

Table 4-1. Summary of exposure scenarios evaluated for each direct contact exposure area.

Exposure Area	EPA Human Health Risk Assessment ¹			Exposure Scenario in CMS Floodplain Evaluation		
	Scenario(s) Evaluated	Receptor	Exposure Frequency (day/yr)	Scenario Evaluated	Receptor	Frequent Use EA
1	General recreation	older child, adult	60	Medium-use general recreation	older child, adult	
2	General recreation	older child, adult	90	High-use general recreation	older child, adult	
2a	General recreation	older child	30	Low-use general recreation	older child	
2b	General recreation	older child	90	High-use general recreation	older child	
3	General recreation	adult	90	High-use general recreation	adult	
4	General recreation	young child, older child, adult	90/15	High-use general recreation	young child (low use), older child, adult	X
5	General recreation	older child, adult	90	High-use general recreation	older child, adult	
6	General recreation	adult	30	Low-use general recreation	adult	
	Future residential	young child, adult	---			
7	General recreation	older child, adult	90	High-use general recreation	older child, adult	
8	Rec. Canoe	older child, adult	---	Recreational canoeist	older child, adult	
9	General recreation	older child	30	Low-use general recreation	older child	
10	General recreation	young child, adult	90/30	High-use general recreation	young child (high use), adult	
10a	General recreation	young child, adult	90/30	High-use general recreation	young child (high use), adult	
11	General recreation	adult	90	High-use general recreation	adult	
12	General recreation	young child, older child, adult	90/15	High-use general recreation	young child (low use), older child, adult	X
13	General recreation	adult	90	High-use general recreation	adult	
14	General recreation	adult	90	High-use general recreation	adult	
15	General recreation	adult	90	High-use general recreation	adult	
16	General recreation	adult	90	High-use general recreation	adult	
17	General recreation	adult	90	High-use general recreation	adult	
18	General recreation	adult	60	Medium-use general recreation	adult	
	Future residential	young child, adult	---			
19	General recreation	adult	90	High-use general recreation	adult	
20	General recreation	adult	90	High-use general recreation	adult	
21	Farmer	adult	---	High-use general recreation	older child, adult	
21-22	Future residential	young child, adult	---			
22	General recreation	older child, adult	90	High-use general recreation	older child, adult	
22a	ATV/Dirt Biker	older child	---	Dirt biking/ATVing	older child	
23	General recreation	older child	60	Medium-use general recreation	older child	
24	General recreation	adult	90	High-use general recreation	adult	
25	General recreation	older child	90	High-use general recreation	older child	
26	General recreation (future)	older child, adult	90	High-use general recreation (future)	older child, adult	
26a	General recreation	older child, adult	90	High-use general recreation	older child, adult	X
26b	Farmer	adult	---	Agricultural use (based on direct contact by farmer)	adult	
27	General recreation	older child, adult	90	High-use general recreation	older child, adult	
27a	ATV/Dirt Biker	older child	---	Dirt biking/ATVing	older child	
28	General recreation	young child, older child, adult	90/15	High-use general recreation	young child (low use), older child, adult	
28a	ATV/Dirt Biker	older child	---	Dirt biking/ATVing	older child	
29	General recreation	older child, adult	30	Low-use general recreation	older child, adult	
30	General recreation	older child, adult	90	High-use general recreation	older child, adult	
31	General recreation	older child, adult	90	High-use general recreation	older child, adult	

