Table C-51 (math behind 4 of the Tfactors)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

C-51 "counts" value at end of the year (impact wetland in year 0, loss "counted" year 0)

Tfactor = ra io of he Present Wor h of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			<--- maximum (MAX) --->			Mine Year 0 / 2016			Mine Year 1 / 2017			Mine Year 2 / 2018			Mine Year 3 / 2019		
t		a	b	c	d	b	c	d	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	MAX	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW
Year		(1+r)-t		0.000	= a X c		0.000	= a X c		0.000	= a X c		0.000	= a X c		0.000	= a X c
0	2016	1.0000	1.000	1.000	1 0000	1.000	1.000	1.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0 0000
1	2017	0.9709	0.000	1.000	0 9709	0.000	1.000	0.9709	1.000	1.000	0 9709	0.000	0.000	0.0000	0.000	0.000	0 0000
2	2018	0.9426	0.000	1.000	0 9426	0.000	1.000	0.9426	0.000	1.000	0 9426	1.000	1.000	0.9426	0.000	0.000	0 0000
3	2019	0.9151	0.000	1.000	0 9151	0.000	1.000	0.9151	0.000	1.000	0 9151	0.000	1.000	0.9151	1.000	1.000	0 9151
4	2020	0.8885	0.000	1.000	0 8885	0.000	1.000	0.8885	0.000	1.000	0 8885	0.000	1.000	0.8885	0.000	1.000	0 8885
5	2021	0.8626	0.000	1.000	0 8626	0.000	1.000	0.8626	0.000	1.000	0 8626	0.000	1.000	0.8626	0.000	1.000	0 8626
6	2022	0.8375	0.000	1.000	0 8375	0.000	1.000	0.8375	0.000	1.000	0 8375	0.000	1.000	0.8375	0.000	1.000	0 8375
7	2023	0.8131	0.000	1.000	0 8131	0.000	1.000	0.8131	0.000	1.000	0 8131	0.000	1.000	0.8131	0.000	1.000	0 8131
8	2024	0.7894	0.000	1.000	0.7894	0.000	1.000	0.7894	0.000	1.000	0.7894	0.000	1.000	0.7894	0.000	1.000	0.7894
9	2025	0.7664	0.000	1.000	0.7664	0.000	1.000	0.7664	0.000	1.000	0.7664	0.000	1.000	0.7664	0.000	1.000	0.7664
10	2026	0.7441	0.000	1.000	0.7441	0.000	1.000	0.7441	0.000	1.000	0.7441	0.000	1.000	0.7441	0.000	1.000	0.7441
11	2027	0.7224	0.000	1.000	0.7224	0.000	1.000	0.7224	0.000	1.000	0.7224	0.000	1.000	0.7224	0.000	1.000	0.7224
12	2028	0.7014	0.000	1.000	0.7014	0.000	1.000	0.7014	0.000	1.000	0.7014	0.000	1.000	0.7014	0.000	1.000	0.7014
13	2029	0.6810	0.000	1.000	0.6810	0.000	1.000	0.6810	0.000	1.000	0.6810	0.000	1.000	0.6810	0.000	1.000	0.6810
14	2030	0.6611	0.000	1.000	0.6611	0.000	1.000	0.6611	0.000	1.000	0.6611	0.000	1.000	0.6611	0.000	1.000	0.6611
15	2031	0.6419	0.000	1.000	0.6419	0.000	1.000	0.6419	0.000	1.000	0.6419	0.000	1.000	0.6419	0.000	1.000	0.6419
16	2032	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232
17	2033	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050
18	2034	0.5874	0.000	1.000	0 5874	0.000	1.000	0.5874	0.000	1.000	0 5874	0.000	1.000	0.5874	0.000	1.000	0 5874
19	2035	0.5703	0.000	1.000	0 5703	0.000	1.000	0.5703	0.000	1.000	0 5703	0.000	1.000	0.5703	0.000	1.000	0 5703
20	2036	0.5537	0.000	1.000	0 5537	0.000	1.000	0.5537	0.000	1.000	0 5537	0.000	1.000	0.5537	0.000	1.000	0 5537
21	2037	0.5375	0.000	1.000	0 5375	0.000	1.000	0.5375	0.000	1.000	0 5375	0.000	1.000	0.5375	0.000	1.000	0 5375
22	2038	0.5219	0.000	1.000	0 5219	0.000	1.000	0.5219	0.000	1.000	0 5219	0.000	1.000	0.5219	0.000	1.000	0 5219
23	2039	0.5067	0.000	1.000	0 5067	0.000	1.000	0.5067	0.000	1.000	0 5067	0.000	1.000	0.5067	0.000	1.000	0 5067
24	2040	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919
25	2041	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776
26	2042	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637
27	2043	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502
28	2044	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371
29	2045	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243
30	2046	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120
31	2047	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000
32	2048	0.3883	0.000	1.000	0 3883	0.000	1.000	0.3883	0.000	1.000	0 3883	0.000	1.000	0.3883	0.000	1.000	0 3883
33	2049	0.3770	0.000	1.000	0 3770	0.000	1.000	0.3770	0.000	1.000	0 3770	0.000	1.000	0.3770	0.000	1.000	0 3770
34	2050	0.3660	0.000	1.000	0 3660	0.000	1.000	0.3660	0.000	1.000	0 3660	0.000	1.000	0.3660	0.000	1.000	0 3660
35	2051	0.3554	0.000	1.000	0 3554	0.000	1.000	0.3554	0.000	1.000	0 3554	0.000	1.000	0.3554	0.000	1.000	0 3554
36	2052	0.3450	0.000	1.000	0 3450	0.000	1.000	0.3450	0.000	1.000	0 3450	0.000	1.000	0.3450	0.000	1.000	0 3450
37	2053	0.3350	0.000	1.000	0 3350	0.000	1.000	0.3350	0.000	1.000	0 3350	0.000	1.000	0.3350	0.000	1.000	0 3350
38	2054	0.3252	0.000	1.000	0 3252	0.000	1.000	0.3252	0.000	1.000	0 3252	0.000	1.000	0.3252	0.000	1.000	0 3252
39	2055	0.3158	0.000	1.000	0 3158	0.000	1.000	0.3158	0.000	1.000	0 3158	0.000	1.000	0.3158	0.000	1.000	0 3158
40	2056	0.3066	0.000	1.000	0 3066	0.000	1.000	0.3066	0.000	1.000	0 3066	0.000	1.000	0.3066	0.000	1.000	0 3066
41	2057	0.2976	0.000	1.000	0 2976	0.000	1.000	0.2976	0.000	1.000	0 2976	0.000	1.000	0.2976	0.000	1.000	0 2976
42	2058	0.2890	0.000	1.000	0 2890	0.000	1.000	0.2890	0.000	1.000	0 2890	0.000	1.000	0.2890	0.000	1.000	0 2890
43	2059	0.2805	0.000	1.000	0 2805	0.000	1.000	0.2805	0.000	1.000	0 2805	0.000	1.000	0.2805	0.000	1.000	0 2805
44	2060	0.2724	0.000	1.000	0 2724	0.000	1.000	0.2724	0.000	1.000	0 2724	0.000	1.000	0.2724	0.000	1.000	0 2724
45	2061	0.2644	0.000	1.000	0 2644	0.000	1.000	0.2644	0.000	1.000	0 2644	0.000	1.000	0.2644	0.000	1.000	0 2644
46	2062	0.2567	0.000	1.000	0 2567	0.000	1.000	0.2567	0.000	1.000	0 2567	0.000	1.000	0.2567	0.000	1.000	0 2567
			MAX =	47.000		LOSS =	47.000		LOSS =	46.000		LOSS =	45.000		LOSS =	44.000	
							PW =	25.7754		PW =	24.7754		PW =	23.8046		PW =	22 8620
			MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754
							Tfactor =	1.0000		Tfactor =	0 9612		Tfactor =	0.9235		Tfactor =	0 8870

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Tfactor = ratio of the Present Worth of proposed we land functions LOSS/LIFT compared to he Maximum possible.

Mine Year 4 / 2020			Mine Year 5 / 2021			Mine Year 6 / 2022			Mine Year 7 / 2023			Mine Year 8 / 2024			Mine Year 9 / 2025		
b	c	d	b	c	d	b	c	d	b	c	d	b	c	d	b	c	d
Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW
	0.000	= a X c		0.000	= a X c		0.000	= a X c		0.000	= a X c		0.000	= a X c		0 000	= a X c
0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0 000	0.0000
0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0 000	0.0000
0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0 000	0.0000
0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0 000	0.0000
1.000	1.000	0.8885	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0 000	0.0000
0.000	1.000	0.8626	1.000	1.000	0.8626	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0 000	0.0000
0.000	1.000	0.8375	0.000	1.000	0.8375	1.000	1.000	0 8375	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0 000	0.0000
0.000	1.000	0.8131	0.000	1.000	0.8131	0.000	1.000	0 8131	1.000	1.000	0.8131	0.000	0.000	0.0000	0.000	0 000	0.0000
0.000	1.000	0.7894	0.000	1.000	0.7894	0.000	1.000	0.7894	0.000	1.000	0.7894	1.000	1.000	0.7894	0.000	0 000	0.0000
0.000	1.000	0.7664	0.000	1.000	0.7664	0.000	1.000	0.7664	0.000	1.000	0.7664	0.000	1.000	0.7664	1.000	1 000	0.7664
0.000	1.000	0.7441	0.000	1.000	0.7441	0.000	1.000	0.7441	0.000	1.000	0.7441	0.000	1.000	0.7441	0.000	1 000	0.7441
0.000	1.000	0.7224	0.000	1.000	0.7224	0.000	1.000	0.7224	0.000	1.000	0.7224	0.000	1.000	0.7224	0.000	1 000	0.7224
0.000	1.000	0.7014	0.000	1.000	0.7014	0.000	1.000	0.7014	0.000	1.000	0.7014	0.000	1.000	0.7014	0.000	1 000	0.7014
0.000	1.000	0.6810	0.000	1.000	0.6810	0.000	1.000	0.6810	0.000	1.000	0.6810	0.000	1.000	0.6810	0.000	1 000	0.6810
0.000	1.000	0.6611	0.000	1.000	0.6611	0.000	1.000	0.6611	0.000	1.000	0.6611	0.000	1.000	0.6611	0.000	1 000	0.6611
0.000	1.000	0.6419	0.000	1.000	0.6419	0.000	1.000	0.6419	0.000	1.000	0.6419	0.000	1.000	0.6419	0.000	1 000	0.6419
0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1 000	0.6232
0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1 000	0.6050
0.000	1.000	0.5874	0.000	1.000	0.5874	0.000	1.000	0 5874	0.000	1.000	0.5874	0.000	1.000	0.5874	0.000	1 000	0.5874
0.000	1.000	0.5703	0.000	1.000	0.5703	0.000	1.000	0 5703	0.000	1.000	0.5703	0.000	1.000	0.5703	0.000	1 000	0.5703
0.000	1.000	0.5537	0.000	1.000	0.5537	0.000	1.000	0 5537	0.000	1.000	0.5537	0.000	1.000	0.5537	0.000	1 000	0.5537
0.000	1.000	0.5375	0.000	1.000	0.5375	0.000	1.000	0 5375	0.000	1.000	0.5375	0.000	1.000	0.5375	0.000	1 000	0.5375
0.000	1.000	0.5219	0.000	1.000	0.5219	0.000	1.000	0 5219	0.000	1.000	0.5219	0.000	1.000	0.5219	0.000	1 000	0.5219
0.000	1.000	0.5067	0.000	1.000	0.5067	0.000	1.000	0 5067	0.000	1.000	0.5067	0.000	1.000	0.5067	0.000	1 000	0.5067
0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1 000	0.4919
0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1 000	0.4776
0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1 000	0.4637
0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1 000	0.4502
0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1 000	0.4371
0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1 000	0.4243
0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1 000	0.4120
0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1 000	0.4000
0.000	1.000	0.3883	0.000	1.000	0.3883	0.000	1.000	0 3883	0.000	1.000	0.3883	0.000	1.000	0.3883	0.000	1 000	0.3883
0.000	1.000	0.3770	0.000	1.000	0.3770	0.000	1.000	0 3770	0.000	1.000	0.3770	0.000	1.000	0.3770	0.000	1 000	0.3770
0.000	1.000	0.3660	0.000	1.000	0.3660	0.000	1.000	0 3660	0.000	1.000	0.3660	0.000	1.000	0.3660	0.000	1 000	0.3660
0.000	1.000	0.3554	0.000	1.000	0.3554	0.000	1.000	0 3554	0.000	1.000	0.3554	0.000	1.000	0.3554	0.000	1 000	0.3554
0.000	1.000	0.3450	0.000	1.000	0.3450	0.000	1.000	0 3450	0.000	1.000	0.3450	0.000	1.000	0.3450	0.000	1 000	0.3450
0.000	1.000	0.3350	0.000	1.000	0.3350	0.000	1.000	0 3350	0.000	1.000	0.3350	0.000	1.000	0.3350	0.000	1 000	0.3350
0.000	1.000	0.3252	0.000	1.000	0.3252	0.000	1.000	0 3252	0.000	1.000	0.3252	0.000	1.000	0.3252	0.000	1 000	0.3252
0.000	1.000	0.3158	0.000	1.000	0.3158	0.000	1.000	0 3158	0.000	1.000	0.3158	0.000	1.000	0.3158	0.000	1 000	0.3158
0.000	1.000	0.3066	0.000	1.000	0.3066	0.000	1.000	0 3066	0.000	1.000	0.3066	0.000	1.000	0.3066	0.000	1 000	0.3066
0.000	1.000	0.2976	0.000	1.000	0.2976	0.000	1.000	0 2976	0.000	1.000	0.2976	0.000	1.000	0.2976	0.000	1 000	0.2976
0.000	1.000	0.2890	0.000	1.000	0.2890	0.000	1.000	0 2890	0.000	1.000	0.2890	0.000	1.000	0.2890	0.000	1 000	0.2890
0.000	1.000	0.2805	0.000	1.000	0.2805	0.000	1.000	0 2805	0.000	1.000	0.2805	0.000	1.000	0.2805	0.000	1 000	0.2805
0.000	1.000	0.2724	0.000	1.000	0.2724	0.000	1.000	0 2724	0.000	1.000	0.2724	0.000	1.000	0.2724	0.000	1 000	0.2724
0.000	1.000	0.2644	0.000	1.000	0.2644	0.000	1.000	0 2644	0.000	1.000	0.2644	0.000	1.000	0.2644	0.000	1 000	0.2644
0.000	1.000	0.2567	0.000	1.000	0.2567	0.000	1.000	0 2567	0.000	1.000	0.2567	0.000	1.000	0.2567	0.000	1 000	0.2567
LOSS =	43.000		LOSS =	42.000		LOSS =	41.000		LOSS =	40.000		LOSS =	39.000		LOSS =	38 000	
	PW =	21.9468		PW =	21.0584		PW =	20.1957		PW =	19.3583		PW =	18.5452		PW =	17.7558
--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754
	Tfactor =	0.8515		Tfactor =	0.8170		Tfactor =	0.7835		Tfactor =	0.7510		Tfactor =	0.7195		Tfactor =	0.6889

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C-51 "counts" value at end of he year (impact wetland in year 0, loss "counted" year 0)

Tfactor = ratio of the Present Worth of proposed we land functions LOSS/LIFT compared to the Maximum possible.

Mine Year 10 / 2026			Mine Year 11 / 2027			Mine Year 12 / 2028			Mine Year 13 / 2029			Mine Year 14 / 2030			Mine Year 15 / 2031		
b	c	d	b	c	d	b	c	d	b	c	d	b	c	d	b	c	d
Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW
	0.000	= a X c		0.000	= a X c		0.000	= a X c		0.000	= a X c		0.000	= a X c		0.000	= a X c
0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1.000	1.000	0.7441	0.000	0.000	0 0000	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	1.000	0.7224	1.000	1.000	0.7224	0.000	0.000	0.0000	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	1.000	0.7014	0.000	1.000	0.7014	1.000	1.000	0.7014	0.000	0.000	0.0000	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	1.000	0.6810	0.000	1.000	0.6810	0.000	1.000	0.6810	1.000	1.000	0.6810	0.000	0.000	0 0000	0.000	0.000	0.0000
0.000	1.000	0.6611	0.000	1.000	0.6611	0.000	1.000	0.6611	0.000	1.000	0.6611	1.000	1.000	0.6611	0.000	0.000	0.0000
0.000	1.000	0.6419	0.000	1.000	0.6419	0.000	1.000	0.6419	0.000	1.000	0.6419	0.000	1.000	0.6419	1.000	1.000	0.6419
0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232	0.000	1.000	0.6232
0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050	0.000	1.000	0.6050
0.000	1.000	0.5874	0.000	1.000	0 5874	0.000	1.000	0.5874	0.000	1.000	0.5874	0.000	1.000	0 5874	0.000	1.000	0.5874
0.000	1.000	0.5703	0.000	1.000	0 5703	0.000	1.000	0.5703	0.000	1.000	0.5703	0.000	1.000	0 5703	0.000	1.000	0.5703
0.000	1.000	0.5537	0.000	1.000	0 5537	0.000	1.000	0.5537	0.000	1.000	0.5537	0.000	1.000	0 5537	0.000	1.000	0.5537
0.000	1.000	0.5375	0.000	1.000	0 5375	0.000	1.000	0.5375	0.000	1.000	0.5375	0.000	1.000	0 5375	0.000	1.000	0.5375
0.000	1.000	0.5219	0.000	1.000	0 5219	0.000	1.000	0.5219	0.000	1.000	0.5219	0.000	1.000	0 5219	0.000	1.000	0.5219
0.000	1.000	0.5067	0.000	1.000	0 5067	0.000	1.000	0.5067	0.000	1.000	0.5067	0.000	1.000	0 5067	0.000	1.000	0.5067
0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919	0.000	1.000	0.4919
0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776	0.000	1.000	0.4776
0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637	0.000	1.000	0.4637
0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502	0.000	1.000	0.4502
0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371	0.000	1.000	0.4371
0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243	0.000	1.000	0.4243
0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120	0.000	1.000	0.4120
0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000	0.000	1.000	0.4000
0.000	1.000	0.3883	0.000	1.000	0 3883	0.000	1.000	0.3883	0.000	1.000	0.3883	0.000	1.000	0 3883	0.000	1.000	0.3883
0.000	1.000	0.3770	0.000	1.000	0 3770	0.000	1.000	0.3770	0.000	1.000	0.3770	0.000	1.000	0 3770	0.000	1.000	0.3770
0.000	1.000	0.3660	0.000	1.000	0 3660	0.000	1.000	0.3660	0.000	1.000	0.3660	0.000	1.000	0 3660	0.000	1.000	0.3660
0.000	1.000	0.3554	0.000	1.000	0 3554	0.000	1.000	0.3554	0.000	1.000	0.3554	0.000	1.000	0 3554	0.000	1.000	0.3554
0.000	1.000	0.3450	0.000	1.000	0 3450	0.000	1.000	0.3450	0.000	1.000	0.3450	0.000	1.000	0 3450	0.000	1.000	0.3450
0.000	1.000	0.3350	0.000	1.000	0 3350	0.000	1.000	0.3350	0.000	1.000	0.3350	0.000	1.000	0 3350	0.000	1.000	0.3350
0.000	1.000	0.3252	0.000	1.000	0 3252	0.000	1.000	0.3252	0.000	1.000	0.3252	0.000	1.000	0 3252	0.000	1.000	0.3252
0.000	1.000	0.3158	0.000	1.000	0 3158	0.000	1.000	0.3158	0.000	1.000	0.3158	0.000	1.000	0 3158	0.000	1.000	0.3158
0.000	1.000	0.3066	0.000	1.000	0 3066	0.000	1.000	0.3066	0.000	1.000	0.3066	0.000	1.000	0 3066	0.000	1.000	0.3066
0.000	1.000	0.2976	0.000	1.000	0 2976	0.000	1.000	0.2976	0.000	1.000	0.2976	0.000	1.000	0 2976	0.000	1.000	0.2976
0.000	1.000	0.2890	0.000	1.000	0 2890	0.000	1.000	0.2890	0.000	1.000	0.2890	0.000	1.000	0 2890	0.000	1.000	0.2890
0.000	1.000	0.2805	0.000	1.000	0 2805	0.000	1.000	0.2805	0.000	1.000	0.2805	0.000	1.000	0 2805	0.000	1.000	0.2805
0.000	1.000	0.2724	0.000	1.000	0 2724	0.000	1.000	0.2724	0.000	1.000	0.2724	0.000	1.000	0 2724	0.000	1.000	0.2724
0.000	1.000	0.2644	0.000	1.000	0 2644	0.000	1.000	0.2644	0.000	1.000	0.2644	0.000	1.000	0 2644	0.000	1.000	0.2644
0.000	1.000	0.2567	0.000	1.000	0 2567	0.000	1.000	0.2567	0.000	1.000	0.2567	0.000	1.000	0 2567	0.000	1.000	0.2567
LOSS =	37.000		LOSS =	36.000		LOSS =	35.000		LOSS =	34.000		LOSS =	33.000		LOSS =	32.000	
	PW =	16.9893		PW =	16 2452		PW =	15.5228		PW =	14.8214		PW =	14.1405		PW =	13.4794
--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754
	Tfactor =	0.6591		Tfactor =	0.6303		Tfactor =	0.6022		Tfactor =	0.5750		Tfactor =	0 5486		Tfactor =	0.5230

Table C-51 (math behind 4 of the Tfactors)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

C-51 "counts" value at end of the year (impact we land in year 0, loss "counted" year 0)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

Mine Year 16 / 2032			Mine Year 17 / 2033			Mine Year 18 / 2034			Mine Year 19 / 2035			Mine Year 20 / 2036			Mine Year 21 / 2037		
b	c	d	b	c	d	b	c	d	b	c	d	b	c	d	b	c	d
Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW
	0.000	= a X c		0 000	= a X c		0 000	= a X c		0 000	= a X c		0 000	= a X c		0.000	= a X c
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	0.000	0.0000	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
1.000	1.000	0.6232	0.000	0 000	0.0000	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	1.000	0.6050	1.000	1 000	0.6050	0.000	0 000	0.0000	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	1.000	0.5874	0.000	1 000	0.5874	1.000	1 000	0.5874	0.000	0.000	0 0000	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	1.000	0.5703	0.000	1 000	0.5703	0.000	1 000	0.5703	1.000	1.000	0 5703	0.000	0 000	0 0000	0.000	0.000	0 0000
0.000	1.000	0.5537	0.000	1 000	0.5537	0.000	1 000	0.5537	0.000	1.000	0 5537	1.000	1 000	0 5537	0.000	0.000	0 0000
0.000	1.000	0.5375	0.000	1 000	0.5375	0.000	1 000	0.5375	0.000	1.000	0 5375	0.000	1 000	0 5375	1.000	1.000	0 5375
0.000	1.000	0.5219	0.000	1 000	0.5219	0.000	1 000	0.5219	0.000	1.000	0 5219	0.000	1 000	0 5219	0.000	1.000	0 5219
0.000	1.000	0.5067	0.000	1 000	0.5067	0.000	1 000	0.5067	0.000	1.000	0 5067	0.000	1 000	0 5067	0.000	1.000	0 5067
0.000	1.000	0.4919	0.000	1 000	0.4919	0.000	1 000	0.4919	0.000	1.000	0.4919	0.000	1 000	0.4919	0.000	1.000	0.4919
0.000	1.000	0.4776	0.000	1 000	0.4776	0.000	1 000	0.4776	0.000	1.000	0.4776	0.000	1 000	0.4776	0.000	1.000	0.4776
0.000	1.000	0.4637	0.000	1 000	0.4637	0.000	1 000	0.4637	0.000	1.000	0.4637	0.000	1 000	0.4637	0.000	1.000	0.4637
0.000	1.000	0.4502	0.000	1 000	0.4502	0.000	1 000	0.4502	0.000	1.000	0.4502	0.000	1 000	0.4502	0.000	1.000	0.4502
0.000	1.000	0.4371	0.000	1 000	0.4371	0.000	1 000	0.4371	0.000	1.000	0.4371	0.000	1 000	0.4371	0.000	1.000	0.4371
0.000	1.000	0.4243	0.000	1 000	0.4243	0.000	1 000	0.4243	0.000	1.000	0.4243	0.000	1 000	0.4243	0.000	1.000	0.4243
0.000	1.000	0.4120	0.000	1 000	0.4120	0.000	1 000	0.4120	0.000	1.000	0.4120	0.000	1 000	0.4120	0.000	1.000	0.4120
0.000	1.000	0.4000	0.000	1 000	0.4000	0.000	1 000	0.4000	0.000	1.000	0.4000	0.000	1 000	0.4000	0.000	1.000	0.4000
0.000	1.000	0.3883	0.000	1 000	0.3883	0.000	1 000	0.3883	0.000	1.000	0 3883	0.000	1 000	0 3883	0.000	1.000	0 3883
0.000	1.000	0.3770	0.000	1 000	0.3770	0.000	1 000	0.3770	0.000	1.000	0 3770	0.000	1 000	0 3770	0.000	1.000	0 3770
0.000	1.000	0.3660	0.000	1 000	0.3660	0.000	1 000	0.3660	0.000	1.000	0 3660	0.000	1 000	0 3660	0.000	1.000	0 3660
0.000	1.000	0.3554	0.000	1 000	0.3554	0.000	1 000	0.3554	0.000	1.000	0 3554	0.000	1 000	0 3554	0.000	1.000	0 3554
0.000	1.000	0.3450	0.000	1 000	0.3450	0.000	1 000	0.3450	0.000	1.000	0 3450	0.000	1 000	0 3450	0.000	1.000	0 3450
0.000	1.000	0.3350	0.000	1 000	0.3350	0.000	1 000	0.3350	0.000	1.000	0 3350	0.000	1 000	0 3350	0.000	1.000	0 3350
0.000	1.000	0.3252	0.000	1 000	0.3252	0.000	1 000	0.3252	0.000	1.000	0 3252	0.000	1 000	0 3252	0.000	1.000	0 3252
0.000	1.000	0.3158	0.000	1 000	0.3158	0.000	1 000	0.3158	0.000	1.000	0 3158	0.000	1 000	0 3158	0.000	1.000	0 3158
0.000	1.000	0.3066	0.000	1 000	0.3066	0.000	1 000	0.3066	0.000	1.000	0 3066	0.000	1 000	0 3066	0.000	1.000	0 3066
0.000	1.000	0.2976	0.000	1 000	0.2976	0.000	1 000	0.2976	0.000	1.000	0 2976	0.000	1 000	0 2976	0.000	1.000	0 2976
0.000	1.000	0.2890	0.000	1 000	0.2890	0.000	1 000	0.2890	0.000	1.000	0 2890	0.000	1 000	0 2890	0.000	1.000	0 2890
0.000	1.000	0.2805	0.000	1 000	0.2805	0.000	1 000	0.2805	0.000	1.000	0 2805	0.000	1 000	0 2805	0.000	1.000	0 2805
0.000	1.000	0.2724	0.000	1 000	0.2724	0.000	1 000	0.2724	0.000	1.000	0 2724	0.000	1 000	0 2724	0.000	1.000	0 2724
0.000	1.000	0.2644	0.000	1 000	0.2644	0.000	1 000	0.2644	0.000	1.000	0 2644	0.000	1 000	0 2644	0.000	1.000	0 2644
0.000	1.000	0.2567	0.000	1 000	0.2567	0.000	1 000	0.2567	0.000	1.000	0 2567	0.000	1 000	0 2567	0.000	1.000	0 2567
LOSS =	31.000		LOSS =	30 000		LOSS =	29 000		LOSS =	28 000		LOSS =	27 000		LOSS =	26.000	
	PW =	12.8375		PW =	12.2143		PW =	11.6093		PW =	11 0219		PW =	10.4516		PW =	9 8980
--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754
	Tfactor =	0.4981		Tfactor =	0.4739		Tfactor =	0.4504		Tfactor =	0.4276		Tfactor =	0.4055		Tfactor =	0 3840

Table C-51 (math behind 4 of the Tfactors)

"r" = 3.00% = Discount Rate (enter 0 03 for 3%)

C-51 "counts" value at end of the year (impact wetland in year 0, loss "counted" year 0)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

Mine Year 22 / 2038			Mine Year 23 / 2039			Mine Year 24 / 2040			Mine Year 25 / 2041		
b	c	d	b	c	d	b	c	d	b	c	d
Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW	Change	LOSS	PW
	0.000	= a X c		0.000	= a X c		0.000	= a X c		0.000	= a X c
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	0.000	0 0000	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
1.000	1.000	0 5219	0 000	0.000	0.0000	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	1.000	0 5067	1 000	1.000	0.5067	0 000	0.000	0.0000	0 000	0.000	0.0000
0.000	1.000	0.4919	0 000	1.000	0.4919	1 000	1.000	0.4919	0 000	0.000	0.0000
0.000	1.000	0.4776	0 000	1.000	0.4776	0 000	1.000	0.4776	1 000	1.000	0.4776
0.000	1.000	0.4637	0 000	1.000	0.4637	0 000	1.000	0.4637	0 000	1.000	0.4637
0.000	1.000	0.4502	0 000	1.000	0.4502	0 000	1.000	0.4502	0 000	1.000	0.4502
0.000	1.000	0.4371	0 000	1.000	0.4371	0 000	1.000	0.4371	0 000	1.000	0.4371
0.000	1.000	0.4243	0 000	1.000	0.4243	0 000	1.000	0.4243	0 000	1.000	0.4243
0.000	1.000	0.4120	0 000	1.000	0.4120	0 000	1.000	0.4120	0 000	1.000	0.4120
0.000	1.000	0.4000	0 000	1.000	0.4000	0 000	1.000	0.4000	0 000	1.000	0.4000
0.000	1.000	0 3883	0 000	1.000	0.3883	0 000	1.000	0.3883	0 000	1.000	0.3883
0.000	1.000	0 3770	0 000	1.000	0.3770	0 000	1.000	0.3770	0 000	1.000	0.3770
0.000	1.000	0 3660	0 000	1.000	0.3660	0 000	1.000	0.3660	0 000	1.000	0.3660
0.000	1.000	0 3554	0 000	1.000	0.3554	0 000	1.000	0.3554	0 000	1.000	0.3554
0.000	1.000	0 3450	0 000	1.000	0.3450	0 000	1.000	0.3450	0 000	1.000	0.3450
0.000	1.000	0 3350	0 000	1.000	0.3350	0 000	1.000	0.3350	0 000	1.000	0.3350
0.000	1.000	0 3252	0 000	1.000	0.3252	0 000	1.000	0.3252	0 000	1.000	0.3252
0.000	1.000	0 3158	0 000	1.000	0.3158	0 000	1.000	0.3158	0 000	1.000	0.3158
0.000	1.000	0 3066	0 000	1.000	0.3066	0 000	1.000	0.3066	0 000	1.000	0.3066
0.000	1.000	0 2976	0 000	1.000	0.2976	0 000	1.000	0.2976	0 000	1.000	0.2976
0.000	1.000	0 2890	0 000	1.000	0.2890	0 000	1.000	0.2890	0 000	1.000	0.2890
0.000	1.000	0 2805	0 000	1.000	0.2805	0 000	1.000	0.2805	0 000	1.000	0.2805
0.000	1.000	0 2724	0 000	1.000	0.2724	0 000	1.000	0.2724	0 000	1.000	0.2724
0.000	1.000	0 2644	0 000	1.000	0.2644	0 000	1.000	0.2644	0 000	1.000	0.2644
0.000	1.000	0 2567	0 000	1.000	0.2567	0 000	1.000	0.2567	0 000	1.000	0.2567
LOSS =	25.000		LOSS =	24.000		LOSS =	23.000		LOSS =	22.000	
	PW =	9 3604		PW =	8 8385		PW =	8.3318		PW =	7.8399
--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754	--> MAX PW =		25.7754
	Tfactor =	0 3632		Tfactor =	0 3429		Tfactor =	0.3232		Tfactor =	0.3042

Printed On: 11/3/2016

(Forested Year Built for tYear = 0)

"r" = 3.00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	LIFT	PW	Change	L FT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0.000	=a X c/3		0 000	=a X c/3
0	2016	1.0000	0 500	0 500	0.1667	1.000	1.000	0.3333	0 500	0 500	0.1667
1	2017	0.9709	0 025	0 525	0.1699	0.000	1.000	0.3236	0 250	0.750	0 2427
2	2018	0.9426	0 025	0 550	0.1728	0.000	1.000	0.3142	0.100	0 850	0 2671
3	2019	0.9151	0 025	0 575	0.1754	0.000	1.000	0.3050	0.100	0 950	0 2898
4	2020	0.8885	0 025	0 600	0.1777	0.000	1.000	0.2962	0 050	1 000	0 2962
5	2021	0.8626	0 025	0 625	0.1797	0.000	1.000	0.2875	0 000	1 000	0 2875
6	2022	0.8375	0 025	0 650	0.1815	0.000	1.000	0.2792	0 000	1 000	0 2792
7	2023	0.8131	0 025	0 675	0.1829	0.000	1.000	0.2710	0 000	1 000	0 2710
8	2024	0.7894	0 025	0.700	0.1842	0.000	1.000	0.2631	0 000	1 000	0 2631
9	2025	0.7664	0 025	0.725	0.1852	0.000	1.000	0.2555	0 000	1 000	0 2555
10	2026	0.7441	0 025	0.750	0.1860	0.000	1.000	0.2480	0 000	1 000	0 2480
11	2027	0.7224	0 050	0 800	0.1926	0.000	1.000	0.2408	0 000	1 000	0 2408
12	2028	0.7014	0 050	0 850	0.1987	0.000	1.000	0.2338	0 000	1 000	0 2338
13	2029	0.6810	0 050	0 900	0 2043	0.000	1.000	0.2270	0 000	1 000	0 2270
14	2030	0.6611	0 050	0 950	0 2094	0.000	1.000	0.2204	0 000	1 000	0 2204
15	2031	0.6419	0 050	1 000	0 2140	0.000	1.000	0.2140	0 000	1 000	0 2140
16	2032	0.6232	0 000	1 000	0 2077	0.000	1.000	0.2077	0 000	1 000	0 2077
17	2033	0.6050	0 000	1 000	0 2017	0.000	1.000	0.2017	0 000	1 000	0 2017
18	2034	0.5874	0 000	1 000	0.1958	0.000	1.000	0.1958	0 000	1 000	0.1958
19	2035	0.5703	0 000	1 000	0.1901	0.000	1.000	0.1901	0 000	1 000	0.1901
20	2036	0.5537	0 000	1 000	0.1846	0.000	1.000	0.1846	0 000	1 000	0.1846
21	2037	0.5375	0 000	1 000	0.1792	0.000	1.000	0.1792	0 000	1 000	0.1792
22	2038	0.5219	0 000	1 000	0.1740	0.000	1.000	0.1740	0 000	1 000	0.1740
23	2039	0.5067	0 000	1 000	0.1689	0.000	1.000	0.1689	0 000	1 000	0.1689
24	2040	0.4919	0 000	1 000	0.1640	0.000	1.000	0.1640	0 000	1 000	0.1640
25	2041	0.4776	0 000	1 000	0.1592	0.000	1.000	0.1592	0 000	1 000	0.1592
26	2042	0.4637	0 000	1 000	0.1546	0.000	1.000	0.1546	0 000	1 000	0.1546
27	2043	0.4502	0 000	1 000	0.1501	0.000	1.000	0.1501	0 000	1 000	0.1501
28	2044	0.4371	0 000	1 000	0.1457	0.000	1.000	0.1457	0 000	1 000	0.1457
29	2045	0.4243	0 000	1 000	0.1414	0.000	1.000	0.1414	0 000	1 000	0.1414
30	2046	0.4120	0 000	1 000	0.1373	0.000	1.000	0.1373	0 000	1 000	0.1373
31	2047	0.4000	0 000	1 000	0.1333	0.000	1.000	0.1333	0 000	1 000	0.1333
32	2048	0.3883	0 000	1 000	0.1294	0.000	1.000	0.1294	0 000	1 000	0.1294
33	2049	0.3770	0 000	1 000	0.1257	0.000	1.000	0.1257	0 000	1 000	0.1257
34	2050	0.3660	0 000	1 000	0.1220	0.000	1.000	0.1220	0 000	1 000	0.1220
35	2051	0.3554	0 000	1 000	0.1185	0.000	1.000	0.1185	0 000	1 000	0.1185
36	2052	0.3450	0 000	1 000	0.1150	0.000	1.000	0.1150	0 000	1 000	0.1150
37	2053	0.3350	0 000	1 000	0.1117	0.000	1.000	0.1117	0 000	1 000	0.1117
38	2054	0.3252	0 000	1 000	0.1084	0.000	1.000	0.1084	0 000	1 000	0.1084
39	2055	0.3158	0 000	1 000	0.1053	0.000	1.000	0.1053	0 000	1 000	0.1053
40	2056	0.3066	0 000	1 000	0.1022	0.000	1.000	0.1022	0 000	1 000	0.1022
41	2057	0.2976	0 000	1 000	0 0992	0.000	1.000	0.0992	0 000	1 000	0 0992
42	2058	0.2890	0 000	1 000	0 0963	0.000	1.000	0.0963	0 000	1 000	0 0963
43	2059	0.2805	0 000	1 000	0 0935	0.000	1.000	0.0935	0 000	1 000	0 0935
44	2060	0.2724	0 000	1 000	0 0908	0.000	1.000	0.0908	0 000	1 000	0 0908
45	2061	0.2644	0 000	1 000	0 0881	0.000	1.000	0.0881	0 000	1 000	0 0881
46	2062	0.2567	0 000	1 000	0 0856	0.000	1.000	0.0856	0 000	1 000	0 0856
	∑PW =	25.7754									
			LIFT =	42 375		LIFT =	47.000		LIFT =	46 050	
	Sum =	24.1338			7 2602			8.5918			8 2819
	divide by:	25.7754									
	Tforest =	0.9363									

(Forested Year Built for tYear = 1)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.500	0 500	0.1618	1.000	1.000	0 3236	0.500	0.500	0.1618
2	2018	0.9426	0.025	0 525	0.1650	0.000	1.000	0 3142	0.250	0.750	0.2356
3	2019	0.9151	0.025	0 550	0.1678	0.000	1.000	0 3050	0.100	0.850	0.2593
4	2020	0.8885	0.025	0 575	0.1703	0.000	1.000	0 2962	0.100	0.950	0.2814
5	2021	0.8626	0.025	0 600	0.1725	0.000	1.000	0 2875	0.050	1.000	0.2875
6	2022	0.8375	0.025	0 625	0.1745	0.000	1.000	0 2792	0.000	1.000	0.2792
7	2023	0.8131	0.025	0 650	0.1762	0.000	1.000	0 2710	0.000	1.000	0.2710
8	2024	0.7894	0.025	0 675	0.1776	0.000	1.000	0 2631	0.000	1.000	0.2631
9	2025	0.7664	0.025	0.700	0.1788	0.000	1.000	0 2555	0.000	1.000	0.2555
10	2026	0.7441	0.025	0.725	0.1798	0.000	1.000	0 2480	0.000	1.000	0.2480
11	2027	0.7224	0.025	0.750	0.1806	0.000	1.000	0 2408	0.000	1.000	0.2408
12	2028	0.7014	0.050	0 800	0.1870	0.000	1.000	0 2338	0.000	1.000	0.2338
13	2029	0.6810	0.050	0 850	0.1929	0.000	1.000	0 2270	0.000	1.000	0.2270
14	2030	0.6611	0.050	0 900	0.1983	0.000	1.000	0 2204	0.000	1.000	0.2204
15	2031	0.6419	0.050	0 950	0 2033	0.000	1.000	0 2140	0.000	1.000	0.2140
16	2032	0.6232	0.050	1 000	0 2077	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.000	1 000	0 2017	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.000	1 000	0.1958	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.000	1 000	0.1901	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.000	1 000	0.1846	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.000	1 000	0.1792	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.000	1 000	0.1740	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.000	1 000	0.1689	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.000	1 000	0.1640	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.000	1 000	0.1592	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.000	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	41 375		LIFT =	46 000		L FT =	45.050	
	Sum =	23.1817			6 9656			8 2585			7 9576
	divide by:	25.7754									
	Tforest =	0.8994									

(Forested Year Built for tYear = 2)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.500	0 500	0.1571	1.000	1.000	0 3142	0.500	0.500	0.1571
3	2019	0.9151	0.025	0 525	0.1601	0.000	1.000	0 3050	0.250	0.750	0.2288
4	2020	0.8885	0.025	0 550	0.1629	0.000	1.000	0 2962	0.100	0.850	0.2517
5	2021	0.8626	0.025	0 575	0.1653	0.000	1.000	0 2875	0.100	0.950	0.2732
6	2022	0.8375	0.025	0 600	0.1675	0.000	1.000	0 2792	0.050	1.000	0.2792
7	2023	0.8131	0.025	0 625	0.1694	0.000	1.000	0 2710	0.000	1.000	0.2710
8	2024	0.7894	0.025	0 650	0.1710	0.000	1.000	0 2631	0.000	1.000	0.2631
9	2025	0.7664	0.025	0 675	0.1724	0.000	1.000	0 2555	0.000	1.000	0.2555
10	2026	0.7441	0.025	0.700	0.1736	0.000	1.000	0 2480	0.000	1.000	0.2480
11	2027	0.7224	0.025	0.725	0.1746	0.000	1.000	0 2408	0.000	1.000	0.2408
12	2028	0.7014	0.025	0.750	0.1753	0.000	1.000	0 2338	0.000	1.000	0.2338
13	2029	0.6810	0.050	0 800	0.1816	0.000	1.000	0 2270	0.000	1.000	0.2270
14	2030	0.6611	0.050	0 850	0.1873	0.000	1.000	0 2204	0.000	1.000	0.2204
15	2031	0.6419	0.050	0 900	0.1926	0.000	1.000	0 2140	0.000	1.000	0.2140
16	2032	0.6232	0.050	0 950	0.1973	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.050	1 000	0 2017	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.000	1 000	0.1958	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.000	1 000	0.1901	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.000	1 000	0.1846	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.000	1 000	0.1792	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.000	1 000	0.1740	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.000	1 000	0.1689	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.000	1 000	0.1640	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.000	1 000	0.1592	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.000	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	40 375		LIFT =	45 000		L FT =	44.050	
	Sum =	22.2572			6 6796			7 9349			7 6427
	divide by:	25.7754									
	Tforest =	0.8635									

(Forested Year Built for tYear = 3)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.500	0 500	0.1525	1.000	1.000	0 3050	0.500	0.500	0.1525
4	2020	0.8885	0.025	0 525	0.1555	0.000	1.000	0 2962	0.250	0.750	0.2221
5	2021	0.8626	0.025	0 550	0.1581	0.000	1.000	0 2875	0.100	0.850	0.2444
6	2022	0.8375	0.025	0 575	0.1605	0.000	1.000	0 2792	0.100	0.950	0.2652
7	2023	0.8131	0.025	0 600	0.1626	0.000	1.000	0 2710	0.050	1.000	0.2710
8	2024	0.7894	0.025	0 625	0.1645	0.000	1.000	0 2631	0.000	1.000	0.2631
9	2025	0.7664	0.025	0 650	0.1661	0.000	1.000	0 2555	0.000	1.000	0.2555
10	2026	0.7441	0.025	0 675	0.1674	0.000	1.000	0 2480	0.000	1.000	0.2480
11	2027	0.7224	0.025	0.700	0.1686	0.000	1.000	0 2408	0.000	1.000	0.2408
12	2028	0.7014	0.025	0.725	0.1695	0.000	1.000	0 2338	0.000	1.000	0.2338
13	2029	0.6810	0.025	0.750	0.1702	0.000	1.000	0 2270	0.000	1.000	0.2270
14	2030	0.6611	0.050	0 800	0.1763	0.000	1.000	0 2204	0.000	1.000	0.2204
15	2031	0.6419	0.050	0 850	0.1819	0.000	1.000	0 2140	0.000	1.000	0.2140
16	2032	0.6232	0.050	0 900	0.1870	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.050	0 950	0.1916	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.050	1 000	0.1958	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.000	1 000	0.1901	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.000	1 000	0.1846	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.000	1 000	0.1792	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.000	1 000	0.1740	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.000	1 000	0.1689	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.000	1 000	0.1640	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.000	1 000	0.1592	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.000	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	39 375		LIFT =	44 000		L FT =	43.050	
	Sum =	21.3597			6.4020			7 6207			7 3370
	divide by:	25.7754									
	Tforest =	0.8287									

(Forested Year Built for tYear = 4)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.500	0 500	0.1481	1.000	1.000	0 2962	0.500	0.500	0.1481
5	2021	0.8626	0.025	0 525	0.1510	0.000	1.000	0 2875	0.250	0.750	0.2157
6	2022	0.8375	0.025	0 550	0.1535	0.000	1.000	0 2792	0.100	0.850	0.2373
7	2023	0.8131	0.025	0 575	0.1558	0.000	1.000	0 2710	0.100	0.950	0.2575
8	2024	0.7894	0.025	0 600	0.1579	0.000	1.000	0 2631	0.050	1.000	0.2631
9	2025	0.7664	0.025	0 625	0.1597	0.000	1.000	0 2555	0.000	1.000	0.2555
10	2026	0.7441	0.025	0 650	0.1612	0.000	1.000	0 2480	0.000	1.000	0.2480
11	2027	0.7224	0.025	0 675	0.1625	0.000	1.000	0 2408	0.000	1.000	0.2408
12	2028	0.7014	0.025	0.700	0.1637	0.000	1.000	0 2338	0.000	1.000	0.2338
13	2029	0.6810	0.025	0.725	0.1646	0.000	1.000	0 2270	0.000	1.000	0.2270
14	2030	0.6611	0.025	0.750	0.1653	0.000	1.000	0 2204	0.000	1.000	0.2204
15	2031	0.6419	0.050	0 800	0.1712	0.000	1.000	0 2140	0.000	1.000	0.2140
16	2032	0.6232	0.050	0 850	0.1766	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.050	0 900	0.1815	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.050	0 950	0.1860	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.050	1 000	0.1901	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.000	1 000	0.1846	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.000	1 000	0.1792	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.000	1 000	0.1740	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.000	1 000	0.1689	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.000	1 000	0.1640	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.000	1 000	0.1592	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.000	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	38 375		LIFT =	43 000		L FT =	42.050	
	Sum =	20.4883			6.1325			7 3156			7 0402
	divide by:	25.7754									
	Tforest =	0.7949									

(Forested Year Built for tYear = 5)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.500	0 500	0.1438	1.000	1.000	0 2875	0.500	0.500	0.1438
6	2022	0.8375	0.025	0 525	0.1466	0.000	1.000	0 2792	0.250	0.750	0.2094
7	2023	0.8131	0.025	0 550	0.1491	0.000	1.000	0 2710	0.100	0.850	0.2304
8	2024	0.7894	0.025	0 575	0.1513	0.000	1.000	0 2631	0.100	0.950	0.2500
9	2025	0.7664	0.025	0 600	0.1533	0.000	1.000	0 2555	0.050	1.000	0.2555
10	2026	0.7441	0.025	0 625	0.1550	0.000	1.000	0 2480	0.000	1.000	0.2480
11	2027	0.7224	0.025	0 650	0.1565	0.000	1.000	0 2408	0.000	1.000	0.2408
12	2028	0.7014	0.025	0 675	0.1578	0.000	1.000	0 2338	0.000	1.000	0.2338
13	2029	0.6810	0.025	0.700	0.1589	0.000	1.000	0 2270	0.000	1.000	0.2270
14	2030	0.6611	0.025	0.725	0.1598	0.000	1.000	0 2204	0.000	1.000	0.2204
15	2031	0.6419	0.025	0.750	0.1605	0.000	1.000	0 2140	0.000	1.000	0.2140
16	2032	0.6232	0.050	0 800	0.1662	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.050	0 850	0.1714	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.050	0 900	0.1762	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.050	0 950	0.1806	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.050	1 000	0.1846	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.000	1 000	0.1792	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.000	1 000	0.1740	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.000	1 000	0.1689	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.000	1 000	0.1640	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.000	1 000	0.1592	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.000	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	37 375		LIFT =	42 000		L FT =	41.050	
	Sum =	19.6423			5 8708			7 0195			6.7521
	divide by:	25.7754									
	Tforest =	0.7621									

