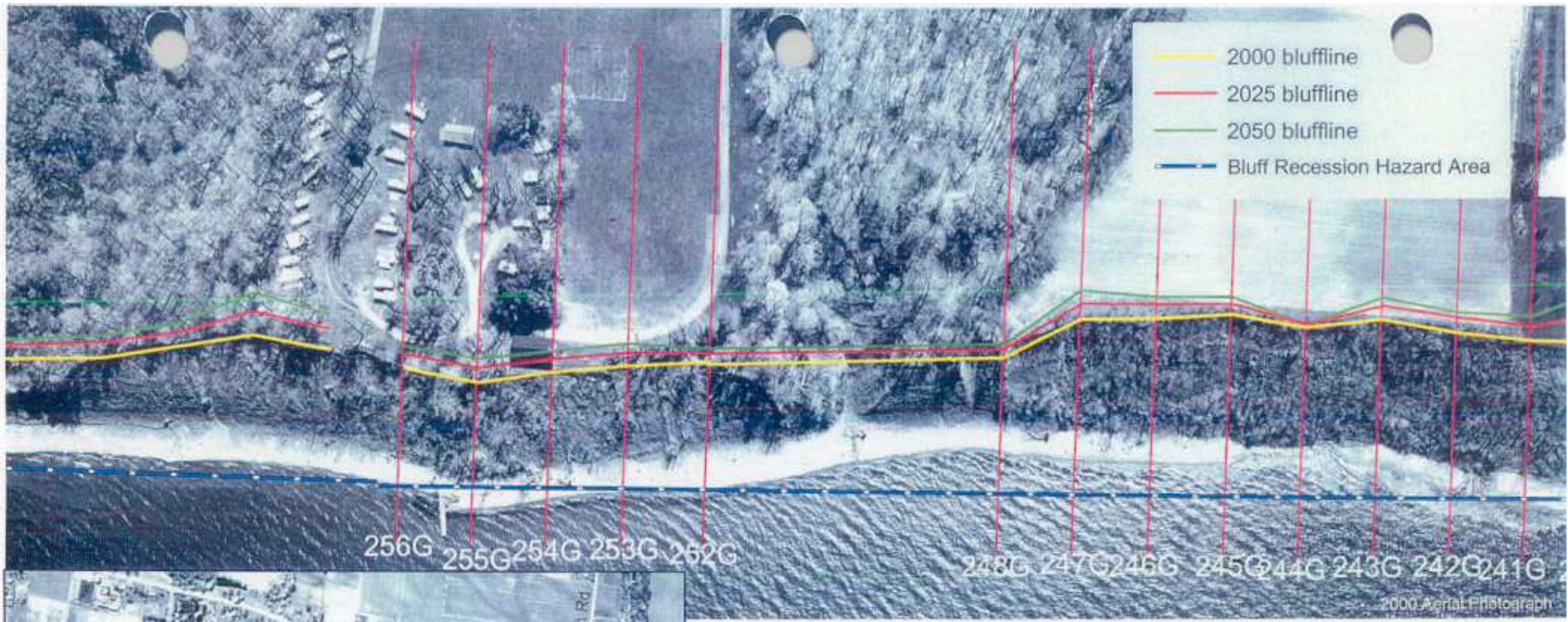


Transect	220	221	222	223	224	225	226
predicted recession by 2025	0.0	0.0	0.0		0.0		0.0
predicted recession by 2050	0.0	0.0	0.0		0.0		0.0
recession rate (ft/yr)	0.0	0.0	0.0	discard	0.0	discard	0.0

Transect	227	228	229	230	231	232
predicted recession by 2025	17.5	10.9	28.0	19.6	11.2	19.5
predicted recession by 2050	29.4	15.8	48.6	32.5	16.4	33.0
recession rate (ft/yr)	0.5	0.2	0.8	0.5	0.2	0.5

Transect	234	235	236	237	238	239	240
predicted recession by 2025		19.4	34.0	53.4	53.3	48.4	38.2
predicted recession by 2050		32.7	66.1	105.6	104.5	92.8	70.9
recession rate (ft/yr)	discard	0.5	1.3	2.1	2.0	1.8	1.3

No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area



Transect	241	242	243	244	245	246	247
predicted recession by 2025	20.1	18.5	18.8	0.0	12.8	18.1	21.9
predicted recession by 2050	33.7	27.1	27.7	0.0	21.6	28.6	37.8
recession rate (ft/yr)	0.5	0.3	0.4	0.0	0.4	0.4	0.6

Transect	248	249	250	251	252	253	254
predicted recession by 2025	11.7				12.7	16.6	15.7
predicted recession by 2050	17.5				19.4	27.6	25.6
recession rate (ft/yr)	0.2	discard	discard	discard	0.3	0.4	0.4

Transect	255	256
predicted recession by 2025	19.4	18.7
predicted recession by 2050	32.7	29.9
recession rate (ft/yr)	0.5	0.4

244 No measurable change in bluff location, but instability and/or signs of bluff recession were observed near transect, therefore this transect is in a Bluff Recession Hazard Area