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31a	General recreation	older child, adult	90	High-use general recreation	older child, adult	
32	General recreation	adult	90	High-use general recreation	adult	
33	General recreation	adult	90	High-use general recreation	adult	
34	Farmer	adult	---	Medium-use general recreation	adult	
	Future residential	young child, adult	---			
35	General recreation	older child, adult	90	High-use general recreation	older child, adult	
35a	General recreation	older child, adult	90	High-use general recreation	older child, adult	X
36a	Groundskeeper	adult	---	Low-use commercial (groundskeeper scenario)	adult	
36b	Farmer	adult	---	Agricultural use (based on direct contact by farmer)	adult	
37	General recreation	older child, adult	90	High-use general recreation	older child, adult	
37a	Angler	older child, adult	---	Bank fishing	older child, adult	
37b	General recreation	older child, adult	90	High-use general recreation	older child, adult	X
38	General recreation	adult	90	High-use general recreation	adult	
38a	Angler	older child, adult	---	Bank fishing	older child, adult	
39	Marathon canoe	adult	---	Marathon canoeist	adult	X
	Rec. Canoe	older child, adult	---	Recreational canoeist	older child, adult	
40	General recreation	young child, adult	90/15	High-use general recreation	young child (low use), adult	X
40a	Angler	older child, adult	---	Bank fishing	older child, adult	
40b	General recreation	young child, adult	90/15	High-use general recreation	young child (low use), adult	
41	General recreation	adult	60	Medium-use general recreation	adult	
41a	Angler	older child, adult	---	Bank fishing	older child, adult	
42	General recreation	adult	60	Medium-use general recreation	adult	
42a	Angler	older child, adult	---	Bank fishing	older child, adult	
43	General recreation	adult	60	Medium-use general recreation	adult	
43a	Angler	older child, adult	---	Bank fishing	older child, adult	
44	General recreation	adult	90	High-use general recreation	adult	
45	Waterfowl hunter	older child, adult	---	Waterfowl hunting	older child, adult	
	General recreation	adult	90	High-use general recreation	adult	
46	Waterfowl hunter	older child, adult	---	Waterfowl hunting	older child, adult	
	General recreation	adult	90	High-use general recreation	adult	
47	Rec. Canoe	older child, adult	---	Recreational canoeist	older child, adult	X
48	Waterfowl hunter	older child, adult	---	Waterfowl hunting	older child, adult	
	General recreation	adult	90	High-use general recreation	adult	
49	Waterfowl hunter	older child, adult	---	Waterfowl hunting	older child, adult	
	General recreation	adult	30	Low-use general recreation	adult	
50	General recreation	adult	30	Low-use general recreation	adult	
50a	Waterfowl hunter	older child, adult	---	Waterfowl hunting	older child, adult	
51	General recreation	adult	30	Low-use general recreation	adult	
51a	Waterfowl hunter	older child, adult	---	Waterfowl hunting	older child, adult	
52	Rec. Canoe	older child, adult	---	Recreational canoeist	older child, adult	X
53	Rec. Canoe	older child, adult	---	Recreational canoeist	older child, adult	X