(Forested Year Built for tYear = 6)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.500	0 500	0.1396	1.000	1.000	0 2792	0.500	0.500	0.1396
7	2023	0.8131	0.025	0 525	0.1423	0.000	1.000	0 2710	0.250	0.750	0.2033
8	2024	0.7894	0.025	0 550	0.1447	0.000	1.000	0 2631	0.100	0.850	0.2237
9	2025	0.7664	0.025	0 575	0.1469	0.000	1.000	0 2555	0.100	0.950	0.2427
10	2026	0.7441	0.025	0 600	0.1488	0.000	1.000	0 2480	0.050	1.000	0.2480
11	2027	0.7224	0.025	0 625	0.1505	0.000	1.000	0 2408	0.000	1.000	0.2408
12	2028	0.7014	0.025	0 650	0.1520	0.000	1.000	0 2338	0.000	1.000	0.2338
13	2029	0.6810	0.025	0 675	0.1532	0.000	1.000	0 2270	0.000	1.000	0.2270
14	2030	0.6611	0.025	0.700	0.1543	0.000	1.000	0 2204	0.000	1.000	0.2204
15	2031	0.6419	0.025	0.725	0.1551	0.000	1.000	0 2140	0.000	1.000	0.2140
16	2032	0.6232	0.025	0.750	0.1558	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.050	0 800	0.1613	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.050	0 850	0.1664	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.050	0 900	0.1711	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.050	0 950	0.1753	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.050	1 000	0.1792	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.000	1 000	0.1740	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.000	1 000	0.1689	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.000	1 000	0.1640	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.000	1 000	0.1592	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.000	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	36 375		LIFT =	41 000		L FT =	40.050	
	Sum =	18.8209			5 6167			6.7319			6.4723
	divide by:	25.7754									
	Tforest =	0.7302									

(Forested Year Built for tYear = 7)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.500	0 500	0.1355	1.000	1.000	0 2710	0.500	0.500	0.1355
8	2024	0.7894	0.025	0 525	0.1381	0.000	1.000	0 2631	0.250	0.750	0.1974
9	2025	0.7664	0.025	0 550	0.1405	0.000	1.000	0 2555	0.100	0.850	0.2172
10	2026	0.7441	0.025	0 575	0.1426	0.000	1.000	0 2480	0.100	0.950	0.2356
11	2027	0.7224	0.025	0 600	0.1445	0.000	1.000	0 2408	0.050	1.000	0.2408
12	2028	0.7014	0.025	0 625	0.1461	0.000	1.000	0 2338	0.000	1.000	0.2338
13	2029	0.6810	0.025	0 650	0.1475	0.000	1.000	0 2270	0.000	1.000	0.2270
14	2030	0.6611	0.025	0 675	0.1488	0.000	1.000	0 2204	0.000	1.000	0.2204
15	2031	0.6419	0.025	0.700	0.1498	0.000	1.000	0 2140	0.000	1.000	0.2140
16	2032	0.6232	0.025	0.725	0.1506	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.025	0.750	0.1513	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.050	0 800	0.1566	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.050	0 850	0.1616	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.050	0 900	0.1661	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.050	0 950	0.1702	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.050	1 000	0.1740	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.000	1 000	0.1689	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.000	1 000	0.1640	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.000	1 000	0.1592	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.000	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	35 375		LIFT =	40 000		L FT =	39.050	
	Sum =	18.0235			5 3700			6.4528			6 2007
	divide by:	25.7754									
	Tforest =	0.6992									

(Forested Year Built for tYear = 8)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.500	0 500	0.1316	1.000	1.000	0 2631	0.500	0.500	0.1316
9	2025	0.7664	0.025	0 525	0.1341	0.000	1.000	0 2555	0.250	0.750	0.1916
10	2026	0.7441	0.025	0 550	0.1364	0.000	1.000	0 2480	0.100	0.850	0.2108
11	2027	0.7224	0.025	0 575	0.1385	0.000	1.000	0 2408	0.100	0.950	0.2288
12	2028	0.7014	0.025	0 600	0.1403	0.000	1.000	0 2338	0.050	1.000	0.2338
13	2029	0.6810	0.025	0 625	0.1419	0.000	1.000	0 2270	0.000	1.000	0.2270
14	2030	0.6611	0.025	0 650	0.1432	0.000	1.000	0 2204	0.000	1.000	0.2204
15	2031	0.6419	0.025	0 675	0.1444	0.000	1.000	0 2140	0.000	1.000	0.2140
16	2032	0.6232	0.025	0.700	0.1454	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.025	0.725	0.1462	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.025	0.750	0.1468	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.050	0 800	0.1521	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.050	0 850	0.1569	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.050	0 900	0.1613	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.050	0 950	0.1653	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.050	1 000	0.1689	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.000	1 000	0.1640	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.000	1 000	0.1592	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.000	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
		∑PW =	25.7754								
			LIFT =	34 375		LIFT =	39 000		L FT =	38.050	
		Sum =	17.2493		5.1305			6.1817			5 9370
		divide by:	25.7754								
		Tforest =	0.6692								

(Forested Year Built for tYear = 9)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.500	0 500	0.1277	1.000	1.000	0 2555	0.500	0.500	0.1277
10	2026	0.7441	0.025	0 525	0.1302	0.000	1.000	0 2480	0.250	0.750	0.1860
11	2027	0.7224	0.025	0 550	0.1324	0.000	1.000	0 2408	0.100	0.850	0.2047
12	2028	0.7014	0.025	0 575	0.1344	0.000	1.000	0 2338	0.100	0.950	0.2221
13	2029	0.6810	0.025	0 600	0.1362	0.000	1.000	0 2270	0.050	1.000	0.2270
14	2030	0.6611	0.025	0 625	0.1377	0.000	1.000	0 2204	0.000	1.000	0.2204
15	2031	0.6419	0.025	0 650	0.1391	0.000	1.000	0 2140	0.000	1.000	0.2140
16	2032	0.6232	0.025	0 675	0.1402	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.025	0.700	0.1412	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.025	0.725	0.1420	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.025	0.750	0.1426	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.050	0 800	0.1476	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.050	0 850	0.1523	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.050	0 900	0.1566	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.050	0 950	0.1605	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.050	1 000	0.1640	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.000	1 000	0.1592	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.000	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	33 375		LIFT =	38 000		L FT =	37.050	
	Sum =	16.4976			4 8980			5 9186			5 6810
	divide by:	25.7754									
	Tforest =	0.6401									

(Forested Year Built for tYear = 10)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.500	0 500	0.1240	1.000	1.000	0 2480	0.500	0.500	0.1240
11	2027	0.7224	0.025	0 525	0.1264	0.000	1.000	0 2408	0.250	0.750	0.1806
12	2028	0.7014	0.025	0 550	0.1286	0.000	1.000	0 2338	0.100	0.850	0.1987
13	2029	0.6810	0.025	0 575	0.1305	0.000	1.000	0 2270	0.100	0.950	0.2156
14	2030	0.6611	0.025	0 600	0.1322	0.000	1.000	0 2204	0.050	1.000	0.2204
15	2031	0.6419	0.025	0 625	0.1337	0.000	1.000	0 2140	0.000	1.000	0.2140
16	2032	0.6232	0.025	0 650	0.1350	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.025	0 675	0.1361	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.025	0.700	0.1371	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.025	0.725	0.1378	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.025	0.750	0.1384	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.050	0 800	0.1433	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.050	0 850	0.1479	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.050	0 900	0.1520	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.050	0 950	0.1558	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.050	1 000	0.1592	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.000	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	32 375		LIFT =	37 000		L FT =	36.050	
	Sum =	15.7678			4 6722			5 6631			5.4325
	divide by:	25.7754									
	Tforest =	0.6117									

(Forested Year Built for tYear = 11)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.500	0 500	0.1204	1.000	1.000	0 2408	0.500	0.500	0.1204
12	2028	0.7014	0.025	0 525	0.1227	0.000	1.000	0 2338	0.250	0.750	0.1753
13	2029	0.6810	0.025	0 550	0.1248	0.000	1.000	0 2270	0.100	0.850	0.1929
14	2030	0.6611	0.025	0 575	0.1267	0.000	1.000	0 2204	0.100	0.950	0.2094
15	2031	0.6419	0.025	0 600	0.1284	0.000	1.000	0 2140	0.050	1.000	0.2140
16	2032	0.6232	0.025	0 625	0.1298	0.000	1.000	0 2077	0.000	1.000	0.2077
17	2033	0.6050	0.025	0 650	0.1311	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.025	0 675	0.1322	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.025	0.700	0.1331	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.025	0.725	0.1338	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.025	0.750	0.1344	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.050	0 800	0.1392	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.050	0 850	0.1436	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.050	0 900	0.1476	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.050	0 950	0.1512	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.050	1 000	0.1546	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.000	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	31 375		LIFT =	36 000		L FT =	35.050	
	Sum =	15.0593			4.4531			5.4151			5.1912
	divide by:	25.7754									
	Tforest =	0.5843									

(Forested Year Built for tYear = 12)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.500	0 500	0.1169	1.000	1.000	0 2338	0.500	0.500	0.1169
13	2029	0.6810	0.025	0 525	0.1192	0.000	1.000	0 2270	0.250	0.750	0.1702
14	2030	0.6611	0.025	0 550	0.1212	0.000	1.000	0 2204	0.100	0.850	0.1873
15	2031	0.6419	0.025	0 575	0.1230	0.000	1.000	0 2140	0.100	0.950	0.2033
16	2032	0.6232	0.025	0 600	0.1246	0.000	1.000	0 2077	0.050	1.000	0.2077
17	2033	0.6050	0.025	0 625	0.1260	0.000	1.000	0 2017	0.000	1.000	0.2017
18	2034	0.5874	0.025	0 650	0.1273	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.025	0 675	0.1283	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.025	0.700	0.1292	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.025	0.725	0.1299	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.025	0.750	0.1305	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.050	0 800	0.1351	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.050	0 850	0.1394	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.050	0 900	0.1433	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.050	0 950	0.1468	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.050	1 000	0.1501	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.000	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	30 375		LIFT =	35 000		L FT =	34.050	
	Sum =	14.3714			4 2403			5.1743			4 9569
	divide by:	25.7754									
	Tforest =	0.5576									

(Forested Year Built for tYear = 13)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.500	0 500	0.1135	1.000	1.000	0 2270	0.500	0.500	0.1135
14	2030	0.6611	0.025	0 525	0.1157	0.000	1.000	0 2204	0.250	0.750	0.1653
15	2031	0.6419	0.025	0 550	0.1177	0.000	1.000	0 2140	0.100	0.850	0.1819
16	2032	0.6232	0.025	0 575	0.1194	0.000	1.000	0 2077	0.100	0.950	0.1973
17	2033	0.6050	0.025	0 600	0.1210	0.000	1.000	0 2017	0.050	1.000	0.2017
18	2034	0.5874	0.025	0 625	0.1224	0.000	1.000	0.1958	0.000	1.000	0.1958
19	2035	0.5703	0.025	0 650	0.1236	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.025	0 675	0.1246	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.025	0.700	0.1254	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.025	0.725	0.1261	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.025	0.750	0.1267	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.050	0 800	0.1312	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.050	0 850	0.1353	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.050	0 900	0.1391	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.050	0 950	0.1426	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.050	1 000	0.1457	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.000	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	29 375		LIFT =	34 000		L FT =	33.050	
	Sum =	13.7036			4 0337			4 9405			4.7294
	divide by:	25.7754									
	Tforest =	0.5317									

(Forested Year Built for tYear = 14)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.500	0 500	0.1102	1.000	1.000	0 2204	0.500	0.500	0.1102
15	2031	0.6419	0.025	0 525	0.1123	0.000	1.000	0 2140	0.250	0.750	0.1605
16	2032	0.6232	0.025	0 550	0.1142	0.000	1.000	0 2077	0.100	0.850	0.1766
17	2033	0.6050	0.025	0 575	0.1160	0.000	1.000	0 2017	0.100	0.950	0.1916
18	2034	0.5874	0.025	0 600	0.1175	0.000	1.000	0.1958	0.050	1.000	0.1958
19	2035	0.5703	0.025	0 625	0.1188	0.000	1.000	0.1901	0.000	1.000	0.1901
20	2036	0.5537	0.025	0 650	0.1200	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.025	0 675	0.1209	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.025	0.700	0.1218	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.025	0.725	0.1225	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.025	0.750	0.1230	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.050	0 800	0.1274	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.050	0 850	0.1314	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.050	0 900	0.1351	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.050	0 950	0.1384	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.050	1 000	0.1414	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.000	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	28 375		LIFT =	33 000		L FT =	32.050	
	Sum =	13.0552			3 8331			4.7135			4 5086
	divide by:	25.7754									
	Tforest =	0.5065									

(Forested Year Built for tYear = 15)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.500	0 500	0.1070	1.000	1.000	0 2140	0.500	0.500	0.1070
16	2032	0.6232	0.025	0 525	0.1091	0.000	1.000	0 2077	0.250	0.750	0.1558
17	2033	0.6050	0.025	0 550	0.1109	0.000	1.000	0 2017	0.100	0.850	0.1714
18	2034	0.5874	0.025	0 575	0.1126	0.000	1.000	0.1958	0.100	0.950	0.1860
19	2035	0.5703	0.025	0 600	0.1141	0.000	1.000	0.1901	0.050	1.000	0.1901
20	2036	0.5537	0.025	0 625	0.1153	0.000	1.000	0.1846	0.000	1.000	0.1846
21	2037	0.5375	0.025	0 650	0.1165	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.025	0 675	0.1174	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.025	0.700	0.1182	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.025	0.725	0.1189	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.025	0.750	0.1194	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.050	0 800	0.1237	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.050	0 850	0.1276	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.050	0 900	0.1311	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.050	0 950	0.1344	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.050	1 000	0.1373	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.000	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	27 375		LIFT =	32 000		L FT =	31.050	
	Sum =	12.4257			3 6384			4.4931			4 2942
	divide by:	25.7754									
	Tforest =	0.4821									

(Forested Year Built for tYear = 16)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.500	0 500	0.1039	1.000	1.000	0 2077	0.500	0.500	0.1039
17	2033	0.6050	0.025	0 525	0.1059	0.000	1.000	0 2017	0.250	0.750	0.1513
18	2034	0.5874	0.025	0 550	0.1077	0.000	1.000	0.1958	0.100	0.850	0.1664
19	2035	0.5703	0.025	0 575	0.1093	0.000	1.000	0.1901	0.100	0.950	0.1806
20	2036	0.5537	0.025	0 600	0.1107	0.000	1.000	0.1846	0.050	1.000	0.1846
21	2037	0.5375	0.025	0 625	0.1120	0.000	1.000	0.1792	0.000	1.000	0.1792
22	2038	0.5219	0.025	0 650	0.1131	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.025	0 675	0.1140	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.025	0.700	0.1148	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.025	0.725	0.1154	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.025	0.750	0.1159	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.050	0 800	0.1201	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.050	0 850	0.1238	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.050	0 900	0.1273	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.050	0 950	0.1305	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.050	1 000	0.1333	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.000	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	26 375		LIFT =	31 000		L FT =	30.050	
	Sum =	11.8145			3.4493			4 2792			4 0860
	divide by:	25.7754									
	Tforest =	0.4584									

(Forested Year Built for tYear = 17)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.500	0 500	0.1008	1.000	1.000	0 2017	0.500	0.500	0.1008
18	2034	0.5874	0.025	0 525	0.1028	0.000	1.000	0.1958	0.250	0.750	0.1468
19	2035	0.5703	0.025	0 550	0.1046	0.000	1.000	0.1901	0.100	0.850	0.1616
20	2036	0.5537	0.025	0 575	0.1061	0.000	1.000	0.1846	0.100	0.950	0.1753
21	2037	0.5375	0.025	0 600	0.1075	0.000	1.000	0.1792	0.050	1.000	0.1792
22	2038	0.5219	0.025	0 625	0.1087	0.000	1.000	0.1740	0.000	1.000	0.1740
23	2039	0.5067	0.025	0 650	0.1098	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.025	0 675	0.1107	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.025	0.700	0.1114	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.025	0.725	0.1121	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.025	0.750	0.1125	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.050	0 800	0.1166	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.050	0 850	0.1202	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.050	0 900	0.1236	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.050	0 950	0.1267	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.050	1 000	0.1294	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.000	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.000	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.000	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.000	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	25 375		LIFT =	30 000		L FT =	29.050	
	Sum =	11.2211			3 2658			4 0714			3 8839
	divide by:	25.7754									
	Tforest =	0.4353									

(Forested Year Built for tYear = 18)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.500	0 500	0 0979	1.000	1.000	0.1958	0.500	0.500	0.0979
19	2035	0.5703	0.025	0 525	0 0998	0.000	1.000	0.1901	0.250	0.750	0.1426
20	2036	0.5537	0.025	0 550	0.1015	0.000	1.000	0.1846	0.100	0.850	0.1569
21	2037	0.5375	0.025	0 575	0.1030	0.000	1.000	0.1792	0.100	0.950	0.1702
22	2038	0.5219	0.025	0 600	0.1044	0.000	1.000	0.1740	0.050	1.000	0.1740
23	2039	0.5067	0.025	0 625	0.1056	0.000	1.000	0.1689	0.000	1.000	0.1689
24	2040	0.4919	0.025	0 650	0.1066	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.025	0 675	0.1075	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.025	0.700	0.1082	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.025	0.725	0.1088	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.025	0.750	0.1093	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.050	0 800	0.1132	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.050	0 850	0.1167	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.050	0 900	0.1200	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.050	0 950	0.1230	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.050	1 000	0.1257	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.050	1 050	0.1281	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.050	1.100	0.1303	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.050	1.150	0.1323	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.050	1 200	0.1340	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.050	1 250	0.1355	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.050	1 300	0.1368	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.050	1 350	0.1380	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.050	1.400	0.1389	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.050	1.450	0.1397	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.050	1 500	0.1403	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.050	1 550	0.1407	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.050	1 600	0.1410	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.050	1 650	0.1412	0.000	1.000	0 0856	0.000	1.000	0.0856
		∑PW =	25.7754								
			LIFT =	28 925		LIFT =	29 000		L FT =	28.050	
		Sum =	11.0853		3 5278			3 8698			3 6877
		divide by:	25.7754								
		Tforest =	0.4301								

(Forested Year Built for tYear = 19)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.500	0 500	0 0950	1.000	1.000	0.1901	0.500	0.500	0.0950
20	2036	0.5537	0.025	0 525	0 0969	0.000	1.000	0.1846	0.250	0.750	0.1384
21	2037	0.5375	0.025	0 550	0 0986	0.000	1.000	0.1792	0.100	0.850	0.1523
22	2038	0.5219	0.025	0 575	0.1000	0.000	1.000	0.1740	0.100	0.950	0.1653
23	2039	0.5067	0.025	0 600	0.1013	0.000	1.000	0.1689	0.050	1.000	0.1689
24	2040	0.4919	0.025	0 625	0.1025	0.000	1.000	0.1640	0.000	1.000	0.1640
25	2041	0.4776	0.025	0 650	0.1035	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.025	0 675	0.1043	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.025	0.700	0.1050	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.025	0.725	0.1056	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.025	0.750	0.1061	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.050	0 800	0.1099	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.050	0 850	0.1133	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.050	0 900	0.1165	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.050	0 950	0.1194	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.050	1 000	0.1220	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.050	1 050	0.1244	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.050	1.100	0.1265	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.050	1.150	0.1284	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.050	1 200	0.1301	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.050	1 250	0.1316	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.050	1 300	0.1328	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.050	1 350	0.1339	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.050	1.400	0.1348	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.050	1.450	0.1356	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.050	1 500	0.1362	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.050	1 550	0.1366	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.050	1 600	0.1369	0.000	1.000	0 0856	0.000	1.000	0.0856
		∑PW =	25.7754								
			LIFT =	27 275		LIFT =	28 000		L FT =	27.050	
		Sum =	10.4591		3 2879			3 6740			3.4972
		divide by:	25.7754								
		Tforest =	0.4058								

(Forested Year Built for tYear = 20)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.500	0 500	0 0923	1.000	1.000	0.1846	0.500	0.500	0.0923
21	2037	0.5375	0.025	0 525	0 0941	0.000	1.000	0.1792	0.250	0.750	0.1344
22	2038	0.5219	0.025	0 550	0 0957	0.000	1.000	0.1740	0.100	0.850	0.1479
23	2039	0.5067	0.025	0 575	0 0971	0.000	1.000	0.1689	0.100	0.950	0.1605
24	2040	0.4919	0.025	0 600	0 0984	0.000	1.000	0.1640	0.050	1.000	0.1640
25	2041	0.4776	0.025	0 625	0 0995	0.000	1.000	0.1592	0.000	1.000	0.1592
26	2042	0.4637	0.025	0 650	0.1005	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.025	0 675	0.1013	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.025	0.700	0.1020	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.025	0.725	0.1026	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.025	0.750	0.1030	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.050	0 800	0.1067	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.050	0 850	0.1100	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.050	0 900	0.1131	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.050	0 950	0.1159	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.050	1 000	0.1185	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.050	1 050	0.1208	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.050	1.100	0.1228	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.050	1.150	0.1247	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.050	1 200	0.1263	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.050	1 250	0.1277	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.050	1 300	0.1290	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.050	1 350	0.1300	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.050	1.400	0.1309	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.050	1.450	0.1316	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.050	1 500	0.1322	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.050	1 550	0.1326	0.000	1.000	0 0856	0.000	1.000	0.0856
		∑PW =	25.7754								
			LIFT =	25 675		LIFT =	27 000		L FT =	26.050	
		Sum =	9.8554		3 0592			3.4839			3 3123
		divide by:	25.7754								
		Tforest =	0.3824								

(Forested Year Built for tYear = 21)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.500	0 500	0 0896	1.000	1.000	0.1792	0.500	0.500	0.0896
22	2038	0.5219	0.025	0 525	0 0913	0.000	1.000	0.1740	0.250	0.750	0.1305
23	2039	0.5067	0.025	0 550	0 0929	0.000	1.000	0.1689	0.100	0.850	0.1436
24	2040	0.4919	0.025	0 575	0 0943	0.000	1.000	0.1640	0.100	0.950	0.1558
25	2041	0.4776	0.025	0 600	0 0955	0.000	1.000	0.1592	0.050	1.000	0.1592
26	2042	0.4637	0.025	0 625	0 0966	0.000	1.000	0.1546	0.000	1.000	0.1546
27	2043	0.4502	0.025	0 650	0 0975	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.025	0 675	0 0983	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.025	0.700	0 0990	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.025	0.725	0 0996	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.025	0.750	0.1000	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.050	0 800	0.1036	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.050	0 850	0.1068	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.050	0 900	0.1098	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.050	0 950	0.1125	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.050	1 000	0.1150	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.000	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	21 375		LIFT =	26 000		L FT =	25.050	
	Sum =	9.0155			2 5835			3 2993			3.1327
	divide by:	25.7754									
	Tforest =	0.3498									

(Forested Year Built for tYear = 22)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
22	2038	0.5219	0.500	0 500	0 0870	1.000	1.000	0.1740	0.500	0.500	0.0870
23	2039	0.5067	0.025	0 525	0 0887	0.000	1.000	0.1689	0.250	0.750	0.1267
24	2040	0.4919	0.025	0 550	0 0902	0.000	1.000	0.1640	0.100	0.850	0.1394
25	2041	0.4776	0.025	0 575	0 0915	0.000	1.000	0.1592	0.100	0.950	0.1512
26	2042	0.4637	0.025	0 600	0 0927	0.000	1.000	0.1546	0.050	1.000	0.1546
27	2043	0.4502	0.025	0 625	0 0938	0.000	1.000	0.1501	0.000	1.000	0.1501
28	2044	0.4371	0.025	0 650	0 0947	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.025	0 675	0 0955	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.025	0.700	0 0961	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.025	0.725	0 0967	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.025	0.750	0 0971	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.050	0 800	0.1005	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.050	0 850	0.1037	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.050	0 900	0.1066	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.050	0 950	0.1093	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.050	1 000	0.1117	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.000	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	20 375		LIFT =	25 000		L FT =	24.050	
	Sum =	8.5037			2.4252			3.1201			2 9584
	divide by:	25.7754									
	Tforest =	0.3299									

(Forested Year Built for tYear = 23)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
22	2038	0.5219	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
23	2039	0.5067	0.500	0 500	0 0844	1.000	1.000	0.1689	0.500	0.500	0.0844
24	2040	0.4919	0.025	0 525	0 0861	0.000	1.000	0.1640	0.250	0.750	0.1230
25	2041	0.4776	0.025	0 550	0 0876	0.000	1.000	0.1592	0.100	0.850	0.1353
26	2042	0.4637	0.025	0 575	0 0889	0.000	1.000	0.1546	0.100	0.950	0.1468
27	2043	0.4502	0.025	0 600	0 0900	0.000	1.000	0.1501	0.050	1.000	0.1501
28	2044	0.4371	0.025	0 625	0 0911	0.000	1.000	0.1457	0.000	1.000	0.1457
29	2045	0.4243	0.025	0 650	0 0919	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.025	0 675	0 0927	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.025	0.700	0 0933	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.025	0.725	0 0938	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.025	0.750	0 0943	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.050	0 800	0 0976	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.050	0 850	0.1007	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.050	0 900	0.1035	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.050	0 950	0.1061	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.050	1 000	0.1084	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.000	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	19 375		LIFT =	24 000		L FT =	23.050	
	Sum =	8.0067			2 2714			2 9462			2.7891
	divide by:	25.7754									
	Tforest =	0.3106									

(Forested Year Built for tYear = 24)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
22	2038	0.5219	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
23	2039	0.5067	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
24	2040	0.4919	0.500	0 500	0 0820	1.000	1.000	0.1640	0.500	0.500	0.0820
25	2041	0.4776	0.025	0 525	0 0836	0.000	1.000	0.1592	0.250	0.750	0.1194
26	2042	0.4637	0.025	0 550	0 0850	0.000	1.000	0.1546	0.100	0.850	0.1314
27	2043	0.4502	0.025	0 575	0 0863	0.000	1.000	0.1501	0.100	0.950	0.1426
28	2044	0.4371	0.025	0 600	0 0874	0.000	1.000	0.1457	0.050	1.000	0.1457
29	2045	0.4243	0.025	0 625	0 0884	0.000	1.000	0.1414	0.000	1.000	0.1414
30	2046	0.4120	0.025	0 650	0 0893	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.025	0 675	0 0900	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.025	0.700	0 0906	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.025	0.725	0 0911	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.025	0.750	0 0915	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.050	0 800	0 0948	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.050	0 850	0 0978	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.050	0 900	0.1005	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.050	0 950	0.1030	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.050	1 000	0.1053	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.000	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	18 375		LIFT =	23 000		L FT =	22.050	
	Sum =	7.5243			2.1222			2.7773			2 6248
	divide by:	25.7754									
	Tforest =	0.2919									

(Forested Year Built for tYear = 25)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
22	2038	0.5219	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
23	2039	0.5067	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
24	2040	0.4919	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
25	2041	0.4776	0.500	0 500	0 0796	1.000	1.000	0.1592	0.500	0.500	0.0796
26	2042	0.4637	0.025	0 525	0 0811	0.000	1.000	0.1546	0.250	0.750	0.1159
27	2043	0.4502	0.025	0 550	0 0825	0.000	1.000	0.1501	0.100	0.850	0.1276
28	2044	0.4371	0.025	0 575	0 0838	0.000	1.000	0.1457	0.100	0.950	0.1384
29	2045	0.4243	0.025	0 600	0 0849	0.000	1.000	0.1414	0.050	1.000	0.1414
30	2046	0.4120	0.025	0 625	0 0858	0.000	1.000	0.1373	0.000	1.000	0.1373
31	2047	0.4000	0.025	0 650	0 0867	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.025	0 675	0 0874	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.025	0.700	0 0880	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.025	0.725	0 0885	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.025	0.750	0 0888	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.050	0 800	0 0920	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.050	0 850	0 0949	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.050	0 900	0 0976	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.050	0 950	0.1000	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.050	1 000	0.1022	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.000	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	17 375		LIFT =	22 000		L FT =	21.050	
	Sum =	7.0559			1 9773			2 6133			2.4653
	divide by:	25.7754									
	Tforest =	0.2737									

(Forested Year Built for tYear = 26)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
22	2038	0.5219	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
23	2039	0.5067	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
24	2040	0.4919	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
25	2041	0.4776	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
26	2042	0.4637	0.500	0 500	0 0773	1.000	1.000	0.1546	0.500	0.500	0.0773
27	2043	0.4502	0.025	0 525	0 0788	0.000	1.000	0.1501	0.250	0.750	0.1125
28	2044	0.4371	0.025	0 550	0 0801	0.000	1.000	0.1457	0.100	0.850	0.1238
29	2045	0.4243	0.025	0 575	0 0813	0.000	1.000	0.1414	0.100	0.950	0.1344
30	2046	0.4120	0.025	0 600	0 0824	0.000	1.000	0.1373	0.050	1.000	0.1373
31	2047	0.4000	0.025	0 625	0 0833	0.000	1.000	0.1333	0.000	1.000	0.1333
32	2048	0.3883	0.025	0 650	0 0841	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.025	0 675	0 0848	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.025	0.700	0 0854	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.025	0.725	0 0859	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.025	0.750	0 0863	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.050	0 800	0 0893	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.050	0 850	0 0921	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.050	0 900	0 0947	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.050	0 950	0 0971	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.050	1 000	0 0992	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.000	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
		∑PW =	25.7754								
			LIFT =	16 375		LIFT =	21 000		L FT =	20.050	
		Sum =	6.6011		1 8366			2.4541			2 3104
		divide by:	25.7754								
		Tforest =	0.2561								

(Forested Year Built for tYear = 27)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
22	2038	0.5219	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
23	2039	0.5067	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
24	2040	0.4919	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
25	2041	0.4776	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
26	2042	0.4637	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
27	2043	0.4502	0.500	0 500	0 0750	1.000	1.000	0.1501	0.500	0.500	0.0750
28	2044	0.4371	0.025	0 525	0 0765	0.000	1.000	0.1457	0.250	0.750	0.1093
29	2045	0.4243	0.025	0 550	0 0778	0.000	1.000	0.1414	0.100	0.850	0.1202
30	2046	0.4120	0.025	0 575	0 0790	0.000	1.000	0.1373	0.100	0.950	0.1305
31	2047	0.4000	0.025	0 600	0 0800	0.000	1.000	0.1333	0.050	1.000	0.1333
32	2048	0.3883	0.025	0 625	0 0809	0.000	1.000	0.1294	0.000	1.000	0.1294
33	2049	0.3770	0.025	0 650	0 0817	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.025	0 675	0 0824	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.025	0.700	0 0829	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.025	0.725	0 0834	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.025	0.750	0 0837	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.050	0 800	0 0867	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.050	0 850	0 0895	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.050	0 900	0 0920	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.050	0 950	0 0942	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.050	1 000	0 0963	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.000	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
	∑PW =	25.7754									
			LIFT =	15 375		LIFT =	20 000		L FT =	19.050	
	Sum =	6.1596			1.7000			2 2995			2.1600
	divide by:	25.7754									
	Tforest =	0.2390									

(Forested Year Built for tYear = 28)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
22	2038	0.5219	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
23	2039	0.5067	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
24	2040	0.4919	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
25	2041	0.4776	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
26	2042	0.4637	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
27	2043	0.4502	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
28	2044	0.4371	0.500	0 500	0 0728	1.000	1.000	0.1457	0.500	0.500	0.0728
29	2045	0.4243	0.025	0 525	0 0743	0.000	1.000	0.1414	0.250	0.750	0.1061
30	2046	0.4120	0.025	0 550	0 0755	0.000	1.000	0.1373	0.100	0.850	0.1167
31	2047	0.4000	0.025	0 575	0 0767	0.000	1.000	0.1333	0.100	0.950	0.1267
32	2048	0.3883	0.025	0 600	0 0777	0.000	1.000	0.1294	0.050	1.000	0.1294
33	2049	0.3770	0.025	0 625	0 0785	0.000	1.000	0.1257	0.000	1.000	0.1257
34	2050	0.3660	0.025	0 650	0 0793	0.000	1.000	0.1220	0.000	1.000	0.1220
35	2051	0.3554	0.025	0 675	0 0800	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.025	0.700	0 0805	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.025	0.725	0 0810	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.025	0.750	0 0813	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.050	0 800	0 0842	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.050	0 850	0 0869	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.050	0 900	0 0893	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.050	0 950	0 0915	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.050	1 000	0 0935	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.000	1 000	0 0908	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
		∑PW =	25.7754								
			LIFT =	14 375		LIFT =	19 000		L FT =	18.050	
		Sum =	5.7309		1 5674			2.1495			2 0140
		divide by:	25.7754								
		Tforest =	0.2223								

(Forested Year Built for tYear = 29)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
22	2038	0.5219	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
23	2039	0.5067	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
24	2040	0.4919	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
25	2041	0.4776	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
26	2042	0.4637	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
27	2043	0.4502	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
28	2044	0.4371	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
29	2045	0.4243	0.500	0 500	0 0707	1.000	1.000	0.1414	0.500	0.500	0.0707
30	2046	0.4120	0.025	0 525	0 0721	0.000	1.000	0.1373	0.250	0.750	0.1030
31	2047	0.4000	0.025	0 550	0 0733	0.000	1.000	0.1333	0.100	0.850	0.1133
32	2048	0.3883	0.025	0 575	0 0744	0.000	1.000	0.1294	0.100	0.950	0.1230
33	2049	0.3770	0.025	0 600	0 0754	0.000	1.000	0.1257	0.050	1.000	0.1257
34	2050	0.3660	0.025	0 625	0 0763	0.000	1.000	0.1220	0.050	1.050	0.1281
35	2051	0.3554	0.025	0 650	0 0770	0.000	1.000	0.1185	0.000	1.050	0.1244
36	2052	0.3450	0.025	0 675	0 0776	0.000	1.000	0.1150	0.000	1.050	0.1208
37	2053	0.3350	0.025	0.700	0 0782	0.000	1.000	0.1117	0.000	1.050	0.1172
38	2054	0.3252	0.025	0.725	0 0786	0.000	1.000	0.1084	0.000	1.050	0.1138
39	2055	0.3158	0.025	0.750	0 0789	0.000	1.000	0.1053	0.000	1.050	0.1105
40	2056	0.3066	0.050	0 800	0 0817	0.000	1.000	0.1022	0.000	1.050	0.1073
41	2057	0.2976	0.050	0 850	0 0843	0.000	1.000	0 0992	0.000	1.050	0.1042
42	2058	0.2890	0.050	0 900	0 0867	0.000	1.000	0 0963	0.000	1.050	0.1011
43	2059	0.2805	0.050	0 950	0 0888	0.000	1.000	0 0935	0.000	1.050	0.0982
44	2060	0.2724	0.050	1 000	0 0908	0.000	1.000	0 0908	0.000	1.050	0.0953
45	2061	0.2644	0.000	1 000	0 0881	0.000	1.000	0 0881	0.000	1.050	0.0926
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.050	0.0899
		∑PW =	25.7754								
			LIFT =	13 375		LIFT =	18 000		L FT =	17.700	
		Sum =	5.3816		1.4387			2 0038			1 9391
		divide by:	25.7754								
		Tforest =	0.2088								

(Forested Year Built for tYear = 30)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
22	2038	0.5219	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
23	2039	0.5067	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
24	2040	0.4919	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
25	2041	0.4776	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
26	2042	0.4637	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
27	2043	0.4502	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
28	2044	0.4371	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
29	2045	0.4243	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
30	2046	0.4120	0.500	0 500	0 0687	1.000	1.000	0.1373	0.500	0.500	0.0687
31	2047	0.4000	0.025	0 525	0 0700	0.000	1.000	0.1333	0.250	0.750	0.1000
32	2048	0.3883	0.025	0 550	0 0712	0.000	1.000	0.1294	0.100	0.850	0.1100
33	2049	0.3770	0.025	0 575	0 0723	0.000	1.000	0.1257	0.100	0.950	0.1194
34	2050	0.3660	0.025	0 600	0 0732	0.000	1.000	0.1220	0.050	1.000	0.1220
35	2051	0.3554	0.025	0 625	0 0740	0.000	1.000	0.1185	0.000	1.000	0.1185
36	2052	0.3450	0.025	0 650	0 0748	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.025	0 675	0 0754	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.025	0.700	0 0759	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.025	0.725	0 0763	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.025	0.750	0 0766	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.050	0 800	0 0794	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.050	0 850	0 0819	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.050	0 900	0 0842	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.050	0 950	0 0863	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.050	1 000	0 0881	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.000	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
		∑PW =	25.7754								
			LIFT =	12 375		LIFT =	17 000		L FT =	16.050	
		Sum =	4.9107		1 3137			1 8623			1.7346
		divide by:	25.7754								
		Tforest =	0.1905								

(Forested Year Built for tYear = 31)

"r" = 3 00% = Discount Rate (enter 0 03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	LIFT	PW	Change	LIFT	PW
Year	0	(1+r)-t		0 000	=a X c/3		0 000	=a X c/3		0.000	=a X c/3
0	2016	1.0000	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
1	2017	0.9709	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
2	2018	0.9426	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
3	2019	0.9151	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
4	2020	0.8885	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
5	2021	0.8626	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
6	2022	0.8375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
7	2023	0.8131	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
8	2024	0.7894	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
9	2025	0.7664	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
10	2026	0.7441	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
11	2027	0.7224	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
12	2028	0.7014	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
13	2029	0.6810	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
14	2030	0.6611	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
15	2031	0.6419	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
16	2032	0.6232	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
17	2033	0.6050	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
18	2034	0.5874	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
19	2035	0.5703	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
20	2036	0.5537	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
21	2037	0.5375	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
22	2038	0.5219	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
23	2039	0.5067	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
24	2040	0.4919	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
25	2041	0.4776	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
26	2042	0.4637	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
27	2043	0.4502	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
28	2044	0.4371	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
29	2045	0.4243	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
30	2046	0.4120	0.000	0 000	0 0000	0.000	0.000	0 0000	0.000	0.000	0.0000
31	2047	0.4000	0.500	0 500	0 0667	1.000	1.000	0.1333	0.500	0.500	0.0667
32	2048	0.3883	0.025	0 525	0 0680	0.000	1.000	0.1294	0.250	0.750	0.0971
33	2049	0.3770	0.025	0 550	0 0691	0.000	1.000	0.1257	0.100	0.850	0.1068
34	2050	0.3660	0.025	0 575	0 0702	0.000	1.000	0.1220	0.100	0.950	0.1159
35	2051	0.3554	0.025	0 600	0 0711	0.000	1.000	0.1185	0.050	1.000	0.1185
36	2052	0.3450	0.025	0 625	0 0719	0.000	1.000	0.1150	0.000	1.000	0.1150
37	2053	0.3350	0.025	0 650	0 0726	0.000	1.000	0.1117	0.000	1.000	0.1117
38	2054	0.3252	0.025	0 675	0 0732	0.000	1.000	0.1084	0.000	1.000	0.1084
39	2055	0.3158	0.025	0.700	0 0737	0.000	1.000	0.1053	0.000	1.000	0.1053
40	2056	0.3066	0.025	0.725	0 0741	0.000	1.000	0.1022	0.000	1.000	0.1022
41	2057	0.2976	0.025	0.750	0 0744	0.000	1.000	0 0992	0.000	1.000	0.0992
42	2058	0.2890	0.050	0 800	0 0771	0.000	1.000	0 0963	0.000	1.000	0.0963
43	2059	0.2805	0.050	0 850	0 0795	0.000	1.000	0 0935	0.000	1.000	0.0935
44	2060	0.2724	0.050	0 900	0 0817	0.000	1.000	0 0908	0.000	1.000	0.0908
45	2061	0.2644	0.050	0 950	0 0837	0.000	1.000	0 0881	0.000	1.000	0.0881
46	2062	0.2567	0.050	1 000	0 0856	0.000	1.000	0 0856	0.000	1.000	0.0856
		∑PW =	25.7754								
			LIFT =	11 375		LIFT =	16 000		L FT =	15.050	
		Sum =	4.5184		1.1924			1.7250			1 6010
		divide by:	25.7754								
		Tforest =	0.1753								

(Herbaceous Year Built for tYear =0)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed stream of functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 500	0.500	0.1667	1 000	1 000	0.3333	0.500	0 500	0.1667
1	2017	0 9709	0 250	0.750	0.2427	0 000	1 000	0.3236	0.250	0.750	0.2427
2	2018	0 9426	0 250	1.000	0.3142	0 000	1 000	0.3142	0.100	0 850	0.2671
3	2019	0 9151	0 000	1.000	0.3050	0 000	1 000	0.3050	0.100	0 950	0.2898
4	2020	0 8885	0 000	1.000	0.2962	0 000	1 000	0.2962	0.050	1 000	0.2962
5	2021	0 8626	0 000	1.000	0.2875	0 000	1 000	0.2875	0.000	1 000	0.2875
6	2022	0 8375	0 000	1.000	0.2792	0 000	1 000	0.2792	0.000	1 000	0.2792
7	2023	0 8131	0 000	1.000	0.2710	0 000	1 000	0.2710	0.000	1 000	0.2710
8	2024	0.7894	0 000	1.000	0.2631	0 000	1 000	0.2631	0.000	1 000	0.2631
9	2025	0.7664	0 000	1.000	0.2555	0 000	1 000	0.2555	0.000	1 000	0.2555
10	2026	0.7441	0 000	1.000	0.2480	0 000	1 000	0.2480	0.000	1 000	0.2480
11	2027	0.7224	0 000	1.000	0.2408	0 000	1 000	0.2408	0.000	1 000	0.2408
12	2028	0.7014	0 000	1.000	0.2338	0 000	1 000	0.2338	0.000	1 000	0.2338
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.000	1 000	0.2270
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.000	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	46.250		L FT =	47 000		LIFT =	46 050	
		Sum =	25 2179		8.3442			8.5918			8.2819
		divide by:	25.7754								
		Therb =	0 9784								

(Herbaceous Year Built for tYear =1)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 500	0.500	0.1618	1 000	1 000	0.3236	0.500	0 500	0.1618
2	2018	0 9426	0 250	0.750	0.2356	0 000	1 000	0.3142	0.250	0.750	0.2356
3	2019	0 9151	0 250	1.000	0.3050	0 000	1 000	0.3050	0.100	0 850	0.2593
4	2020	0 8885	0 000	1.000	0.2962	0 000	1 000	0.2962	0.100	0 950	0.2814
5	2021	0 8626	0 000	1.000	0.2875	0 000	1 000	0.2875	0.050	1 000	0.2875
6	2022	0 8375	0 000	1.000	0.2792	0 000	1 000	0.2792	0.000	1 000	0.2792
7	2023	0 8131	0 000	1.000	0.2710	0 000	1 000	0.2710	0.000	1 000	0.2710
8	2024	0.7894	0 000	1.000	0.2631	0 000	1 000	0.2631	0.000	1 000	0.2631
9	2025	0.7664	0 000	1.000	0.2555	0 000	1 000	0.2555	0.000	1 000	0.2555
10	2026	0.7441	0 000	1.000	0.2480	0 000	1 000	0.2480	0.000	1 000	0.2480
11	2027	0.7224	0 000	1.000	0.2408	0 000	1 000	0.2408	0.000	1 000	0.2408
12	2028	0.7014	0 000	1.000	0.2338	0 000	1 000	0.2338	0.000	1 000	0.2338
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.000	1 000	0.2270
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.000	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	45.250		L FT =	46 000		LIFT =	45 050	
		Sum =	24 2342		8.0181			8.2585			7.9576
		divide by:	25.7754								
		Therb =	0 9402								

(Herbaceous Year Built for tYear =2)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 500	0.500	0.1571	1 000	1 000	0.3142	0.500	0 500	0.1571
3	2019	0 9151	0 250	0.750	0.2288	0 000	1 000	0.3050	0.250	0.750	0.2288
4	2020	0 8885	0 250	1.000	0.2962	0 000	1 000	0.2962	0.100	0 850	0.2517
5	2021	0 8626	0 000	1.000	0.2875	0 000	1 000	0.2875	0.100	0 950	0.2732
6	2022	0 8375	0 000	1.000	0.2792	0 000	1 000	0.2792	0.050	1 000	0.2792
7	2023	0 8131	0 000	1.000	0.2710	0 000	1 000	0.2710	0.000	1 000	0.2710
8	2024	0.7894	0 000	1.000	0.2631	0 000	1 000	0.2631	0.000	1 000	0.2631
9	2025	0.7664	0 000	1.000	0.2555	0 000	1 000	0.2555	0.000	1 000	0.2555
10	2026	0.7441	0 000	1.000	0.2480	0 000	1 000	0.2480	0.000	1 000	0.2480
11	2027	0.7224	0 000	1.000	0.2408	0 000	1 000	0.2408	0.000	1 000	0.2408
12	2028	0.7014	0 000	1.000	0.2338	0 000	1 000	0.2338	0.000	1 000	0.2338
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.000	1 000	0.2270
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.000	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	44.250		L FT =	45 000		LIFT =	44 050	
		Sum =	23 2791		7.7015			7.9349			7.6427
		divide by:	25.7754								
		Therb =	0 9031								

(Herbaceous Year Built for tYear =3)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 500	0.500	0.1525	1 000	1 000	0.3050	0.500	0 500	0.1525
4	2020	0 8885	0 250	0.750	0.2221	0 000	1 000	0.2962	0.250	0.750	0.2221
5	2021	0 8626	0 250	1.000	0.2875	0 000	1 000	0.2875	0.100	0 850	0.2444
6	2022	0 8375	0 000	1.000	0.2792	0 000	1 000	0.2792	0.100	0 950	0.2652
7	2023	0 8131	0 000	1.000	0.2710	0 000	1 000	0.2710	0.050	1 000	0.2710
8	2024	0.7894	0 000	1.000	0.2631	0 000	1 000	0.2631	0.000	1 000	0.2631
9	2025	0.7664	0 000	1.000	0.2555	0 000	1 000	0.2555	0.000	1 000	0.2555
10	2026	0.7441	0 000	1.000	0.2480	0 000	1 000	0.2480	0.000	1 000	0.2480
11	2027	0.7224	0 000	1.000	0.2408	0 000	1 000	0.2408	0.000	1 000	0.2408
12	2028	0.7014	0 000	1.000	0.2338	0 000	1 000	0.2338	0.000	1 000	0.2338
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.000	1 000	0.2270
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.000	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	43.250		L FT =	44 000		LIFT =	43 050	
		Sum =	22 3518		7.3941			7.6207			7.3370
		divide by:	25.7754								
		Therb =	0 8672								

(Herbaceous Year Built for tYear =4)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 500	0.500	0.1481	1 000	1 000	0.2962	0.500	0 500	0.1481
5	2021	0 8626	0 250	0.750	0.2157	0 000	1 000	0.2875	0.250	0.750	0.2157
6	2022	0 8375	0 250	1.000	0.2792	0 000	1 000	0.2792	0.100	0 850	0.2373
7	2023	0 8131	0 000	1.000	0.2710	0 000	1 000	0.2710	0.100	0 950	0.2575
8	2024	0.7894	0 000	1.000	0.2631	0 000	1 000	0.2631	0.050	1 000	0.2631
9	2025	0.7664	0 000	1.000	0.2555	0 000	1 000	0.2555	0.000	1 000	0.2555
10	2026	0.7441	0 000	1.000	0.2480	0 000	1 000	0.2480	0.000	1 000	0.2480
11	2027	0.7224	0 000	1.000	0.2408	0 000	1 000	0.2408	0.000	1 000	0.2408
12	2028	0.7014	0 000	1.000	0.2338	0 000	1 000	0.2338	0.000	1 000	0.2338
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.000	1 000	0.2270
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.000	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	42.250		L FT =	43 000		LIFT =	42 050	
		Sum =	21.4515		7.0956			7.3156			7.0402
		divide by:	25.7754								
		Therb =	0 8322								

(Herbaceous Year Built for tYear =5)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 500	0.500	0.1438	1 000	1 000	0.2875	0.500	0 500	0.1438
6	2022	0 8375	0 250	0.750	0.2094	0 000	1 000	0.2792	0.250	0.750	0.2094
7	2023	0 8131	0 250	1.000	0.2710	0 000	1 000	0.2710	0.100	0 850	0.2304
8	2024	0.7894	0 000	1.000	0.2631	0 000	1 000	0.2631	0.100	0 950	0.2500
9	2025	0.7664	0 000	1.000	0.2555	0 000	1 000	0.2555	0.050	1 000	0.2555
10	2026	0.7441	0 000	1.000	0.2480	0 000	1 000	0.2480	0.000	1 000	0.2480
11	2027	0.7224	0 000	1.000	0.2408	0 000	1 000	0.2408	0.000	1 000	0.2408
12	2028	0.7014	0 000	1.000	0.2338	0 000	1 000	0.2338	0.000	1 000	0.2338
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.000	1 000	0.2270
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.000	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	41.250		L FT =	42 000		LIFT =	41 050	
		Sum =	20 5774		6.8059			7.0195			6.7521
		divide by:	25.7754								
		Therb =	0.7983								

(Herbaceous Year Built for tYear =6)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 500	0.500	0.1396	1 000	1 000	0.2792	0.500	0 500	0.1396
7	2023	0 8131	0 250	0.750	0.2033	0 000	1 000	0.2710	0.250	0.750	0.2033
8	2024	0.7894	0 250	1.000	0.2631	0 000	1 000	0.2631	0.100	0 850	0.2237
9	2025	0.7664	0 000	1.000	0.2555	0 000	1 000	0.2555	0.100	0 950	0.2427
10	2026	0.7441	0 000	1.000	0.2480	0 000	1 000	0.2480	0.050	1 000	0.2480
11	2027	0.7224	0 000	1.000	0.2408	0 000	1 000	0.2408	0.000	1 000	0.2408
12	2028	0.7014	0 000	1.000	0.2338	0 000	1 000	0.2338	0.000	1 000	0.2338
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.000	1 000	0.2270
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.000	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	40.250		L FT =	41 000		LIFT =	40 050	
		Sum =	19.7288		6.5246			6.7319			6.4723
		divide by:	25.7754								
		Therb =	0.7654								

(Herbaceous Year Built for tYear =7)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 500	0.500	0.1355	1 000	1 000	0.2710	0.500	0 500	0.1355
8	2024	0.7894	0 250	0.750	0.1974	0 000	1 000	0.2631	0.250	0.750	0.1974
9	2025	0.7664	0 250	1.000	0.2555	0 000	1 000	0.2555	0.100	0 850	0.2172
10	2026	0.7441	0 000	1.000	0.2480	0 000	1 000	0.2480	0.100	0 950	0.2356
11	2027	0.7224	0 000	1.000	0.2408	0 000	1 000	0.2408	0.050	1 000	0.2408
12	2028	0.7014	0 000	1.000	0.2338	0 000	1 000	0.2338	0.000	1 000	0.2338
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.000	1 000	0.2270
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.000	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	39.250		L FT =	40 000		LIFT =	39 050	
		Sum =	18 9049		6.2515			6.4528			6.2007
		divide by:	25.7754								
		Therb =	0.7334								

(Herbaceous Year Built for tYear =8)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 500	0.500	0.1316	1 000	1 000	0.2631	0.500	0 500	0.1316
9	2025	0.7664	0 250	0.750	0.1916	0 000	1 000	0.2555	0.250	0.750	0.1916
10	2026	0.7441	0 250	1.000	0.2480	0 000	1 000	0.2480	0.100	0 850	0.2108
11	2027	0.7224	0 000	1.000	0.2408	0 000	1 000	0.2408	0.100	0 950	0.2288
12	2028	0.7014	0 000	1.000	0.2338	0 000	1 000	0.2338	0.050	1 000	0.2338
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.000	1 000	0.2270
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.000	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	38.250		L FT =	39 000		LIFT =	38 050	
		Sum =	18.1050		5.9863			6.1817			5.9370
		divide by:	25.7754								
		Therb =	0.7024								

(Herbaceous Year Built for tYear =9)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 500	0.500	0.1277	1 000	1 000	0.2555	0.500	0 500	0.1277
10	2026	0.7441	0 250	0.750	0.1860	0 000	1 000	0.2480	0.250	0.750	0.1860
11	2027	0.7224	0 250	1.000	0.2408	0 000	1 000	0.2408	0.100	0 850	0.2047
12	2028	0.7014	0 000	1.000	0.2338	0 000	1 000	0.2338	0.100	0 950	0.2221
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.050	1 000	0.2270
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.000	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	37.250		L FT =	38 000		LIFT =	37 050	
		Sum =	17 3285		5.7288			5.9186			5.6810
		divide by:	25.7754								
		Therb =	0 6723								

(Herbaceous Year Built for tYear =10)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 500	0.500	0.1240	1 000	1 000	0.2480	0.500	0 500	0.1240
11	2027	0.7224	0 250	0.750	0.1806	0 000	1 000	0.2408	0.250	0.750	0.1806
12	2028	0.7014	0 250	1.000	0.2338	0 000	1 000	0.2338	0.100	0 850	0.1987
13	2029	0 6810	0 000	1.000	0.2270	0 000	1 000	0.2270	0.100	0 950	0.2156
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.050	1 000	0.2204
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.000	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	36.250		L FT =	37 000		LIFT =	36 050	
		Sum =	16 5745		5.4789			5.6631			5.4325
		divide by:	25.7754								
		Therb =	0 6430								

(Herbaceous Year Built for tYear =11)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 500	0.500	0.1204	1 000	1 000	0.2408	0.500	0 500	0.1204
12	2028	0.7014	0 250	0.750	0.1753	0 000	1 000	0.2338	0.250	0.750	0.1753
13	2029	0 6810	0 250	1.000	0.2270	0 000	1 000	0.2270	0.100	0 850	0.1929
14	2030	0 6611	0 000	1.000	0.2204	0 000	1 000	0.2204	0.100	0 950	0.2094
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.050	1 000	0.2140
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.000	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	35.250		L FT =	36 000		LIFT =	35 050	
		Sum =	15 8425		5.2362			5.4151			5.1912
		divide by:	25.7754								
		Therb =	0 6146								

(Herbaceous Year Built for tYear =12)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 500	0.500	0.1169	1 000	1 000	0.2338	0.500	0 500	0.1169
13	2029	0 6810	0 250	0.750	0.1702	0 000	1 000	0.2270	0.250	0.750	0.1702
14	2030	0 6611	0 250	1.000	0.2204	0 000	1 000	0.2204	0.100	0 850	0.1873
15	2031	0 6419	0 000	1.000	0.2140	0 000	1 000	0.2140	0.100	0 950	0.2033
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.050	1 000	0.2077
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.000	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	34.250		L FT =	35 000		LIFT =	34 050	
		Sum =	15.1318		5.0006			5.1743			4.9569
		divide by:	25.7754								
		Therb =	0 5871								

(Herbaceous Year Built for tYear =13)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 500	0.500	0.1135	1 000	1 000	0.2270	0.500	0 500	0.1135
14	2030	0 6611	0 250	0.750	0.1653	0 000	1 000	0.2204	0.250	0.750	0.1653
15	2031	0 6419	0 250	1.000	0.2140	0 000	1 000	0.2140	0.100	0 850	0.1819
16	2032	0 6232	0 000	1.000	0.2077	0 000	1 000	0.2077	0.100	0 950	0.1973
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.050	1 000	0.2017
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.000	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	33.250		L FT =	34 000		LIFT =	33 050	
		Sum =	14.4418		4.7719			4.9405			4.7294
		divide by:	25.7754								
		Therb =	0 5603								

(Herbaceous Year Built for tYear =14)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 500	0.500	0.1102	1 000	1 000	0.2204	0.500	0 500	0.1102
15	2031	0 6419	0 250	0.750	0.1605	0 000	1 000	0.2140	0.250	0.750	0.1605
16	2032	0 6232	0 250	1.000	0.2077	0 000	1 000	0.2077	0.100	0 850	0.1766
17	2033	0 6050	0 000	1.000	0.2017	0 000	1 000	0.2017	0.100	0 950	0.1916
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.050	1 000	0.1958
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.000	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	32.250		L FT =	33 000		LIFT =	32 050	
		Sum =	13.7719		4.5498			4.7135			4.5086
		divide by:	25.7754								
		Therb =	0 5343								

(Herbaceous Year Built for tYear =15)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 500	0.500	0.1070	1 000	1 000	0.2140	0.500	0 500	0.1070
16	2032	0 6232	0 250	0.750	0.1558	0 000	1 000	0.2077	0.250	0.750	0.1558
17	2033	0 6050	0 250	1.000	0.2017	0 000	1 000	0.2017	0.100	0 850	0.1714
18	2034	0 5874	0 000	1.000	0.1958	0 000	1 000	0.1958	0.100	0 950	0.1860
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.050	1 000	0.1901
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.000	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	31.250		L FT =	32 000		LIFT =	31 050	
		Sum =	13.1215		4.3342			4.4931			4.2942
		divide by:	25.7754								
		Therb =	0 5091								

(Herbaceous Year Built for tYear =16)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 500	0.500	0.1039	1 000	1 000	0.2077	0.500	0 500	0.1039
17	2033	0 6050	0 250	0.750	0.1513	0 000	1 000	0.2017	0.250	0.750	0.1513
18	2034	0 5874	0 250	1.000	0.1958	0 000	1 000	0.1958	0.100	0 850	0.1664
19	2035	0 5703	0 000	1.000	0.1901	0 000	1 000	0.1901	0.100	0 950	0.1806
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.050	1 000	0.1846
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.000	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	30.250		L FT =	31 000		LIFT =	30 050	
		Sum =	12.4901		4.1249			4.2792			4.0860
		divide by:	25.7754								
		Therb =	0.4846								

(Herbaceous Year Built for tYear =17)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 500	0.500	0.1008	1 000	1 000	0.2017	0.500	0 500	0.1008
18	2034	0 5874	0 250	0.750	0.1468	0 000	1 000	0.1958	0.250	0.750	0.1468
19	2035	0 5703	0 250	1.000	0.1901	0 000	1 000	0.1901	0.100	0 850	0.1616
20	2036	0 5537	0 000	1.000	0.1846	0 000	1 000	0.1846	0.100	0 950	0.1753
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.050	1 000	0.1792
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.000	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	29.250		L FT =	30 000		LIFT =	29 050	
		Sum =	11 8770		3.9217			4.0714			3.8839
		divide by:	25.7754								
		Therb =	0.4608								

(Herbaceous Year Built for tYear =18)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 500	0.500	0.0979	1 000	1 000	0.1958	0.500	0 500	0.0979
19	2035	0 5703	0 250	0.750	0.1426	0 000	1 000	0.1901	0.250	0.750	0.1426
20	2036	0 5537	0 250	1.000	0.1846	0 000	1 000	0.1846	0.100	0 850	0.1569
21	2037	0 5375	0 000	1.000	0.1792	0 000	1 000	0.1792	0.100	0 950	0.1702
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.050	1 000	0.1740
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.000	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	28.250		L FT =	29 000		LIFT =	28 050	
		Sum =	11 2818		3.7244			3.8698			3.6877
		divide by:	25.7754								
		Therb =	0.4377								

(Herbaceous Year Built for tYear =19)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 500	0.500	0.0950	1 000	1 000	0.1901	0.500	0 500	0.0950
20	2036	0 5537	0 250	0.750	0.1384	0 000	1 000	0.1846	0.250	0.750	0.1384
21	2037	0 5375	0 250	1.000	0.1792	0 000	1 000	0.1792	0.100	0 850	0.1523
22	2038	0 5219	0 000	1.000	0.1740	0 000	1 000	0.1740	0.100	0 950	0.1653
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.050	1 000	0.1689
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.000	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	27.250		L FT =	28 000		LIFT =	27 050	
		Sum =	10.7040		3.5328			3.6740			3.4972
		divide by:	25.7754								
		Therb =	0.4153								

(Herbaceous Year Built for tYear =20)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 500	0.500	0.0923	1 000	1 000	0.1846	0.500	0 500	0.0923
21	2037	0 5375	0 250	0.750	0.1344	0 000	1 000	0.1792	0.250	0.750	0.1344
22	2038	0 5219	0 250	1.000	0.1740	0 000	1 000	0.1740	0.100	0 850	0.1479
23	2039	0 5067	0 000	1.000	0.1689	0 000	1 000	0.1689	0.100	0 950	0.1605
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.050	1 000	0.1640
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.000	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	26.250		L FT =	27 000		LIFT =	26 050	
		Sum =	10.1430		3.3468			3.4839			3.3123
		divide by:	25.7754								
		Therb =	0 3935								

(Herbaceous Year Built for tYear =21)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 500	0.500	0.0896	1 000	1 000	0.1792	0.500	0 500	0.0896
22	2038	0 5219	0 250	0.750	0.1305	0 000	1 000	0.1740	0.250	0.750	0.1305
23	2039	0 5067	0 250	1.000	0.1689	0 000	1 000	0.1689	0.100	0 850	0.1436
24	2040	0.4919	0 000	1.000	0.1640	0 000	1 000	0.1640	0.100	0 950	0.1558
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.050	1 000	0.1592
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.000	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	25.250		L FT =	26 000		LIFT =	25 050	
		Sum =	9 5983		3.1662			3.2993			3.1327
		divide by:	25.7754								
		Therb =	0 3724								

(Herbaceous Year Built for tYear =22)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
22	2038	0 5219	0 500	0.500	0.0870	1 000	1 000	0.1740	0.500	0 500	0.0870
23	2039	0 5067	0 250	0.750	0.1267	0 000	1 000	0.1689	0.250	0.750	0.1267
24	2040	0.4919	0 250	1.000	0.1640	0 000	1 000	0.1640	0.100	0 850	0.1394
25	2041	0.4776	0 000	1.000	0.1592	0 000	1 000	0.1592	0.100	0 950	0.1512
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.050	1 000	0.1546
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.000	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	24.250		L FT =	25 000		LIFT =	24 050	
		Sum =	9 0695		2.9909			3.1201			2.9584
		divide by:	25.7754								
		Therb =	0 3519								

(Herbaceous Year Built for tYear =23)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
22	2038	0 5219	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
23	2039	0 5067	0 500	0.500	0.0844	1 000	1 000	0.1689	0.500	0 500	0.0844
24	2040	0.4919	0 250	0.750	0.1230	0 000	1 000	0.1640	0.250	0.750	0.1230
25	2041	0.4776	0 250	1.000	0.1592	0 000	1 000	0.1592	0.100	0 850	0.1353
26	2042	0.4637	0 000	1.000	0.1546	0 000	1 000	0.1546	0.100	0 950	0.1468
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.050	1 000	0.1501
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.000	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	23.250		L FT =	24 000		LIFT =	23 050	
		Sum =	8 5560		2.8207			2.9462			2.7891
		divide by:	25.7754								
		Therb =	0 3319								

(Herbaceous Year Built for tYear =24)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
22	2038	0 5219	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
23	2039	0 5067	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
24	2040	0.4919	0 500	0.500	0.0820	1 000	1 000	0.1640	0.500	0 500	0.0820
25	2041	0.4776	0 250	0.750	0.1194	0 000	1 000	0.1592	0.250	0.750	0.1194
26	2042	0.4637	0 250	1.000	0.1546	0 000	1 000	0.1546	0.100	0 850	0.1314
27	2043	0.4502	0 000	1.000	0.1501	0 000	1 000	0.1501	0.100	0 950	0.1426
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.050	1 000	0.1457
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.000	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	22.250		L FT =	23 000		LIFT =	22 050	
		Sum =	8 0576		2.6555			2.7773			2.6248
		divide by:	25.7754								
		Therb =	0 3126								

(Herbaceous Year Built for tYear =25)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
22	2038	0 5219	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
23	2039	0 5067	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
24	2040	0.4919	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
25	2041	0.4776	0 500	0.500	0.0796	1 000	1 000	0.1592	0.500	0 500	0.0796
26	2042	0.4637	0 250	0.750	0.1159	0 000	1 000	0.1546	0.250	0.750	0.1159
27	2043	0.4502	0 250	1.000	0.1501	0 000	1 000	0.1501	0.100	0 850	0.1276
28	2044	0.4371	0 000	1.000	0.1457	0 000	1 000	0.1457	0.100	0 950	0.1384
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.050	1 000	0.1414
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.000	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	21.250		L FT =	22 000		LIFT =	21 050	
		Sum =	7 5736		2.4951			2.6133			2.4653
		divide by:	25.7754								
		Therb =	0 2938								

(Herbaceous Year Built for tYear =26)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
22	2038	0 5219	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
23	2039	0 5067	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
24	2040	0.4919	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
25	2041	0.4776	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
26	2042	0.4637	0 500	0.500	0.0773	1 000	1 000	0.1546	0.500	0 500	0.0773
27	2043	0.4502	0 250	0.750	0.1125	0 000	1 000	0.1501	0.250	0.750	0.1125
28	2044	0.4371	0 250	1.000	0.1457	0 000	1 000	0.1457	0.100	0 850	0.1238
29	2045	0.4243	0 000	1.000	0.1414	0 000	1 000	0.1414	0.100	0 950	0.1344
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.050	1 000	0.1373
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.000	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	20.250		L FT =	21 000		LIFT =	20 050	
		Sum =	7.1038		2.3393			2.4541			2.3104
		divide by:	25.7754								
		Therb =	0 2756								

(Herbaceous Year Built for tYear =27)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
22	2038	0 5219	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
23	2039	0 5067	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
24	2040	0.4919	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
25	2041	0.4776	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
26	2042	0.4637	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
27	2043	0.4502	0 500	0.500	0.0750	1 000	1 000	0.1501	0.500	0 500	0.0750
28	2044	0.4371	0 250	0.750	0.1093	0 000	1 000	0.1457	0.250	0.750	0.1093
29	2045	0.4243	0 250	1.000	0.1414	0 000	1 000	0.1414	0.100	0 850	0.1202
30	2046	0.4120	0 000	1.000	0.1373	0 000	1 000	0.1373	0.100	0 950	0.1305
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.050	1 000	0.1333
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.000	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	19.250		L FT =	20 000		LIFT =	19 050	
		Sum =	6 6476		2.1881			2.2995			2.1600
		divide by:	25.7754								
		Therb =	0 2579								

(Herbaceous Year Built for tYear =28)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
22	2038	0 5219	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
23	2039	0 5067	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
24	2040	0.4919	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
25	2041	0.4776	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
26	2042	0.4637	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
27	2043	0.4502	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
28	2044	0.4371	0 500	0.500	0.0728	1 000	1 000	0.1457	0.500	0 500	0.0728
29	2045	0.4243	0 250	0.750	0.1061	0 000	1 000	0.1414	0.250	0.750	0.1061
30	2046	0.4120	0 250	1.000	0.1373	0 000	1 000	0.1373	0.100	0 850	0.1167
31	2047	0.4000	0 000	1.000	0.1333	0 000	1 000	0.1333	0.100	0 950	0.1267
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.050	1 000	0.1294
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.000	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	18.250		L FT =	19 000		LIFT =	18 050	
		Sum =	6 2047		2.0413			2.1495			2.0140
		divide by:	25.7754								
		Therb =	0 2407								

(Herbaceous Year Built for tYear =29)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
22	2038	0 5219	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
23	2039	0 5067	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
24	2040	0.4919	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
25	2041	0.4776	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
26	2042	0.4637	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
27	2043	0.4502	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
28	2044	0.4371	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
29	2045	0.4243	0 500	0.500	0.0707	1 000	1 000	0.1414	0.500	0 500	0.0707
30	2046	0.4120	0 250	0.750	0.1030	0 000	1 000	0.1373	0.250	0.750	0.1030
31	2047	0.4000	0 250	1.000	0.1333	0 000	1 000	0.1333	0.100	0 850	0.1133
32	2048	0 3883	0 000	1.000	0.1294	0 000	1 000	0.1294	0.100	0 950	0.1230
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.050	1 000	0.1257
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.000	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	17.250		L FT =	18 000		LIFT =	17 050	
		Sum =	5.7748		1.8987			2.0038			1.8723
		divide by:	25.7754								
		Therb =	0 2240								

(Herbaceous Year Built for tYear =30)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
22	2038	0 5219	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
23	2039	0 5067	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
24	2040	0.4919	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
25	2041	0.4776	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
26	2042	0.4637	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
27	2043	0.4502	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
28	2044	0.4371	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
29	2045	0.4243	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
30	2046	0.4120	0 500	0.500	0.0687	1 000	1 000	0.1373	0.500	0 500	0.0687
31	2047	0.4000	0 250	0.750	0.1000	0 000	1 000	0.1333	0.250	0.750	0.1000
32	2048	0 3883	0 250	1.000	0.1294	0 000	1 000	0.1294	0.100	0 850	0.1100
33	2049	0 3770	0 000	1.000	0.1257	0 000	1 000	0.1257	0.100	0 950	0.1194
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.050	1 000	0.1220
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.000	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	16.250		L FT =	17 000		LIFT =	16 050	
		Sum =	5 3573		1.7603			1.8623			1.7346
		divide by:	25.7754								
		Therb =	0 2078								

(Herbaceous Year Built for tYear =31)

"r" = 3 00% = Discount Rate (enter 0.03 for 3%)

Tfactor = ratio of the Present Worth of proposed wetland functions LOSS/LIFT compared to the Maximum possible.

			Community Structure			Water Environment			Landscape Support		
t		a	b	c	d	b	c	d	b	c	d
Present Worth PW			Change	L FT	PW	Change	L FT	PW	Change	L FT	PW
Year	0	(1+r)-t		0.000	=a X c/3		0 000	=a X c/3		0 000	=a X c/3
0	2016	1 0000	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
1	2017	0 9709	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
2	2018	0 9426	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
3	2019	0 9151	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
4	2020	0 8885	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
5	2021	0 8626	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
6	2022	0 8375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
7	2023	0 8131	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
8	2024	0.7894	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
9	2025	0.7664	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
10	2026	0.7441	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
11	2027	0.7224	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
12	2028	0.7014	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
13	2029	0 6810	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
14	2030	0 6611	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
15	2031	0 6419	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
16	2032	0 6232	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
17	2033	0 6050	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
18	2034	0 5874	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
19	2035	0 5703	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
20	2036	0 5537	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
21	2037	0 5375	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
22	2038	0 5219	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
23	2039	0 5067	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
24	2040	0.4919	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
25	2041	0.4776	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
26	2042	0.4637	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
27	2043	0.4502	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
28	2044	0.4371	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
29	2045	0.4243	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
30	2046	0.4120	0 000	0.000	0.0000	0 000	0 000	0.0000	0.000	0 000	0.0000
31	2047	0.4000	0 500	0.500	0.0667	1 000	1 000	0.1333	0.500	0 500	0.0667
32	2048	0 3883	0 250	0.750	0.0971	0 000	1 000	0.1294	0.250	0.750	0.0971
33	2049	0 3770	0 250	1.000	0.1257	0 000	1 000	0.1257	0.100	0 850	0.1068
34	2050	0 3660	0 000	1.000	0.1220	0 000	1 000	0.1220	0.100	0 950	0.1159
35	2051	0 3554	0 000	1.000	0.1185	0 000	1 000	0.1185	0.050	1 000	0.1185
36	2052	0 3450	0 000	1.000	0.1150	0 000	1 000	0.1150	0.000	1 000	0.1150
37	2053	0 3350	0 000	1.000	0.1117	0 000	1 000	0.1117	0.000	1 000	0.1117
38	2054	0 3252	0 000	1.000	0.1084	0 000	1 000	0.1084	0.000	1 000	0.1084
39	2055	0 3158	0 000	1.000	0.1053	0 000	1 000	0.1053	0.000	1 000	0.1053
40	2056	0 3066	0 000	1.000	0.1022	0 000	1 000	0.1022	0.000	1 000	0.1022
41	2057	0 2976	0 000	1.000	0.0992	0 000	1 000	0.0992	0.000	1 000	0.0992
42	2058	0 2890	0 000	1.000	0.0963	0 000	1 000	0.0963	0.000	1 000	0.0963
43	2059	0 2805	0 000	1.000	0.0935	0 000	1 000	0.0935	0.000	1 000	0.0935
44	2060	0 2724	0 000	1.000	0.0908	0 000	1 000	0.0908	0.000	1 000	0.0908
45	2061	0 2644	0 000	1.000	0.0881	0 000	1 000	0.0881	0.000	1 000	0.0881
46	2062	0 2567	0 000	1.000	0.0856	0 000	1 000	0.0856	0.000	1 000	0.0856
		∑PW =	25.7754								
			L FT =	15.250		L FT =	16 000		LIFT =	15 050	
		Sum =	4 9520		1.6260			1.7250			1.6010
		divide by:	25.7754								
		Therb =	0.1921								

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

APPENDIX 2-5-A-III
HYDROLOGIC EVALUATION OF WETLAND MITIGATION DESIGNS FOR THE PRAIRIE DOG WETLANDS
ONA MINE
HARDEE COUNTY, FLORIDA
(April 2015 Revision)

Prepared for:

MOSAIC FERTILIZER, L.L.C.
Lithia, Florida

Prepared by:

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ECT No. 150055-0100-1200

April 2015

PROFESSIONAL CERTIFICATION

The technical contents of this hydrologic evaluation of wetland mitigation designs for the Prairie Dog wetlands at the Ona Mine in Hardee County, Florida represent our professional interpretations and are arrived at in accordance with generally accepted hydrologic, hydraulic, hydrogeologic, and engineering practices. The findings and results of this report are for the sole use and benefit of Mosaic Fertilizer, L.L.C. and appropriate applicable regulatory agencies. Utilization of this report by other parties is at their risk, and Environmental Consulting & Technology, Inc. is not liable for consequences or damages extending therefrom.

I certify that the hydrogeological/engineering interpretations in this report have been produced by me and staff under my direct supervision.

Prepared by:

Jiangtao Sun, P.E.
Senior Engineer
Florida License No. 68354

04/13/2015
Date

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1.0 INTRODUCTION

1.1 PURPOSE

Mosaic Fertilizer, L.L.C. (Mosaic) has prepared plans and designs to re-establish a drainage sub-basin and upland and wetland communities within that are intended to mimic the communities at an existing group of wetlands referred to as the "Prairie Dog".

Environmental Consulting & Technology, Inc. (ECT) was retained by Mosaic to conduct hydrologic evaluation of the existing and post-reclamation design conditions to assess whether the hydrologic conditions and functions resulting from the mitigation plans would similarly mimic existing conditions.

ECT's evaluation focused on three key questions with respect to the hydrologic functionality of the mitigation plans and designs:

1. Will the reclaimed upland topography, vegetative community, and soil types respond to rainfall events by providing volumes of stormwater runoff similar to the volumes received by the existing Prairie Dog wetland system?
2. Will the reclaimed upland topography, vegetative community, and soil types provide groundwater inflows in volumes similar to the volumes received by the existing Prairie Dog wetland system?
3. Will hydroperiod depths and durations experienced in the mitigation wetlands mimic the depths and durations experienced and measured in the existing Prairie Dog wetland system?

The likelihood of successfully re-establishing the target vegetative community types is substantially improved if the answer to all three questions is yes.

1.2 BACKGROUND

The Ona Mine is located in Townships 34 and 35 South, Ranges 23 and 24 East, in west-central Hardee County, Florida. The existing Prairie Dog wetlands are located in the north-central portion of the Ona Mine, in Section 17, Township 34 South, Range 24 East, as shown in Figure 1-1. Because the area west of Ft. Green Ona Road, including the existing Prairie Dog wetlands, is needed to site a clay setting area, the mitigation wetlands are proposed to be re-established approximately 1.5 miles to the east in Section 21, Township 34 South, Range 24 East, as shown in Figure 1-1.

The existing Prairie Dog wetland system is one of several headwater sub-basins that drain into and hydrate headwater stream reaches in the Oak Creek drainage basin. The mitigation wetlands are similarly situated in another headwater sub-basin in the post-reclamation Oak Creek drainage basin. Section 2.0 explains that the existing Prairie Dog wetland system is located along the Brushy Creek/Oak Creek drainage divide and the mitigation wetland system is located along the Hickory Creek/Oak Creek drainage divide. Thus, the mitigation site mimics the existing Prairie Dog system in terms of watershed position.

Figure 1-2 illustrates the community types currently existing as mapped by applying the Florida Land Use, Cover, and Forms Classification System (FLUCFCS, Florida Department of Transportation [FDOT], 1999), as well as in the post-reclamation condition. The design shown in Figure 1-2 (right) is based upon extensive, detailed topographic and vegetation transects of the existing Prairie Dog wetlands. The designs mimic existing vegetation types and relative topographic gradients across the contributing uplands and in the wetlands.

1.3 DOCUMENTATION OF EVALUATION RESULTS

Section 2.0 describes the hydrologic and hydraulic modeling conducted for selected rainfall events. As described there, the Inter-Connected Pond Routing (ICPR) model was applied to the existing Prairie Dog drainage sub-basin as well as to the mitigation plans

and designs. Model results project total stormwater runoff volumes to the Prairie Dog wetlands would be comparable in the post-reclamation conditions.

Section 3.0 describes the groundwater modeling conducted for groundwater inflow evaluation. The U.S. Geological Survey (USGS) MODFLOW model was used to project groundwater flow patterns and levels in the contributing uplands as well as the wetlands for both existing and post-reclamation conditions. Model results project groundwater inflow volumes in the post-reclamation conditions would be within 6 percent of the volumes received by the existing Prairie Dog wetland.

Section 4.0 describes the application of an integrated ground and surface water model to project wetland hydroperiod depths and durations. Model results project hydroperiod durations in the post-reclamation condition would be similar to the existing Prairie Dog wetlands, with differences of less than 21 days per year, or 6 percent.

2.0 HYDROLOGIC & HYDRAULIC MODEL SIMULATIONS

2.1 METHODOLOGY

2.1.1 MODEL SELECTION

Numerous computer programs are available for use in hydrologic and hydraulic (H&H) simulations. ICPR version 3.10 is selected for use in this study. ICPR is a comprehensive hydrodynamic stormwater modeling system that includes an integrated hydrology component. Runoff hydrographs generated in the hydrology component of ICPR are assigned to specific nodes in the drainage network and subsequently routed through ponds, channels, and wetland systems in the surface water conveyance system. It is flexible and can be used for the design of a single stormwater pond and complex regional systems with thousands of nodes and links.

2.1.2 DATA SOURCES

The principal data sources used in developing the H&H models include:

- Aerial photographs (Southwest Florida Water Management District [SWFWMD], 2011; ESRI, 2014);
- 1996 aerial topographic data and 1-foot contours;
- 2005 SWFWMD light detection and ranging (LiDAR)-based terrain data in digital elevation model (DEM);
- Land uses and covers (SWFWMD, 2011)[1];
- Soils (SWFWMD, 2002); and
- Post-reclamation topography and land uses and covers provided by Mosaic.

In addition, a previous H&H model for the Ona Mine has been developed by Ardaman & Associates Inc. (Ardaman) using the CHAN for Windows model (Version 2.03)

[1] Mosaic has mapped existing land uses and covers and presents that data in application Map 2-2-B. While ground truthed and generally more precise and accurate than the SWFWMD remote sensing data, the Mosaic data is limited to the Ona Mine boundary and does not encompass the spatial extent of the modeled area. Therefore, the SWFWMD data was used across the entire modeled area for consistency.

(Ardaman, 2014). The methodology and implementation for this watershed-wide model were documented in the hydrologic and hydraulic evaluations report prepared by Ardaman, in Appendix 2-9-A of this Environmental Resource Permit (ERP) application submitted by Mosaic to the Florida Department of Environment (FDEP)[2].

2.1.3 HORIZONTAL AND VERTICAL DATUM

The North American Datum (NAD83) High Accuracy Reference Network (HARN) State Plane Florida West coordinates were used for the horizontal projection. Elevation data is referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29).

2.2 PRE-MINING HYDROLOGIC AND HYDRAULIC MODEL DEVELOPMENT

2.2.1 HYDROLOGIC MODEL DEVELOPMENT

2.2.1.1 Sub-Basin Delineation

For the pre-mining conditions, the Prairie Dog wetlands, or sub-watershed, were further subdivided into sub-basins, using the latest topographic information, which include the Mosaic 1996 aerial topographic map and digital topographic files with 1 foot contour intervals for the Ona mine and the SWFWMD 2005 LiDAR-based topographic data. The topographic data for the pre-mining conditions are graphically presented in Figure 2-1.

As plotted in Figure 2-1, a total of 11 sub-basins were delineated at the Prairie Dog wetlands in the pre-mining conditions.

2.2.1.2 Curve Number

For the sub-basins in the study area, the values of curve number (CN) were calculated based on the methods outlined in Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Services (SCS), publication TR-55, as previously employed in the watershed-wide model (Ardaman, 2014).

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[2] The Ardaman model was relied upon for culvert locations and dimensions and was reviewed to gain knowledge of drainage patterns and flow paths in the vicinity of the Prairie Dog wetland system. Because the Ardaman modeling was performed across the entire Ona Mine for other purposes, the basins analyzed are not comparable to the small sub-basins analyzed herein. The text references the Ardaman report when relied upon as described below.

The 2011 land uses/covers geographic information systems (GIS) coverage was obtained from SWFWMD. The 2011 land use map consists of the land use classification system defined by FLUCFCS (FDOT, 1999) across the project area for the pre-mining conditions, as presented in Figure 2-2.

The NRCS Soil Survey Geographic (SSURGO) dataset was also obtained from SWFWMD. Soils are categorized into hydrologic soil groups (HSG), depending on their infiltration rate and rate of water transmission. Figure 2-3 depicts the spatial distribution of soils across the project area for the pre-mining conditions. The project area is predominated by HSG "B/D" and "D" soils in the pre-mining conditions.

In ArcGIS, the land use and soil coverages were intersected to generate polygons consisting of land cover and soil combinations. These polygons were then intersected with sub-basin delineations, further subdividing the polygons. This procedure resulted in the generation of unique polygons consisting of a single sub-basin number, land use and soil type. A lookup table was created and utilized to cross-reference CN values. The curve numbers were then weighted to develop an individual sub-basin curve number for use in hydrologic modeling (Ardaman, 2014). The CN calculations are summarized in Table 2-1 for the pre-mining conditions. Runoff curve numbers used in this project are representative of average antecedent moisture conditions (AMC-II)

2.2.1.3 Time of Concentration

Time of concentration (Tc) is generally defined as the amount of time for runoff to travel from the hydrologically most distant point in a sub-basin to the point where that sub-basin discharges to a receiving water body (represented in the ICPR model as a node). Tc is used as a parameter in the computation of a runoff hydrograph, when using the NRCS Unit Hydrograph Method for runoff hydrograph generation. The computation of Tc is made according to techniques described in TR-55 by the NRCS.

Travel segment data for this study was developed using Mosaic topographic data in 1-foot contours, 2005 LiDAR-based DEM data, as well as 2011 aerial photographs. The flow paths along the surface of the sub-basins were broken into three main components: sheet flow, shallow concentrated flow, and channel flow. The pre-mining Tc flow paths are plotted in Figure 2-4 for each sub-basin in the study area. Table 2-2 presents the Tc calculations for the pre-mining conditions.

2.2.1.4 Unit Hydrograph

The NRCS Unit Hydrograph Method was used to calculate runoff volume over the duration of a given storm. A standard peaking factor of 256 as recommended by SWFWMD was used for all sub-basins in the study area.

Table 2-3 summarizes the hydrologic parameters for all sub-basins in the project area for the pre-mining conditions.

2.2.2 HYDRAULIC MODEL DEVELOPMENT

2.2.2.1 Reach – Conveyance Features

The conveyance features within the project area include open channels, overland weirs, and culverts. These conveyance features were modeled in the ICPR model accordingly through their corresponding downstream receiving water body features, as presented in the ICPR model schematic for the pre-mining conditions (Figure 2-5).

2.2.2.2 Node – Storage Representation and Boundary Conditions

Nodes in the ICPR model are used to represent lakes, ponds, wetlands, and specific locations in the drainage network such as along channels, streams, rivers, and junctions in pipe systems. Two types of nodes were modeled: 1) time-stage node; and 2) stage-area node.

The time-stage nodes were used to define the downstream boundaries. Two boundary nodes, labeled as “Boundary” and “Bounday2” in Figure 2-5, were modeled in the pre-mining conditions, with a constant stage elevation estimated from the existing watershed-wide model (Ardaman, 2014).

The stage-area nodes were used to model the depression storage areas in a watershed, such as lakes, wetlands, stormwater ponds, and overbank storage areas. Using a GIS-based tool and the LiDAR-based DEM, the stage-area relationships were calculated at the depression storage nodes. In addition, channel storage was removed from node storage using exclusion polygons digitized in ArcGIS. The exclusion polygons represent the channel areas that are occupied by flow conveyance and should not be duplicated in node storage calculation. In summary, a total of 11 stage-area nodes were modeled in the project area for the pre-mining conditions, as shown in Figure 2-5.

2.3 POST-RECLAMATION HYDROLOGIC AND HYDRAULIC MODEL DEVELOPMENT

2.3.1 HYDROLOGIC MODEL DEVELOPMENT

2.3.1.1 Sub-Basin Delineation

For the post-reclamation conditions, the mitigation wetlands were further subdivided into sub-basins, using the post-reclamation topographic data in 1-foot contours. The topographic data in 1-foot contours and DEM formats are graphically presented in Figure 2-6 for the post-reclamation conditions. As shown in Figure 2-6, a total of seven sub-basins were delineated at the mitigation wetlands in the post-reclamation conditions.

2.3.1.2 Curve Number

The same methodology used in the pre-mining hydrologic model development (Section 2.2.1.2) was applied in the CN calculation in the post-reclamation conditions. The post-reclamation land uses/covers GIS coverage was provided by Mosaic. The post-reclamation land use map, as shown in Figure 2-7, defines land use classification across the project area for the post-reclamation conditions.

The post-reclamation soil data, including HSG and areas of coverage across the project area, was provided by Mosaic, as shown in Figure 2-8. The project area is predominated by HSG “C” and “D” soils in the post-reclamation conditions.

Based on the land use and soil coverages described above, the CN calculations were completed and are summarized in Table 2-4 for the post-reclamation conditions.

2.3.1.3 Time of Concentration

As described in Section 2.2.1.3, the computation of Tc is made according to techniques described in TR-55 by the NRCS. Travel segment data for this study was developed using the post-reclamation topographic data provided by Mosaic in 1 foot contour format. The flow paths along the surface of the sub-basins were broken into two main components: sheet flow and shallow concentrated flow.

The post-reclamation Tc flow paths are plotted in Figure 2-9 for each sub-basin in the study area. Table 2-5 summarizes the Tc calculations for the post-reclamation conditions.

2.3.1.4 Unit Hydrograph

The NRCS Unit Hydrograph Method was used to calculate runoff volume over the duration of a given storm. A standard peaking factor of 256 was used in the study area.

Table 2-6 summarizes the hydrologic parameters for all sub-basins in the project area for the post-reclamation conditions.

2.3.2 HYDRAULIC MODEL DEVELOPMENT

2.3.2.1 Reach – Conveyance Features

The conveyance features within the project area include open channels and overland weirs in the post-reclamation conditions. These conveyance features were modeled in the ICPR model accordingly through their corresponding downstream receiving water body features, as presented in the ICPR model schematic for the post-reclamation conditions (Figure 2-10).

2.3.2.2 Node – Boundary Conditions and Storage Representation

One time-stage node and seven stage-area nodes, as presented in Figure 2-10, were modeled to represent the downstream boundary and mitigation wetlands in the post-

reclamation conditions. A constant time stage relationship was defined at the boundary node.

Similar to the hydraulic model development for the pre-mining conditions, the stage-area relationships were calculated using the GIS-based tool and DEM data derived from the post-reclamation 1-foot contours. Channel storage was removed from node storage using exclusion polygons digitized in ArcGIS.

2.4 HYDROLOGIC AND HYDRAULIC MODEL SIMULATIONS – PRE-MINING AND POST-RECLAMATION

2.4.1 SELECTION OF STORM EVENTS

A total of three storm events, including two real storm events and one design storm, were simulated in the pre-mining and post-reclamation models. These selected storm events cover from regular afternoon thunderstorm to an extreme rainfall event in 1997, which is equivalent to a 25-yr/24-hr design storm in term of rainfall depth. The rainfall depth, duration, and distribution types are summarized in the table below.

Storm Event	Depth (inches)	Duration (hours)	Distribution
Nov_1997	8.3	24	15-min rainfall data* on 11/13/1997
Sep_2008	2.4	12	15-min rainfall data* on 09/16/2008
1 inch/24-Hr	1.0	24	Type II Florida-Modified

* 15-min rainfall data was derived from the SWFWMD Next-Generation Radar (NEXRAD) rainfall database.

2.4.2 MODEL INITIAL CONDITIONS

Initial elevations for all stage-area nodes were established at control elevations, for both pre-mining and post-reclamation conditions. The control elevation refers to the minimum elevation of a hydraulic structure above which discharge occurs (e.g. lowest elevation of a multistage weir).

2.4.3 MODEL TESTING

Model testing was performed to generally evaluate model performance for both the pre-mining and post-reclamation models. A review of model input data was conducted and a qualitative assessment of preliminary model results was made as well.

Input data were reviewed to ensure consistent and defensible use of parameter values. Modifications to input data were made, if necessary, until the model yielded reasonable results and could be used as a reliable predictor of watershed response to rainfall.

2.4.4 MODEL SIMULATIONS RESULTS

Model Results of the pre-mining and post-reclamation conditions were used to establish the runoff volumes into the Prairie Dog wetlands to evaluate if the reclaimed topography, land use, and soil types respond to rainfall events by providing volumes of stormwater runoff similar to the volumes received by the existing Prairie Dog wetlands.

Tables 2-7 and 2-8 summarize the total runoff volume values at the end of simulation (Hour 240) for all three selected rainfall storm events for the pre-mining and post-reclamation conditions, respectively. Table 2-9 presents the comparison results of the pre-mining versus post-reclamation conditions with respect to total runoff volumes for each of the three storm events simulated.

Further hydrologic and hydraulic information can be found in Appendix A, on the attached Digital Video Disc (DVD), which contains the complete existing and proposed conditions model input and output files for the selected storm events.

2.5 DISCUSSION OF STORM EVENT MODELING RESULTS

The ICPR modeling was conducted to address the question: Will the reclaimed upland topography, vegetative community, and soil types respond to rainfall events by providing volumes of stormwater runoff similar to the volumes received by the existing Prairie Dog wetland system? Table 2-9 demonstrates the answer is yes.

Two actual, historic storm events were modeled, including one approaching a 25-year event in November 1997 and one approximating a mean annual event in September 2008. A third synthetic event of a 1-inch rainfall distributed across 24 hours using the SWFWMD Type II distribution curve was also modeled to simulate typical winter frontal boundaries.

The modeling results shown on Table 2-9 indicate the post-reclamation simulations of the mitigation site consistently generate more runoff volumes than the existing Prairie Dog wetland system, albeit at very small differences in acre-feet volumes. One main reason contributes to the differences and this can be accounted for in the final design.

The reason is the curve numbers generated by the existing and post-reclamation conditions. Comparison of Tables 2-3 and 2-6 illustrate marginally higher curve numbers in the post-reclamation condition. The existing curve numbers could be replicated by substituting upland forests for pine flatwoods vegetation for example; however, replication simply for the purpose of "matching the hydrology numbers" is not warranted at the mitigation site where a pine flatwoods community is more ecologically appropriate.

There are two important conclusions that were produced by the ICPR storm event modeling. The first is that the mitigation designs and plans would provide surface water runoff volumes in response to an expected range of storm events that would neither overwhelm the capacity of the mitigation wetlands to accommodate such flows, nor "starve" the wetlands of needed hydration following lighter rainfall events. The second is that the discussion above demonstrates Mosaic will have a variety of design tools to work with during final, pre-construction design to result in the post-mitigation conditions that mimic the existing storm event response hydrology.

3.0 GROUNDWATER MODEL SIMULATIONS

3.1 METHODOLOGY

3.1.1 MODEL SELECTION

Many computer programs are available for use in groundwater flow simulations. MODFLOW is the USGS's three-dimensional (3D) finite-difference groundwater model. MODFLOW is considered an international standard for simulating and predicting groundwater conditions and groundwater/surface-water interactions. Groundwater Vistas (GV, Version 6) developed by Environmental Simulations, Inc. (ESI), is a pre- and post-processor for MODFLOW models and other similar models. GV and MODFLOW have been widely used in the United States and Florida, particularly by the water management districts (WMDs) for regional groundwater modeling projects.

3.1.2 DATA SOURCES

The major data sources used in developing the groundwater models include:

- 1996 aerial topographic data and 1-foot contours (Mosaic, 1996);
- 2005 SWFWMD LiDAR-based terrain data in DEM;
- Post-reclamation topography provided by Mosaic;
- Top and bottom elevation contours of ore matrix provided by Mosaic; and
- Pumping test results in surficial and intermediate aquifer systems across the Ona Mine (ECT, 1999 & 2009).

3.1.3 MODELING APPROACH

The primary objective of the groundwater modeling efforts is to project groundwater flow patterns and levels in the contributing uplands as well as the wetlands for both the existing Prairie Dog wetlands and mitigation wetlands on the reclaimed mine site. A series of 2-dimensional (2D) profile models were developed using GV and MODFLOW for the pre-mining and post-reclamation analysis of the main Prairie Dog wetland, which is numbered Wetland C720 in the existing condition and Wetland 21-15 in the post-

reclamation condition. Each of these profile models was simulated in steady-state conditions to facilitate comparison of the modeling results.

As shown in Figure 3-1, a total of four transects, including two at the upper portion, one at the middle portion, and one at the lower portion of the existing Prairie Dog wetland (Wetland C720) were selected to evaluate the groundwater inflow volumes to the existing wetlands using the profile models. For comparison purposes, four transects at similar locations of the mitigation wetland (Wetland 21-15) were selected to evaluate the groundwater inflow volumes to the mitigation wetlands using the profile models, as plotted in Figure 3-2.

3.2 PRE-MINING GROUNDWATER MODEL DEVELOPMENT

3.2.1 MODEL DESCRETIZATION

As presented in Figures 3-3 thru 3-6, a total of four layers were used to model the surficial and intermediate aquifer systems at the Ona Mine Prairie Dog wetlands in the pre-mining conditions, as listed below:

- Layer 1: Overburden in surficial aquifer system;
- Layer 2: Ore matrix in surficial aquifer system;
- Layer 3: Clay aquitard between surficial and intermediate aquifer systems; and
- Layer 4: Intermediate aquifer system.

Note that the surficial aquifer occurs in the overburden and matrix lithological zones based on monitor well borings across the Ona Mine completed by ECT in 1999. The 2005 SWFWMD LiDAR-based DEM data was used to define the top elevations of Layer 1: overburden. The top and bottom elevation contours of the ore matrix provided by Mosaic were first converted into DEM format prior to being used to assign the top and bottom elevations of Layer 2: ore matrix.

Due to lack of the thickness data of clay aquitard (confining layer) at the project site, a uniform thickness of 10 feet (ft) was assumed for Layer 3. For Layer 4: intermediate

aquifer system, a uniform thickness of 200 ft was used in the profile models. The use of an approximate thickness for the intermediate aquifer system will not impact the model performance, as this layer is to be modeled as a constant head boundary as described in the subsequent section.

The raw widths of the profile model were set at 1 ft and the column widths of the profile models range from 6.1 ft to 20 ft. The column widths at wetland slopes, where steep gradient in water table occurs, were intentionally reduced to improve model performance in predicting water table elevations and flow velocities near edges of the simulated wetlands.

3.2.2 BOUNDARY CONDITIONS

Three types of boundary conditions were applied in the profile models, as described in the subsequent sections.

3.2.2.1 General Head Boundary (GHB) Conditions

The boundary conditions for the both ends of the profile model were simulated with GHB conditions to allow the influx and out flow of groundwater into the profile models. The predicted upland water table elevations using the wetland hydroperiod models, as described in Section 4, were used to estimate the head at the GHB conditions in the profile models.

3.2.2.2 Drain Boundary (DB) Conditions

To simulate the wetland areas, the DB conditions was used and assigned with a fixed head value representing wetland control elevation. If groundwater level rises above the control elevation at the wetland, the profile models will remove the excess groundwater from the system simulating seepage discharge from the wetland and account for that water in the model's water flow balance.

3.2.2.3 Constant Head Boundary (CHB) Conditions

The assignment of CHB conditions at all cells in Layer 4: intermediate aquifer system is acceptable for simulation of discharge from the surficial aquifer system in steady-state conditions. The USGS potentiometric surface maps in May and September of 1996 were

averaged to estimate potentiometric elevation of the intermediate aquifer system for each of the profile models.