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	Scenario(s) Evaluated	Receptor	Exposure Frequency (day/yr)	Scenario Evaluated	Receptor	Frequent Use EA
54	Waterfowl hunter	older child, adult	---	Waterfowl hunting	older child, adult	
	General recreation	adult	90	High-use general recreation	adult	
55	General recreation	young child, adult	90/15	High-use general recreation	young child (low use), adult	
55a	Waterfowl hunter	older child, adult	---	Waterfowl hunting	older child, adult	
56	General recreation	older child, adult	60	Medium-use general recreation	older child, adult	
56a	Waterfowl hunter	older child, adult	---	Waterfowl hunting	older child, adult	
57	Waterfowl hunter	older child, adult	---	Waterfowl hunting	older child, adult	X
	General recreation	young child, adult	90/15	High-use general recreation	young child (low use), adult	
58	Angler	older child, adult	---	Bank fishing	older child, adult	X
	General recreation	adult	90	High-use general recreation	adult	
59	General recreation	young child, adult	90/15	High-use general recreation	young child (low use), adult	X
59a	Angler	older child, adult	---	Bank fishing	older child, adult	
60	General recreation	young child, adult	90/15	High-use general recreation	young child (low use), adult	
60a	Rec. Canoe	older child, adult	---	Recreational canoeist	older child, adult	X
61	Utility Worker	adult	---	Utility worker	adult	
62	Utility Worker	adult	---	Utility worker	adult	
63	Utility Worker	adult	---	Utility worker	adult	
64	Utility Worker	adult	---	Utility worker	adult	
65	Utility Worker	adult	---	Utility worker	adult	
66	Utility Worker	adult	---	Utility worker	adult	
67	General recreation	adult	90	High-use general recreation	adult	
68	General recreation	adult	90	High-use general recreation	adult	
69	Angler	older child, adult	---	Bank fishing	older child, adult	
	General recreation	adult	90	High-use general recreation	adult	
70	General recreation	young child, adult	90/30	High-use general recreation	young child (high use), adult	
70a	Angler	older child, adult	---	Bank fishing	older child, adult	
71	Angler	older child, adult	---	Bank fishing	older child, adult	
	General recreation	adult	30	Low-use general recreation	adult	
72	Angler	older child, adult	---	Bank fishing	older child, adult	
72-73	Future residential	young child, adult	---	<i>Do Not Evaluate</i>		
73	General recreation	adult	90	High-use general recreation	adult	
74	General recreation	adult	90	High-use general recreation	adult	
75	General recreation	adult	90	High-use general recreation	adult	
76	General recreation	adult	90	High-use general recreation	adult	
	Future residential	young child, adult	---	High-use general recreation	adult	
77	General recreation	adult	90	High-use general recreation	adult	
78	General recreation	older child	90	High-use general recreation	older child	
	Future residential	young child, adult	---	High-use general recreation	older child	
79	General recreation	adult	90	High-use general recreation	adult	
80	Future residential	young child, adult	---	<i>Do Not Evaluate</i>		
80a	General recreation	adult	30	Low-use general recreation	adult	
80b	Farmer	adult	---	Agricultural use (based on direct contact by farmer)	adult	

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	Scenario(s) Evaluated	Receptor	Exposure Frequency (day/yr)	Scenario Evaluated	Receptor	Frequent Use EA
81	General recreation	adult	30	Low-use general recreation	adult	
82	General recreation	adult	30	Low-use general recreation	adult	
83	Groundskeeper	adult	---	High-use commercial (groundskeeper scenario)	adult	
	Future residential	young child, adult	---			
84	General recreation	adult	30	Low-use general recreation	adult	
85a	Rec. Canoe	older child, adult	---	Recreational canoeist	older child, adult	
85b	General recreation	older child	90	High-use general recreation	older child	
86	Groundskeeper	adult	---	High-use commercial (groundskeeper scenario)	adult	
	Future residential	young child, adult	---			
87	General recreation	young child, adult	90/30	High-use general recreation	young child (high use), adult	
87a	Angler	older child, adult	---	Bank fishing	older child, adult	
88	General recreation	older child	60	Medium-use general recreation	older child	
89	General recreation	adult	90	High-use general recreation	adult	
90	General recreation	older child, adult	90	High-use general recreation	older child, adult	

¹ EPA exposure scenarios from Human Health Risk Assessment Table 5-1 (Reaches 5 &6) and Table 5-325 (Reaches 7 & 8).

Table 4-2. Summary of agricultural averaging areas and adjusted agricultural products consumption IMPGs.

Farm ID	EPA Designation	IMPG Category	Total Farm Area (acre)	Farm Area in Floodplain (acre)	Adjusted IMPG (mg/kg) ¹									
					Cancer Risk @ 10 ⁻⁶		Cancer Risk @ 10 ⁻⁵		Cancer Risk @ 10 ⁻⁴		Non-Cancer (Child)		Non-Cancer (Adult)	
					RME	CTE	RME	CTE	RME	CTE	RME	CTE	RME	CTE
FA 1	Corn	Commercial Dairy	22.8	8.0	0.68	3.1	6.8	31	68	312	7.7	12	36	44
FA 2	Hay		35.8	3.3	2.59	11.9	25.9	119	259	1187	29.1	46.4	138	168
FA 3	Formerly Corn		4.8	4.1	0.29	1.3	2.9	13	29	132	3.2	5.2	15	19
FA 4	Corn (Silage)		65.4	64.4	0.24	1.1	2.4	11	24	110	2.7	4.3	13	16
FA 5	Corn (Silage)		12.4	12.2	0.24	1.1	2.4	11	24	110	2.7	4.3	13	16
FA 6	Corn (Silage)		7.7	7.7	0.24	1.1	2.4	11	24	110	2.7	4.3	13	16
FA 7	Corn (Silage) / Wetland		24.1	24.1	0.24	1.1	2.4	11	24	110	2.7	4.3	13	16
FA 8	Hay		13.4	9.4	0.34	1.5	3.4	15	34	154	3.8	6.0	18	22
FA 9	Corn (Silage)		34.6	26.3	0.31	1.4	3.1	14	31	143	3.5	5.6	17	20
FA 10	Open Land (Possibly Hay)		2.7	0.3	2.1	9.5	21	95	206	946	23	37	110	134
FA 11	Open Land (Possibly Hay)		3.5	0.1	6.1	28	61	279	610	2794	69	109	325	396
FA 12	Open Land (Formerly Grazing)		12.4	8.0	0.38	1.8	3.8	18	38	176	4.3	6.9	20	25
FA 13	Open Land (Formerly Grazing)		4.1	4.0	0.24	1.1	2.4	11	24	110	2.7	4.3	13	16
FA 14	Open Land (Possibly Hay)		6	2.6	0.55	2.5	5.5	25	55	253	6.2	9.9	29	36

¹ Agricultural products consumption IMPGs from Table 2-3 adjusted to account for the portion of the farm area located outside the floodplain.

Table 4-3a. Summary of Reach 7 IMPGs (mg/kg) for amphibians and omnivorous/carnivorous mammals compared to average floodplain concentrations.

Subreach	0-6" Floodplain Soil PCB Concentration (95% Hall's UCL)	Amphibian IMPGs ¹		Omnivorous/Carnivorous Mammal IMPGs	
		Upper Bound	Lower Bound	Upper Bound	Lower Bound
7A	3.1	5.6	3.27	34.3	21.1
7B	6.9	--	--	34.3	21.1
7C	4.5	--	--	34.3	21.1
7D	2.4	5.6	3.27	34.3	21.1
7E	2.5	5.6	3.27	34.3	21.1
7F	2.1	5.6	3.27	34.3	21.1
7G	5.4	--	--	34.3	21.1
7H	3.8	--	--	34.3	21.1

Note:

¹ Only subreaches 7A, 7D, 7E, and 7F are presented because vernal pools (those classified as both "certified" or "potential") were identified only in these subreaches.

Key

= 95% UCL is lower than the IMPG

Table 4-3b. Summary of Reach 7 IMPGs (mg/kg) for insectivorous birds and piscivorous mammals compared to average floodplain concentrations.

Subreach	Analogous PSA Subreach	Average 0-6" Sediment Concentration ¹	0-6" Floodplain Soil PCB Concentration (95% Hall's UCL)	Insectivorous Bird IMPGs ²	Piscivorous Mammal IMPGs ²	
					Upper Bound	Lower Bound
7A	5A	0.41	3.1	50	16.63	3.42
7B	5C	5.1	6.9	46	11.78	na
7C	5A/5B	4.1	4.5	18	na	na
7D	5B	1.0	2.4	48	16.63	3.42
7E	5A	1.9	2.5	50	16.63	3.42
7F	5B	0.77	2.1	48	16.63	3.42
7G	6	6.1	5.4	46	11.78	na
7H	5A	0.40	3.8	50	16.63	3.42

Note:

¹ Sediment concentration at the end of the model validation period (i.e., 2004).

² The insectivorous bird and piscivorous mammal IMPG presented for each subreach corresponds to the IMPG associated with the analogous PSA Reach (from the EPA Final Model Documentation Report, Table 3.6-9, based on habitat suitability for FCM species), and the corresponding average sediment concentration for that subreach.

Key

	= 95% UCL is lower than the IMPG
	= 95% UCL exceeds the IMPG
na	= receptor IMPG is not achievable at corresponding sediment concentration