3.2.3 AQUIFER/SOIL PROPERTIES

3.2.3.1 Hydraulic Conductivity

Previous pumping tests were conducted by ECT in 2009 in piezometers installed in the overburden in the vicinity of the Prairie Dog wetlands. The hydraulic conductivity value of the overburden ranges from 1.5 to 2.3 ft/day and averages at 2.0 ft/day, approximately. In the profile models, assume $K_x = K_y = 2.0$ ft/day, and $K_z = 1.5$ ft/day for overburden in Layer 1.

Similar pumping tests of the ore matrix were performed by ECT in 1999, at four different monitoring wells across the Ona Mine. The hydraulic conductivity values of the ore matrix average approximately 8.0 ft/day. In the profile models, assume $K_x = K_y = 8.0$ ft/day, and $K_z = 6$ ft/day for ore matrix in Layer 2.

Information provided by SWFWMD (1988) indicates that the recharge from the surficial aquifer to intermediate aquifer in the vicinity of the Ona Mine generally ranges between 0 to 10 inches per year. This range for the recharge rate for the intermediate aquifer system is also supported by more recently developed regional models (District Wide Regulation Model Version 2, ESI, 2007). Environmental Simulations, Inc. (ESI, 2007) presents the leakance value at 4.0×10^{-5} (ft/day)/ft in the vicinity of the existing Prairie Dog wetland (Wetland C720). Given the modeled thickness of clay aquitard of 10 ft, see Section 3.2.1 above, vertical hydraulic conductivity (K_z) of Layer 3 was estimated at 4.0×10^{-4} ft/day. In the profile models, assume $K_x = K_y = 8 \times 10^{-4}$ ft/day, and $K_z = 4.0 \times 10^{-4}$ ft/day for clay aquitard in Layer 3.

Based on the pumping tests of Arcadia Formation (intermediate aquifer system) by ECT in 1999, the hydraulic conductivity values average approximately 1.2 ft/day. In the profile models, assume $K_x = K_y = 1.2$ ft/day, and $K_z = 1$ ft/day for intermediate aquifer in Layer 4.

3.2.3.2 Porosity

The porosity value was estimated at 0.23, based on the geotechnical data conducted for the overburden and ore matrix across the Ona Mine, and then adopted in the profile models of the Prairie Dog wetlands in the pre-mining conditions. A porosity value of 0.2 was assumed and used in the clay aquitard and intermediate aquifer systems.

3.2.3.3 Recharge

Recharge in the MODFLOW model represents the infiltration of water from precipitation. ESI presents the recharge value at approximately 8.0 in/year in the vicinity of the existing Prairie Dog wetlands (ESI, 2007). In the profile models, the recharge value of 0.0018 ft/day was applied to Layer 1: overburden of surficial aquifer system.

3.3 POST-RECLAMATION GROUNDWATER MODEL DEVELOPMENT

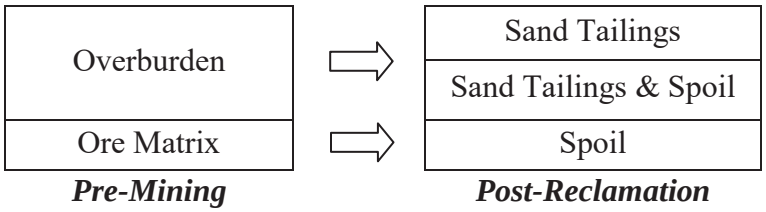
3.3.1 MODEL DESCRETIZATION

As presented in Figures 3-7 thru 3-10, a total of five layers were used to model the surficial and intermediate aquifer systems at the Ona Mine Prairie Dog wetlands in the post-reclamation conditions, as listed below:

- Layer 1: Sand tailings in surficial aquifer system;
- Layer 2: Combination of sand tailings and spoil in surficial aquifer system;
- Layer 3: Spoil in surficial aquifer system;
- Layer 4: Clay aquitard between surficial and intermediate aquifer systems; and
- Layer 5: Intermediate aquifer system.

Note that the surficial aquifer system in the pre-mining conditions consists of two layers: overburden and ore matrix. At the Ona Mine where mining will be accomplished using draglines, the overburden is excavated and placed in adjacent mine voids as a spoiled backfill material. The sand tailings are managed separately from the overburden, which allows greater flexibility for creating design sub-surface lithological zones. In the post-reclamation conditions, as illustrated in the sketch on the next page, the pre-mining ore matrix is assumed to be filled with spoiled backfill material. The pre-mining overburden

is subdivided into two layers: 1) sand tailings at the top, approximately 2 ~ 5 ft in thickness; and 2) a combination of sand tailings and spoil at the bottom.



The post-reclamation topographic data provided by Mosaic was used to define the top elevation of Layer 1: sand tailings. The top and bottom elevation data of the ore matrix provided by Mosaic were used to define the top and bottom elevations of Layer 3: spoil.

Similar to the profile models of the pre-mining conditions (Section 3.2.1), a uniform thickness of 10 ft was used for clay aquitard layer (Layer 4), and a uniform thickness of 200 ft was used for Layer 5: intermediate aquifer system in the profile models of the post-reclamation conditions.

The raw widths of the profile model were set at 1 ft and the column widths of the profile models range from 6.6 ft to 25.3 ft.

3.3.2 BOUNDARY CONDITIONS

Similar to the profile models for the pre-mining conditions, three types of boundary conditions were applied in the modeling of post-reclamation conditions, as described in the subsequent sections.

3.3.2.1 GHB Conditions

The boundary conditions for the both ends of the profile model were simulated with GHB conditions to allow the influx and out flow of groundwater into the profile models.

3.3.2.2 DB Conditions

To simulate the wetland areas, the DB conditions was used and assigned with a fixed head value representing wetland control elevation.

3.3.2.3 CHB Conditions

The CHB conditions were assigned with a fixed head value representing the average potentiometric surface in Layer 5: intermediate aquifer system. Similar to the profile models for the pre-mining conditions, the USGS potentiometric surface maps in May and September of 1996 were averaged to estimate the elevation of the intermediate aquifer system.

3.3.3 AQUIFER/SOIL PROPERTIES

3.3.3.1 Hydraulic Conductivity

The hydraulic conductivity value of sand tailings in the Ona mine ranges from 25 to 35 ft/day, and averages at 30 ft/day, approximately. In the profile data, assume $K_x = K_y = K_z = 30$ ft/day for sand tailings in Layers 1 and 2.

The hydraulic conductivity value of spoil at the Ona Mine is approximately 0.5 ft/day. In the profile models, assume $K_x = K_y = K_z = 0.5$ ft/day for spoil in Layers 2 and 3.

The same hydraulic conductivity values for the clay aquitard and intermediate aquifer systems in the pre-mining conditions (see Section 3.2.3 above) were adopted in the modeling of the post-reclamation conditions.

3.3.3.2 Porosity

The porosity value of was assumed at 0.27, based on the geotechnical data conducted for the sand tailings and spoil across the Ona Mine and other mine sites, and then adopted in the profile models of the mitigation wetlands in the post-reclamation conditions. A porosity value of 0.2 was assumed and used in the clay aquitard and intermediate aquifer systems.

3.3.3.3 Recharge

ESI presents the recharge value at approximately 8.0 in/year in the vicinity of the mitigation wetlands (ESI, 2007). In the profile models, the recharge value of 0.0018 ft/day was applied to Layer 1: sand tailings.

3.4 GROUNDWATER MODEL SIMULATIONS – PRE-MINING AND POST-RECLAMATION

3.4.1 STEADY-STATE SIMULATIONS

As described in Sections 3.2 and 3.3, the profile models were developed for a total of eight transects selected in the existing Prairie Dog wetland (Wetland C720) as well as the mitigation wetland (Wetland 21-15), as presented in Figures 3-3 thru 3-10. To facilitate comparison of the model results in the pre-mining and post-reclamation conditions at similar location, the profile models were simulated in steady-state.

3.4.2 MODEL SIMULATION RESULTS – PRE-MINING

For the pre-mining conditions, the profile models were run to provide an estimate of the typical baseline water levels, hydraulic gradients, and flow rates representing discharge from the surficial aquifer to the wetland (wetland discharge). The model simulation results in the pre-mining conditions, as listed in Table 3-1, were reviewed and subsequently utilized to guide design of the sub-surface lithological zones in the post-reclamation conditions. The profile model input and output files for the pre-mining conditions can be found in Appendix B on the attached DVD.

3.4.3 MODEL SIMULATION RESULTS – POST-RECLAMATION

For the post-reclamation conditions, the profile models were basically used to evaluate water levels, hydraulic gradients, and wetland discharge flow rates for a given wetland mitigation design scenario, specifically for the design of the sub-surface lithological zones. The goal of the wetland mitigation design is to achieve groundwater inflows to the mitigation wetlands that are comparable with the baseline groundwater inflows to the existing Prairie Dog wetlands established using the profile models for the pre-mining conditions.

In the post-reclamation conditions, the surficial aquifer system consists of three layers: 1) sand tailings in the top layer; 2) a combination of sand tailings and spoil in the middle layer; and 3) spoil in the bottom layer. However only the middle layer of the surficial aquifer system can be modified to adjust hydraulic conductivity by adjusting the location and width of overburden spoil and sand tailings materials. Due to its relatively small

hydraulic conductivity, overburden spoil essentially functions as a barrier by decreasing groundwater inflows to the wetland. As illustrated in Figures 3-7 thru 3-10, Layer 2 encompasses a series of sand tailings buckets created by spoil barriers.

The profile models results shown in Table 3-1 indicate that the groundwater inflow volumes to the mitigation wetlands are within 6 percent of the existing Prairie Dog wetland system. The profile model input and output files for the post-reclamation conditions can be found in Appendix B on the attached DVD.

3.5 DISCUSSION OF GROUNDWATER MODELING RESULTS

The groundwater modeling in MODFLOW was conducted to address the question: Will the reclaimed upland topography and vegetative community, and soil types provide groundwater inflows in volumes similar to the volumes received by the existing Prairie Dog wetland system? Table 3-1 demonstrates the answer is yes.

A series of 2D profile models were developed and simulated using GV and MODFLOW for the existing and post-reclamation analysis of the main Prairie Dog wetland. To facilitate comparison of the modeling results, each of these profile models was run in steady-state conditions. Review of Table 3-1 indicated that the simulated groundwater inflow volumes to the mitigation wetland are within 6 percent of the volumes received by the existing Prairie Dog wetland.

There are two important conclusions that were produced by the groundwater modeling. The first is that the mitigation designs and plans would provide groundwater inflow volumes to the mitigation wetland that would mimic the volumes received by the existing Prairie Dog wetland, with an appropriate design of the sub-surface lithological zones in the post-reclamation conditions. The second is Mosaic will have a variety of design tools to work with during final, pre-construction design to result in post-mitigation hydrogeologic conditions that mimic the existing Prairie Dog wetland system. Because the actual locations and elevations of cast overburden will be known and the hydraulic

conductivity of the overburden spoil can be determined by sampling and analysis. This data will provide the reclamation design team with the inputs needed to complete a similar modeling analysis of actual conditions and to achieve the desired groundwater inflow volumes to the mitigation wetlands.

4.0 WETLAND HYDROPERIOD MODEL SIMULATIONS

4.1 METHODOLOGY

ECT developed a wetland hydroperiod water balance (Wetland HP) model for Mosaic that is designed to simulate the hydrology of wetlands, for existing wetlands as well as wetlands re-established on reclaimed mine sites. The Wetland HP model accounts for numerous hydrologic interactions between the atmosphere, vegetation, surface water, the vadose zone, and the water table.

The Wetland HP model has been successfully applied at other Mosaic mine sites in Manatee and Hardee Counties, Florida. In addition, the model has been proven to accurately simulate hydroperiod depths and durations in existing wetlands when verified against actual field monitoring data for selected wetlands on the Ona Mine in Hardee County, Florida (ECT, 2014). These prior modeling results demonstrate the Wetland HP model is an effective tool for estimating the hydroperiods in existing and/or post-reclamation wetlands.

In this report, ECT applied the Wetland HP model to both pre-mining and post-reclamation conditions at the Prairie Dog wetlands as proposed in the ERP application to FDEP. The modeling was completed to provide reasonable assurance that the hydroperiod depths and durations in the mitigation wetlands on the reclaimed mine site will mimic hydroperiods in the existing Prairie Dog wetlands of similar types and support the establishment of healthy wetland vegetation free from hydroperiod stress.

Mosaic provided ECT with its pre-mining and post-reclamation conditions on the Ona Mine, including the Prairie Dog wetlands, which were subsequently utilized to conduct hydroperiod simulations for the existing Prairie Dog wetlands as shown in Figure 4-1, as well as the mitigation wetlands proposed on the reclaimed mine site as shown in Figure 4-2.

4.2 EXISTING SITE CONDITIONS

The pre-mining conditions for the Ona Mine, including the existing Prairie Dog wetlands, were provided by Mosaic in the form of geodatabases that contain the information presented on the following pre-mining conditions maps in the ERP Application:

- Map 2-1-A-ii: Existing Land Use and Vegetation;
- Map 2-2-A-i: Jurisdictional Wetlands;
- Map 2-2-A-ii: Jurisdictional Streams;
- Map 2-5: Existing Soils;
- Map 2-7: Existing Topography; and
- Map 2-9-A: Existing Onsite Drainage Basins.

The approach taken into account for the general pre-mining conditions is described in the following sub-sections and subsequently is followed by more detailed and site-specific descriptions in Section 4.3.

For convenience and ease of review, the tables and figures for the existing wetland systems are provided together in individual Attachments 1 through 10. Note that some wetlands are grouped and simulated in one Wetland HP model, due to the similarity in topography, design water depths and hydroperiods.

4.2.1 LONG-TERM PRECIPITATION AND EVAPOTRANSPIRATION DATA

A primary objective of this wetland modeling analysis is to provide reasonable assurance that the reclaimed wetlands would experience hydroperiod depths and durations through seasonal fluctuations, as well as drought and wet periods, similar to existing conditions. As a starting point for the modeling effort, the wetland simulations were started during the wet season (July), or when the depth of water in the wetlands should be at or approaching the anticipated seasonal high water elevations. Based on these considerations, a time period of approximately 17.5 years, from July 1, 1996 through December 31, 2013, was selected for both pre-mining and post-reclamation conditions.

This time period encompasses seasonal fluctuations and includes the drought periods in 1999/2000 and 2006/2007, and the wet period in 2004/2005.

The daily rainfall data was derived from the SWFWMD Next-Generation Radar (NEXRAD) rainfall database (see Figure 4-3 for NEXRAD rainfall pixels). For the 17.5 year simulation period, the annual average precipitation averages approximately 49.0 inches per year in the vicinity of the existing Prairie Dog wetlands.

The reference evapotranspiration (RET) data were obtained from nearby SWFWMD monitoring stations (see Figure 4-4). The average value of ET from a surface water body in Central Florida is estimated at approximately 52 inches per year, while the actual ET (ETa) from an average vegetated area is estimated at approximately 39 inches per year (Jones, *et al.*, 1984). The annual RET obtained from SWFWMD monitoring stations averages approximately 50.6 inches per year. The RET does not account for the depth to water or vegetation conditions, but these conditions are subsequently accounted for in the Wetland HP model.

4.2.2 SATURATED THICKNESS

The surficial aquifer bottom elevations are set at the bottom of the phosphate ore matrix evaluations provided by Mosaic. These elevations are then used to estimate the saturated thickness of the surficial aquifer. The estimated saturated thickness of the surficial aquifer was calculated by subtracting surficial aquifer bottom elevations from the existing topography for each of the existing Prairie Dog wetlands.

4.2.3 HYDRAULIC CONDUCTIVITY AND POROSITY

In Hardee County, Florida, including the Ona Mine site, the surficial aquifer occurs in the overburden and matrix lithological zones. Several pumping tests were conducted by ECT in 2009 in piezometers installed in the overburden in the vicinity of the Prairie Dog wetlands (Figure 4-1). The hydraulic conductivity value of the overburden material in the vicinity ranges from 1.5 to 2.3 ft/day and averages at approximately 2.0 ft/day. Similar pumping tests of the ore matrix were performed by ECT in 1999, at four different monitoring wells across the Ona Mine. The hydraulic conductivity values of the ore

matrix average approximately 8.0 ft/day. Based on the top and bottom contours of the ore matrix provided by Mosaic, it is concluded that the thickness of the overburden is approximately the same as the ore matrix; therefore, the resultant hydraulic conductivity value of the surficial aquifer could be estimated at 5.0 ft/day using a weighted method.

The porosity value was estimated at 0.23 based on the geotechnical data collected across the Ona Mine, and then adopted in the Wetland HP model of the Prairie Dog wetlands in the pre-mining conditions.

4.2.4 RECHARGE TO THE INTERMEDIATE AQUIFER

Information provided by SWFWMD (1988) indicates that the recharge between the surficial and intermediate aquifer systems in the vicinity of the Ona Mine generally ranges between 0 to 10 inches per year. This range for the recharge rate for the intermediate aquifer system is also supported by more recently developed regional models for the project site. Environmental Simulations, Inc. (ESI, 2007) presents a range of leakance values that range between 3.5 $x10^{-5}$ to 4.1 x 10^{-5} (ft/day)/ft (see Table 4-1). This range of leakance rates would equate to approximately 5.7 to 8.8 inches per year, with an average of approximately 7.2 inches per year.

The Wetland HP model requires the input of a vertical hydraulic conductivity value and thickness of the upper confining unit, and it then calculates the leakance as variable condition. The leakance varies as the water table elevation in the surficial aquifer rises and falls and is calculated by the model on a daily basis. Also, the water levels in the intermediate aquifer system are input in the "GW" worksheet of the model and vary on a monthly basis to account for seasonal fluctuations of the potentiometric surface of the intermediate aquifer. At the bottom of Table 4-1, an average value of the vertical hydraulic conductivity of 2.7 x 10^{-3} ft/day and an average thickness of the upper confining unit of 70 ft were used along with the range of seasonal head difference between the aquifers to approximate an average leakance rate of approximately 7.3 inches per year.

4.3 PRE-MINING WETLAND SIMULATIONS

As described in the preceding sections of this report, the Wetland HP model was used to evaluate the pre-mining hydroperiods at a total of 10 inter-connected wetland systems (26 counting slope/fringe wetlands/zones) across the Prairie Dog wetlands. Table 4-2 summarizes selected model input parameters and simulated results at the Prairie Dog wetlands in the pre-mining conditions. A brief description of these simulations and results is provided in the following sections:

4.3.1 WETLANDS C512 & OTHERS

The total area of this existing wetland system is approximately 28.5 acres and consists of ten components: Wetland C512, the primary wetland depression - freshwater marsh wetland (FLUCFCS 641); Wetland C513, the secondary wetland depression – shrub marsh wetland (FLUCFCS 647); and seven other small forested and non-forested slope/fringe wetlands, as listed in Table 4-2. Wetland C512 covers 7.8 acres or 27.4 percent of the total wetland area, Wetland C513 covers 7.0 acres or 24.6 percent of the total wetland area; and the remaining wetlands cover 13.7 acres or 48.0 percent of the total wetland area. This wetland system includes a contributing upland area of approximately 92.8 acres.

The bottom elevation of the wetland system is 96.2 ft, with an outflow elevation of 97.8 ft, and a top of bank elevation of 100.0 ft. The downgradient hydraulic control point was placed in a downstream wetland system (Wetlands C720_Mid & C715, see Section 4.3.7 below). The simulated wetland water table elevation data at Wetlands C720_Mid & C715, with an average elevation 92.4 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A1-1 and basic input parameters are summarized in Table A1, the "D&IC" worksheet of the accompanying Wetland HP model
(Appendix C - Hydroperiod-Model-ONA-RAI_Pre-Wetlands#C512_JS_20140730.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A1-2), a frequency (stage-duration) curve (Figure A1-3), a wetland outflow

(Figure A1-4), an upland hydrograph (Figure A1-5), and a hydrograph comparison (predicted vs. observed) (Figure A1-6). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 97.3 ft (ranging between 93.5 ft to 97.8 ft), a predicted water depth between 0 to 1.6 ft occurring at a 88.3 percent frequency, or equivalent to 10.6 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 98.9 ft (ranging between 95.0 ft to 100.5 ft). These data are also summarized in Table 4-2, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.3.2 WETLAND C526

Wetland C526 includes a contributing upland area of approximately 19.1 acres with the wetland itself comprising 3.9 acres. This wetland is classified as a wet prairie wetland system (FLUCFCS 643).

The bottom elevation of the wetland system is 98.0 ft, with an outflow elevation of 98.5 ft, and a top of bank elevation of 100.0 ft. The downgradient hydraulic control point was placed in a downstream wetland system (Wetlands C708 & C707, see Section 4.3.6 below). The simulated wetland water table elevation data at Wetlands C708 & C707, with an average elevation 95.5 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A2-1 and basic input parameters are summarized in Table A2, the "D&IC" worksheet of the accompanying Wetland HP model
(Appendix C - Hydroperiod-Model-ONA-RAI_Pre-Wetlands#C526_JS_20140730.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A2 2), a frequency (stage-duration) curve (Figure A2-3), a wetland outflow (Figure A2-4), and an upland hydrograph (Figure A2-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 98.1 ft (ranging between 94.5 ft to 98.5 ft), a predicted water depth between 0 to 0.5 ft occurring at a 56.0 percent frequency, or equivalent to 6.7

months on an annualized basis. The simulated results also indicate a median upland water table elevation of 99.3 ft (ranging between 95.5 ft to 100.5 ft). These data are also summarized in Table 4-2, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.3.3 WETLANDS C529 & C528

The total area of this existing wetland system is approximately 7.6 acres and consists of four components: Wetland C529, the primary wetland depression - freshwater marsh wetland (FLUCFCS 641); Wetland C528, the secondary wetland depression - shrub marsh wetland (FLUCFCS 647); and two un-numbered wetland communities - a mixed wetland hardwoods system (FLUCFCS 617) and a shrub marsh wetland system (FLUCFCS 647), as listed in Table 4-2. Wetland C529 covers 3.3 acres or 43.4 percent of the total wetland area, Wetland C528 covers 2.6 acres or 34.2 percent of the total wetland area; and the remaining two un-numbered wetland communities cover 1.7 acres or 22.4 percent of the total wetland area. This wetland system includes a contributing upland area of approximately 26.8 acres.

The bottom elevation of the wetland system is 97.0 ft, with an outflow elevation of 98.6 ft, and a top of bank elevation of 100.0 ft. The downgradient hydraulic control point was placed in a downstream wetland system (Wetlands C702 & C703, see Section 4.3.5 below). The simulated wetland water table elevation data at Wetlands C702 & C703, with an average elevation 95.9 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A3-1 and basic input parameters are summarized in Table A3, the "D&IC" worksheet of the accompanying Wetland HP model
(Appendix C - Hydroperiod-Model-ONA-RAI_Pre-Wetlands#C529_JS_20140730.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A3 2), a frequency (stage-duration) curve (Figure A3-3), a wetland outflow (Figure A3-4), and an upland hydrograph (Figure A3-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland

water table elevation of 98.2 ft (ranging between 94.6 ft to 98.6 ft), a predicted water depth between 0 to 1.6 ft occurring at a 89.9 percent frequency, or equivalent to 10.8 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 98.6 ft (ranging between 95.1 ft to 100.0 ft). These data are also summarized in Table 4-2, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.3.4 WETLAND C538

Wetland C538 includes a contributing upland area of approximately 47.1 acres with the wetland itself comprising 4.6 acres. This wetland is classified as a freshwater marsh wetland system (FLUCFCS 641).

The bottom elevation of the wetland system is 94.5 ft, with an outflow elevation of 95.7 ft, and a top of bank elevation of 99.5 ft. The downgradient hydraulic control point was placed in a downstream wetland system (Wetlands C720_Mid & C715, see Section 4.3.7 below). The simulated wetland water table elevation data at Wetlands C720_Mid & C715, with an average elevation 92.4 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A4-1 and basic input parameters are summarized in Table A4, the "D&IC" worksheet of the accompanying Wetland HP model
(Appendix C - Hydroperiod-Model-ONA-RAI_Pre-Wetlands#C538_JS_20140730.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A4-2), a frequency (stage-duration) curve (Figure A4-3), a wetland outflow (Figure A4-4), and an upland hydrograph (Figure A4-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 95.7 ft (ranging between 93.2 ft to 95.7 ft), a predicted water depth between 0 to 1.2 ft occurring at a 98.9 percent frequency, or equivalent to 11.9 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 96.9 ft (ranging between 94.0 ft to 98.5 ft). These data are also

summarized in Table 4-2, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.3.5 WETLANDS C702 & C703

The total area of this existing wetland system is approximately 16.6 acres and consists of two components: Wetland C702, the primary wetland depression - shrub marsh wetland (FLUCFCS 647); and Wetland C703, the secondary wetland depression - freshwater marsh wetland (FLUCFCS 641). Wetland C702 covers 8.5 acres or 51.2 percent of the total wetland area, and Wetland C703 covers 8.1 acres or 48.8 percent of the total wetland area. This wetland system includes a contributing upland area of approximately 25.5 acres.

The bottom elevation of the wetland system is 95.2 ft, with an outflow elevation of 96.5 ft, and a top of bank elevation of 98.0 ft. The downgradient hydraulic control point was placed in a downstream wetland system (Wetlands C708 & C707, see Section 4.3.6 below). The simulated wetland water table elevation data at Wetlands C708 & C707, with an average elevation 95.5 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A5-1 and basic input parameters are summarized in Table A5, the "D&IC" worksheet of the accompanying Wetland HP model
(Appendix C - Hydroperiod-Model-ONA-RAI_Pre-Wetlands#C702_JS_20140730.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A5-2), a frequency (stage-duration) curve (Figure A5-3), a wetland outflow (Figure A5-4), and an upland hydrograph (Figure A5-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 96.2 ft (ranging between 92.8 ft to 96.5 ft), a predicted water depth between 0 to 1.3 ft occurring at 88.2 percent frequency, or equivalent to 10.6 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 96.9 ft (ranging between 93.7 ft to 98.5 ft). These data are also

summarized in Table 4-2, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.3.6 WETLANDS C708 & C707

The total area of this existing wetland system is approximately 16.1 acres and consists of two components: Wetland C708, the primary wetland depression - freshwater marsh wetland (FLUCFCS 641); and Wetland C707, the secondary mixed wetland hardwoods system (FLUCFCS 617). Wetland C708 covers 7.2 acres or 44.7 percent of the total wetland area, and Wetland C707 covers 8.9 acres or 55.3 percent of the total wetland area. This wetland system includes a contributing upland area of approximately 37.7 acres.

The bottom elevation of the wetland system is 94.8 ft, with an outflow elevation of 96.0 ft, and a top of bank elevation of 98.0 ft. The downgradient hydraulic control point was placed in a downstream wetland system (Wetlands C720_Mid & C715, see Section 4.3.7 below). The simulated wetland water table elevation data at Wetlands C720_Mid & C715, with an average elevation 92.4 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A6-1 and basic input parameters are summarized in Table A6, the "D&IC" worksheet of the accompanying Wetland HP model
(Appendix C - Hydroperiod-Model-ONA-RAI_Pre-Wetlands#C708_JS_20140730.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A6-2), a frequency (stage-duration) curve (Figure A6-3), a wetland outflow (Figure A6-4), and an upland hydrograph (Figure A6-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 95.8 ft (ranging between 92.2 ft to 96.0 ft), a predicted water depth between 0 to 1.2 ft occurring at 89.2 percent frequency, or equivalent to 10.7 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 97.2 ft (ranging between 93.3 ft to 99.0 ft). These data are also

summarized in Table 4-2, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.3.7 WETLANDS C720_MID & C715

The total area of this existing wetland system is approximately 50.3 acres and consists of two components: Wetland C720_Mid, the primary wetland depression - mixed wetland hardwoods system (FLUCFCS 617); and Wetland C715, the secondary wetland depression - freshwater marsh wetland (FLUCFCS 641). Wetland C720_Mid covers 45.7 acres or 90.9 percent of the total wetland area, and Wetland C715 covers 4.6 acres or 9.1 percent of the total wetland area. This wetland system includes a contributing upland area of approximately 113.3 acres.

The bottom elevation of the wetland system is 92.0 ft, with an outflow elevation of 93.0 ft, and a top of bank elevation of 97.0 ft. The downgradient hydraulic control point was placed in a downstream wetland system (Wetlands C2097, C720_Low & C723, see Section 4.3.9 below). The simulated wetland water table elevation data at Wetlands C2097, C720_Low & C723, with an average elevation 91.7 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A7-1 and basic input parameters are summarized in Table A7, the "D&IC" worksheet of the accompanying Wetland HP model (Appendix C - Hydroperiod-Model-ONA-RAI_Pre-Wetlands#C720_Mid_JS_20140730.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A7-2), a frequency (stage-duration) curve (Figure A7-3), a wetland outflow (Figure A7-4), and an upland hydrograph (Figure A7-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 92.7 ft (ranging between 89.2 ft to 93.0 ft), a predicted water depth between 0 to 1.0 foot occurring at 85.1 percent frequency, or equivalent to 10.2 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 97.5 ft (ranging between 93.5 ft to 99.0 ft). These data are also

summarized in Table 4-2, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.3.8 WETLAND C720_UP

Wetland C720_Up includes a contributing upland area of approximately 23.1 acres with the wetland itself comprising 23.7 acres. This wetland is classified as a mixed wetland hardwoods system (FLUCFCS 617). The bottom elevation of the wetland system is 93.3 ft, with an outflow elevation of 94.0 ft, and a top of bank elevation of 97.0 ft. The downgradient hydraulic control point was placed in a downstream wetland system (Wetlands C720_Mid & C715, see Section 4.3.7 above). The simulated wetland water table elevation data at Wetlands C720_Mid & C715, with an average elevation 92.4 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A8-1 and basic input parameters are summarized in Table A8, the "D&IC" worksheet of the accompanying Wetland HP model (Appendix C - Hydroperiod-Model-ONA-RAI_Pre-Wetlands#C720_Up_JS_20140730.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A8-2), a frequency (stage-duration) curve (Figure A8-3), a wetland outflow (Figure A8-4), and an upland hydrograph (Figure A8-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 93.8 ft (ranging between 90.2 ft to 94.0 ft), a predicted water depth between 0 to 0.7 ft occurring at a 77.9 percent frequency, or equivalent to 9.4 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 96.9 ft (ranging between 93.2 ft to 101.5 ft). These data are also summarized in Table 4-2, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.3.9 WETLANDS C2097, C720_LOW & C723

The total area of this existing wetland system is approximately 15.7 acres and consists of three components: Wetland C2097, the primary wetland depression – inland ponds and sloughs (FLUCFCS 616); Wetland C720_Low, the secondary wetland depression - mixed wetland hardwoods system (FLUCFCS 617); and Wetland C723, the third wetland

depression - freshwater marsh wetland (FLUCFCS 641). Wetland C2097 covers 7.3 acres or 46.5 percent of the total wetland area, Wetland C720_Low covers 7.6 acres or 48.4 percent of the total wetland area, and Wetland C723 covers 0.8 acres or 5.1 percent of the total wetland area. This wetland system includes a contributing upland area of approximately 28.3 acres.

The bottom elevation of the wetland system is 90.8 ft, with an outflow elevation of 92.5 ft, and a top of bank elevation of 100.0 ft. The downgradient hydraulic control point was placed in a downstream wetland system at an elevation of 86.0 ft. The model diagram is illustrated in Figure A9-1 and basic input parameters are summarized in Table A9, the "D&IC" worksheet of the accompanying Wetland HP model (Appendix C - Hydroperiod-Model-ONA-RAI_Pre-Wetlands#C2097_JS_20140730.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A9-2), a frequency (stage-duration) curve (Figure A9-3), a wetland outflow (Figure A9-4), and an upland hydrograph (Figure A9-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 92.0 ft (ranging between 88.0 ft to 92.5 ft), a predicted water depth between 0 to 1.7 ft occurring at 89.1 percent frequency, or equivalent to 10.7 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 93.6 ft (ranging between 90.1 ft to 95.0 ft). These data are also summarized in Table 4-2, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.3.10 WETLAND X641

Wetland X641 includes a contributing upland area of approximately 8.9 acres with the wetland itself comprising 4.0 acres. This wetland is classified as a freshwater marsh wetland system (FLUCFCS 641).

The bottom elevation of the wetland system is 96.2 ft, with an outflow elevation of 97.8 ft, and a top of bank elevation of 100.0 ft. The downgradient hydraulic control point was

placed in a downstream wetland system (Wetlands C720_Mid & C715, see Section 4.3.7 above). The simulated wetland water table elevation data at Wetlands C720_Mid & C715, with an average elevation 92.4 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A10-1 and basic input parameters are summarized in Table A10, the "D&IC" worksheet of the accompanying Wetland HP model
(Appendix C - Hydroperiod-Model-ONA-RAI_Pre-Wetlands#X641_JS_20140730.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A10-2), a frequency (stage-duration) curve (Figure A10-3), a wetland outflow (Figure A10-4), and an upland hydrograph (Figure A10-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 97.2 ft (ranging between 93.5 ft to 97.8 ft), a predicted water depth between 0 to 1.6 ft occurring at a 83.2 percent frequency, or equivalent to 10.0 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 98.1 ft (ranging between 94.5 ft to 100.0 ft). These data are also summarized in Table 4-2, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.4 SUMMARY OF PRE-MINING WETLAND SIMULATIONS

As described above, a total of 10 existing Prairie Dog wetlands have been simulated by applying the pre-mining site conditions, including long-term precipitation and evapotranspiration, surficial aquifer saturated thickness, hydraulic conductivity, soil porosity, and recharge to the intermediate aquifer, using the Wetland HP model. As summarized in Table 4-2, the predicted seasonal range of wetland depth and hydroperiod at most of the existing Prairie Dog wetlands are consistent with the general design guidance for water depth and hydroperiod for a given wetland type.

However for Wetland C720_Mid, a mixed wetland hardwoods system (FLUCFCS 617), the predicted hydroperiod of 10.2 months on an annualized basis is longer (wetter) than

the general design guidance hydroperiod (between 3 to 9 months) for this type of hardwoods wetland system. But based on the field assessment made by Mosaic's ecological subconsultant, Flatwoods Consulting Group (Flatwoods), Wetland C720_Mid does not appear to dry out at any time during most years. Therefore, the predicted wetland hydroperiod from the Wetland HP model seems to be reasonable and be representative of the actual wetland hydroperiod as observed in field.

Wetland HP Model Verification at Wetland C512

In addition, to further test the performance of the Wetland HP model, ECT selected an existing wetland system in which a piezometer was equipped with a water level data logger to allow for daily comparison of observed versus predicted water level for the verification purposed of this model.

As shown in Figure 4-1 and described in Section 4.3.1, Wetland C512 along with other secondary forested and non-forested wetlands are located at the northeast portion of the existing Prairie Dog wetlands where the topography is relatively flat, and these wetlands have limited connectivity to the main wetland system (Wetland C720) to the west. The Wetland HP model has been applied and the model diagram, input parameters, and model results are summarized in Attachment 1, Table A1 and Figures A1-1 thru A1-6.

As presented in Figure A1-1, a piezometer identified as "C512-W3" is located in the center portion of the wetland system, and the 12-hour/6-hour raw water level data was collected by ECT for approximately 4.5 years in time period from July 24, 2009 through December 31, 2013. The raw water level data was re-sampled to a daily interval and then plotted in Figure A1-6 along with the predicted daily wetland water level from the Wetland HP model and daily precipitation data.

As observed from the hydrograph comparison results shown on Figure A1-6, the predicted wetland water level appears to have a reasonably well match with the observed data in Year 2009/2010. For the dry seasons of Year 2011 thru 2013, the predicted wetland water level has the data trends track reasonably well, but is higher than the

observed value with an average residual error of ~0.5 foot, which is likely due to the groundwater from the intermediate aquifer system being pumped for irrigation to compensate for the deficit in rainfall volume. The model verification results, particularly in dry seasons, would be further improved if more site-specific data, including pumping data and groundwater level data in the intermediate aquifer system were available, which is not the case. Furthermore, it is recognized and understood that no mathematical model (simple or complex, analytical or numerical) will provide an "*exact*" replication of the real world environment being simulated.

Overall, the ability of the Wetland HP model to produce similar data to that observed from the piezometer in the wetland area supports the conclusion that the model can provide a reasonable representation of corresponding hydrograph, and is suitable for used of estimating the post-reclamation wetland hydroperiods. Thus, the wetland water depth and hydroperiod simulated and established at the existing Prairie Dog wetlands were considered and subsequently utilized to guide the wetland mitigation designs of the Prairie Dog wetlands on the reclaimed mine site.

4.5 POST-RECLAMATION SITE CONDITIONS

The post-reclamation conditions were provided by Mosaic in the form of geodatabases that contain the information presented on the following post-reclamation conditions maps in the ERP Application:

- Map 4-2-A-ii: Post-Reclamation Vegetation;
- Map 4-3-A: Post-Reclamation Streams;
- Map 4-4: Post-Reclamation Soils;
- Map 4-5: Post-Reclamation Topography;
- Map 4-6: Post-Reclamation Drainage Basins; and
- Map 4-8-A-i: Mitigation Wetlands and Streams.

As the purpose of this wetland modeling effort is to simulate the post-reclamation hydrology of the mitigation wetlands, hydrologic and hydrogeologic conditions that represent the time period of interest and post-reclamation site conditions must be

incorporated into the model analyses. The approach taken into account for the general post-reclamation conditions is described in the following sub-sections and subsequently is followed by more detailed and site-specific descriptions in Section 4.6. For convenience and ease of review, the tables and figures for the mitigation wetland systems are provided together in individual Attachments 11 through 17.

4.5.1 LONG-TERM PRECIPITATION AND EVAPOTRANSPIRATION DATA

Similar to the pre-mining wetland simulations (Section 4.2.1), the same time period of approximately 17.5 years, from July 1, 1996 through December 31, 2013, was selected for the post-reclamation wetland simulations. The SWFWMD NEXRAD rainfall and RET data was also adopted to generate model input for the post-reclamation wetland simulations.

4.5.2 SATURATED THICKNESS

The surficial aquifer bottom elevations are set at the bottom of the phosphate ore matrix evaluations provided by Mosaic. These elevations are then used to estimate the saturated thickness of the surficial aquifer. The estimated saturated thickness of the surficial aquifer was calculated by subtracting surficial aquifer bottom elevations from the post-reclamation topography for each of the mitigation wetland systems.

4.5.3 HYDRAULIC CONDUCTIVITY AND POROSITY

Due to the nature of the mining operations in the areas being mined, the overburden and matrix materials previously comprising the surficial aquifer will be removed. Depending upon where the wetlands are located with respect to the mining plan and the perimeter of the area to be mined (disturbed), several potential combinations of subsurface materials may be used to backfill the mine excavations following mining.

At the Ona Mine where mining will be accomplished using draglines, the overburden is excavated and placed in adjacent mine voids as a spoiled backfill material. The sand tailings are managed separately from the overburden, which allows greater flexibility for creating design sub-surface hydraulic conductivity and porosity.

While there are numerous possible combinations of subsurface material placement during reclamation at dragline mining sites, two conditions which bracket either end of these scenarios include groundwater flow parallel to the rows of overburden spoil and groundwater flow perpendicular to the rows of overburden spoil. Aerial photographs taken following mining will provide the subsurface lithology information needed to understand and evaluate the subsurface conditions during the final design efforts and to properly account for the locations of overburden and sand tailings.

The actual site specific conditions at each mitigation wetland in terms of hydraulic conductivity and porosity will not be known until after mining and backfilling is complete. Therefore, modeling similar to this effort will need to be completed to take into account actual sub-surface conditions as part of the final design work.

Using estimates of the average hydraulic conductivities for the different types of reclamation backfill and considering their subsurface placement, the cumulative conductivity values for selected wetlands have been estimated. As presented in the "Reference Values" worksheet in the wetland HP model, the hydraulic conductivity value of sand tailings ranges from 25 to 35 ft/day, and the hydraulic conductivity value of spoil at the Ona Mine is approximately 0.5 ft/day. For the Ona Mine site including the mitigation wetlands, an estimate of the cumulative conductivity value ranges from 2 to 10 ft/day by using a weighted average approach, with an average value of 5.0 ft/day.

Similarly, the estimated porosity values for different types of subsurface materials is considered along with the individual and cumulative lengths respectively, to estimate a representative porosity value for the wetland watershed. For the Ona Mine, an estimate of the porosity value of 0.27 was used in the Wetland HP model for all mitigation wetlands.

4.5.4 RECHARGE TO THE INTERMEDIATE AQUIFER

The same data source used in the pre-mining wetland simulations for the leakance values (Section 4.2.4 in this report) was also utilized in the post-reclamation wetland

simulations, given that mining activity is limited to the surficial aquifer and the confining layer between the surficial and intermediate aquifer systems will not be disturbed.

The leakance values for the mitigation Prairie Dog wetlands range between 3.0 x10^{-5} to 4.3 x 10^{-5} (ft/day)/ft (see Table 4-3). This range of leakance rates would equate to approximately 6.7 to 11.9 inches per year, with an average of approximately 9.1 inches per year. At the bottom of Table 4-3, an average value of the vertical hydraulic conductivity of 2.6 x 10^{-3} ft/day and an average thickness of the upper confining unit of 70 ft were used along with the range of seasonal head difference between the aquifers to approximate an average leakance rate of approximately 9.6 inches per year.

4.6 POST-RECLAMATION WETLAND SIMULATIONS

The Wetland HP model was used to evaluate the post-reclamation hydroperiods at 7 inter-connected mitigation wetland systems (12 counting slope/fringe wetlands/zones). Table 4-4 summarizes selected model input parameters and simulated results at these mitigation wetland systems. A brief description of these simulations and results is provided in the following sections:

4.6.1 WETLAND 16E-2

The design of Wetland 16E-2 is intended to function as a freshwater marsh wetland system (FLUCFCS 641), with a general design guidance seasonal high water depth of approximately 1.0 to 1.5 ft and a hydroperiod ranging between 7 to 12 months. The design of this wetland includes a contributing upland area of approximately 53.8 acres with the wetland itself comprising 11.1 acres.

The bottom elevation of the wetland is 99.6 ft, with an outflow elevation of 100.9 ft, and a top of bank elevation of 104.0 ft. The downgradient hydraulic control point (boundary condition) was placed in a downstream wetland (Wetlands 21-15_Mid & 21-11, see Section 4.6.4 below). The simulated wetland water table elevation data at Wetlands 21-15_Mid & 21-11, with an average elevation of 97.8 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A11-1 and basic

input parameters are summarized in Table A11, the "D&IC" worksheet of the accompanying Wetland HP model (Appendix C - Hydroperiod-Model-ONA-RAI_Post-Wetlands#16E-2_JS_20140805.xlsx).

The modeling results for this wetland provide a wetland hydrograph (Figure A11-2), a frequency (stage-duration) curve (Figure A11-3), a wetland outflow (Figure A11-4), and an upland hydrograph (Figure A11-5). For the simulated conditions and time period, the modeling results for this wetland indicate a median wetland water table elevation of 100.8 ft (ranging between 98.1 ft to 100.9 ft), a predicted water depth between 0 to 1.3 ft occurring at a 95.6 percent frequency, or equivalent to 11.5 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 102.8 ft (ranging between 99.4 ft to 104.5 ft). These data are also summarized in Table 4-4, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.6.2 WETLANDS 21-10 & 21-2

The design of Wetland 21-10 is intended to function as a freshwater marsh wetland system (FLUCFCS 641), with a general design guidance water depth of approximately 1.0 to 1.5 ft and a hydroperiod ranging between 7 to 12 months, plus a mixed wetland hardwoods fringe (FLUCFCS 617). The total area of the wetland system is approximately 15.3 acres and consists of two components: Wetland 21-10, the primary wetland depression; and Wetland 21-2, a fringe area along the side slope. Wetland 21-10 covers 10.8 acres or 70.6 percent of the total wetland area and Wetland 21-2 covers 4.5 acres or 29.4 percent of the total wetland area. The design of this wetland system includes a contributing upland area of approximately 23.4 acres.

The bottom elevations of the wetlands are 99.5 ft, with an outflow elevation of 101.0 ft, and a top of bank elevation of 103.0 ft. The downgradient hydraulic control point (boundary condition) was placed in a downstream wetland (Wetlands 21-15_Mid & 21-11, see Section 4.6.4 below). The simulated wetland water table elevation data at Wetlands 21-15_Mid & 21-11, with an average elevation of 97.8 ft, was used to define

the time-varying boundary conditions. The model diagram is illustrated in Figure A12-1 and basic input parameters are summarized in Table A12, the "D&IC" worksheet of the accompanying Wetland HP model (Appendix C - Hydroperiod-Model-ONA-RAI_Post-Wetlands#21-10_JS_20140805.xlsx).

The modeling results for this wetland system provide wetland hydrographs (Figure A12-2 & A12-3), frequency (stage-duration) curves (Figure A12-4 & A12-5), a wetland outflow (Figure A12-6), and an upland hydrograph (Figure A12-7). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 100.1 ft (ranging between 97.0 ft to 101.0 ft), a predicted water depth between 0 to 1.5 ft occurring at a 79.7 percent frequency, or equivalent to 9.6 months on an annualized. The simulated results also indicate a median upland water table elevation of 101.7 ft (ranging between 98.6 ft to 103.8 ft).

The modeling results for the fringe slope wetland (Wetland 21-2) indicate a median water table elevation of 101.3 ft (ranging between 98.2 ft to 101.6 ft). Seepage from the center (~101.5 ft) is estimated to be occurring at 43.1 percent frequency or equivalent to 5.2 months on an annualized basis. Seepage from the outer edge (~102.0 ft) is estimated to be occurring at 28.8 percent frequency or equivalent to 3.5 months on an annualized basis. Seepage from the bottom (~101.0 ft) is estimated to be occurring at 56.1 percent frequency or equivalent to 6.7 months on an annualized basis. The predicted water table elevations for the fringe slope wetland were calculated using a distance relationship between the approximate centers of the modeled depressional wetland and upland area in correlation to the approximate center of the fringe slope wetland. These data are also summarized in Table 4-4, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.6.3 WETLANDS 21-15_LOW & 21-1

The design of this wetland system is intended to function as a mixed wetland hardwoods system (FLUCFCS 617) for Wetland 21-15_Low, with a general design guidance water depth of approximately 0.5 to 1.0 foot and a hydroperiod ranging between 3 to 9 months,

and an inland ponds and slough system (FLUCFCS 616) for Wetland 21-1, with a general design guidance water depth of approximately 1.0 to 1.5 ft and a hydroperiod ranging between 7 to 12 months. The total area of the wetland system is approximately 25.6 acres and consists of two components: Wetland 21-15_Low, the primary wetland depression; and Wetland 21-1, the secondary wetland depression in the center. Wetland 21-15_Low covers 15.3 acres or 59.8 percent of the total wetland area, and Wetland 21-1 covers 10.3 acres or 40.2 percent of the total wetland area. The design of this wetland system includes a contributing upland area of approximately 28.8 acres.

The bottom elevations of the wetlands are 97.0 ft and 96.1 ft for Wetlands 21-15_Low and 21-1, respectively, with an outflow elevation of 98.0 ft, and a top of bank elevation of 101.5 ft. The downgradient hydraulic control point was placed in a downstream channel bed at an elevation of 91.0 ft. The model diagram is illustrated in Figure A13-1 and basic input parameters are summarized in Table A13, the "D&IC" worksheet of the accompanying Wetland HP model (Appendix C - Hydroperiod-Model-ONA-RAI_Post-Wetlands#21-15_Low_JS_20140805.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A13-2), a frequency (stage-duration) curve (Figure A13-3), a wetland outflow (Figure A13-4), and an upland hydrograph (Figure A13-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 97.3 ft (ranging between 93.8 ft to 98.0 ft), a predicted water depth between 0 to 1.0 ft occurring at a 69.5 percent frequency, or equivalent to 8.3 months on an annualized basis for Wetland 21-15_Low, and a predicted water depth between 0 to 1.9 foot occurring at a 83.1 percent frequency, or equivalent to 10.0 months on an annualized basis for Wetland 21-1. The simulated results also indicate a median upland water table elevation of 99.7 ft (ranging between 96.2 ft to 102.0 ft). These data are also summarized in Table 4-4, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.6.4 WETLANDS 21-15_MID & 21-11

The design of this wetland system is intended to function as a mixed wetland hardwoods system (FLUCFCS 617) for Wetland 21-15_Mid, with a general design guidance water depth of approximately 0.5 to 1.0 foot and a hydroperiod ranging between 3 to 9 months, and a freshwater marsh wetland system (FLUCFCS 641) for Wetland 21-11, with a general design guidance water depth of approximately 1.0 to 1.5 ft and a hydroperiod ranging between 7 to 12 months. The total area of the wetland system is approximately 80.6 acres and consists of two components: Wetland 21-15_Mid, the primary wetland depression; and Wetland 21-11, the secondary wetland depression near the side slope. Wetland 21-15_Mid covers 74.2 acres or 92.1 percent of the total wetland area, and Wetland 21-11 covers 6.4 acres or 7.9 percent of the total wetland area. The design of this wetland system includes a contributing upland area of approximately 88.9 acres.

The bottom elevations of the wetlands are 97.5 ft and 96.6 ft for Wetlands 21-15_Mid and 21-11, respectively, with an outflow elevation of 98.5 ft, and a top of bank elevation of 100.5 ft. The downgradient hydraulic control point (boundary condition) was placed in a downstream wetland (Wetlands 21-15_Low & 21-1, see Section 4.6.3 above). The simulated wetland water table elevation data at Wetlands 21-15_Low & 21-1, with an average elevation of 97.1 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A14-1 and basic input parameters are summarized in Table A14, the "D&IC" worksheet of the accompanying Wetland HP model (Appendix C - Hydroperiod-Model-ONA-RAI_Post-Wetlands#21-15_Mid_JS_20140805.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A14-2), a frequency (stage-duration) curve (Figure A14-3), a wetland outflow (Figure A14-4), and an upland hydrograph (Figure A14-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 98.0 ft (ranging between 94.6 ft to 98.5 ft), a predicted water depth between 0 to 1.0 ft occurring at a 80.3 percent frequency, or equivalent to 9.6 months on an annualized basis for Wetland 21-15_Mid, and a predicted water depth

between 0 to 1.9 foot occurring at a 88.4 percent frequency, or equivalent to 10.6 months on an annualized basis for Wetland 21-11. The simulated results also indicate a median upland water table elevation of 100.0 ft (ranging between 96.5 ft to 103.0 ft). These data are also summarized in Table 4-4, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.6.5 WETLANDS 21-15_UP & 21-15_MYRSINE

The design of this wetland system is intended to function as a mixed wetland hardwoods system (FLUCFCS 617) for Wetland 21-15_Up, with a general design guidance water depth of approximately 0.5 to 1.0 foot and a hydroperiod ranging between 3 to 9 months, and a mixed wetland hardwoods - myrsine dominated system (FLUCFCS 617) for Wetland 21-15_Myrsine, with a general design guidance water depth of approximately ≤0.5 foot and a hydroperiod ranging between 2 to 8 months. The total area of the wetland system is approximately 19.8 acres and consists of two components: Wetland 21-15_Up, the primary wetland depression; and Wetland 21-15_Myrsine, the secondary wetland depression. Wetland 21-15_Up covers 13.0 acres or 65.7 percent of the total wetland area, and Wetland 21-15_Myrsine covers 6.8 acres or 34.3 percent of the total wetland area. The design of this wetland system includes a contributing upland area of approximately 44.5 acres.

The bottom elevations are 98.9 ft and 99.6 ft for Wetlands 21-15_Up and 21-15_Myrsine, respectively, with an outflow elevation of 99.7 ft, and a top of bank elevation of 102.0 ft. The downgradient hydraulic control point was placed in a downstream wetland (Wetlands 21-15_Mid & 21-11, see Section 4.6.4 below). The simulated wetland water table elevation data at Wetlands 21-15_Mid & 21-11, with an average elevation of 97.8 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A15-1 and basic input parameters are summarized in Table A15, the "D&IC" worksheet of the accompanying Wetland HP model (Appendix C - Hydroperiod-Model-ONA-RAI_Post-Wetlands#21-15_Up_JS_20150407.xlsx).

The modeling results for this wetland system provide wetland hydrographs (Figure A15-2), frequency (stage-duration) curves (Figure A15-3), outflow of the primary wetland (Figure A15-4), and an upland hydrograph (Figure A15-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 99.3 ft (ranging between 95.9 ft to 99.7 ft), a predicted water depth between 0 to 0.8 foot occurring at a 77.6 percent frequency, or equivalent 9.3 months on an annualized basis for Wetland 21-15_Up, and a predicted water depth between 0 to 0.1 foot occurring at a 20.2 percent frequency, or equivalent 2.4 months on an annualized basis for Wetland 21-15_Myrsine. The simulated results also indicate a median upland water table elevation of 106.1 ft (ranging between 102.1 ft to 108.5 ft). These data are also summarized in Table 4-4, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.6.6 WETLANDS 22-3 & 21-15

The design of this wetland system is intended to function as a freshwater marsh wetland system (FLUCFCS 641) for Wetland 22-3, with a general design guidance water depth of approximately 1.0 to 1.5 ft and a hydroperiod ranging between 7 to 12 months, and a mixed wetland hardwoods system (FLUCFCS 617) for Wetland 21-15, with a design water depth of approximately 0.5 to 1.0 foot and a hydroperiod ranging between 3 to 9 months. The total area of the wetland system is approximately 39.1 acres and consists of two components: Wetland 22-3, the primary wetland depression; and Wetland 21-15, the secondary mixed wetland hardwoods near the side slope. Wetland 22-3 covers 25.2 acres or 64.5 percent of the total wetland area and Wetland 21-15 covers 13.9 acres or 35.5 percent of the total wetland area. The design of this wetland system includes a contributing upland area of approximately 45.9 acres.

The bottom elevations of the wetlands are 101.4 ft and 102.0 ft for Wetlands 22-3 and 21-15, respectively, with an outflow elevation of 103.0 ft, and a top of bank elevation of 105.0 ft. The downgradient hydraulic control point (boundary condition) was placed in a downstream wetland (Wetlands 21-15_Mid & 21-11, see Section 4.6.4 above). The simulated wetland water table elevation data at Wetlands 21-15_Mid & 21-11, with an

average elevation of 97.8 ft, was used to define the time-varying boundary conditions. The model diagram is illustrated in Figure A16-1 and basic input parameters are summarized in Table A16, the "D&IC" worksheet of the accompanying Wetland HP model
(Appendix C - Hydroperiod-Model-ONA-RAI_Post-Wetlands#22-3_JS_20140805.xlsx).

The modeling results for this wetland system provide a wetland hydrograph (Figure A16-2), a frequency (stage-duration) curve (Figure A16-3), a wetland outflow (Figure A16-4), and an upland hydrograph (Figure A16-5). For the simulated conditions and time period, the modeling results for this wetland system indicate a median wetland water table elevation of 102.3 ft (ranging between 99.1 ft to 103.0 ft), a predicted water depth between 0 to 1.6 ft occurring at a 88.0 percent frequency, or equivalent to 10.6 months on an annualized basis for Wetland 22-3, and a predicted water depth between 0 to 1.0 ft occurring at a 66.3 percent frequency, or equivalent to 8.0 months on an annualized basis for Wetland 21-15. The simulated results also indicate a median upland water table elevation of 103.2 ft (ranging between 100.1 ft to 105.2 ft). These data are also summarized in Table 4-4, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.6.7 WETLAND 22-4

The design of Wetland 22-4 is intended to function as a freshwater marsh wetland system (FLUCFCS 641), with a general design guidance seasonal high water depth of approximately 1.0 to 1.5 ft and a hydroperiod ranging between 7 to 12 months. The design of this wetland includes a contributing upland area of approximately 25.7 acres with the wetland itself comprising 4.9 acres.

The bottom elevation of the wetland is 104.5 ft, with an outflow elevation of 106.2 ft, and a top of bank elevation of 108.0 ft. The downgradient hydraulic control point was placed in a downstream wetland (Wetlands 22-3 & 21-15, see Section 4.6.6 above). The simulated wetland water table elevation data at the downgradient cell of Wetlands 22-3 & 21-15, with an average elevation of 102.2 ft, was used to define the time-varying

boundary conditions. The model diagram is illustrated in Figure A17-1 and basic input parameters are summarized in Table A17, the "D&IC" worksheet of the accompanying Wetland HP model (Appendix C - Hydroperiod-Model-ONA-RAI_Post-Wetlands#22-4_JS_20140805.xlsx).

The modeling results for this wetland provide a wetland hydrograph (Figure A17-2), a frequency (stage-duration) curve (Figure A17-3), a wetland outflow (Figure A17-4), and an upland hydrograph (Figure A17-5). For the simulated conditions and time period, the modeling results for this wetland indicate a median wetland water table elevation of 105.8 ft (ranging between 102.6 ft to 106.2 ft), a predicted water depth between 0 to 1.7 foot occurring at a 92.3 percent frequency, or equivalent to 11.1 months on an annualized basis. The simulated results also indicate a median upland water table elevation of 106.7 ft (ranging between 103.4 ft to 108.0 ft). These data are also summarized in Table 4-4, and an electronic copy of the modeling results can be found in a separate directory in Appendix C.

4.7 DISCUSSION OF WETLAND MODELING RESULTS

The wetland hydroperiod modeling was conducted to address the question: Will hydroperiod depths and durations experienced in the mitigation wetlands mimic the depths and durations experienced and measured in the existing Prairie Dog system? Tables 4-2, 4-4, and 4-5 demonstrate the answer is yes.

It is important to note the differences between the ICPR model for storm event simulations, the MODFLOW model for groundwater inflow evaluation, and the hydroperiod model discussed in this section. The ICPR and MODFLOW models focus on assessing whether surface water and sub-surface groundwater flows into the mitigation wetlands will approximate existing flow volumes. The results presented in Sections 2.5 and 3.6 demonstrate the upland topography and vegetative community, and soil conditions at the mitigation site combine to produce hydraulic and hydrogeologic conditions that mimic the existing conditions. The wetland hydroperiod model then

combines these upland topography and vegetative community, and soil conditions with wetland topography and vegetative community, and soil conditions and applies a continuous 17.5 year meteorological period of record to determine if the mitigation wetland designs and plans will result in hydroperiod depths and durations that approximate the existing Prairie Dog system conditions.

The primary objective of this modeling effort is to evaluate whether the post-reclamation hydrology of the mitigation wetlands would be suitable for the successful re-establishment of wetlands that mimic the exiting Prairie Dog wetlands at the Ona Mine, Hardee County, Florida. As a result of mining, many changes occur to the surface topography and subsurface materials. These physical changes are accounted for and represented with the modeling analyses performed and described in detail in Section 4.5.

Tables 4-2 and 4-4 provide a detailed summary of the wetland hydroperiod modeling results, for pre-mining and post-reclamation conditions, respectively. Based upon those data, Table 4-5 presents a further summary and direct comparison of wetland depths and predicted hydroperiods for a total of seven pairs of wetlands. These selected wetlands cover three representative wetlands types of the study area:

- Mixed wetland hardwoods - FLUCFCS 617;
- Inland ponds and sloughs - FLUCFCS 616; and
- Freshwater marsh - FLUCFCS 641.

Review of Table 4-5 indicates that the design wetland depths and predicted hydroperiods (either overall hydroperiod or hydroperiod for a given water depth range) of the mitigation wetlands are analogous to the wetland depths and hydroperiods simulated at the existing Prairie Dog wetlands. Therefore, the wetland hydroperiod model results support the conclusion that the proposed wetland mitigation designs will provide suitable hydration for the successful re-establishment of the existing Prairie Dog wetland system.

Furthermore, review of the model input files and data presented in the attachments illustrates Mosaic will have a number of design tools to work with to achieve final construction designs and plans prior to actual construction of the mitigation wetlands. Examples include adjusting wetland bottom and outflow elevations as well as aligning upland and/or wetland features with the presence or absence of overburden spoil or sand tailings in sub-surface lithological zones. This flexibility significantly improves the likelihood that post-reclamation hydroperiod depths and durations will approximate the existing Prairie Dog system conditions.

5.0 REFERENCES

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TABLES

Table 2-1. Curve Number Calculations - Pre-Mining Conditions

Basin_Name	Land_Use	Soil_Type	CN	Area (sq. ft.)	Area*CN	Weighted CN
C2093	320	B/D	73.5	137945.453	10138990.8	
C2093	320	B/D	73.5	0.536	39.396	
C2093	320	D	77	4417.698	340162.746	
C2093	320	D	77	530.445	40844.265	
C2093	641	B/D	98	5873.239	575577.422	
C2093	641	D	98	840.969	82414.962	
C2093				**149608.34**	**11178029.59**	**74.72**
C2097	210	B/D	81.5	205469.288	16745746.97	
C2097	210	B/D	81.5	1506.998	122820.337	
C2097	210	D	84	2193.847	184283.148	
C2097	210	D	84	5514.602	463226.568	
C2097	210	D	84	57.228	4807.152	
C2097	320	B/D	73.5	409740.296	30115911.76	
C2097	320	B/D	73.5	96067.377	7060952.21	
C2097	320	D	77	6910.76	532128.52	
C2097	320	D	77	57523.246	4429289.942	
C2097	330	B/D	81.5	39574.59	3225329.085	
C2097	330	D	84	72856.134	6119915.256	
C2097	330	D	84	25512.981	2143090.404	
C2097	615	B/D	98	29634.978	2904227.844	
C2097	615	D	98	481554.235	47192315.03	
C2097	615	D	98	140608.96	13779678.08	
C2097	615	D	98	51718.484	5068411.432	
C2097	621	D	98	12247.083	1200214.134	
C2097	621	D	98	273625.969	26815344.96	
C2097				**1912317.056**	**168107692.83**	**87.91**
C512	320	B/D	73.5	3775858.719	277525615.8	
C512	320	D	77	3013.386	232030.722	
C512	320	D	77	113048.787	8704756.599	
C512	320	D	77	17829.218	1372849.786	
C512	320	D	77	5652.878	435271.606	
C512	330	B/D	81.5	127968.115	10429401.37	
C512	330	D	84	76855.861	6455892.324	
C512	615	B/D	98	43336.159	4246943.582	
C512	615	D	98	210172.703	20596924.89	
C512	641	B/D	98	13602.754	1333069.892	
C512	641	B/D	98	349411.47	34242324.06	
C512	641	D	98	395646.845	38773390.81	
C512				**5132396.895**	**404348471.49**	**78.78**
C526	320	B/D	73.5	763015.617	56081647.85	
C526	320	B/D	73.5	0.048	3.528	
C526	320	D	77	3826.395	294632.415	
C526	320	D	77	70031.271	5392407.867	
C526	641	B/D	98	45440.097	4453129.506	
C526	641	B/D	98	9689.765	949596.97	
C526	641	D	98	110459.888	10825069.02	

Table 2-1. Curve Number Calculations - Pre-Mining Conditions

Basin_Name	Land_Use	Soil_Type	CN	Area (sq. ft.)	Area*CN	Weighted CN
C526	810	B/D	92	1.476	135.792	
C526				**1002464.557**	**77996622.95**	**77.80**
C529	210	B/D	81.5	5156.635	420265.7525	
C529	320	B/D	73.5	377858.979	27772634.96	
C529	320	B/D	73.5	299194.038	21990761.79	
C529	320	D	77	106069.049	8167316.773	
C529	320	D	77	560.051	43123.927	
C529	411	B/D	84	114124.913	9586492.692	
C529	641	B/D	98	40736.41	3992168.18	
C529	641	B/D	98	14079.199	1379761.502	
C529	641	D	98	11794.359	1155847.182	
C529	641	D	98	185006.726	18130659.15	
C529	810	B/D	92	271269.017	24956749.56	
C529	810	D	93	71375.561	6637927.173	
C529				**1497224.937**	**124233708.64**	**82.98**
C538	210	B/D	81.5	1532835.894	124926125.4	
C538	210	C	79	78045.676	6165608.404	
C538	210	D	84	421857.959	35436068.56	
C538	320	B/D	73.5	101015.596	7424646.306	
C538	330	B/D	81.5	3158.182	257391.833	
C538	641	B/D	98	6622.605	649015.29	
C538	641	B/D	98	3852.351	377530.398	
C538	641	D	98	59832.514	5863586.372	
C538	641	D	98	15286.761	1498102.578	
C538	641	D	98	29050.574	2846956.252	
C538				**2251558.112**	**185445031.35**	**82.36**
C702	210	B/D	81.5	404381.316	32957077.25	
C702	210	D	84	75945.524	6379424.016	
C702	320	B/D	73.5	609134.555	44771389.79	
C702	320	D	77	120056.382	9244341.414	
C702	641	B/D	98	7186.635	704290.23	
C702	641	D	98	615565.515	60325420.47	
C702				**1832269.927**	**154381943.18**	**84.26**
C708	320	B/D	73.5	1501867.622	110387270.2	
C708	320	B/D	73.5	0.048	3.528	
C708	320	D	77	152243.344	11722737.49	
C708	615	B/D	98	75222.448	7371799.904	
C708	615	D	98	208056.251	20389512.6	
C708	641	B/D	98	352.413	34536.474	
C708	641	D	98	380258.929	37265375.04	
C708	643	B/D	98	26185.485	2566177.53	
C708				**2344186.54**	**189737412.78**	**80.94**
C720_Low	210	B/D	81.5	69241.522	5643184.043	
C720_Low	210	D	84	2750.46	231038.64	
C720_Low	320	B/D	73.5	3726706.115	273912899.5	
C720_Low	320	B/D	73.5	180634.805	13276658.17	

Table 2-1. Curve Number Calculations - Pre-Mining Conditions

Basin_Name	Land_Use	Soil_Type	CN	Area (sq. ft.)	Area*CN	Weighted CN
C720_Low	320	B/D	73.5	0.536	39.396	
C720_Low	320	D	77	155295.288	11957737.18	
C720_Low	320	D	77	86326.675	6647153.975	
C720_Low	320	D	77	9463.124	728660.548	
C720_Low	330	B/D	81.5	110829.614	9032613.541	
C720_Low	330	B/D	81.5	28058.269	2286748.924	
C720_Low	330	D	84	84381.162	7088017.608	
C720_Low	615	B/D	98	112432.558	11018390.68	
C720_Low	615	B/D	98	1291745.277	126591037.1	
C720_Low	615	D	98	1011969.84	99173044.32	
C720_Low	615	D	98	48128.307	4716574.086	
C720_Low	641	B/D	98	9609.131	941694.838	
C720_Low	641	B/D	98	13148.794	1288581.812	
C720_Low	641	D	98	8467.394	829804.612	
C720_Low	641	D	98	4241.307	415648.086	
C720_Low	641	D	98	174582.67	17109101.66	
C720_Low				**7128012.848**	**592888628.71**	**83.18**
C720_Up	210	B/D	81.5	49145.186	4005332.659	
C720_Up	210	B/D	81.5	952.93	77663.795	
C720_Up	210	C	79	286050.788	22598012.25	
C720_Up	210	D	84	15294.96	1284776.64	
C720_Up	320	B/D	73.5	300961.864	22120697	
C720_Up	320	B/D	73.5	49113.865	3609869.078	
C720_Up	320	B/D	73.5	7911.353	581484.4455	
C720_Up	320	C	70	17294.75	1210632.5	
C720_Up	320	C	70	1523.87	106670.9	
C720_Up	320	D	77	128397.01	9886569.77	
C720_Up	330	C	79	824.882	65165.678	
C720_Up	330	D	84	145326.923	12207461.53	
C720_Up	615	B/D	98	63391.799	6212396.302	
C720_Up	615	B/D	98	962418.809	94317043.28	
C720_Up	615	C	98	7648.383	749541.534	
C720_Up	615	D	98	434.356	42566.888	
C720_Up				**2036691.728**	**179075884.26**	**87.92**
X641	210	B/D	81.5	70477.874	5743946.731	
X641	210	C	79	66117.893	5223313.547	
X641	320	B/D	73.5	215660.808	15851069.39	
X641	320	C	70	13745.54	962187.8	
X641	320	D	77	66688.106	5134984.162	
X641	641	B/D	98	9187.508	900375.784	
X641	641	D	98	121938.772	11949999.66	
X641				**563816.501**	**45765877.07**	**81.17**

Table 2-2. Time of Concentration Calculations - Pre-Mining Conditions

Basin Name	Tc Flow Type	Upstream Elevation (ft-NGVD)	Downstream Elevation (ft-NGVD)	Length (ft)	Slope	Time (min)
C2093	Sheet	101.4	100.3	100	0.011	15.82
C2093	Open Channel	100.3	97.4	648.54	0.004472	8.67
C2093						**24.49**
C2097	Sheet	97.3	97	100	0.003	26.60
C2097	Shallow Concentrated	97	92.3	1052.23	0.004467	16.27
C2097						**42.87**
C512	Sheet	102.8	102.5	100	0.003	26.60
C512	Shallow Concentrated	102.5	101.5	743.66	0.001345	20.95
C512						**47.55**
C526	Sheet	102	101.5	100	0.005	21.69
C526	Shallow Concentrated	101.5	99.6	874.23	0.002173	19.38
C526						**41.07**
C529	Sheet	101.8	101.3	100	0.005	21.69
C529	Shallow Concentrated	101.3	99	769.03	0.002991	14.53
C529						**36.22**
C538	Sheet	105	104.6	100	0.004	23.71
C538	Shallow Concentrated	104.6	101	594.49	0.006056	7.89
C538	Open Channel	100	96	607.53	0.006584	6.69
C538						**38.29**
C702	Sheet	99.2	99	100	0.002	31.29
C702	Shallow Concentrated	99	97	658.52	0.003037	12.35
C702						**43.64**
C708	Sheet	101.3	100.8	100	0.005	21.69
C708	Shallow Concentrated	100.8	99	837.75	0.002149	18.67
C708						**40.36**
C720_Low	Sheet	101.5	101	100	0.005	21.69
C720_Low	Shallow Concentrated	101	95	1890.81	0.003173	34.68
C720_Low						**56.37**
C720_Up	Sheet	102	101.4	100	0.006	20.16
C720_Up	Shallow Concentrated	101.4	97.4	542.19	0.007377	6.52
C720_Up						**26.68**
X641	Sheet	104.1	96.7	100	0.074	7.38
X641	Shallow Concentrated	104.5	104.1	885.29	0.000452	43.02
X641						**50.40**

Table 2-3. Summary of Hydrologic Parameters - Pre-Mining Conditions

Basin Name	Node Name	Area (acre)	Weighted CN	Tc (min)	Peaking Factor	DCIA (%)
C2093	NC2093	3.43	74.72	24.49	256	0
C2097	NC2097	43.94	87.91	42.87	256	0
C512	NC512	117.82	78.78	47.55	256	0
C526	NC526	23.01	77.8	41.07	256	0
C529	NC529	34.37	82.98	36.22	256	0
C538	NC538	51.69	82.36	38.29	256	0
C702	NC702	42.06	84.26	43.64	256	0
C708	NC708	53.82	80.94	40.36	256	0
C720_Mid	NC720_Mid	163.64	83.18	56.37	256	0
C720_Up	NC720_Up	46.76	87.92	26.68	256	0
X641	NX641	12.94	81.17	50.4	256	0

Table 2-4. Curve Number Calculations - Post-Reclamation Conditions

Basin_Name	Land_Use	Soil_Type	CN	Area (sq. ft.)	Area*CN	Weighted CN
B16E-2	213	C	79	298803.4003	23605468.62	
B16E-2	411	C	82	424816.2086	34834929.1	
B16E-2	411	C	82	834644.4274	68440843.05	
B16E-2	434	C	73	786365.9777	57404716.37	
B16E-2	641	D	98	484100.1088	47441810.67	
B16E-2				**2828730.123**	**231727767.81**	**81.92**
B21-10	411	C	82	1004709.42	82386172.43	
B21-10	411	C	82	12559.4342	1029873.604	
B21-10	617	D	98	193774.2356	18989875.08	
B21-10	641	D	98	469805.4106	46040930.24	
B21-10				**1680848.5**	**148446851.37**	**88.32**
B21-15_Low	411	C	82	407277.5256	33396757.1	
B21-15_Low	411	C	82	82097.44061	6731990.13	
B21-15_Low	427	C	73	47782.77239	3488142.384	
B21-15_Low	427	C	73	78874.98994	5757874.265	
B21-15_Low	434	C	73	638137.0352	46584003.57	
B21-15_Low	616	D	98	665431.7104	65212307.62	
B21-15_Low	617	D	98	450696.7356	44168280.09	
B21-15_Low				**2370298.21**	**205339355.15**	**86.63**
B21-15_Mid	411	C	82	9226.453112	756569.1552	
B21-15_Mid	411	C	82	823294.2202	67510126.06	
B21-15_Mid	411	C	82	576.40584	47265.27888	
B21-15_Mid	411	C	82	585530.033	48013462.7	
B21-15_Mid	411	C	82	394165.0502	32321534.12	
B21-15_Mid	425	C	73	14083.34666	1028084.306	
B21-15_Mid	425	C	73	156758.593	11443377.29	
B21-15_Mid	427	C	73	238713.8159	17426108.56	
B21-15_Mid	427	C	73	83348.81192	6084463.27	
B21-15_Mid	434	C	73	1434114.887	104690386.8	
B21-15_Mid	617	D	98	3343573.501	327670203.1	
B21-15_Mid	641	D	98	279518.6734	27392829.99	
B21-15_Mid	641	D	98	19318.01116	1893165.093	
B21-15_Mid				**7382221.802**	**646277575.66**	**87.55**
B21-15_Up	411	C	82	564001.7411	46248142.77	
B21-15_Up	411	C	82	63327.13258	5192824.871	
B21-15_Up	411	C	82	273209.3915	22403170.1	
B21-15_Up	421	B	60	287903.1037	17274186.22	
B21-15_Up	425	C	73	220973.5817	16131071.47	
B21-15_Up	434	C	73	528747.7564	38598586.22	
B21-15_Up	617	D	98	863110.9856	84584876.59	
B21-15_Up				**2801273.693**	**230432858.23**	**82.26**
B22-3	213	C	79	28131.34435	2222376.204	
B22-3	411	C	82	143350.5716	11754746.87	

Table 2-4. Curve Number Calculations - Post-Reclamation Conditions

Basin_Name	Land_Use	Soil_Type	CN	Area (sq. ft.)	Area*CN	Weighted CN
B22-3	411	C	82	426254.3162	34952853.93	
B22-3	434	C	73	1401085.658	102279253	
B22-3	617	D	98	604272.3382	59218689.15	
B22-3	641	D	98	1096102.123	107418008	
B22-3				**3699196.351**	**317845927.17**	**85.92**
B22-4	213	C	79	93940.20109	7421275.886	
B22-4	411	C	82	304503.5286	24969289.35	
B22-4	421	B	60	108706.6487	6522398.923	
B22-4	434	C	73	610746.2179	44584473.91	
B22-4	641	D	98	212358.2763	20811111.08	
B22-4				**1330254.873**	**104308549.14**	**78.41**

Table 2-5. Time of Concentration Calculations - Post-Reclamation Conditions

Basin Name	Tc Flow Type	Upstream Elevation (ft-NGVD)	Downstream Elevation (ft-NGVD)	Length (ft)	Slope	Time (min)
B16E-2	Overland	110.5	110.3	100	0.002	31.29
B16E-2	Shallow Concentrated	110.3	101	1720.01	0.005407	24.17
B16E-2						**55.46**
B21-10	Overland	106.8	106	100	0.008	17.97
B21-10	Shallow Concentrated	106	101	457.71	0.010924	4.52
B21-10						**22.49**
B21-15_Low	Overland	104.6	104.5	100	0.001	41.29
B21-15_Low	Shallow Concentrated	104.5	99	1007.5	0.005459	14.09
B21-15_Low						**55.38**
B21-15_Mid	Overland	108.7	108	100	0.007	18.96
B21-15_Mid	Shallow Concentrated	108	99	1035.51	0.008691	11.48
B21-15_Mid						**30.44**
B21-15_Up	Overland	113.5	113.2	100	0.003	26.60
B21-15_Up	Shallow Concentrated	109	100	225.18	0.039969	1.16
B21-15_Up	Shallow Concentrated	113.2	109	1898.02	0.002213	41.69
B21-15_Up						**69.45**
B22-3	Overland	108.5	108.1	100	0.004	23.71
B22-3	Shallow Concentrated	108.1	103	428.95	0.011889	4.06
B22-3						**27.77**
B22-4	Overland	113.5	113.2	100	0.003	26.60
B22-4	Shallow Concentrated	113.2	105	2039.7	0.00402	33.24
B22-4						**59.84**

Table 2-6. Summary of Hydrologic Parameters - Post-Reclamation Conditions

Basin Name	Node Name	Area (acre)	Weighted CN	Tc (min)	Peaking Factor	DCIA (%)
B16E-2	N16E-2	64.94	81.92	55.46	256	0
B21-10	N21-10	38.59	88.32	22.49	256	0
B21-15_Low	N21-15_Low	54.41	86.63	55.38	256	0
B21-15_Mid	N21-15_Mid	169.47	87.55	30.44	256	0
B21-15_Up	N21-15_Up	64.31	82.26	69.45	256	0
B22-3	N22-3	84.92	85.92	27.77	256	0
B22-4	N22-4	30.54	78.41	59.84	256	0

Table 2-7. Summary of ICPR Node Results at Hour 240 - Pre-Mining Conditions

Storm Events	Node Name	Time (hour)	Stage (ft-NGVD)	Surface Area (sq. ft.)	Total Volume In (ac-ft)	Total Volume Out (ac-ft)
Nov_1997	Boundary	240	92.2	142145.3	261.8	0.0
Nov_1997	Boundary2	240	93.2	0.0	37.2	0.0
Nov_1997	NC2093	240	97.9	12040.9	55.6	55.6
Nov_1997	NC2097	240	92.7	717587.8	264.2	261.8
Nov_1997	NC512	240	97.9	976422.1	56.4	54.1
Nov_1997	NC526	240	98.5	75966.9	11.3	11.4
Nov_1997	NC529	240	98.6	327143.2	17.9	17.9
Nov_1997	NC538	240	95.7	349913.5	29.7	29.7
Nov_1997	NC702	240	96.6	340453.8	39.8	39.1
Nov_1997	NC708	240	96.0	611829.5	40.2	40.1
Nov_1997	NC720_Mid	240	93.0	1979419.0	240.8	239.2
Nov_1997	NC720_Up	240	94.0	852788.2	26.6	26.5
Nov_1997	NX641	240	97.8	171396.0	6.5	6.5
Sep_2008	Boundary	240	92.2	141979.4	41.4	0.0
Sep_2008	Boundary2	240	93.2	0.0	2.1	0.0
Sep_2008	NC2093	240	97.8	11725.6	6.7	6.7
Sep_2008	NC2097	240	92.6	696435.3	42.6	41.4
Sep_2008	NC512	240	97.8	948264.2	7.4	6.6
Sep_2008	NC526	240	98.5	75956.6	1.4	1.4
Sep_2008	NC529	240	98.6	327120.6	2.8	2.8
Sep_2008	NC538	240	95.7	349897.1	4.1	4.1
Sep_2008	NC702	240	96.6	325566.0	6.5	5.9
Sep_2008	NC708	240	96.0	611584.0	9.0	8.9
Sep_2008	NC720_Mid	240	93.0	1976157.0	39.0	37.9
Sep_2008	NC720_Up	240	94.0	852681.0	5.0	4.9
Sep_2008	NX641	240	97.8	171399.3	0.9	0.9
1Inch24Hr	Boundary	240	92.2	141862.0	4.7	0.0
1Inch24Hr	Boundary2	240	93.2	0.0	0.0	0.0
1Inch24Hr	NC2093	240	97.8	10522.1	0.5	0.5
1Inch24Hr	NC2097	240	92.5	676156.7	5.1	4.7
1Inch24Hr	NC512	240	97.8	932496.0	0.7	0.5
1Inch24Hr	NC526	240	98.5	75955.4	0.1	0.1
1Inch24Hr	NC529	240	98.6	327043.7	0.4	0.4
1Inch24Hr	NC538	240	95.7	349887.8	0.5	0.5
1Inch24Hr	NC702	240	96.6	261535.7	0.9	0.6
1Inch24Hr	NC708	240	96.0	610742.0	1.1	1.1
1Inch24Hr	NC720_Mid	240	93.0	1969904.0	5.0	4.2
1Inch24Hr	NC720_Up	240	94.0	852698.6	1.0	0.9
1Inch24Hr	NX641	240	97.8	171397.2	0.1	0.1

Table 2-8. Summary of ICPR Node Results at Hour 240 - Post-Reclamation Conditions

Storm Events	Node Name	Time (hour)	Stage (ft-NGVD)	Surface Area (sq. ft.)	Total Volume In (ac-ft)	Total Volume Out (ac-ft)
Nov_1997	Boundary	240	96.4	68511.8	270.3	0.0
Nov_1997	N16E-2	240	100.8	490668.2	33.1	33.2
Nov_1997	N21-10	240	101.0	500492.8	22.1	22.1
Nov_1997	N21-15_Low	240	98.1	1065938.0	272.0	270.3
Nov_1997	N21-15_Mid	240	98.5	3290974.0	242.8	241.7
Nov_1997	N21-15_Up	240	99.7	828289.5	33.0	32.9
Nov_1997	N22-3	240	103.1	1750346.0	61.2	58.7
Nov_1997	N22-4	240	106.2	347368.3	14.5	14.5
Sep_2008	Boundary	240	96.4	68466.3	44.2	0.0
Sep_2008	N16E-2	240	100.8	464441.3	5.0	4.9
Sep_2008	N21-10	240	101.0	489437.0	4.2	4.2
Sep_2008	N21-15_Low	240	98.0	1053324.0	45.1	44.2
Sep_2008	N21-15_Mid	240	98.5	3183220.0	40.3	39.6
Sep_2008	N21-15_Up	240	99.7	828282.3	5.0	5.0
Sep_2008	N22-3	240	103.0	1740924.0	10.1	8.4
Sep_2008	N22-4	240	106.2	347364.6	1.9	1.9
1Inch24Hr	Boundary	240	96.4	3796.8	6.8	0.0
1Inch24Hr	N16E-2	240	100.8	464289.3	0.6	0.6
1Inch24Hr	N21-10	240	101.0	487914.2	0.8	0.8
1Inch24Hr	N21-15_Low	240	98.0	1020977.0	7.1	6.8
1Inch24Hr	N21-15_Mid	240	98.5	3181210.0	6.5	6.1
1Inch24Hr	N21-15_Up	240	99.7	828284.5	0.6	0.6
1Inch24Hr	N22-3	240	103.0	1726814.0	1.5	1.1
1Inch24Hr	N22-4	240	106.2	347364.8	0.2	0.2

Table 2-9. Comparison of ICPR Modeling Results at Prairie Dog Wetlands - Pre-Mining vs. Post-Reclamation

Storm Event	Rainfall Depth (in)	Description	Node Name	Total Volume In (ac-ft)	Total Volume Out (ac-ft)	Node Name	Total Volume In (ac-ft)	Total Volume Out (ac-ft)
Nov_1997	8.3	Pre-Mining	NC720_Mid	240.8	239.2	NC2097	264.2	261.8
Nov_1997	8.3	Post-Reclamation	N21-15_Mid	242.8	241.7	N21-15_Low	272	270.3
		Diff. (Post-Pre)		**2**	**2.5**		**7.8**	**8.5**
		Diff. (%)		**0.8%**	**1.0%**		**3.0%**	**3.2%**
Sep_2008	2.4	Pre-Mining	NC720_Mid	39.0	37.9	NC2097	42.6	41.4
Sep_2008	2.4	Post-Reclamation	N21-15_Mid	40.3	39.6	N21-15_Low	45.1	44.2
		Diff. (Post-Pre)		**1.3**	**1.7**		**2.5**	**2.8**
		Diff. (%)		**3.3%**	**4.5%**		**5.9%**	**6.8%**
1 inch/24-Hr	1.0	Pre-Mining	NC720_Mid	5.0	4.2	NC2097	5.1	4.7
1 inch/24-Hr	1.0	Post-Reclamation	N21-15_Mid	6.5	6.1	N21-15_Low	7.1	6.8
		Diff. (Post-Pre)		**1.5**	**1.9**		**2**	**2.1**
		Diff. (%)		**30.0%**	**45.2%**		**39.2%**	**44.7%**

Source: ECT, 2014

Table 3-1. Comparison of MODFLOW Modeling Results at Prairie Dog Wetlands - Pre-Mining vs. Post-Reclamation

Wetland Name	Transect Name	Description	Aquifer Discharge to Wetland		Diff. (%)	Comments
			ft^3/day per LF	cfs per LF		
C720_Up	C720_Up_1	Pre-Mining	0.47	5.47E-06	100%	Baseline
21-15_Up	21-15_Up_1	Post-Reclamation	0.47	5.46E-06	99.9%	Discharge/seepage decreased slightly
C720_Up	C720_Up_2	Pre-Mining	0.22	2.57E-06	100%	Baseline
21-15_Up	21-15_Up_2	Post-Reclamation	0.23	2.66E-06	103.6%	Discharge/seepage increased slightly
C720_Mid	C720_Mid	Pre-Mining	0.16	1.81E-06	100%	Baseline
21-15_Mid	21-15_Mid	Post-Reclamation	0.17	1.92E-06	105.9%	Discharge/seepage increased slightly
C720_Low	C720_Low	Pre-Mining	0.11	1.24E-06	100%	Baseline
21-15_Low	21-15_Low	Post-Reclamation	0.11	1.26E-06	101.3%	Discharge/seepage increased slightly

Notes:
1. Average hydraulic conductivity of the overburden material in the vicinity (Kob) = 2.0 ft/day
2. Average hydraulic conductivity of the matrix material in the vicinity (Km) = 8.0 ft/day
3. Average hydraulic conductivity of the spoil material (Ksp) = 0.5 ft/day
4. Average hydraulic conductivity of the sand tailings material (Kst) = 30 ft/day
5. Average leakance of clay aquitard in the vicinity (L) = 0.00004 ft/day/ft
6. Average recharge rate (R) = 8 in/year

Source: ECT, 2015

Table 4-1. Estimates of Vertical Leakance and Recharge Rates - Pre-Mining Conditions

Leakage = L = K'/b' = Q_L / A / (has - hia)
or
Vert Hyd Conductivity = K' = L * b'

Data Source	Leakance L (ft/day)/ft	Confining Unit Thickness b' (ft)	Head Difference (has-hia)	Vertical Hyd. Gradient i (ft/ft)	Vertical Hyd. Conductivity K' (ft/day)	Discharge per Unit Area Q (ft3/day)	Velocity V (ft/day)	Velocity V (in/yr)
ESI, 2007	3.5E-05	70	37	0.53	2.5E-03	0.00130	0.00130	5.7
	3.5E-05	70	49	0.70	2.5E-03	0.00172	0.00172	7.5
	4.1E-05	70	37	0.53	2.9E-03	0.00152	0.00152	6.6
	4.1E-05	70	49	0.70	2.9E-03	0.00201	0.00201	8.8
							Average:	**7.2**

	Vertical Hyd. Conductivity K' (ft/day)	Confining Unit Thickness b' (ft)	Head Difference (has-hia)	Vertical Hyd. Gradient i (ft/ft)	Leakance L (ft/day)/ft	Discharge per Unit Area Q (ft3/day)	Velocity V (ft/day)	Velocity V (in/yr)
	2.7E-03	70	37	0.53	3.86E-05	0.00143	0.00143	6.3
	2.7E-03	70	49	0.70	3.86E-05	0.00189	0.00189	8.3
							Average:	**7.3**

Source: ECT, 2014

HYDROLOGIC EVALUATION OF WETLAND MITIGATION DESIGNS
PRAIRIE DOG WETLANDS
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Table 4 2. Summary of Wetland Hydroperiod Modeling Results at Prairie Dog Wetlands Pre Mining Conditions

Wetland Name	Wetland FLUCFCS	Wetland Type	Design Seasonal High Water Depth (feet)	Design Hydroperiod (months)	Upland Area (acres)	Wetland Area (acres)	Upland to Wetland Ratio (acres/acres)	Wetland Design Elevations			Wetland Depth (feet)	Annual Ave. Upland ET [4] (in/year)	Annual Ave. Wetland ET [4] (in/year)	Predicted Wetland Water Elevations (ft NGVD)			Predicted Hydroperiod in days when Water Depth Range is					Predicted Seasonal Range Water Depth (feet)	Predicted Frequency [5 6] %	Predicted Hydro period [5 6] (months)	Wetland Outer Edge Elevation (ft, NGVD)	Predicted Seepage Frequency at outer %	Predicted Hydro period (months)	Predicted Frequency Wet (WL <0.5' bls) %	Predicted Upland Water Elevations (ft NGVD)		
								Top of Bank [1]	Outflow [2]	Bottom				median	min	max	Below 0.0 feet	0.0 0.5 feet	0.5 1.0 feet	1.0 1.5 feet	Above 1.5 feet									median	min	max
Attachment 1																																
C512	641	Freshwater Marsh	0.75 - 2.0	7 to 12	92.8	28.5	3.3	100.0	97.8	96.2	1.6	32.2	50.4	97.3	93.5	97.8	43	64	60	126	72	0 - 1.6	88.3%	10.6	98.2	0.0%	0.0	19.8%	98.9	95.0	100.5
C510	630	Wetland Forested Mixed	0.5 - 1.0	3 to 9						97.0	0.8						141	83	141	0	0	0 - 0.8	61.3%	7.4							
C511	630	Wetland Forested Mixed	0.5 - 1.0	3 to 9						97.0	0.8						141	83	141	0	0	0 - 0.8	61.3%	7.4							
C513	647	Shrub Marsh	0.5 - 1.5	7 to 12						96.5	1.3						82	59	83	141	0	0 - 1.3	77.5%	9.3							
C514	647	Shrub Marsh	0.5 - 1.5	7 to 12						96.8	1.0						120	63	160	23	0	0 - 1.0	67.2%	8.1							
C515	630	Wetland Forested Mixed	0.5 - 1.0	3 to 9						97.2	0.6						166	126	72	0	0	0 - 0.6	54.5%	6.5							
C516	649	Unimproved Pasture	< 0.5	2 to 8						97.6	0.2						257	108	0	0	0	0 - 0.2	29.7%	3.6							
C2093	617	Mixed Wetland Hardwoods	0.5 - 1.0	3 to 9						97.0	0.8						141	83	141	0	0	0 - 0.8	61.3%	7.4							
C2122	617	Mixed Wetland Hardwoods	0.5 - 1.0	3 to 9						97.0	0.8						141	83	141	0	0	0 - 0.8	61.3%	7.4							
Attachment 2																																
C526	643	Wet Prairie	0.5	2 to 8	19.1	3.9	4.9	100.0	98.5	98.0	0.5	30.5	43.6	98.1	94.5	98.5	161	184	21	0	0	0 - 0.5	56.0%	6.7	98.5	0.3%	0.0	56.0%	99.3	95.5	100.5
Attachment 3																																
C529	641	Freshwater Marsh	1 - 1.5	7 to 12	26.8	7.6	3.5	100.0	98.6	97.0	1.6	30.2	49.7	98.2	94.6	98.6	37	50	60	108	111	0 - 1.6	89.9%	10.8	98.5	30.3%	3.6	59.8%	98.6	95.1	100.0
C528	647	Shrub Marsh	0.5 - 1.5	7 to 12						97.3	1.3						61	56	78	169	0	0 - 1.3	83.2%	10.0							
N/A	617	Mixed Wetland Hardwoods	0.5 - 1	3 to 9						97.7	0.9						107	70	188	0	0	0 - 0.9	70.7%	8.5							
N/A	647	Shrub Marsh	0.5 - 1.5	7 to 12						97.5	1.1						87	60	108	111	0	0 - 1.1	76.2%	9.1							
Attachment 4																																
C538	641	Freshwater Marsh	1 - 1.5	7 to 12	47.1	4.6	10.3	99.5	95.7	94.5	1.2	28.6	51.0	95.7	93.2	95.7	4	23	51	287	0	0 - 1.2	98.9%	11.9	95.7	4.0%	0.5	88.5%	96.9	94.0	98.5
Attachment 5																																
C702	647	Shrub Marsh	0.5 - 1.5	7 to 12	25.5	16.6	1.5	98.0	96.5	95.2	1.3	27.5	49.3	96.2	92.8	96.5	43	61	89	172	0	0 - 1.3	88.2%	10.6	96.5	6.8%	0.8	58.6%	96.9	93.7	98.5
C703	641	Freshwater Marsh	1 - 1.5	7 to 12						95.0	1.5						39	35	77	178	35	0 - 1.5	89.3%	10.7							
Attachment 6																																
C708	641	Freshwater Marsh	1 - 1.5	7 to 12	37.7	16.1	2.3	98.0	96.0	94.8	1.2	30.0	51.5	95.8	92.2	96.0	39	56	97	173	0	0 - 1.2	89.2%	10.7	96.0	6.0%	0.7	66.2%	97.2	93.3	99.0
C707	617	Mixed Wetland Hardwoods	0.5 - 1	3 to 9						95.4	0.6						109	123	133	0	0	0 - 0.6	70.2%	8.4							
Attachment 7																																
C720_Mid	617	Mixed Wetland Hardwoods	0.5 - 1	3 to 9	113.3	50.3	2.3	97.0	93.0	92.0	1.0	30.6	52.1	92.7	89.2	93.0	54	73	210	28	0	0 - 1.0	85.1%	10.2	93.0	2.3%	0.3	65.1%	97.5	93.5	99.0
C715	641	Freshwater Marsh	1 - 1.5	7 to 12						91.3	1.7						36	13	45	115	156	0 - 1.7	90.1%	10.8							
Attachment 8																																
C720_Up	617	Mixed Wetland Hardwoods	0.5 - 1	3 to 9	23.1	23.7	1.0	97.0	94.0	93.3	0.7	19.8	51.3	93.8	90.2	94.0	81	115	169	0	0	0 - 0.7	77.9%	9.4	94.0	2.9%	0.3	66.8%	96.9	93.2	101.5
Attachment 9																																
C2097	616	Inland Ponds and Sloughs	1 - 1.5	7 to 12	28.3	15.7	1.8	100.0	92.5	90.8	1.7	29.6	52.6	92.0	88.0	92.5	40	59	54	95	117	0 - 1.7	89.1%	10.7	92.5	0.2%	0.0	49.4%	93.6	90.1	95.0
C720_Low	617	Mixed Wetland Hardwoods	0.5 - 1	3 to 9						91.5	1.0						123	61	158	23	0	0 - 1.0	66.2%	7.9							
C723	641	Freshwater Marsh	1 - 1.5	7 to 12						90.5	2.0						34	28	61	61	180	0 - 2.0	90.7%	10.9							
Attachment 10																																
X641	641	Freshwater Marsh	1 - 1.5	7 to 12	8.9	4.0	2.2	100.0	97.8	96.2	1.6	27.4	48.2	97.2	93.5	97.8	61	66	62	107	69	0 - 1.6	83.2%	10.0	97.8	1.2%	0.1	44.3%	98.1	94.5	100.0

Notes These summary data represent average conditions over an extended time period (~17.5 year simulation)
[1] Top of Bank elevation for this design application represents the downgradient elevation on the wetland that acts as a spillway/overflow elevation above any channel that would influence the volume of wetland storage before bank spillover flow would occur
[2] Outflow elevation for this design application represents the downgradient outlet elevation (stream channel or bank of depression) controlling the wetland storage and water outflow
[3] Bottom elevation for this design application represents the average bottom elevation for the center of the wetland area
The maximum reference evapotranspiration (RET) determined for these analyses was approximately 50.6 in/year
[5] For the fringe/slope wetlands, the first (top) number (e.g., 75.4% or 9.0 months) represents the cond tion at the mid-point elevation of the wetland
[6] For the fringe/slope wetlands, the second (bottom) number (e.g., 81.8% or 9.8 months) represents the condition at the bottom (toe) elevation of the wetland

Source ECT, 2014

Table 4-3. Estimates of Vertical Leakance and Recharge Rates - Post-Reclamation Conditions

Leakage = L = K'/b' = Q_L / A / (has - hia)
or
Vert Hyd Conductivity = K' = L * b'

Data Source	Leakance L (ft/day)/ft	Confining Unit Thickness b' (ft)	Head Difference (has-hia)	Vertical Hyd. Gradient i (ft/ft)	Vertical Hyd. Conductivity K' (ft/day)	Discharge per Unit Area Q (ft3/day)	Velocity V (ft/day)	Velocity V (in/yr)
ESI, 2007	3.0E-05	70	51	0.73	2.1E-03	0.00153	0.00153	6.7
	3.0E-05	70	63	0.90	2.1E-03	0.00189	0.00189	8.3
	4.3E-05	70	51	0.73	3.0E-03	0.00219	0.00219	9.6
	4.3E-05	70	63	0.90	3.0E-03	0.00271	0.00271	11.9
							Average:	**9.1**

	Vertical Hyd. Conductivity K' (ft/day)	Confining Unit Thickness b' (ft)	Head Difference (has-hia)	Vertical Hyd. Gradient i (ft/ft)	Leakance L (ft/day)/ft	Discharge per Unit Area Q (ft3/day)	Velocity V (ft/day)	Velocity V (in/yr)
	2.6E-03	70	51	0.73	3.71E-05	0.00189	0.00189	8.3
	2.6E-03	70	63	0.90	3.71E-05	0.00234	0.00234	10.2
							Average:	**9.3**

Source: ECT, 2014

HYDROLOGIC EVALUATION OF WETLAND MITIGATION DESIGNS
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Table 4 4. Summary of Wetland Hydroperiod Modeling Results at Prairie Dog Wetlands Post Reclamation Conditions

Wetland Name	Wetland FLUCFCS	Wetland Type	Design Seasonal High Water Depth	Design Hydroperiod	Upland Area	Wetland Area	Upland to Wetland Ratio	Wetland Design Elevations			Wetland Depth	Annual Ave Upland ET [4]	Annual Ave. Wetland ET [4]	Predicted Wetland Water Elevations (ft NGVD)			Predicted Hydroperiod in days when Water Depth Range is					Predicted Seasonal Range Water Depth	Predicted Frequency [5 6]	Predicted Hydro period [5 6]	Wetland Outer Edge Elevation	Predicted Seepage Frequency at outer	Predicted Hydro period	Predicted Frequency Wet (WL <0.5' bls)	Predicted Upland Water Elevations (ft NGVD)		
								Top of Bank [1]	Outflow [2]	Bottom [3]				median	min	max	Below 0.0 feet	0.0 0.5 feet	0.5 1.0 feet	1.0 1.5 feet	Above 1.5 feet								median	min	max
			(feet)	(months)	(acres)	(acres)	(acres/acres)				(feet)	(in/year)	(in/year)									(feet)	%	(months)	(ft, NGVD)	%	(months)	%			
Attachment 11																															
16E-2	641	Freshwater Marsh	1 - 1.5	7 to 12	53.8	11.1	4.8	104.0	100.9	99.6	1.3	31.7	50.3	100.8	98.1	100.9	16	33	66	250	0	0 - 1.3	95.6%	11.5	100.8	85.6%	10.3	93.9%	102.8	99.4	104.5
Attachment 12																															
21-10	641	Freshwater Marsh	1 - 1.5	7 to 12	27.8	10.8	2.6	103.0	101.0	99.5	1.5	31.6	48.9	100.1	97.0	101.0	74	91	71	118	11	0 - 1.5	79.7%	9.6	101.0	56.1%	6.7	72.1%	101.7	98.6	103.8
21-2	617	Mixed Wetland Hardwoods - Fringe/Slope	-0.5 - 0	3 to 9	23.4	4.5	5.2	102.0	101.5	101.0	0.5	31.6	48.9	101.3	98.2	101.6						-0.5 - 0	43.1% // 56.1%	5.2 // 6.7	102.0	28.8%	3.5	46.3%	101.7	98.6	103.8
Attachment 13																															
21-15_Low	617	Mixed Wetland Hardwoods	0.5 - 1	3 to 9	28.8	15.3	1.9	101.5	98.0	97.0	1.0	27.2	50.3	97.3	93.8	98.0	111	99	137	18	0	0 - 1.0	69.6%	8.3	99.0	47.0%	5.6	63.1%	99.7	96.2	102.0
21-1	616	Inland Ponds and Sloughs	1 - 1.5	7 to 12	44.1	10.3	4.3			96.1	1.9						62	24	48	93	138	0 - 1.9	83.1%	10.0							
Attachment 14																															
21-15_Mid	617	Mixed Wetland Hardwoods	0.5 - 1	3 to 9	88.9	74.2	1.2	100.5	98.5	97.5	1.0	27.3	51.3	98.0	94.6	98.5	72	104	164	26	0	0 - 1.0	80.3%	9.6	99.0	64.4%	7.7	78.4%	100.0	96.5	103.0
21-11	641	Freshwater Marsh	1 - 1.5	7 to 12	163.1	6.4	25.4			96.6	1.9						42	15	32	103	171	0 - 1.9	88.4%	10.6							
Attachment 15																															
21-15_Up	617	Mixed Wetland Hardwoods	0.5 - 1	3 to 9	44.5	13.0	3.4	102.0	99.7	98.9	0.8	30.8	51.4	99.3	95.9	99.7	82	132	151	0	0	0 - 0.8	77.6%	9.3	100.0	98.5%	11.8	99.9%	106.1	102.1	108.5
21-15_Myrsine	617	Mixed Wetland Hardwoods - Myrsine Dominated	< 0.5	2 to 8	57.5	6.8	8.4			99.6	0.1						291	74	0	0	0	0 - 0.1	20.2%	2.4							
Attachment 16																															
22-3	641	Freshwater Marsh	1 - 1.5	7 to 12	59.8	25.2	2.4	105.0	103.0	101.4	1.6	29.2	50.4	102.3	99.1	103.0	44	58	89	100	74	0 - 1.6	88.0%	10.6	103.0	47.7%	5.7	65.3%	103.2	100.1	105.2
21-15	617	Mixed Wetland Hardwoods	0.5 - 1	3 to 9	45.9	13.9	3.3			102.0	1.0						123	82	131	29	0	0 - 1.0	66.3%	8.0							
Attachment 17																															
22-4	641	Freshwater Marsh	1 - 1.5	7 to 12	25.7	4.9	5.3	108.0	106.2	104.5	1.7	32.3	50.2	105.8	102.6	106.2	28	39	65	107	125	0 - 1.7	92.3%	11.1	105.0	87.8%	10.5	94.4%	106.7	103.4	108.0

Notes These summary data represent average conditions over an extended time period (~17.5 year simulation)
[1] Top of Bank elevation for this design app ication represents the downgradient elevation on the wetland that acts as a spillway/overflow elevation above any channel that would influence the volume of wetland storage before bank spillover flow would occur
[2] Outflow elevation for this design application represents the downgradient outlet elevation (stream channel or bank of depression) controlling the wetland storage and water outflow
[3] Bottom elevation for this design application represents the average bottom elevation for the center of the wetland area
The maximum reference evapotranspiration (RET) determined for these analyses was approximately 50.6 in/year
[5] For the fringe/slope wetlands, the first (top) number (e.g., 75.4% or 9.0 months) represents the condition at the mid-point elevation of the wetland
[6] For the fringe/slope wetlands, the second (bottom) number (e.g., 81.8% or 9.8 months) represents the condition at the bottom (toe) elevation of the wetland

Source ECT, 2015

Table 4-5. Comparison of Wetland Hydroperiod Modeling Results at Prairie Dog Wetlands - Pre-Mining vs. Post-Reclamation

Wetland Name	Wetland FLUCFCS	Wetland Type	Description	Wetland Depth	Predicted Hydroperiod in days when Water Depth Range is					Predicted Hydroperiod	
				(feet)	Below 0.0 feet	0.0 - 0.5 feet	0.5 - 1.0 feet	1.0 - 1.5 feet	Above 1.5 feet	(days)	(months)
C720_Up	617	Mixed Wetland Hardwoods	Pre-Mining	0.7	81	115	169	0	0	284	9.4
21-15_Up	617	Mixed Wetland Hardwoods	Post-Reclamation	0.8	82	132	151	0	0	283	9.3
			Difference:	**0.1**	**1**	**17**	**(18)**	**0**	**0**	**(1)**	**(0.0)**
C720_Mid	617	Mixed Wetland Hardwoods	Pre-Mining	1.0	54	73	210	28	0	311	10.2
21-15_Mid	617	Mixed Wetland Hardwoods	Post-Reclamation	1.0	72	104	164	26	0	293	9.6
			Difference:	**0.0**	**17**	**31**	**(46)**	**(2)**	**0**	**(17)**	**(0.6)**
C720_Low	617	Mixed Wetland Hardwoods	Pre-Mining	1.0	123	61	158	23	0	242	7.9
21-15_Low	617	Mixed Wetland Hardwoods	Post-Reclamation	1.0	111	99	136	18	0	254	8.3
			Difference:	**0.0**	**(12)**	**38**	**(21)**	**(4)**	**0**	**12**	**0.4**
C2097	616	Inland Ponds and Sloughs	Pre-Mining	1.7	40	59	54	95	117	325	10.7
21-1	616	Inland Ponds and Sloughs	Post-Reclamation	1.9	62	25	48	93	138	303	10.0
			Difference:	**0.2**	**22**	**(35)**	**(7)**	**(2)**	**22**	**(22)**	**(0.7)**
C715	641	Freshwater Marsh	Pre-Mining	1.7	36	13	45	115	156	329	10.8
21-11	641	Freshwater Marsh	Post-Reclamation	1.9	42	15	32	103	171	323	10.6
			Difference:	**0.2**	**6**	**2**	**(12)**	**(11)**	**15**	**(6)**	**(0.2)**
C512	641	Freshwater Marsh	Pre-Mining	1.6	43	64	60	126	72	322	10.6
22-3	641	Freshwater Marsh	Post-Reclamation	1.6	44	58	89	100	74	321	10.6
			Difference:	**0.0**	**1**	**(5)**	**29**	**(27)**	**2**	**(1)**	**(0.0)**
C538	641	Freshwater Marsh	Pre-Mining	1.2	4	23	51	287	0	361	11.9
16E-2	641	Freshwater Marsh	Post-Reclamation	1.3	16	33	66	250	0	349	11.5
			Difference:	**0.1**	**12**	**10**	**16**	**(38)**	**0**	**(12)**	**(0.4)**

Source: ECT, 2014

FIGURES

C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\WHP RAI MXDs\Figure 1-1 Location of Study Area.mxd By: jsun Date: 10/17/2014

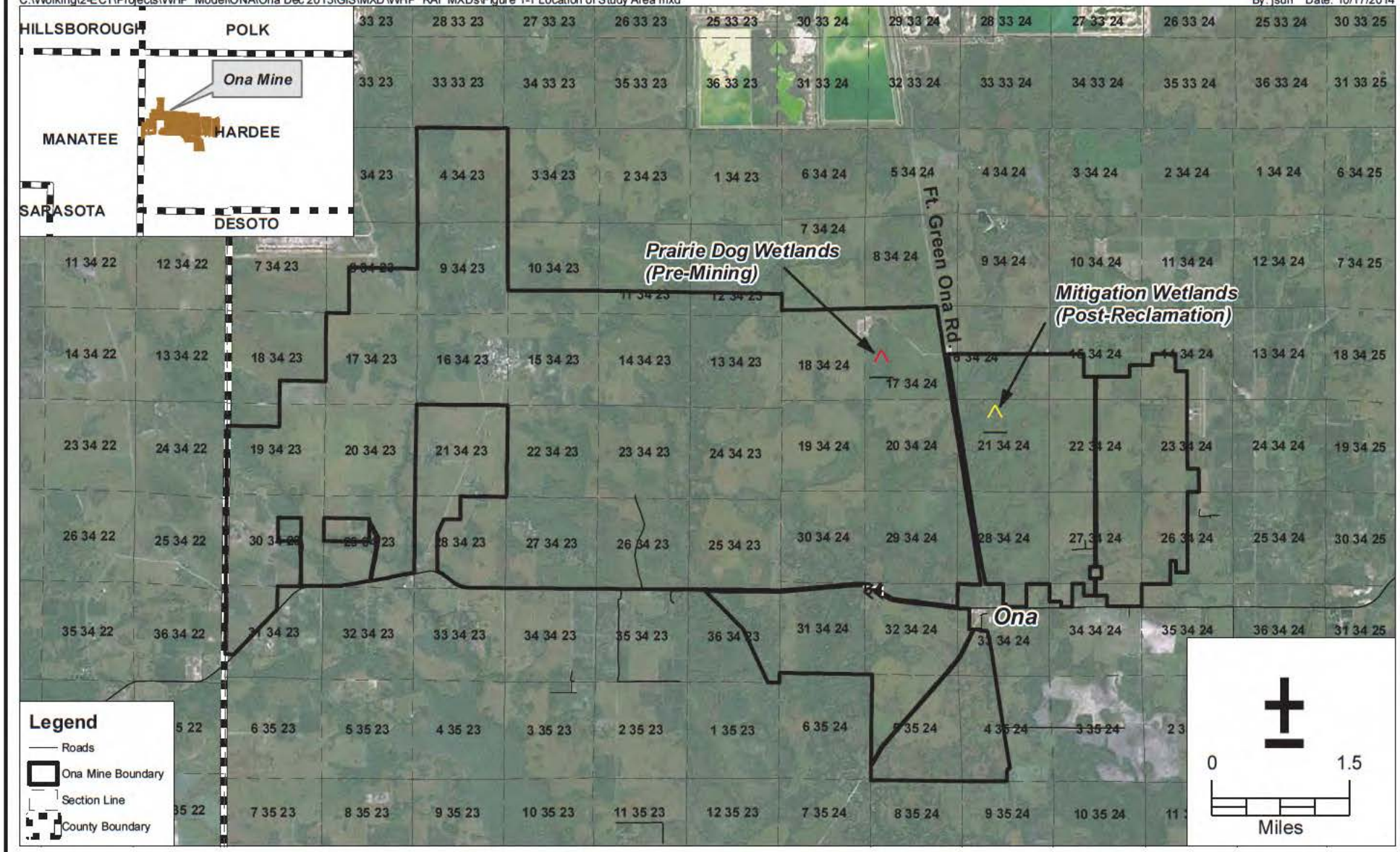


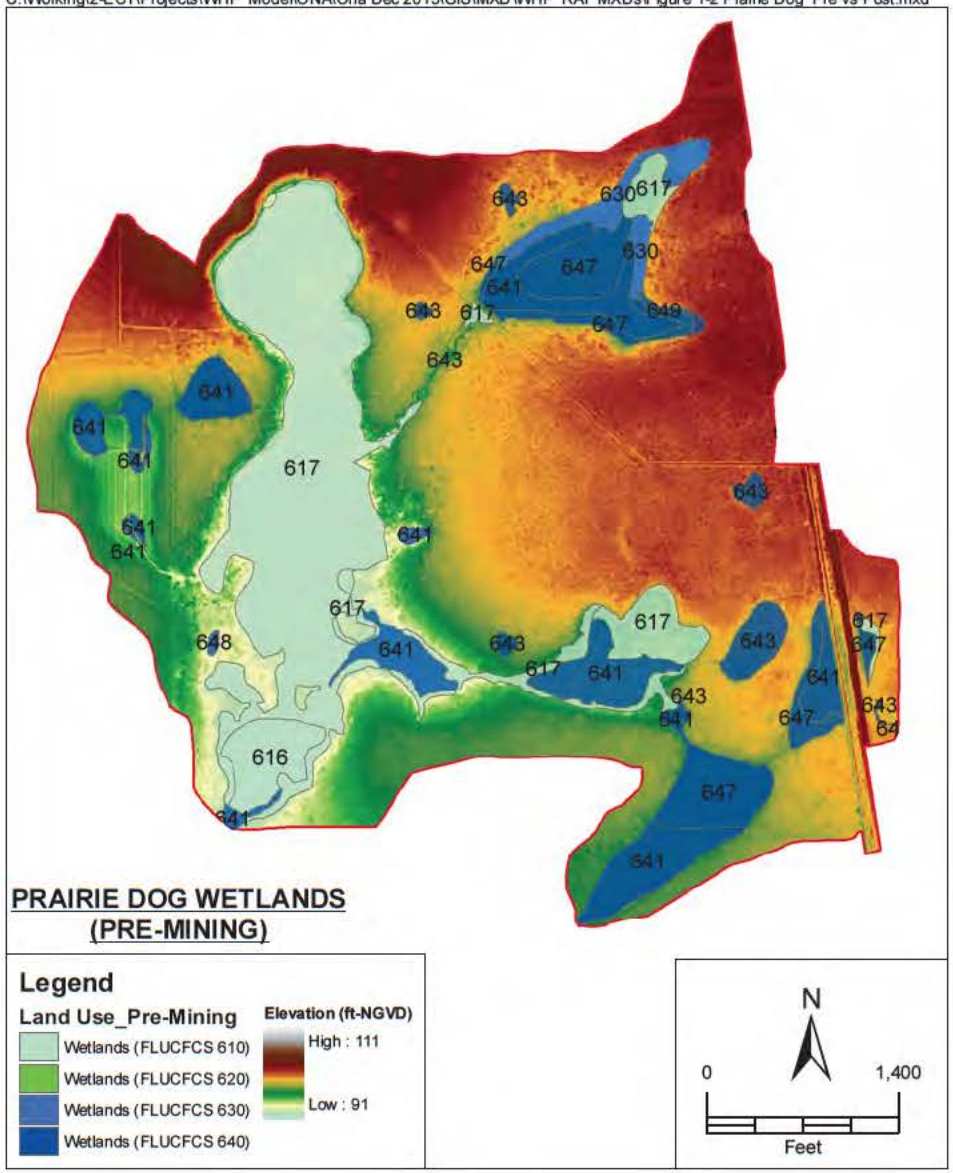
FIGURE 1-1
LOCATION OF STUDY AREA
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; Mosaic, 2014; ECT, 2014.

ECT Environmental Consulting & Technology, Inc

C:\Working\2-ECT\Projects\WHP_Model\ONA\Ona Dec 2013\GIS\MXD\WHP_RAI_MXDs\Figure 1-2 Prairie Dog_Pre vs Post.mxd

By: jsun Date: 4/9/2015



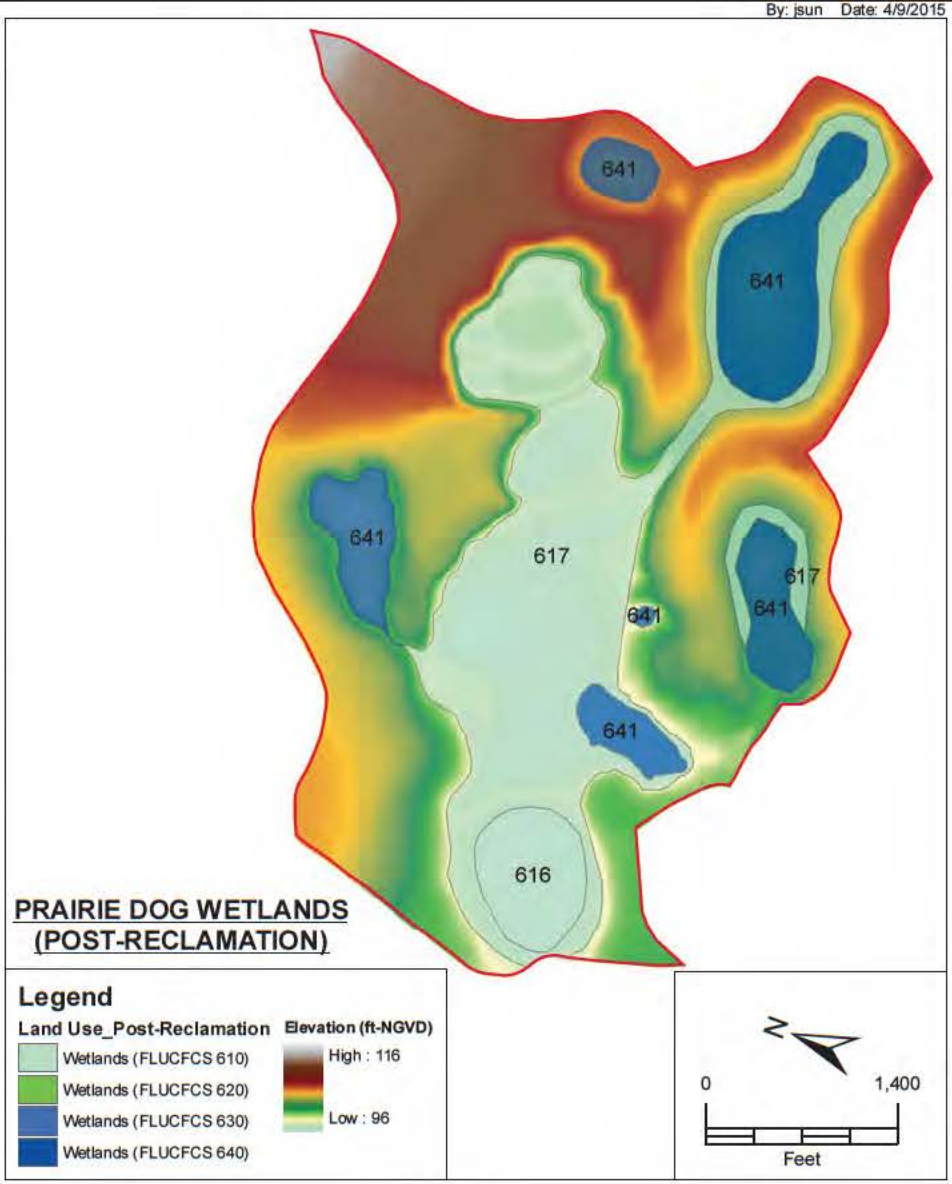


FIGURE 1-2
WETLAND MITIGATION DESIGN LAYOUT - PRE-MINING VS. POST-RECLAMATION
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: SWFWMD, 2005; Mosaic, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc

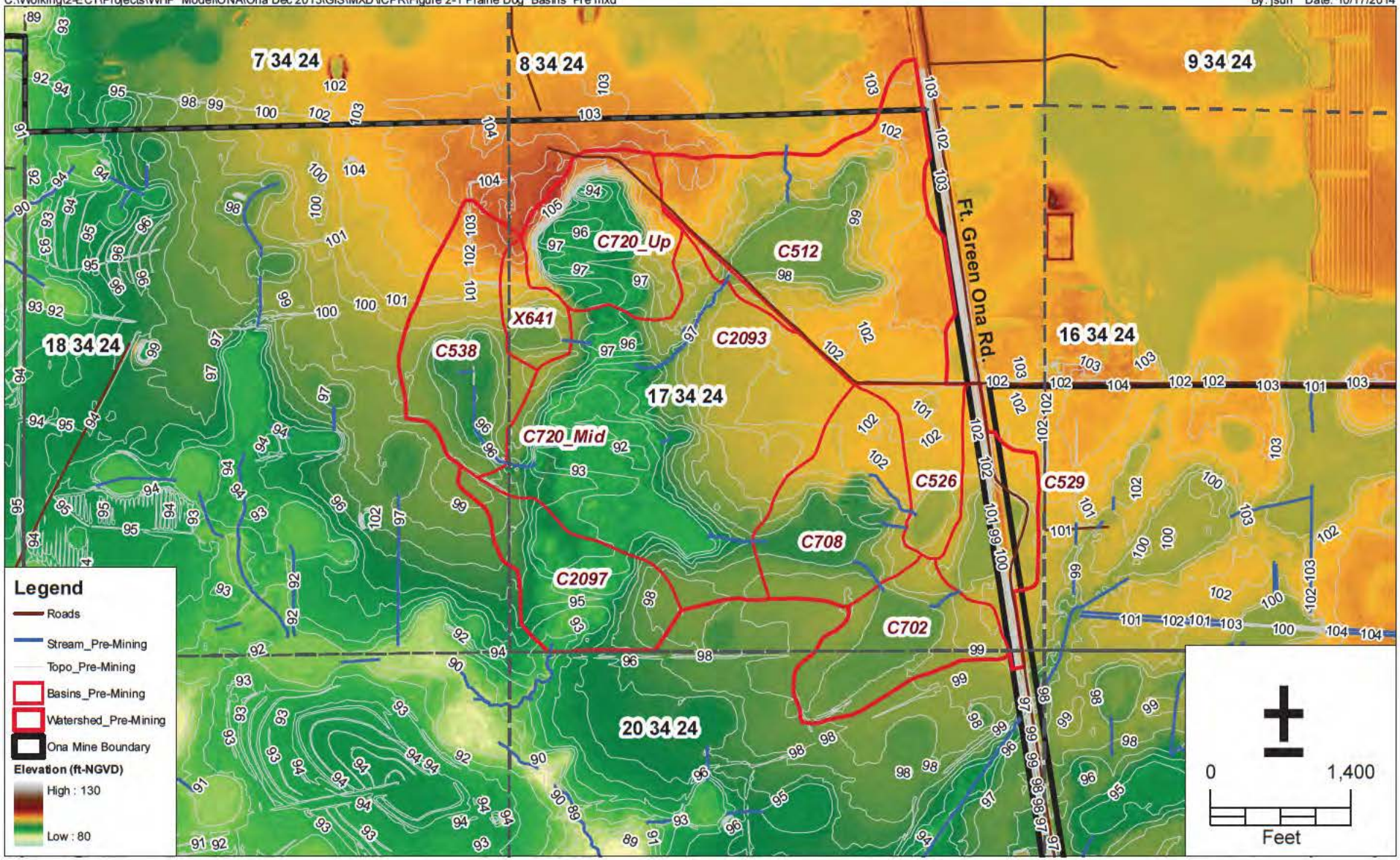


FIGURE 2-1
PRE-MINING TOPOGRAPHY AND SUB-BASIN DELINEATION
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: SWFWMD, 2005; Mosaic, 2014; ECT, 2014.

ECT Environmental Consulting & Technology, Inc

C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\ICPR\Figure 2-2 Prairie Dog Land Use Pre.mxd By: jsun Date: 10/17/2014

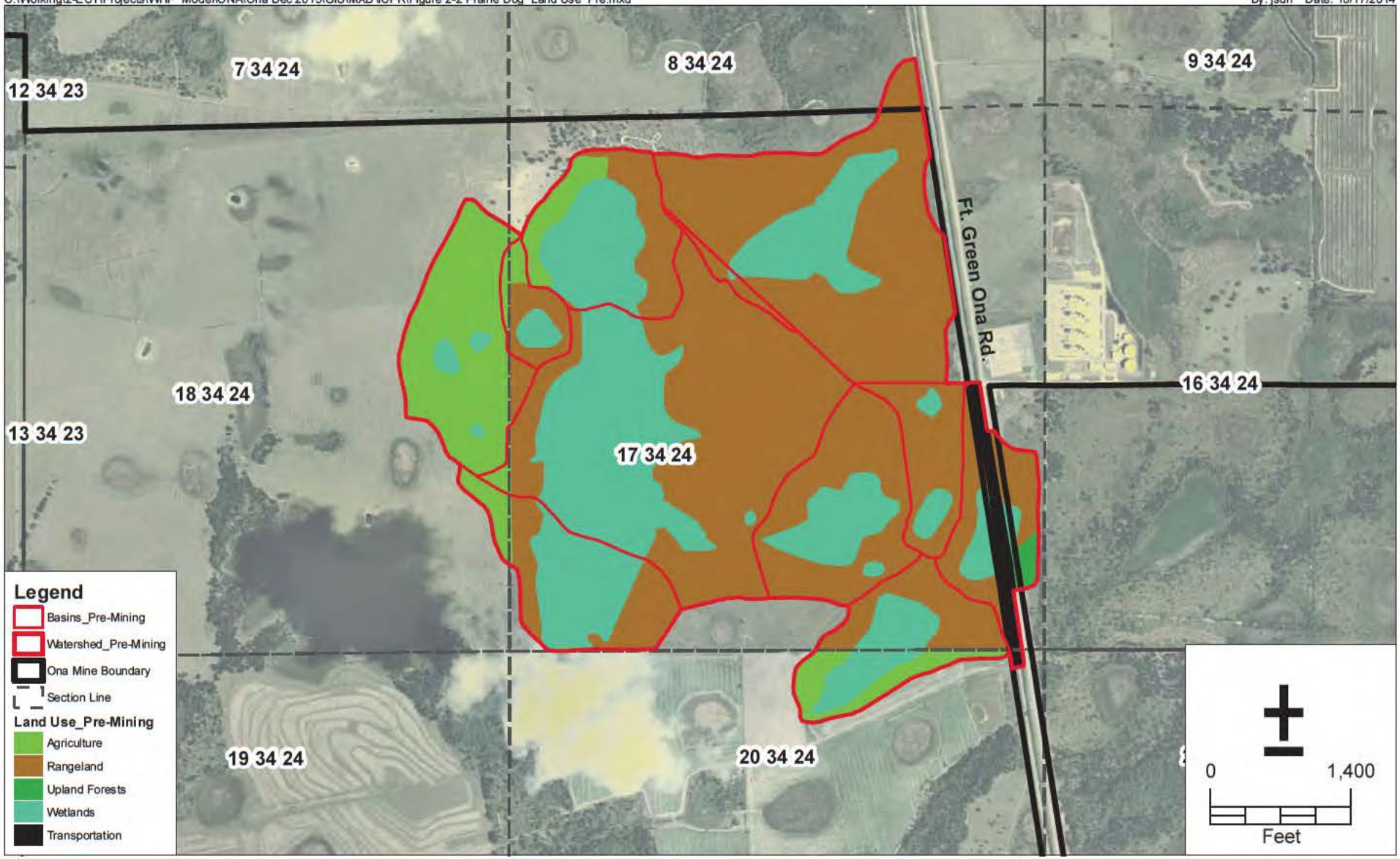


FIGURE 2-2
PRE-MINING LAND USE CLASSIFICATIONS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: SWFWMD, 2011; ESRI, 2014; Mosaic, 2014; ECT, 2014.

ECT Environmental Consulting & Technology, Inc

C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\ICPR\Figure 2-3 Prairie Dog Soil Pre.mxd By: jsun Date: 10/17/2014

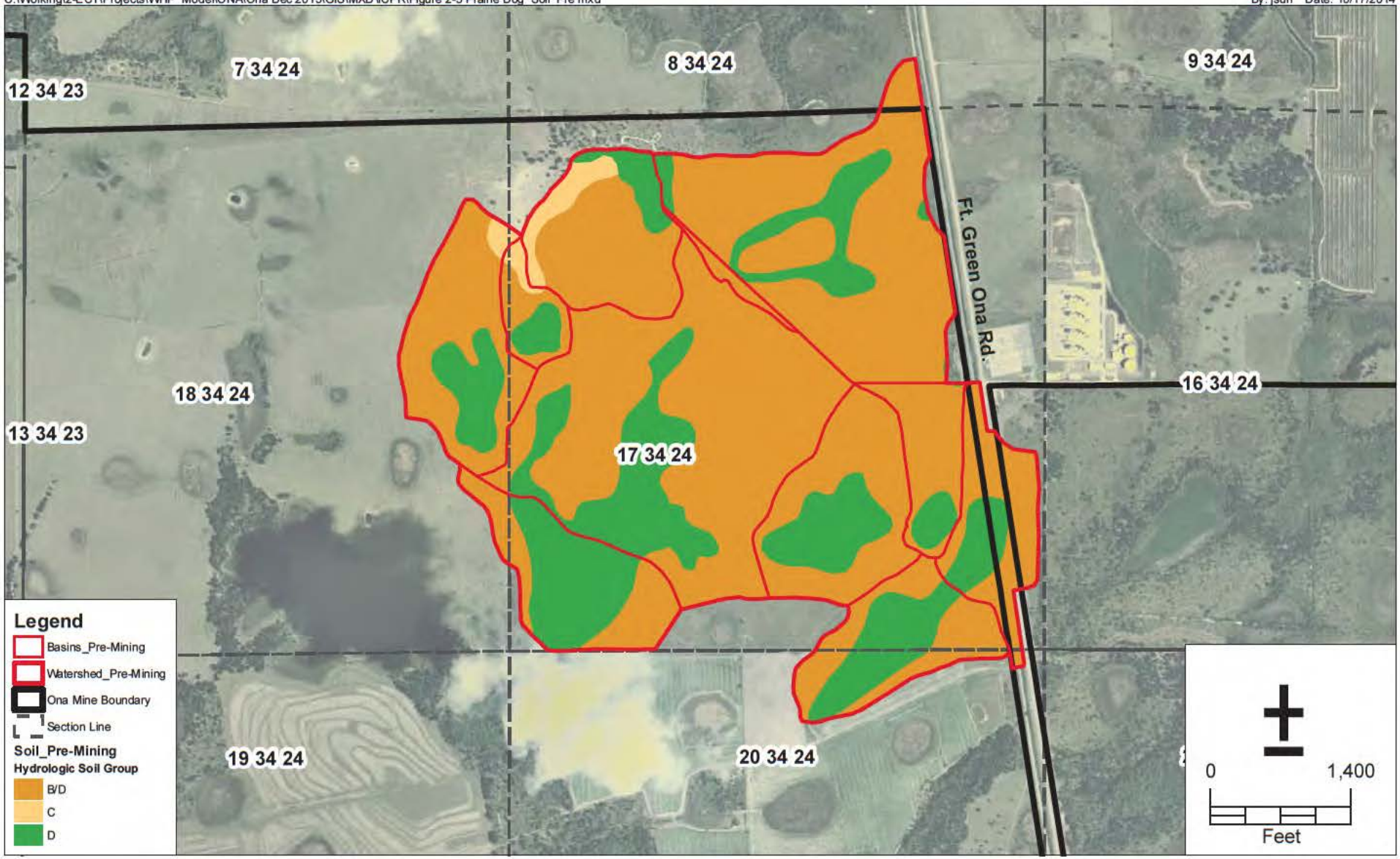


FIGURE 2-3
PRE-MINING SOIL CLASSIFICATIONS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: SWFWMD, 2002; ESRI, 2014; Mosaic, 2014; ECT, 2014.

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C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\ICPR\Figure 2-4 Prairie Dog Tc Pre.mxd By: jsun Date: 10/17/2014

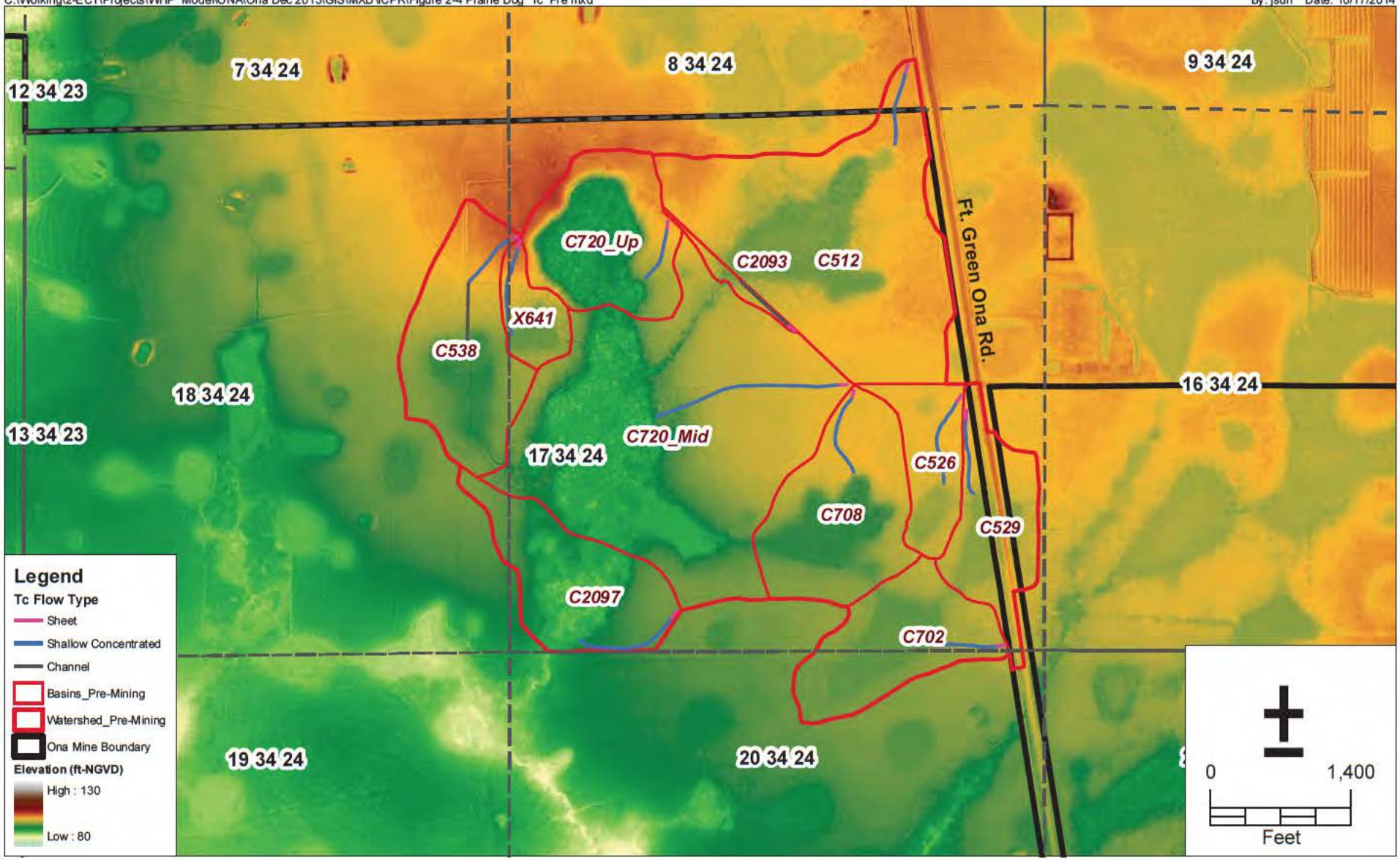

FIGURE 2-4
PRE-MINING TIME OF CONCENTRATION FLOW PATHS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: SWFWMD, 2005; Mosaic, 2014; ECT, 2014.

ECT Environmental Consulting & Technology, Inc

C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\ICPR\Figure 2-5 Prairie Dog Network Pre.mxd By: jsun Date: 10/17/2014

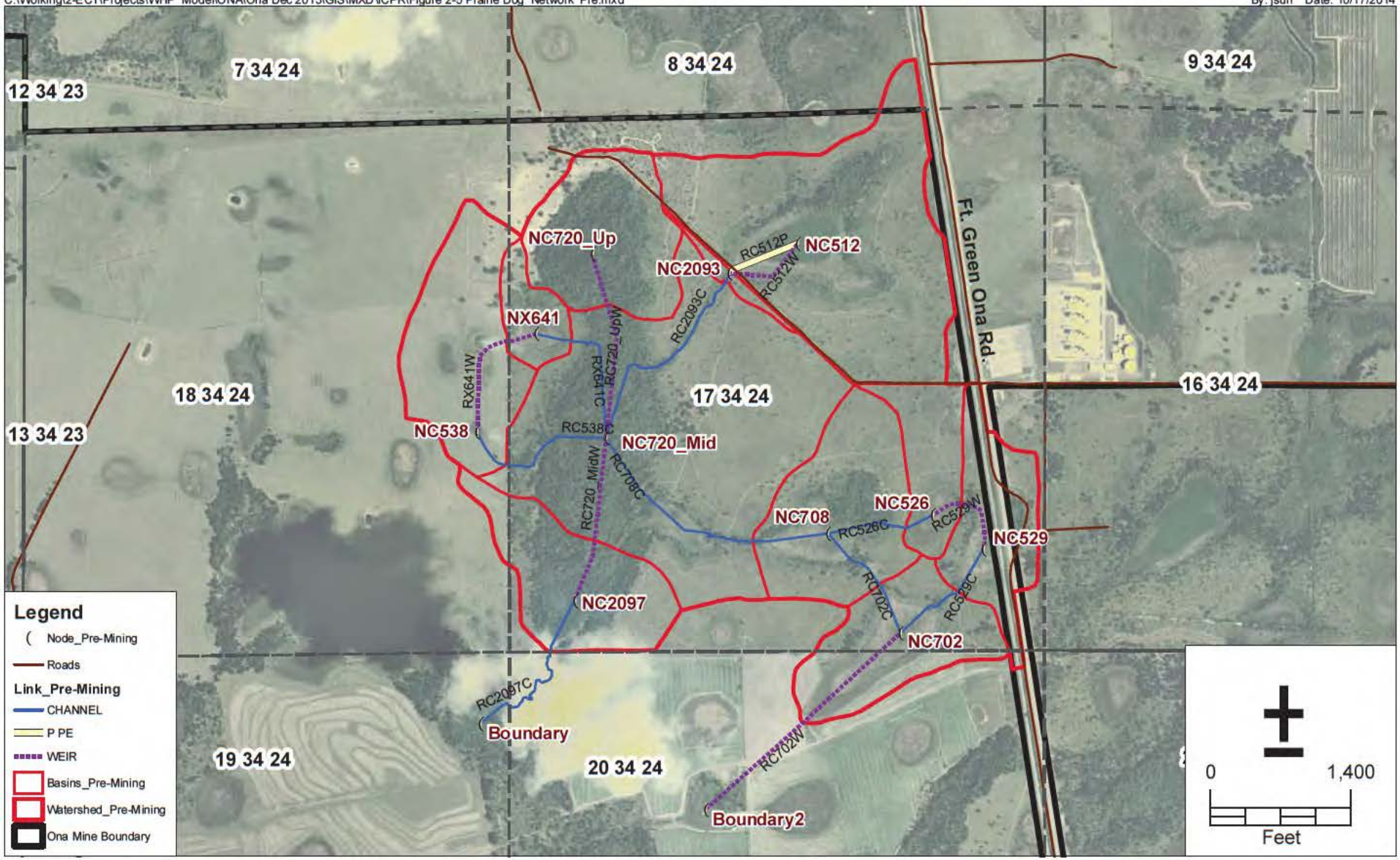

FIGURE 2-5
ICPR MODEL SCHEMATIC - PRE-MINING CONDITIONS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; Mosaic, 2014; ECT, 2014.

ECT Environmental Consulting & Technology, Inc

C:\Working\2-ECT\Projects\WHP_Model\ONA\Ona Dec 2013\GIS\MXD\ICPR\Figure 2-6 Prairie Dog_Basins_Post.mxd By: jsun Date: 4/9/2015

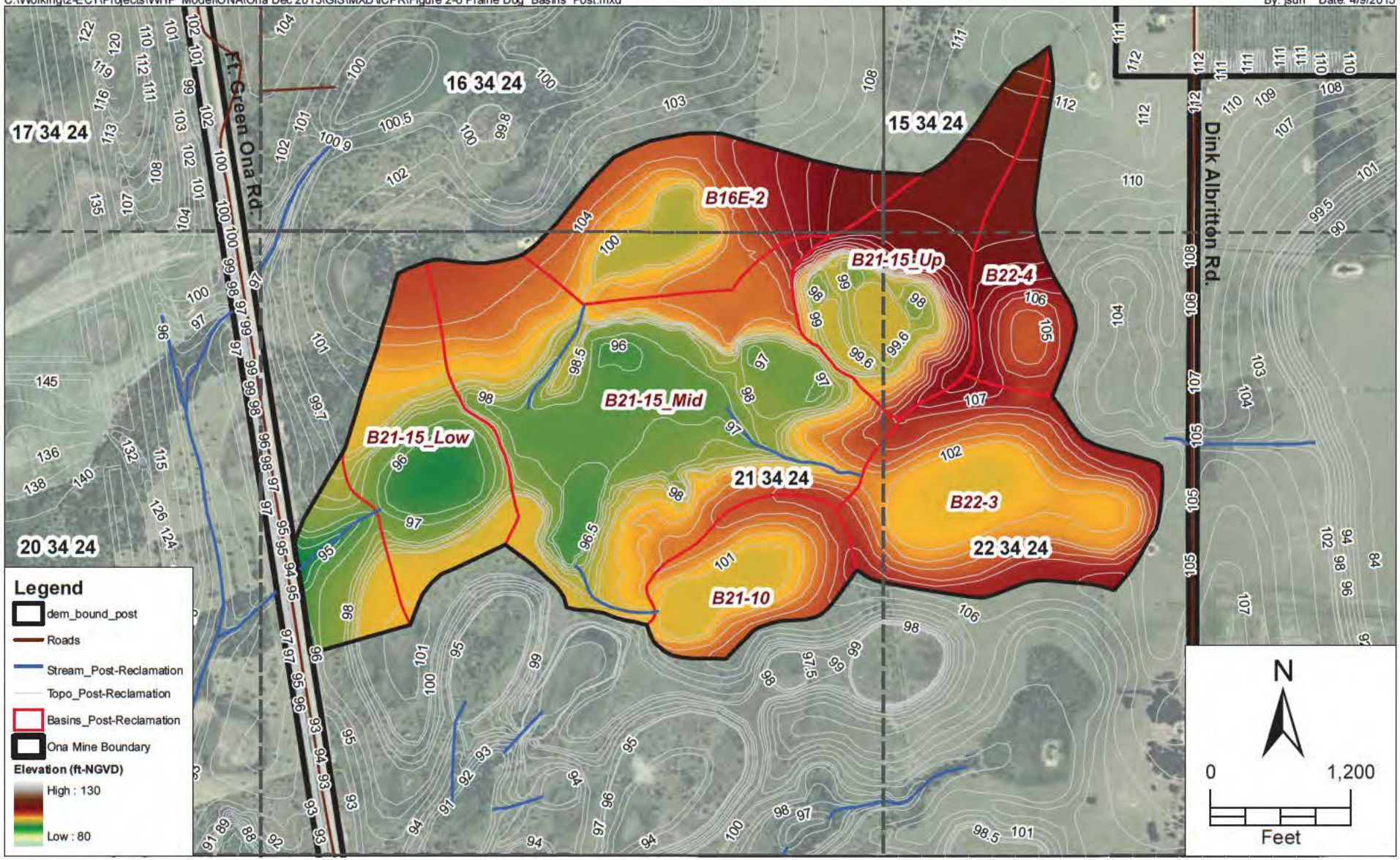

FIGURE 2-6
POST-RECLAMATION TOPOGRAPHY AND SUB-BASIN DELINEATION
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; Mosaic, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc

C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\ICPR\Figure 2-7 Prairie Dog Land Use Post.mxd By: jsun Date: 10/17/2014

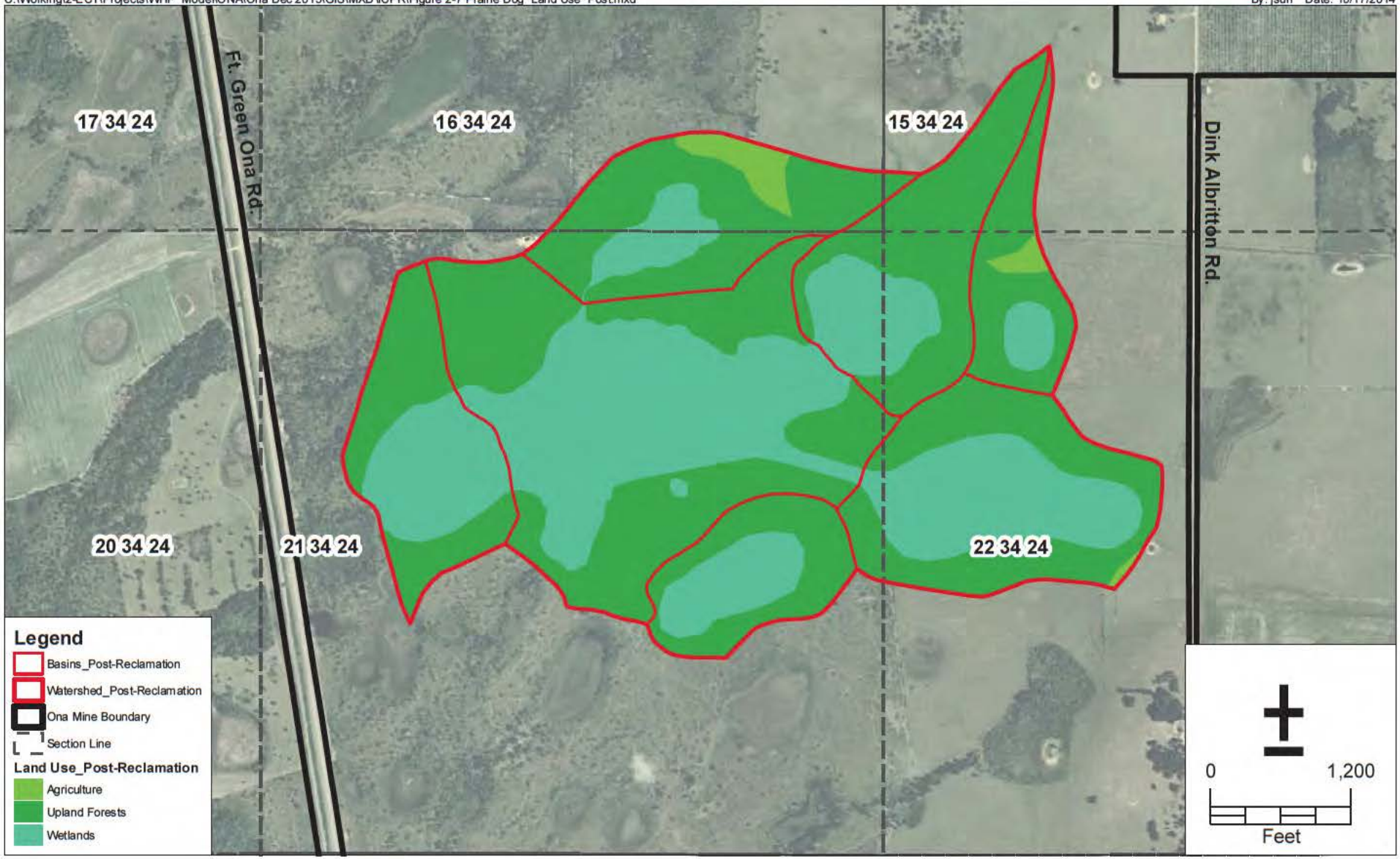

FIGURE 2-7
POST-RECLAMATION LAND USE CLASSIFICATIONS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; Mosaic, 2014; ECT, 2014.

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C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\ICPR\Figure 2-8 Prairie Dog Soil Post.mxd

By: jsun Date: 10/17/2014

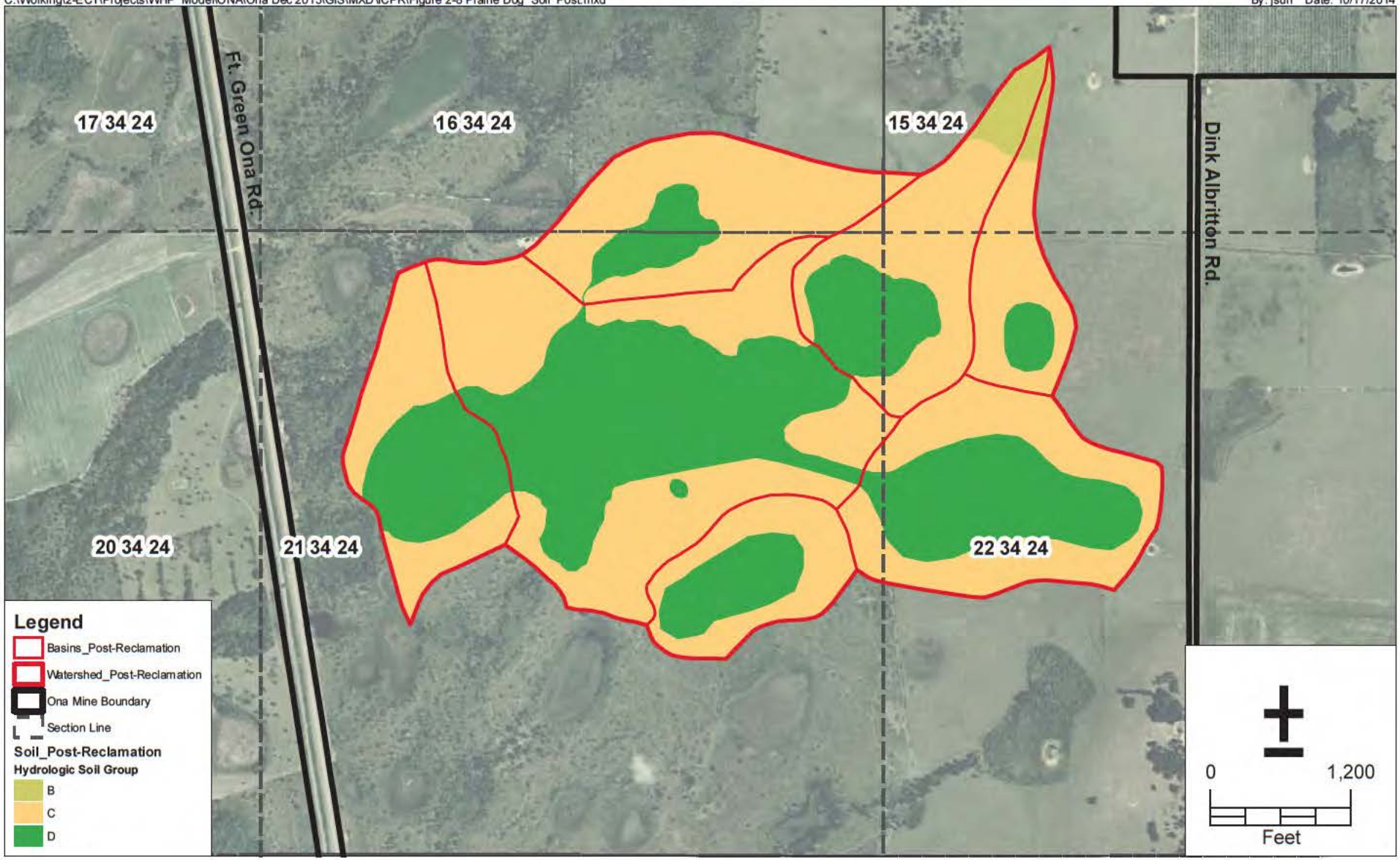

FIGURE 2-8
POST-RECLAMATION SOIL CLASSIFICATIONS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; Mosaic, 2014; ECT, 2014.

ECT Environmental Consulting & Technology, Inc

C:\Working\2-ECT\Projects\WHP_Model\ONA\Ona Dec 2013\GIS\MXD\ICPR\Figure 2-9 Prairie Dog_Tc_Post.mxd

By: jsun Date: 4/9/2015

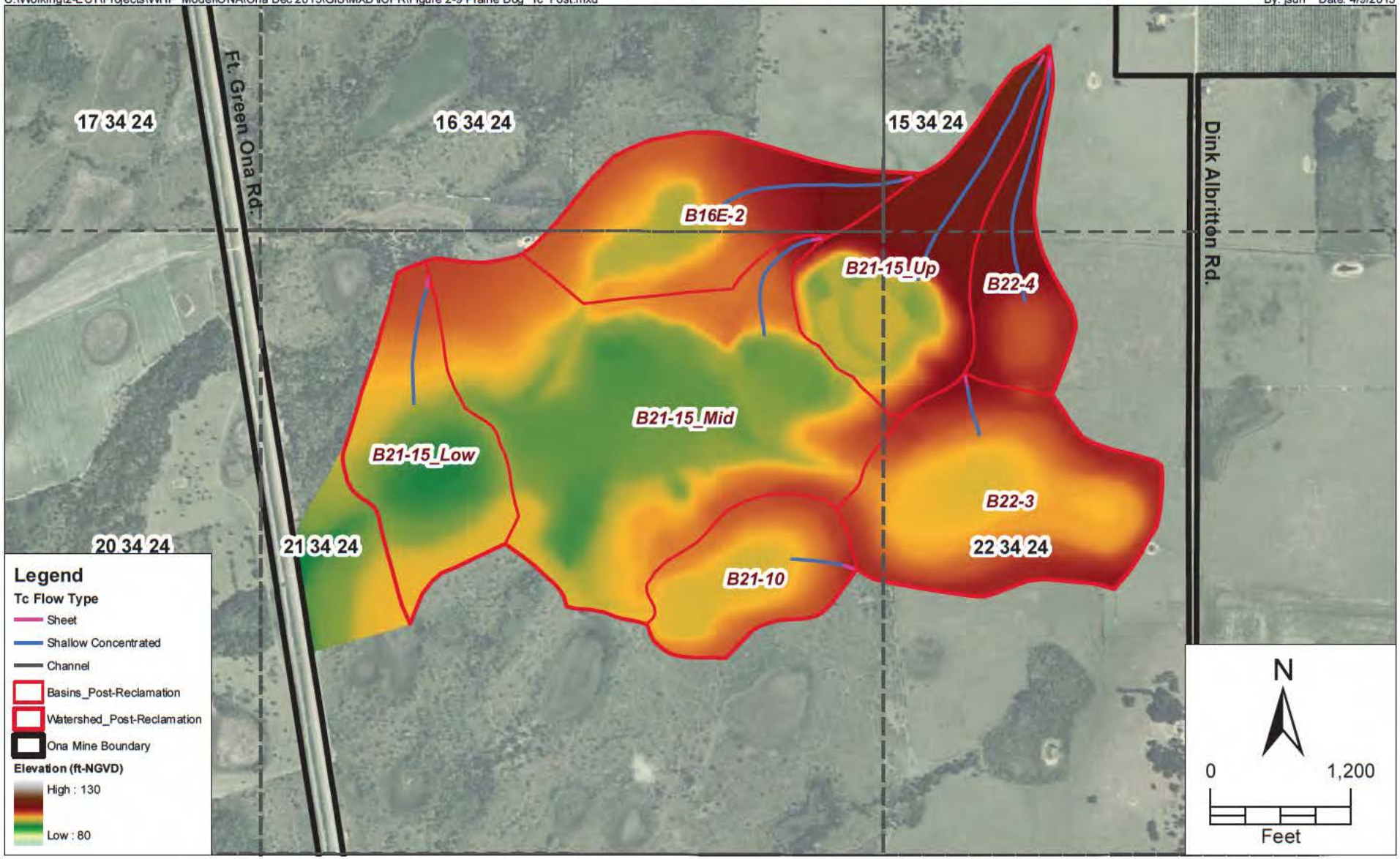

FIGURE 2-9
POST-RECLAMATION TIME OF CONCENTRATION FLOW PATHS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; Mosaic, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc

C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\ICPR\Figure 2-10 Prairie Dog Network Post.mxd

By: jsun Date: 4/9/2015

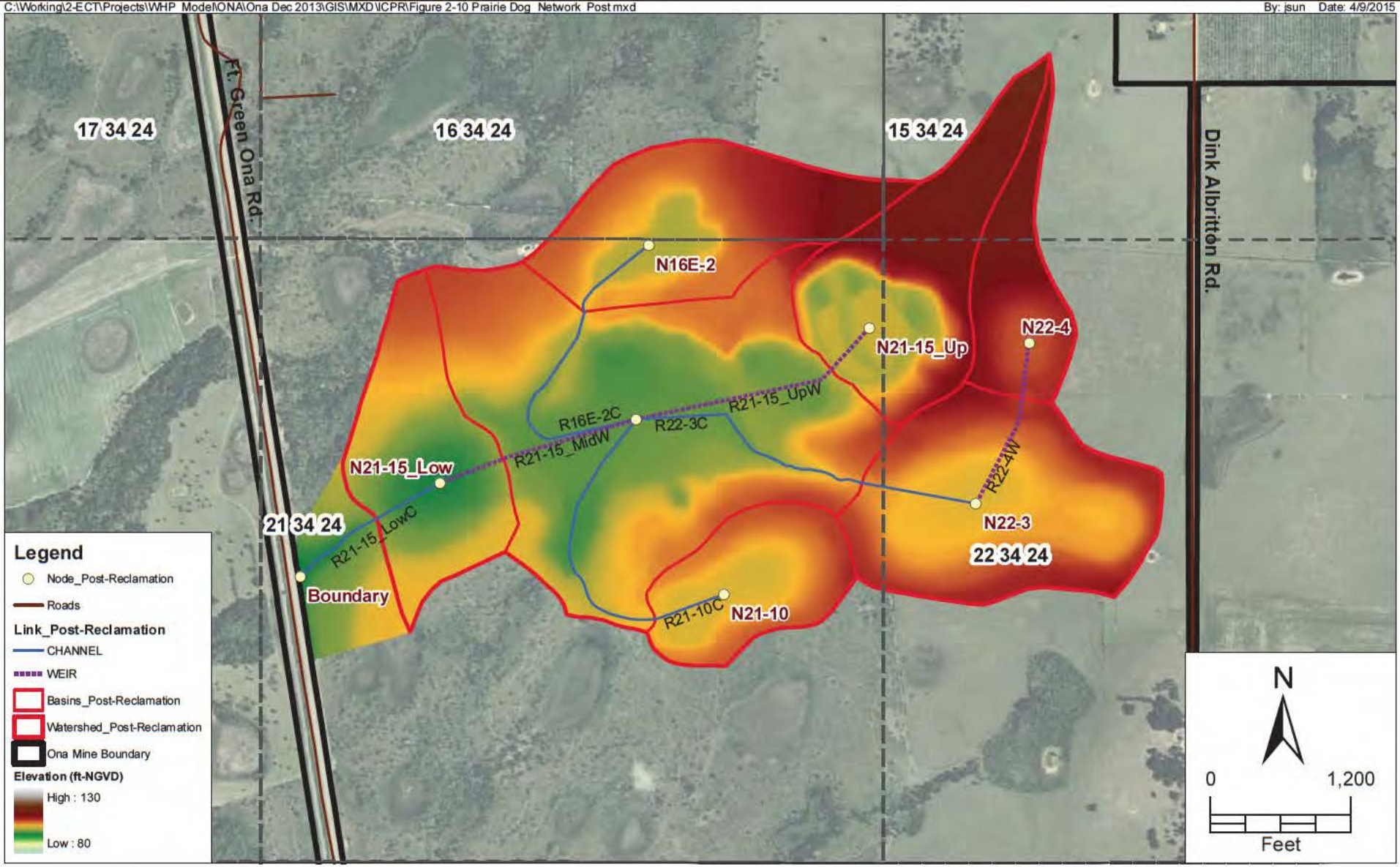

FIGURE 2-10
ICPR MODEL SCHEMATIC - POST-RECLAMATION CONDITIONS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; Mosaic, 2015; ECT, 2015.

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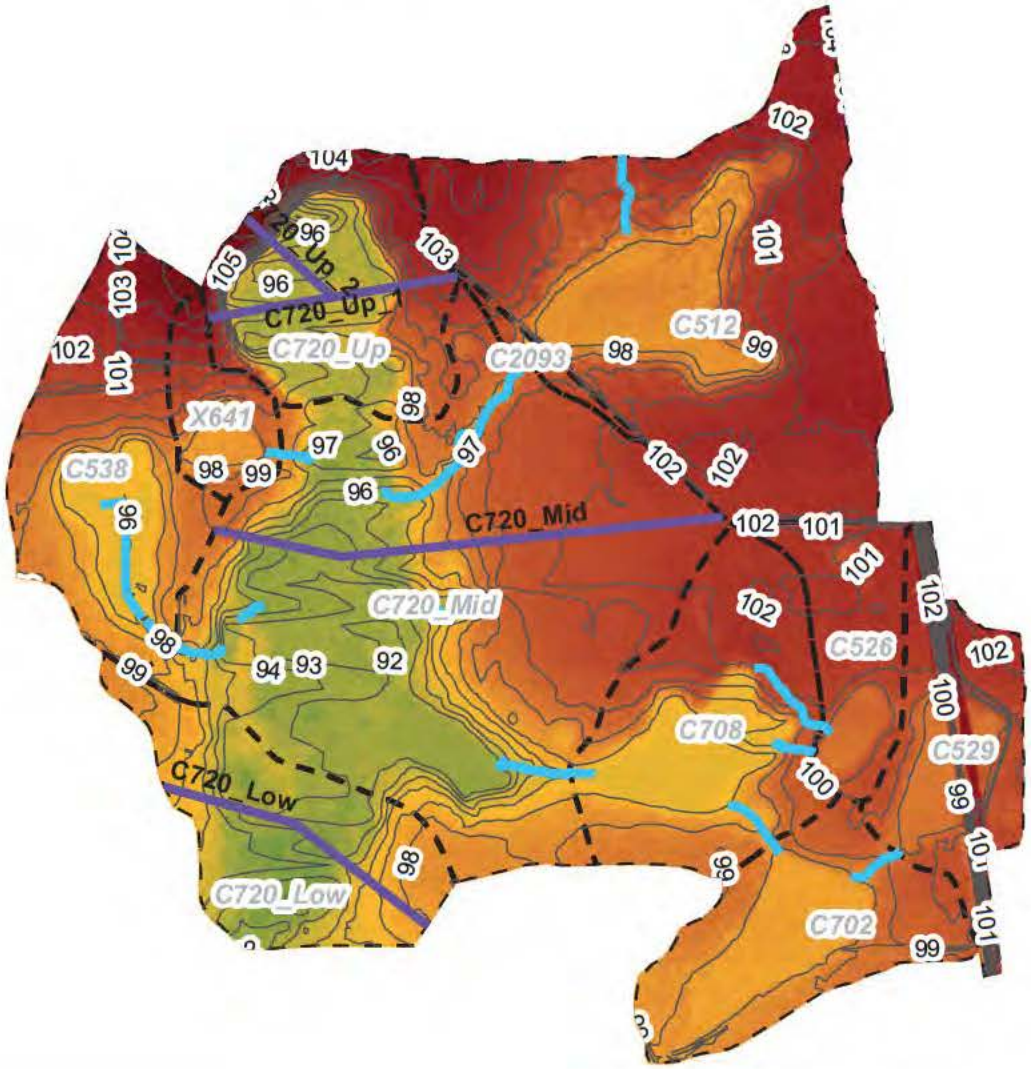
C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\MODFLOW\MODFLOW_C720_Tansects.mxd By: jsun Date: 10/14/2014



0 1,200
Feet

FIGURE 3-1
PRE-MINING MODFLOW TRANSECTS - WETLAND C720
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: Mosaic, 2014; ECT, 2014.

Legend
Transect_Pre_Mining
Stream_Pre_Mining
Topo_Pre_Mining
Basin_Pre_Mining

Elevation (ft-NGVD)
High : 130
Low : 70

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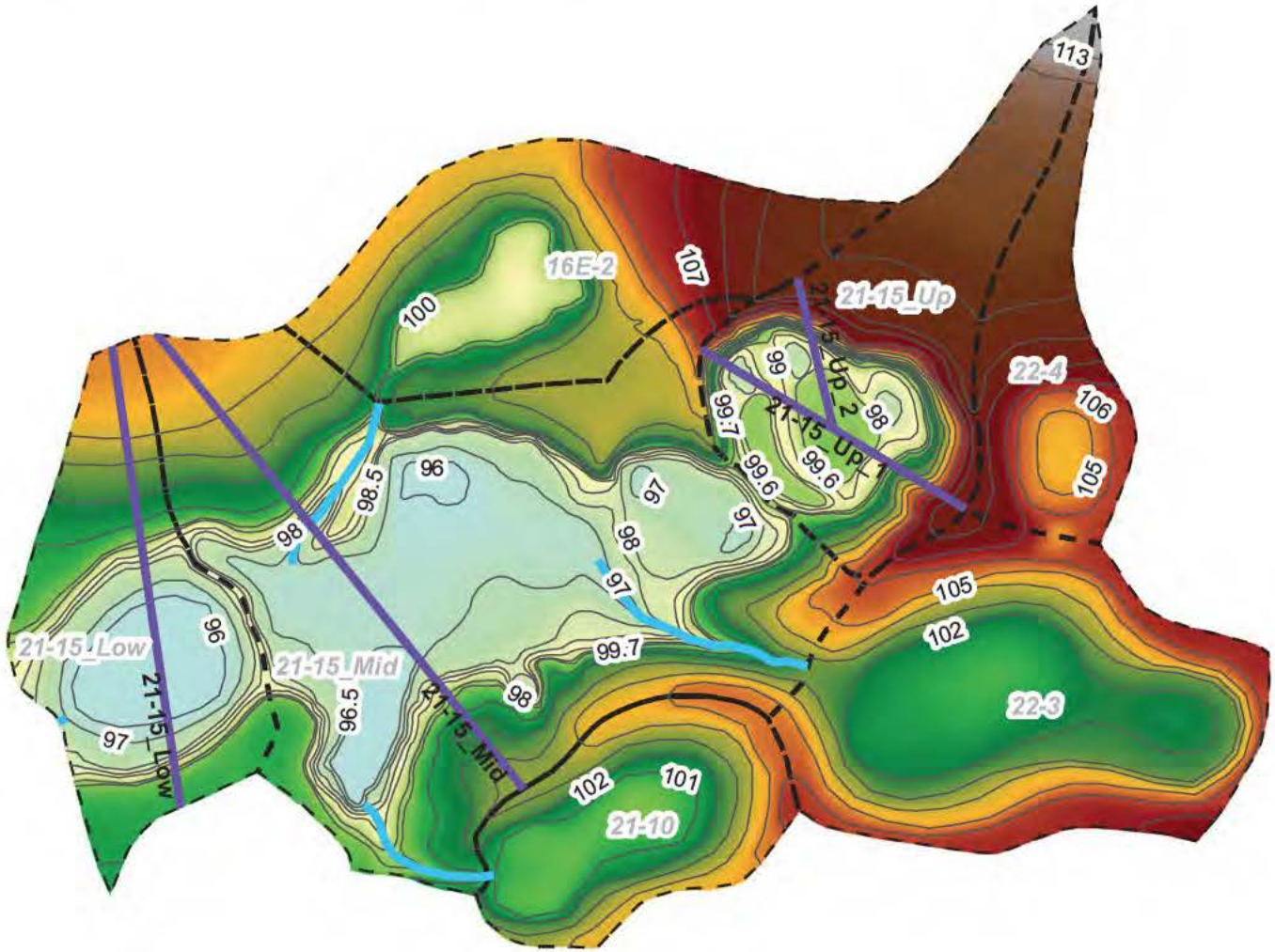
C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\MODFLOW\MODFLOW 21-15 Tansects.mxd By: jsun Date: 4/9/2015



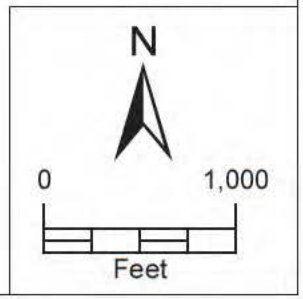


FIGURE 3-2
POST-RECLAMATION MODFLOW TRANSECTS - WETLAND 21-15
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: Mosaic, 2015; ECT, 2015.

Legend

- Transect_Post_Rec
- Stream_Post_Rec
- Topo_Post_Rec
- Basin_Post_Rec

Elevation (ft-NGVD)
High : 116
Low : 96

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C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\MODFLOW\MODFLOW_C720_Up_1.mxd By: jsun Date: 10/14/2014

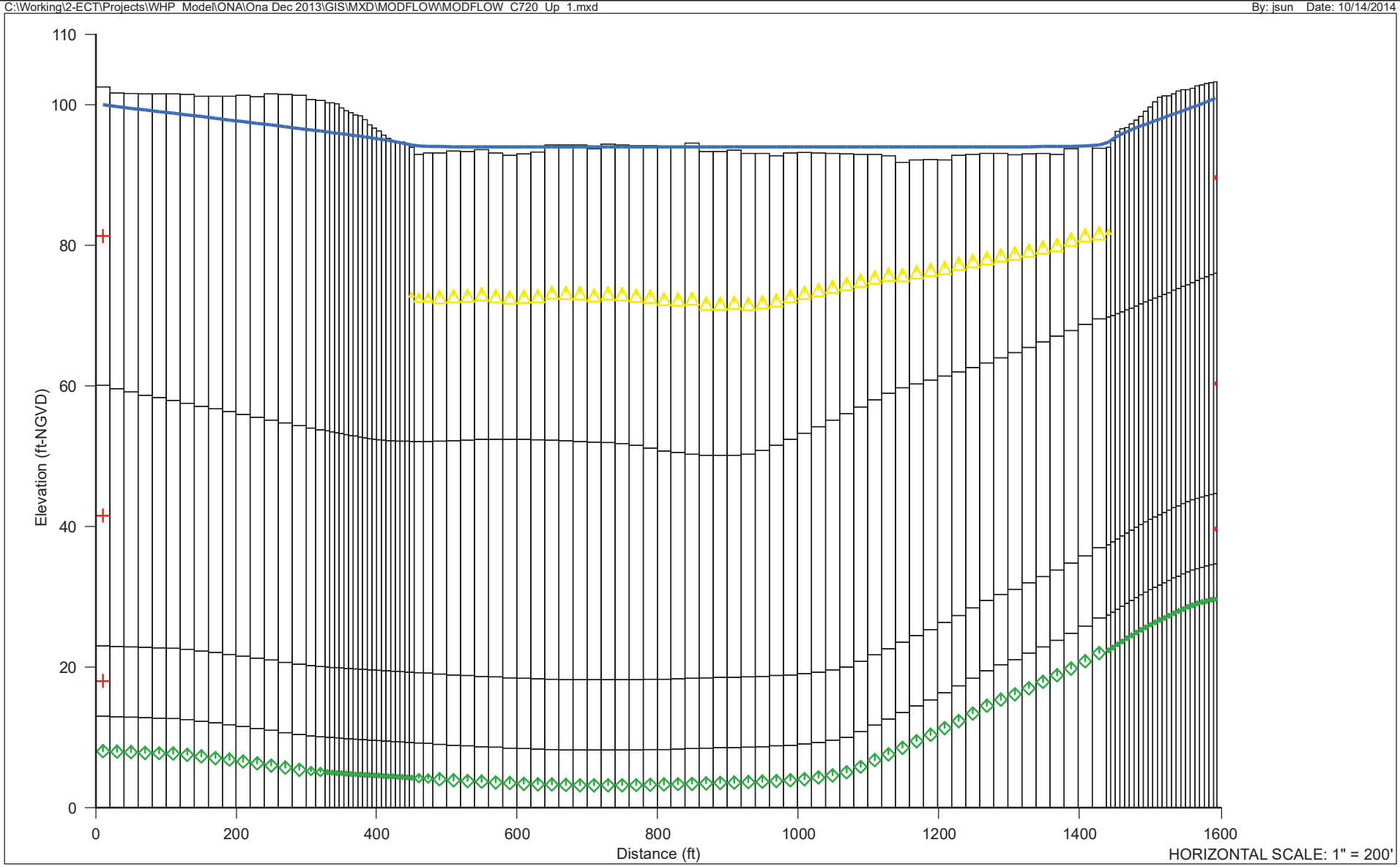

FIGURE 3-3
PRE-MINING WATER LEVEL - TRANSECT C720_UP_1
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ECT, 2014.

Legend

- MODFLOW Grid
- Drain Boundary
- General Head Boundary
- ConstantHead Boundary
- Simulated Water Table
- Overburden
- Matrix
- Clay Aquitard
- Intermediate Aquifer

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C:\Working\2-ECT\Projects\WHP_Model\ONA\Ona Dec 2013\GIS\MXD\MODFLOW\MODFLOW_C720_Up_2.mxd By: jsun Date: 10/14/2014

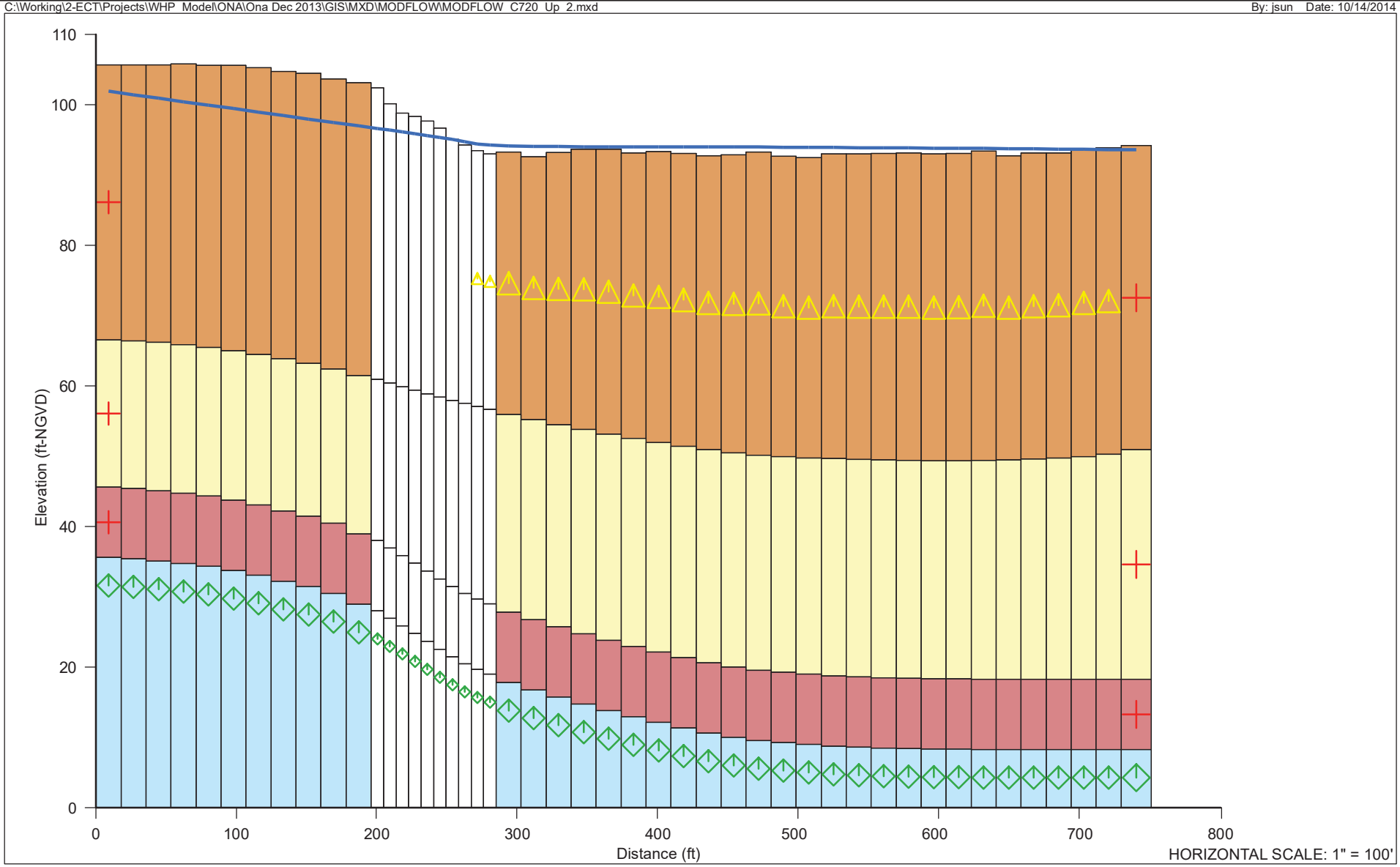

FIGURE 3-4
PRE-MINING WATER LEVEL - TRANSECT C720_UP_2
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ECT, 2014.

Legend

- MODFLOW Grid
- Drain Boundary
- General Head Boundary
- ConstantHead Boundary
- Simulated Water Table
- Overburden
- Matrix
- Clay Aquitard
- Intermediate Aquifer

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C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\MODFLOW\MODFLOW_C720_Mid.mxd By: jsun Date: 10/14/2014

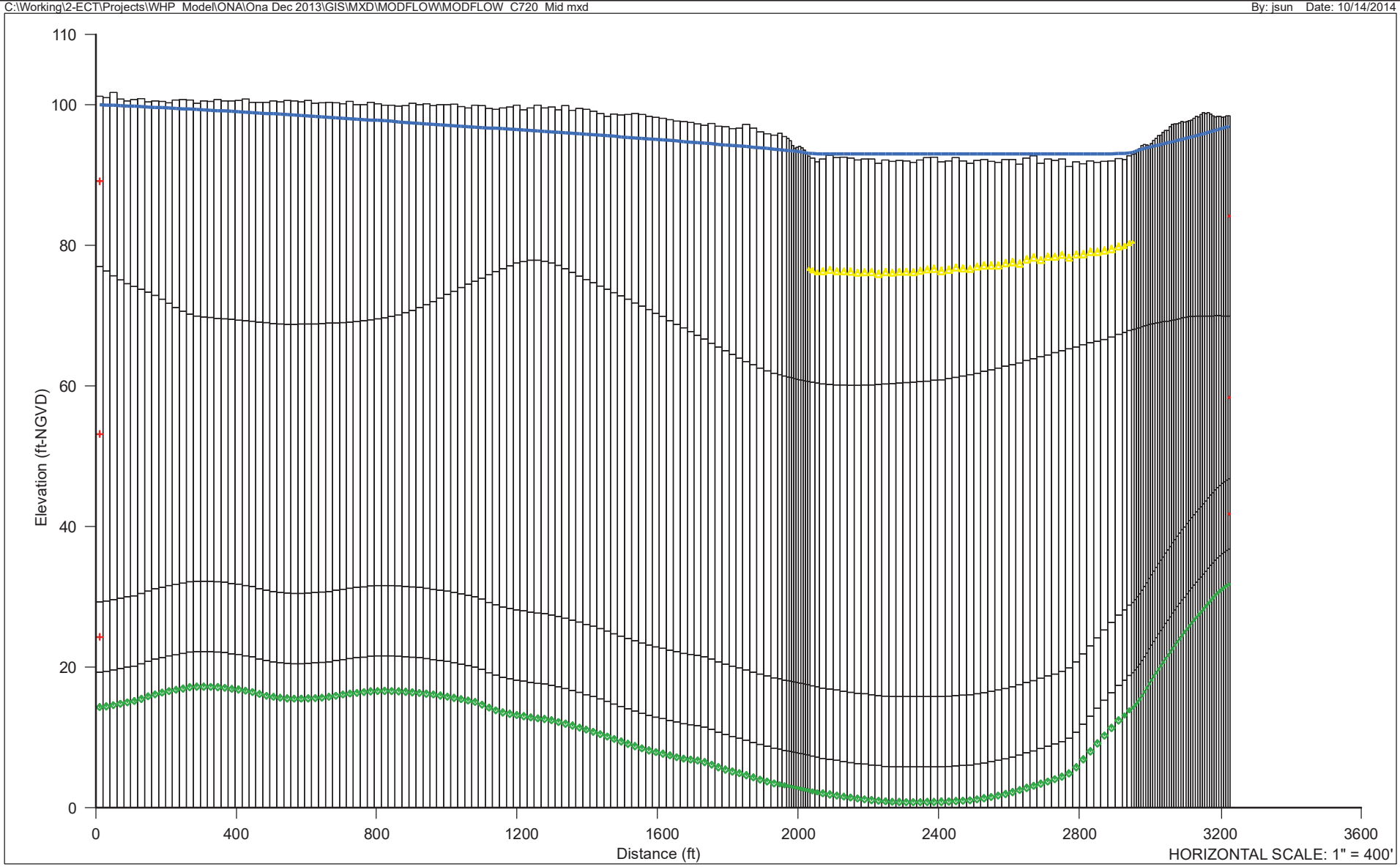

FIGURE 3-5
PRE-MINING WATER LEVEL - TRANSECT C720_MID
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ECT, 2014.

Legend

- MODFLOW Grid
- Drain Boundary
- General Head Boundary
- ConstantHead Boundary
- Simulated Water Table
- Overburden
- Matrix
- Clay Aquitard
- Intermediate Aquifer

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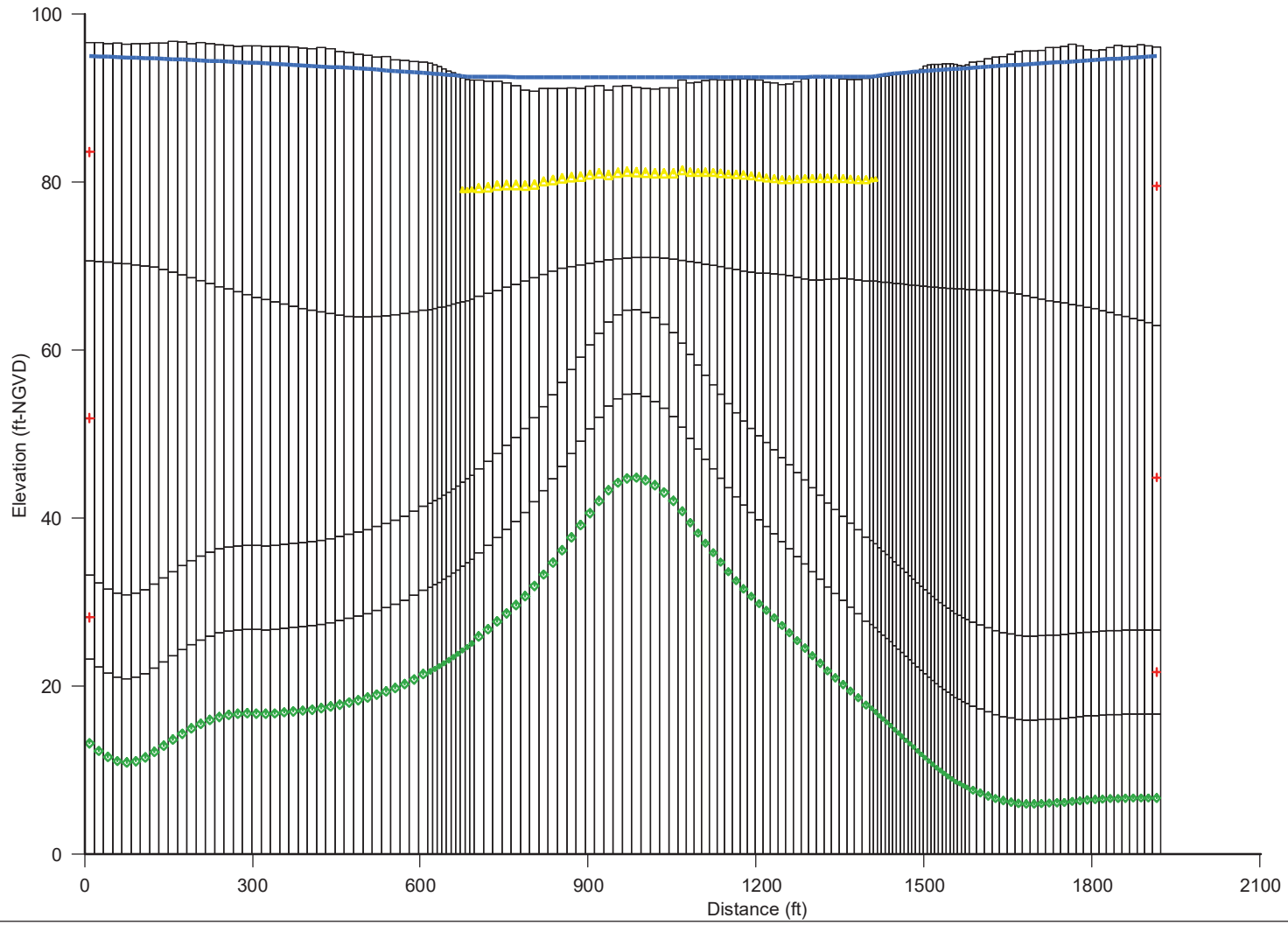
C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\MODFLOW\MODFLOW_C720_Low.mxd By: jsun Date: 10/14/2014



HORIZONTAL SCALE: 1" = 300'

FIGURE 3-6
PRE-MINING WATER LEVEL - TRANSECT C720_LOW
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ECT, 2014.

Legend

- MODFLOW Grid
- Drain Boundary
- General Head Boundary
- ConstantHead Boundary
- Simulated Water Table
- Overburden
- Matrix
- Clay Aquitard
- Intermediate Aquifer

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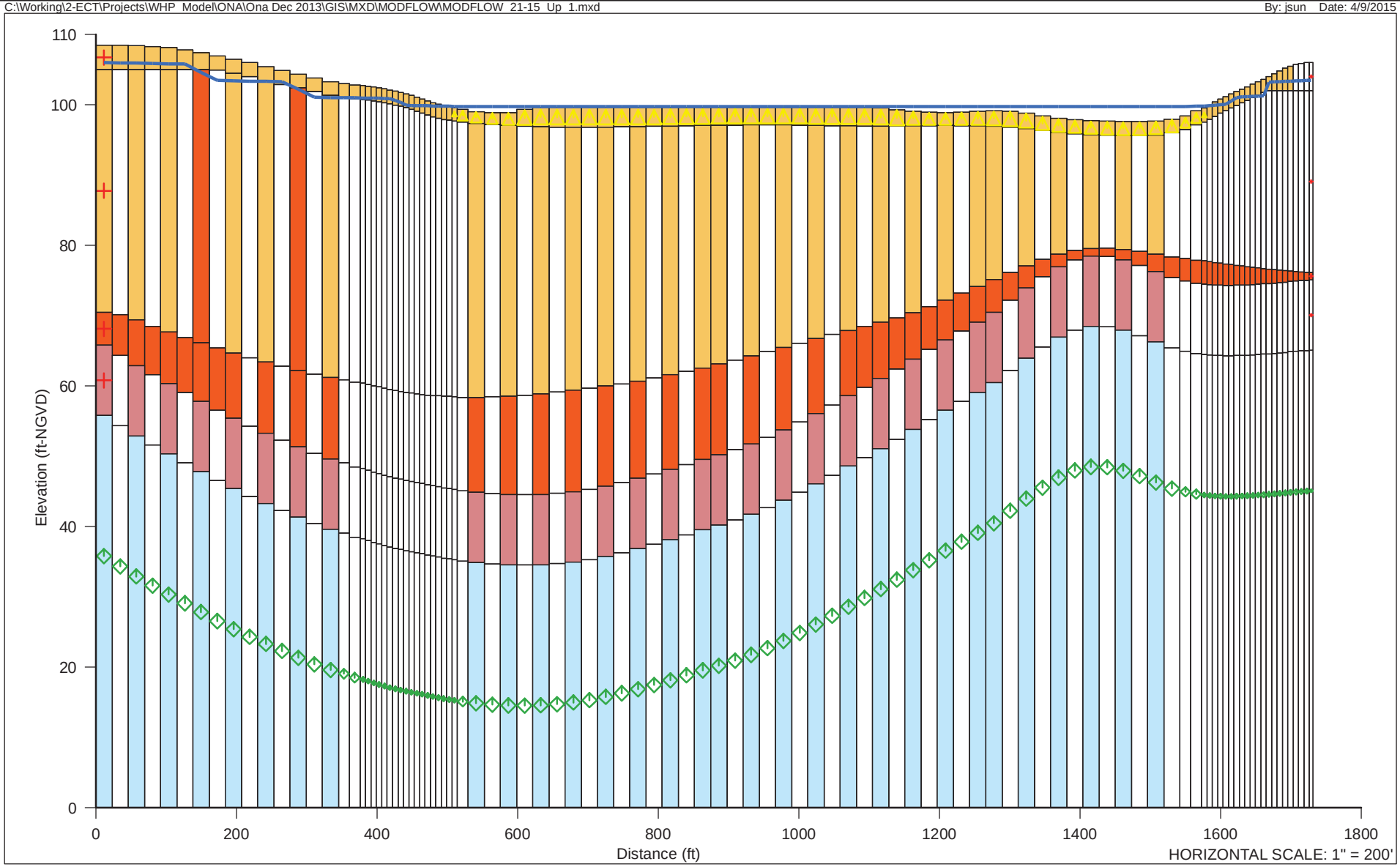

FIGURE 3-7
POST-RECLAMATION WATER LEVEL - TRANSECT 21-15_UP_1
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ECT, 2015.

Legend

- MODFLOW Grid
- Drain Boundary
- General Head Boundary
- Constant Head Boundary
- Simulated Water Table
- Sand Tailings
- Spoil
- Clay Aquitard
- Intermediate Aquifer

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By: jsun Date: 4/9/2015

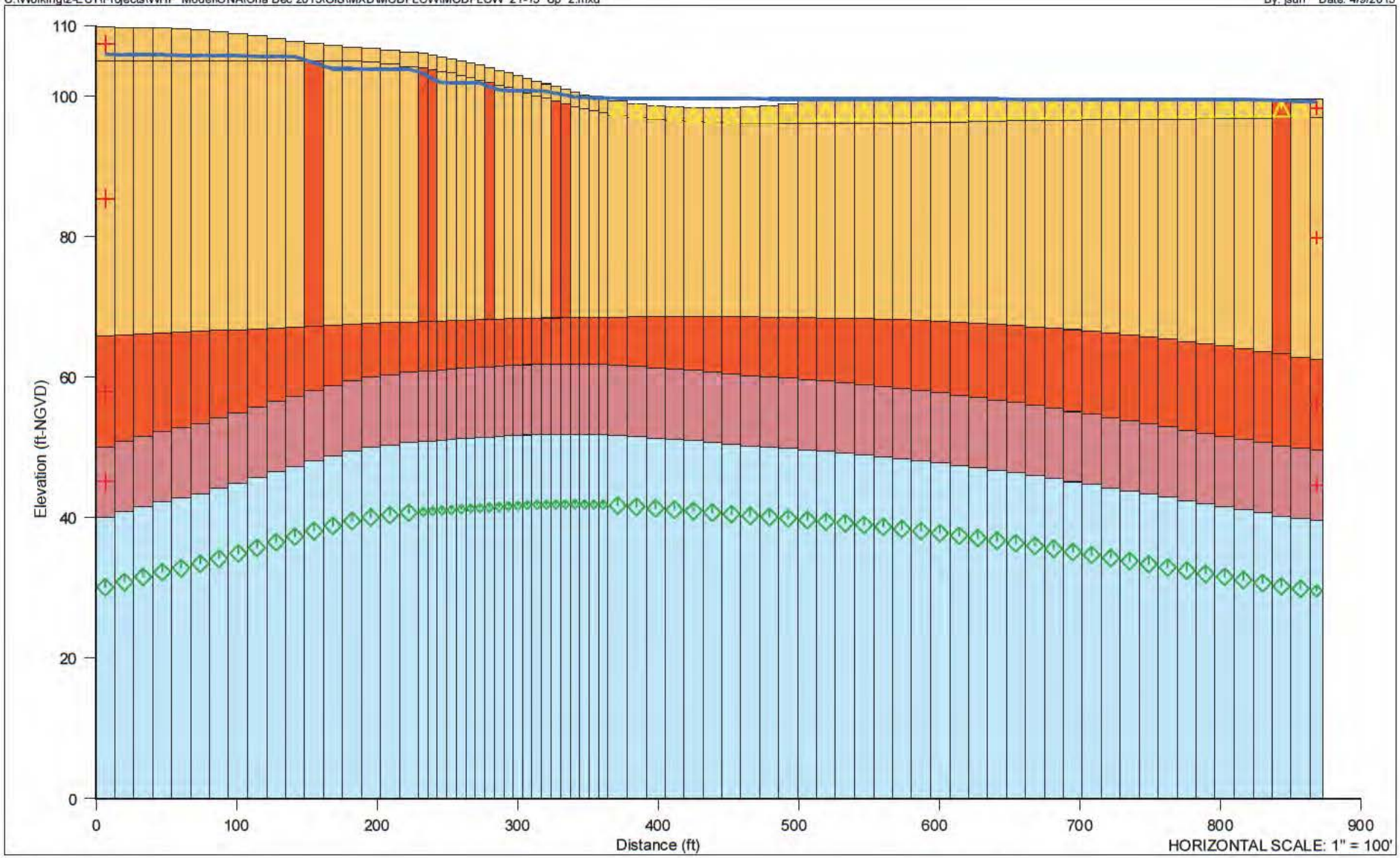

FIGURE 3-8
POST-RECLAMATION WATER LEVEL - TRANSECT 21-15_UP_2
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ECT, 2015.

Legend

- MODFLOW Grid
- Drain Boundary
- General Head Boundary
- Constant Head Boundary
- Simulated Water Table
- Sand Tailings
- Spoil
- Clay Aquitard
- Intermediate Aquifer

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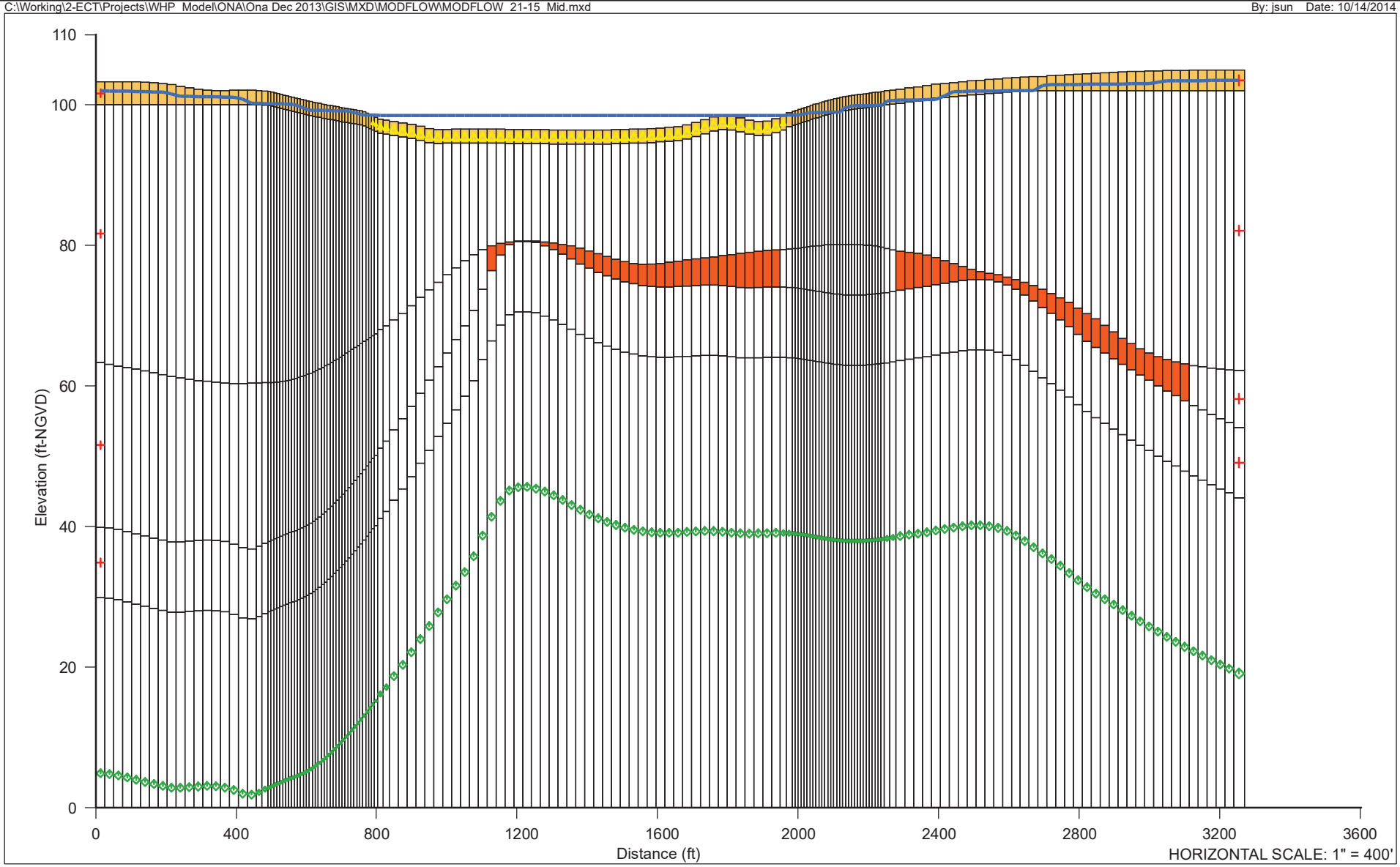

FIGURE 3-9
POST-RECLAMATION WATER LEVEL - TRANSECT 21-15_MID
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ECT, 2014.

Legend

- MODFLOW Grid
- Drain Boundary
- General Head Boundary
- Constant Head Boundary
- Simulated Water Table
- Sand Tailings
- Spoil
- Clay Aquitard
- Intermediate Aquifer

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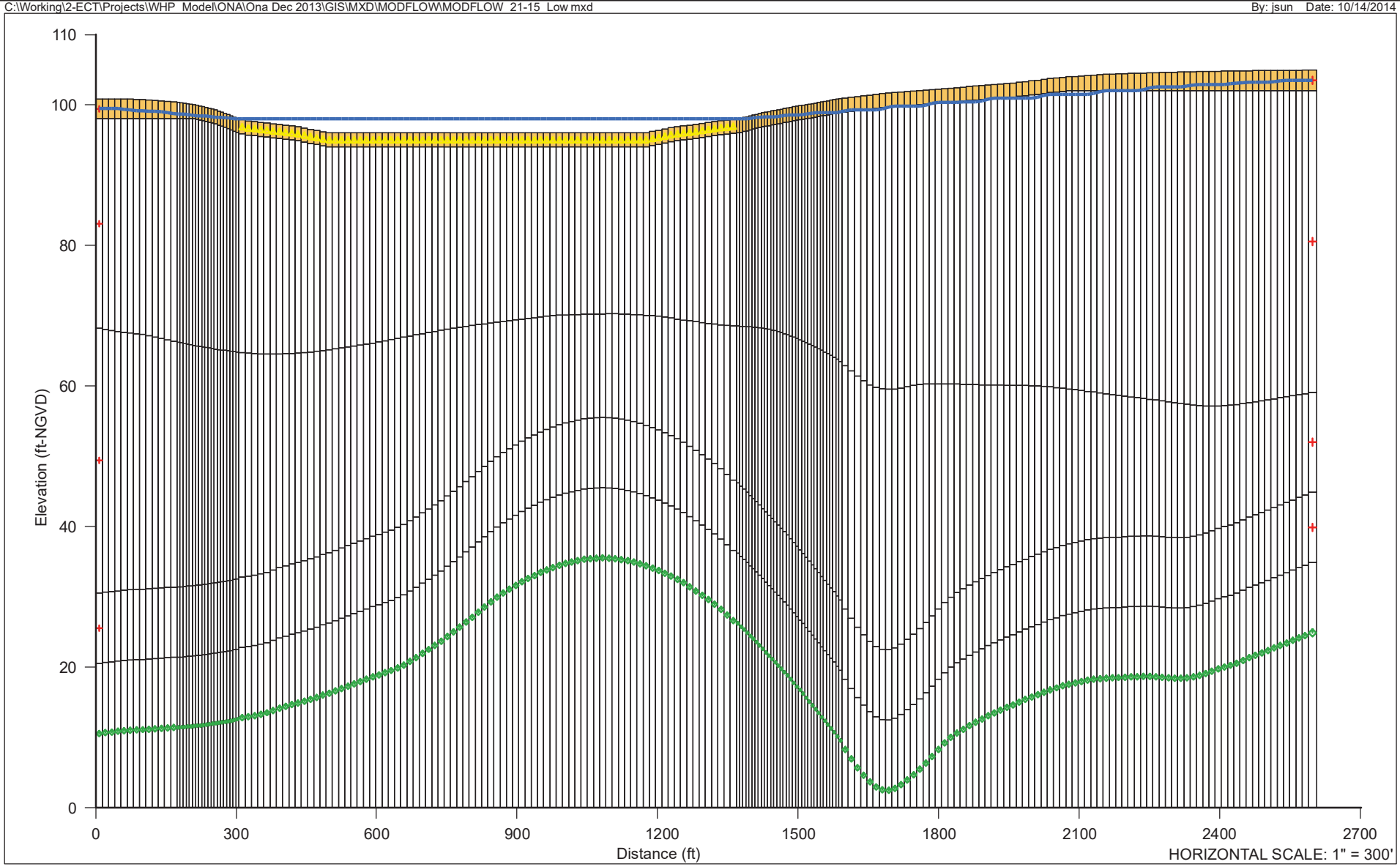

FIGURE 3-10
POST-RECLAMATION WATER LEVEL - TRANSECT 21-15_LOW
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ECT, 2014.

Legend

- MODFLOW Grid
- Drain Boundary
- General Head Boundary
- Constant Head Boundary
- Simulated Water Table
- Sand Tailings
- Spoil
- Clay Aquitard
- Intermediate Aquifer

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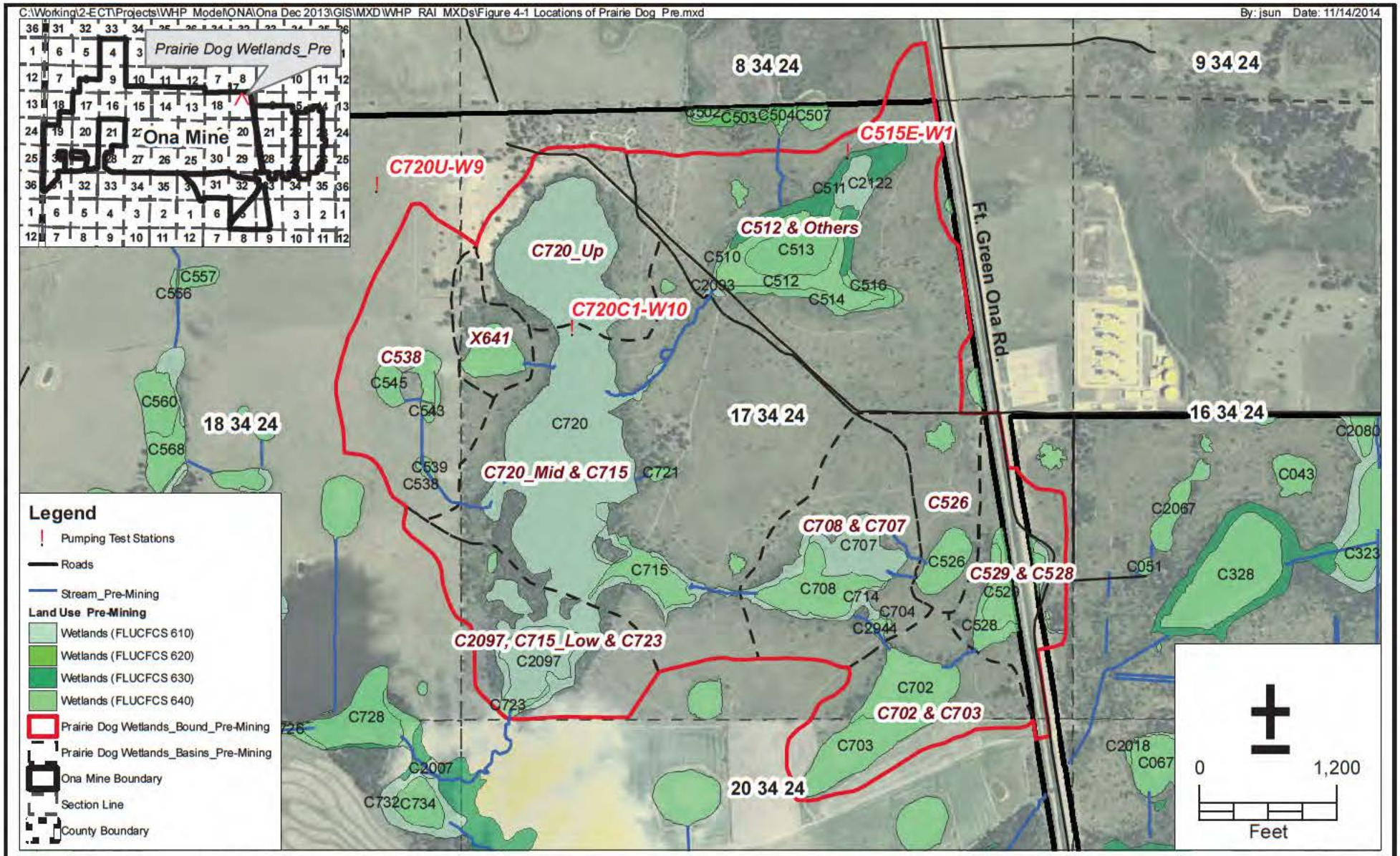

FIGURE 4-1
LOCATIONS OF PRAIRIE DOG WETLANDS - PRE-MINING CONDITIONS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; Mosaic, 2014; ECT, 2014.

ECT Environmental Consulting & Technology, Inc

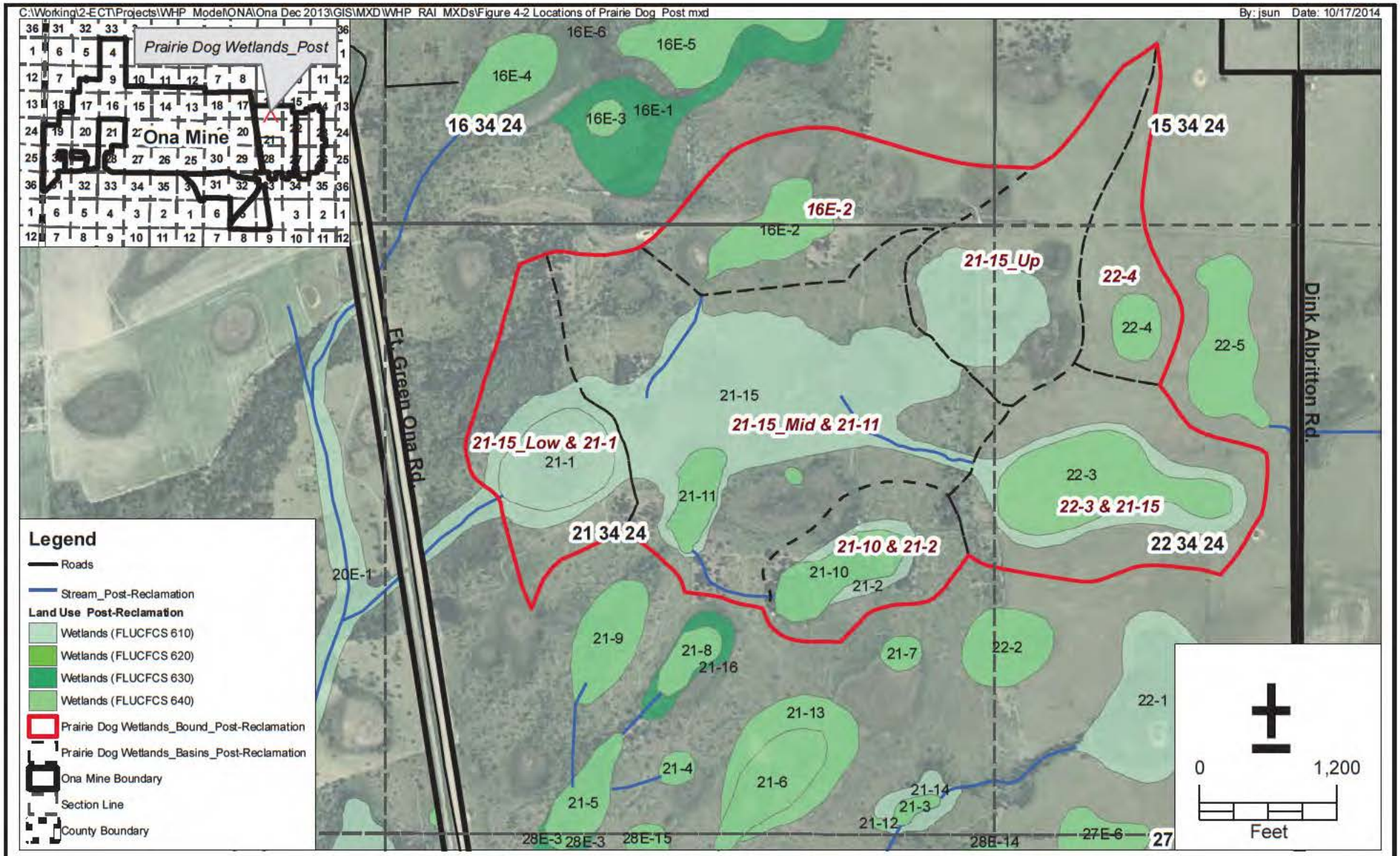

FIGURE 4-2
LOCATIONS OF PRAIRIE DOG WETLANDS - POST-RECLAMATION CONDITIONS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; Mosaic, 2014; ECT, 2014.

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C:\Working\2-ECT\Projects\WHP Model\ONA\Ona Dec 2013\GIS\MXD\WHP RAI MXDs\Figure 4-3 SWFWMD NEXRAD Pixels.mxd

By: jsun Date: 10/17/2014

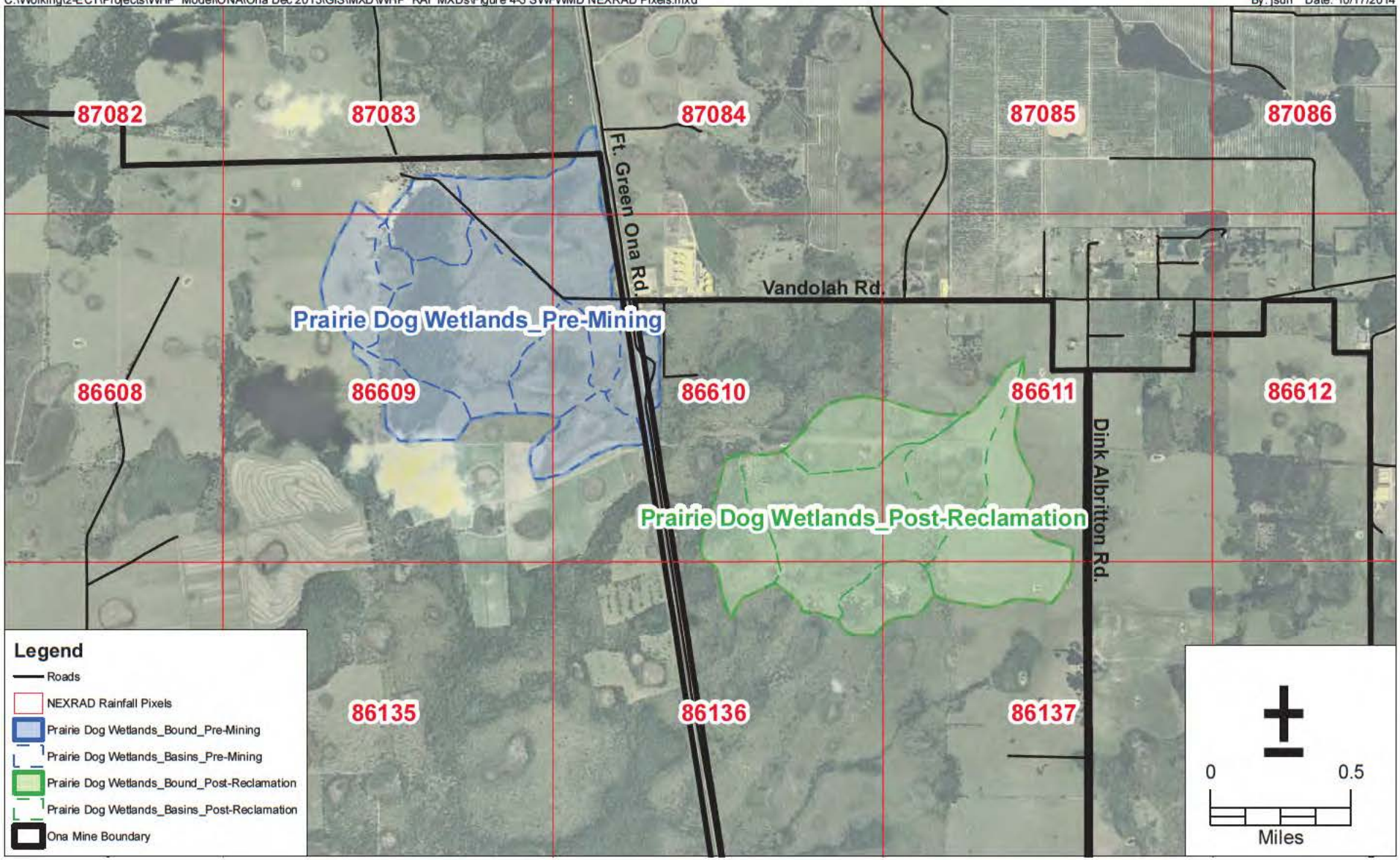

FIGURE 4-3
SWFWMD NEXRAD RAINFALL PIXELS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; SWFWMD, 2014; Mosaic, 2014; ECT, 2014.

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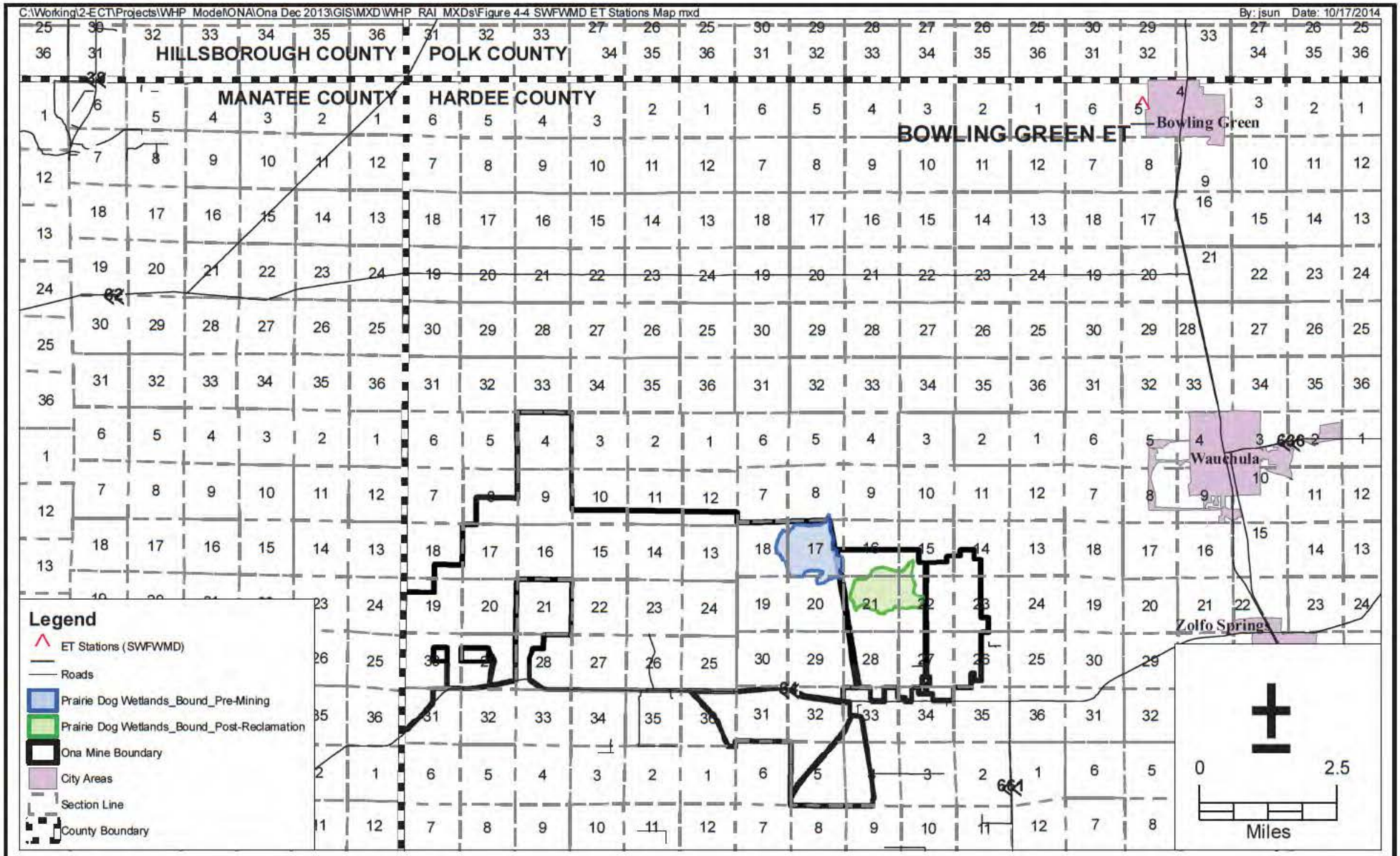

FIGURE 4-4
SWFWMD ET MONITORING STATIONS
ONA MINE - PRAIRIE DOG WETLANDS
HARDEE COUNTY, FLORIDA

Sources: ESRI, 2014; SWFWMD, 2014; Mosaic, 2014; ECT, 2014.

ECT Environmental Consulting & Technology, Inc

MOSAIC FERTILIZER, LLC
ONA MINE – PRAIRIE DOG WETLAND
HARDEE COUNTY, FLORIDA
DETAILED ASSESSMENT OF VEGETATION, SOILS AND HYDROLOGY

Prepared for:

Mosaic

Beth Niec
Permitting Engineer
Mosaic Fertilizer, LLC
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1.0 BACKGROUND

Flatwoods Consulting Group Inc. (Flatwoods) assisted Mosaic Fertilizer, LLC (Mosaic) in a comprehensive review of a wetland complex known as the "Prairie Dog" on the Ona Mine in Hardee County, Florida. This effort was intended to supplement an earlier assessment of the Prairie Dog (August 2013 Report) conducted by Flatwoods and addresses specific requests for additional data collection made by the Florida Department of Environmental Protection (FDEP) Bureau of Mining and Minerals Regulation (BMMR). In addition, the enhanced mitigation that will result from this effort is intended to meet the requirements of Sections 10.3-10.3.8 of the Environmental Resource Permit Applicant's Handbook Volume I by ensuring all appropriate data has been collected and will be utilized to successfully recreate the existing functions. The effort builds on the previous work and includes a comprehensive vegetative and soils review of the various community types within the Prairie Dog. Detailed figures (cross-section and plan views) and data describing the relationships between vegetation, soils, topography and hydrology are provided and are intended to aid in the design of a reclaimed wetland complex to replace the Prairie Dog, which is proposed for mining.

2.0 METHODS

Upon receipt of FDEP comments on the August 2013 Report, Flatwoods reviewed available information using Geographical Information Systems (GIS) software to evaluate specific areas for which more detailed data was requested. The basis for this review was the Dominant Vegetation Map (2013 Dominant Vegetation Map) included in the August 2013 Report, but also included LiDAR information, previously collected survey data, historic aerial photography, FDEP 3.1 data sheets, and UMAM/WRAP data previously collected by others. The goal was to determine the extent of additional sampling necessary within each vegetative community type for the purpose of replicating (to the greatest extent possible) the Prairie Dog within the post-reclamation landscape. During this review, a determination was made as to the benefit of quantitative surveys of vegetation along with new or existing transects, an establishment of additional soil sampling points, collection of hydrologic information, and the addition of surveyed ground elevations.

The result of this information review was a map of existing and proposed sampling transects/points (Sampling Location Map) overlain on the vegetative communities originally depicted on the August 2013 Dominant Vegetation Map. Each distinct community type polygon was assigned a unique ID (PD1-PD19) and each sampling transect/point included a description of the type of data proposed for collection (i.e. soils, hydroperiod, elevation, photograph, etc.). Length and number of transects/points to be installed for quantitative data collection were determined based on the size of the community type in an effort to accurately represent each habitat. This effort first addressed additional detail necessary along previously assessed transects (taking advantage of existing data from multiple sources), but also included data collection on the remaining three existing transects, as well as transects proposed for new survey data collection. Data collection methods for vegetation, soils and hydrology are described below.

Note that the original Sampling Location Map provided to the FDEP was developed using a prior wetland jurisdictional determination while the wetland delineation field review was ongoing. Final sampling locations and associated data included in this report have been revised to reflect the FDEP approved jurisdictional wetland limits.

2.1 Vegetation

Both quantitative and qualitative data collection were conducted across all strata in each mapped community type within the Prairie Dog. Although minor field adjustments were made upon inspection of the site, quantitative data were collected at locations depicted on the Sampling Location Map. Flatwoods collected tree and shrub data between December 2013 and July 2014. Herbaceous data was collected at the onset of the growing season in April 2014 and May 2014. Weather conditions were variable consisting of temperatures ranging from the mid-50s to the low 90s.

Quantitative tree and shrub species data were collected by sampling multiple permanently marked 900m^2 square tree plots located within each forested community type. Tree data were collected over the entire plot and shrub data were collected within a 100m^2 area nested within the tree plots (Bonham, 2013). The number of tree plots per community type was determined based on overall acreage and the geographic configuration of each community type. All tree and shrub species that existed within the rectangle plot were identified to species, counted, and provided a status (living, stressed, apical die back or dead) an estimated height of each tree was recorded. Diameter at breast height (DBH) was also recorded along the sample tree plot for all tree specimens. DBH was measured from a height of 1.3 m (4.5 ft.) from the ground. Tree and shrub density were determined by dividing the total number of trees/shrubs recorded in the plots by the combined area of the rectangle plots within each community type identified and on the Sampling Location Map. The corners of the predetermined tree plots and nested shrub plots were collected in the field utilizing a Global Positioning System (GPS) with sub-meter accuracy. The GPS points were uploaded to ArcMap and the area of each tree and shrub plot as it was measured in the field was used to complete the density calculations. In addition, percent cover of canopy and subcanopy were qualitatively assessed and provided an estimated percent cover. Dominant tree and shrub species were determined after density calculations were conducted.

At the specific request of the FDEP, Flatwoods also characterized hummocks observed within each sampled tree plot. In addition to noting the quantity of hummocks within the limits of each tree plot, Flatwoods used a GPS with sub-meter accuracy to document their location or the location of groupings. In areas where hummocks were abundant, Flatwoods located all hummocks within a defined portion of the tree plot and extrapolated the number over the entire plot. An estimate of spacing, size and height above ground elevation was also collected. In addition, vegetation most frequently observed atop hummocks was recorded.

Quantitative data collected for ground strata, defined as herbaceous species and/or woody species under 18 inches in height, utilized the square-meter sampling methodology (Bonham, 1989). Quadrats were spaced at 50 to 100 foot intervals along each transect with interval spacing determined based on total length of each transect (i.e. <1,000 ft. = every 50 feet and >1,000 = every 100 feet). Quadrat sampling intervals were measured utilizing a hip chain (Chainman II® Hip Chain, 10 kilometer in 1/10 meter increments with 1,800 meter thread) to reduce subjectivity and biasness of quadrat placement at each monitoring plot. Cover, which is the percentage of the ground surface that is vegetated, was determined using 1 square meter quadrats. Cover of herbaceous species, open water, and bare ground (including dead vegetation) in each quadrat was

recorded with the combined values resulting in total cover. Those individuals that were rooted in the quadrat were counted. Creeping and matting vegetation were included in the count if the shoots were rooted.

Taxonomy and nomenclature for plants identified during each survey followed Wunderlin 2011. Data for all quadrats were combined to determine the dominant (most abundant) and subdominant (average cover >5%) species for the community. Total and relative cover of herbaceous species were calculated using the following formulas:

$$\text{Total \% Cover} = \frac{\text{Combined \% Cover of a Particular Species for the Wetland}}{\text{Total \# of Quadrats in Sample Area}}$$

$$\text{Relative \% Cover} = \frac{\text{Total \% Cover of a Particular Species}}{\text{Total \% Cover of All Vegetation*}}$$

*Does not include coverage of bare ground, dead vegetation, or open water.

Total and relative cover of herbaceous species were tabulated and categorized by State status (UPL, FACU, FAC, FACW, OBL, etc.) per Chapter 62-340 F.A.C. Once tabulated, herbaceous species cover is available as Total % Cover and Relative % Cover for each groundcover species and presented in table format (Appendix A).

Concurrent with quantitative data collection, qualitative observations were made to ensure quantitative data accurately reflects existing conditions from a holistic perspective. Qualitative observations included the following: dominant and subdominant vegetation present per strata, presence of nuisance and exotic species concentrations, presence of hydrologic indicators (i.e., algal matting, adventitious rooting, aquatic fauna, stain lines, etc.), wildlife utilization, and estimated percent cover of desirable wetland species and upland/transitional species.

Data was reported separately for individual community types and species were identified by both scientific and common name. Summary data tables including the following information were provided for each community type:

Trees:

- Density of each species (reported as numbers per acre)
- Mean height of each species
- Mean DBH of each species
- Percent canopy (qualitative) cover for both canopy and subcanopy strata
- Dominant species per community type

Shrubs:

- Density of each species (reported as numbers per acre)
- Dominant species per community type

Ground cover:

- Percent cover of each species
- Percent cover of desirable species (based on recent FDEP permit conditions).
- Percent cover of nuisance and/or exotic species according to the Florida Exotic Pest Control Council (FLEPPC) and Wunderlin (2011).
- Percent cover of upland species
- Percent cover of open water
- Percent cover of bare ground
- Qualitative description of vegetation zonation along the wetland ecotone

2.2 Soils

Soil profile descriptions were recorded at each point specified on the Sampling Location Map, in accordance with the United States Department of Agriculture's Natural Resources Conservation Service (NRCS) "Field Book for Describing and Sampling Soils" Version 3.0, and NRCS's "Field Indicators of Hydric Soils in the United States" Version 7.0. These soil profile descriptions were used to supplement earlier work and were described in the same manner. Soil profile descriptions were completed within each tree plot and marsh community at a frequency and spacing to ensure that each vegetative community had representative soils described.

Soil physical and chemical parameters were measured at a minimum of three locations within each community. Soil physical and chemical measurements consisted of soil texture (determined in the field), as well as organic carbon content, pH and particle size distribution. The collected soil samples were analyzed for the above chemical parameters in accordance with the Environmental Protection Agency's Method SW-846 and Method 9045C. Results from the above analyses were utilized to determine the NRCS soil map unit and/or soil series (similar).

These data were then used to evaluate the relationship between the physical, chemical and biological characteristics of each community type. A description of each soil type and notable differences between the field-mapped soils and the NRCS soil survey is described within Section 3.2 of this report.

Summary data including the following information is provided for each soil profile recorded:

- Similar soil map unit/series
- Soil profile description (includes soil texture)
- Organic Carbon Content
- pH and percent base saturation

2.3 Hydrology

Hydrologic indicators, as outlined in Section 62-340.500 F.A.C., were previously used to determine the Seasonal High Water Levels (SHWL) observed along each of three sampled transects, as documented in the initial report. These SHWL elevations were supplemented by

locating additional SHWL at locations specified on the Sampling Location Map. Elevations were determined by a Professional Surveyor and Mapper (PSM).

In addition to the SHWL information collected in the field, Flatwoods obtained water-level data for three piezometers in the immediate vicinity of the Prairie Dog. Two of these piezometers fall within the wetland, and one is located immediately outside the wetland boundary. The location of these piezometers is depicted on the Sampling Location Map. The period of record for these piezometers is approximately four years, spanning from June 2009 to April 2013. These data were used to supplement the biological indicators of SHWL and provide a range of seasonal fluctuation within different locations of the Prairie Dog.

Representative photographs (Appendix D) were taken of hydrologic indicators within community types where the SHWL was above the surface. A GPS point was collected to document the location of each SHWL location.

2.4 Field Data Integration

In addition to separate vegetative, soils and hydrologic information described above, Flatwoods estimated fluctuation of water depth within each community type and compared that fluctuation with field-verified soils information and vegetative composition. This was done using cross sectional views specific to community type and season. Water depth, SHWL elevation, soil type and stratigraphy, as well as a summary of vegetative composition were displayed on each cross section view (Appendix E and F).

3.0 RESULTS

3.1 Vegetation

A total of 19 tree species, 32 shrub species and 133 groundcover species were observed within the entire Prairie Dog wetland. The abundance and distribution of these species was used to separate the wetland into 9 distinct community types. While several of these communities (i.e., PD1, PD2, PD4, PD5, etc.) would be best described using the Florida Land Use and Cover Classification System (FLUCFCS) code of 617 (Mixed Wetland Hardwoods), other communities exist as well. For instance, communities dominated by a popash (*Fraxinus caroliniana*) canopy, such as PD17, are described as FLUCFCS 616 (Inland Ponds and Sloughs) and the areas without any canopy are classified as FLUCFCS 641 (Herbaceous Marsh). The following section describes vegetative composition per strata for each wetland community type. In addition to vegetative data, hummock data is provided for those wetland communities in which hummocks were common. Hummocks were most common in PD5, PD17 and PD18 where the inundation depth and duration was adequate for hummock formation. Hummocks were either absent or very infrequent in other communities. Tree and shrub strata data is summarized and provided in the table below, followed by a narrative summary of each community type. Further detail may be found in Appendix A.

Prairie Dog Wetland Tree and Shrub Data Summary Table*

TREE DATA (WOODY SPP >4.0 INCHES DBH)									SHRUB DATA (WOODY SPP <4.0 INCHES DBH)**					
Wetland Community (PD)	Acreage	Total # of Tree Species	Total # of Trees	Average Tree Height (ft)	Average Tree DBH (inches)	Tree Density (trees/acre)			Wetland Community (PD)	Total # of Shrub Species	Total # of Shrubs	Shrub Density (shrubs/acre)		
						Min	Overall	Max				Min	Overall	Max
1	19.56	10	407	36.3	10.1	139	208	291	1	11	222	66	966	2,004
2	2.92	8	75	36.8	13.4	165	167	172	2	2	445	6,887	8,121	9,573
3,4,6	6.74	11	100	31.7	10.3	137	145	154	3,4,6	5	159	1,346	2,481	4,986
5	35.34	16	811	34.1	9.5	128	228	306	5	8	553	245	1,245	3,508
8,16	3.28	6	130	27.3	12.3	150	214	273	8,16	4	75	880	1,373	1,866
9,10	5.34	6	200	27.0	11.7	148	216	312	9,10	2	36	94	992	2,267
13,17	7.00	6	766	29.3	5.8	760	835	1,002	13,17	1	4	0	33	146
18	0.79	3	40	20.5	5.4	177	177	177	18	N/A				

*No tree/shrub data were collected within PD7, 11, 12, 14, 15 and 19 because these were classified as Herbaceous Marsh. No tree/shrub data were collected within PD9 because the majority of the polygon was reclassified as upland and the remaining wetland portion was not of the size or configuration to allow for three/shrub plot installation.

**Includes data for "true shrubs" only

Mixed Wetland Hardwoods (PD1 – 19.56 Acres)

PD1 is the largest community type within the northern portion of the Prairie Dog Wetland and is characterized as Mixed Wetland Hardwoods. This community type supports a wide variety of tree, shrub and herbaceous groundcover species. The following paragraphs describe the PD1 community type per vegetation strata.

Canopy Stratum (*woody species with a DBH ≥ 4 inches*)

A total of ten tree species were recorded in nine tree plots (TP) located in predetermined locations throughout PD1. A total of 407 trees were sampled within the TPs which equates to a density of 208 trees per acre (TPA) for the community. Average height and DBH for all trees sampled was 36 feet and 10.1 inches respectively. The three most abundant tree species sampled included American elm (*Ulmus americana*), sweetgum (*Liquidambar styraciflua*), and swamp tupelo (*Nyssa sylvatica* var. *biflora*). Percent composition for these species ranged from a low of 16.3% or 34 TPA for swamp tupelo to a high of 22.6% or 47 TPA for American elm. Tree densities ranged from 139 TPA (TP2) to 291 (TP9) for all TPs sampled within PD1. Detailed tree data by species are provided in Appendix A.

Sub-canopy/Shrub Stratum (*woody species with a DBH ≤ 4 inches*)

A total of 20 shrub species were recorded in nine shrub plots (SP) nested within the above referenced TPs. A total of 425 shrubs were sampled within the nested shrub plots which equates to 1,849 shrubs per acre (SPA) for the community. Dominant shrub species included wax myrtle (*Myrica cerifera*), Virginia willow (*Itea virginica*), and sweetgum. Percent composition for dominant shrub species ranged from a low of 17.2% or 318 shrubs per acre (SPA) for Virginia willow to a high of 26.4% or 488 SPA for wax myrtle. Shrub densities ranged from 638 (SP6) to 2,614 SPA (SP5). Detailed shrub data per species are provided Appendix A.

Groundcover Stratum (*all species <18 inches in height*)

A total of 37 groundcover species and one non-nuisance, non-listed aquatic (NLA) species, were recorded within three predetermined transects that bisected the PD1 mixed hardwood wetland community. Total vegetative groundcover was 71.3%, of which 48.3% consisted of non-nuisance, non-exotic wetland species. Lizard's tail (*Saururus cernuus*) and water spangles (*Salvinia minima*) were the dominant groundcover species and provided 25.7% and 16.7% total percent cover, respectively. Cover provided by nuisance and/or exotic species was categorized pursuant to the FLEPPC 2013 list of invasive plant species. Total percent cover provided by nuisance and/or exotic vegetation was 17.0%, 16.7% of which consisted of water spangles, a Category 1 NLA species. Facultative (FAC), Upland (UPL), non-nuisance NLA species, unclassified species (-), and open water/bare ground/dead vegetation accounted for the remaining total cover percentage. Detailed groundcover data are provided in Appendix A.

Mixed Wetland Hardwoods w/ Myrsine Dominant Sub-Canopy (PD2 – 2.92 Acres)

PD2 is the second largest community type within the northern portion of the Prairie Dog Wetland and is characterized as Mixed Wetland Hardwoods with a sub-canopy dominated by

myrsine (*Myrsine* sp.). This community type supports a wide variety of tree species and low diversity of shrub and herbaceous groundcover species. The following paragraphs describe the PD2 community type per vegetation strata.

Canopy Stratum (*woody species with a DBH ≥ 4 inches*)

A total of eight tree species were recorded in two TPs located in predetermined locations throughout PD2. A total of 75 trees were sampled within the TPs which equates to a density of 167 TPA for the community. Average height and DBH for all trees sampled was 37 feet and 13.4 inches, respectively. The three most abundant tree species sampled included cabbage palm (*Sabal palmetto*), American elm, and southern magnolia (*Magnolia grandiflora*). Percent composition for these species ranged from a low of 17.4% or 29 TPA for southern magnolia to a high of 32.3% or 54 TPA for cabbage palm. Tree densities ranged from 165 TPA (TP2) to 172 TPA (TP1) for all TPs sampled within PD2. Detailed tree data by species are provided in Appendix A.

Sub-canopy/Shrub Stratum (*woody species with a DBH ≤ 4 inches*)

A total of 5 shrub species were recorded in two SPs nested within the above referenced TP. A total of 457 shrubs were sampled within the nested shrub plots which equates to 8,339 SPA for the community. Shrub density was high largely because of high concentrations of myrsine which accounted for 426 of the 457 total shrubs sampled. Percent composition for myrsine was 93.2% or 7,774 SPA. The next most abundant shrub species was saw palmetto (*Serenoa repens*) with 4.2% percent composition or 347 SPA. Shrub densities ranged from 7,056 (SP1) to 9,851 SPA (SP2) within PD2. Detailed shrub data per species are provided Appendix A.

Groundcover Stratum (*all species <18 inches in height*)

A total of nine groundcover species were recorded within three predetermined transects that bisected the PD2 community. Total vegetative groundcover was 57.3% of which 17.8% consisted of non-nuisance, non-exotic wetland species. Wild coffee (*Psychotria nervosa*) and giant leather fern (*Acrostichum danaeifolium*) were the most abundant groundcover species and provided 36.2% and 12.1% total percent cover, respectively. Cover provided by nuisance and/or exotic vegetation (FLEPPC, 2013) was absent. Facultative (FAC), Upland (UPL), non-nuisance NLA species, unclassified species (-), and open water/bare ground/dead vegetation accounted for the remaining total cover percentages. Total and relative cover per species, status, and cover totals per species status are provided in Appendix A.

Mixed Wetland Hardwoods w/ American Elm, Sweetgum, & Laurel Oak Dominant Canopy (PD3, 4 and 6 – 6.74 Acres)

This community type encompasses three previously mapped communities similar in vegetative composition and is characterized as Mixed Wetland Hardwoods with a sub-canopy dominated by American elm, sweetgum, and laurel oak (*Quercus laurifolia*). This community supports a moderate diversity of tree species and low to moderate diversity of shrub and herbaceous groundcover species. The following paragraphs describe this community type per vegetation strata.

Canopy Stratum (*woody species with a DBH ≥ 4 inches*)

A total of three TPs located at predetermined locations throughout this community were utilized to record tree and shrub data. TPs were located within PD4 and PD6 only. PD3 was too small to incorporate sampling TPs, thus the following results report averages for tree and shrub specimens sampled within PD4 and PD6 TPs only.

A total of 11 tree species were recorded in three TPs located in predetermined locations throughout PD4, and 6. A total of 100 trees were sampled within the TPs which equates to a density of 145 TPA for the community. Average height and DBH for all trees sampled was 32 feet and 10.3 inches, respectively. The three most abundant tree species sampled included American elm, sweetgum, and laurel oak. Percent composition for these species ranged from a low of 19.3% or 28 TPA for laurel oak to a high of 34.5% or 50 TPA for American elm. Tree densities ranged from 137 TPA (PD4-TP1) to 154 (PD4-TP2) for all TPs sampled within PD4, and 6. Detailed tree data by species are provided in Appendix A.

Sub-canopy/Shrub Stratum (*woody species with a DBH ≤ 4 inches*)

A total of 12 shrub species were recorded in three SPs nested within the above referenced TP. A total of 206 shrubs were sampled within the nested shrub plots which equates to 3,215 SPA for the community. Shrub density was high largely because of high concentrations of saw palmetto which accounted for 140 of the 206 total shrubs sampled. Percent composition for saw palmetto was 68.0% or 2,185 SPA. The next most abundant shrub species recorded was cabbage palm with a percent composition of 10.2% or 328 SPA. Shrub densities ranged from 2,390 SPA (PD6-SP1) to 5,263 SPA (PD4-SP2) for all nested SPs sampled within PD3, 4, and 6. Detailed shrub data per species are provided Appendix A.

Groundcover Stratum (*all species <18 inches in height*)

A total of 44 groundcover species were recorded within five predetermined transects that bisected the PD3, 4, and 6 community. Total vegetative groundcover was 53.8% of which 27.7% consisted of non-nuisance, non-exotic wetland species. Cinnamon fern (*Osmunda cinnamomea*) and netted chainfern (*Woodwardia aerolata*) were the most abundant groundcover species and provided 7.0% and 5.0% total percent cover, respectively. Total cover provided by nuisance and/or exotic vegetation (FLEPPC, 2013 and Wunderlin 2011) was 7.9%. The majority of this coverage was comprised of bahia grass (*Paspalum notatum*) and Caesarweed (*Urena lobata*) Facultative (FAC), Upland (UPL), non-nuisance NLA species, unclassified species (-), and open water/bare ground/dead vegetation accounted for the remaining total cover percentages. Total and relative cover per species, status, and cover totals per species status are provided in Appendix A.

Mixed Wetland Hardwoods w/ Red Maple, Popash, & Swamp Tupelo Dominant Canopy (PD5 – 35.34 Acres)

PD5 is the largest community type within the Prairie Dog Wetland and is characterized as Mixed Wetland Hardwoods with a sub-canopy dominated by red maple, popash, and swamp tupelo. This community type supports a wide variety of tree, shrub and herbaceous groundcover species.

A high presence of hummocks also exists within this community. The following paragraphs describe the PD5 community type per vegetation strata, as well as hummock data.

Canopy Stratum (*woody species with a DBH ≥ 4 inches*)

A total of 16 tree species were recorded in 16 TPs located in predetermined locations throughout PD5. A total of 811 trees were sampled within the TPs which equates to a density of 228 TPA for the community. Average height and DBH for all trees sampled was 34 feet and 9.5 inches, respectively. The three most abundant tree species were red maple (*Acer rubrum*), popash, and swamp tupelo. Percent composition for these species ranged from a low 18.9% or 43 TPA for swamp tupelo to a high of 27.2% or 62 TPA for red maple. Tree densities ranged from 128 TPA (TP6) to 306 TPA (TP13) for all TPs sampled within PD5. Detailed tree data by species are provided in Appendix A.

Sub-canopy/Shrub Stratum (*woody species with a DBH ≤ 4 inches*)

A total of 20 shrub species were recorded in 16 SPs nested within the above referenced TP. A total of 836 shrubs were sampled within the nested shrub plots which equates to 1,883 SPA for the community. Dominant shrub species sampled included wax myrtle and Virginia willow. Percent composition for these shrub species ranged from a low of 14.1% or 266 SPA for wax myrtle to a high of 20.9% or 394 SPA for Virginia willow. Shrub densities ranged from 459 SPA (SP13) to 3,591 SPA (SP12) for all nested SPs sampled within PD5. Detailed shrub data per species are provided Appendix A.

Groundcover Stratum (*all species <18 inches in height*)

A total of 53 groundcover species and two non-nuisance NLAs were recorded within six predetermined transects that bisected the PD5 community. Total vegetative groundcover was 94.4% of which 50.7% consisted of non-nuisance, non-exotic wetland species. Water spangles, lizard's tail, and swamp fern (*Blechnum serrulatum*) were the most abundant groundcover species and provided 38.0%, 12.8% and 6.9% total percent cover, respectively. Total cover provided by nuisance and/or exotic vegetation (FLEPPC, 2013) was 38.9%, 38% of which consisted of water spangles (*Salvinia minima*), a nuisance NLA species that is typical for mature, deep hardwood wetland systems. Facultative (FAC), Upland (UPL), non-nuisance NLA species, unclassified species (-), and open water/bare ground/dead vegetation accounted for the remaining total cover percentages. Total and relative cover per species, status, and cover totals per species status are provided in Appendix A.

Hummocks

Hummock observations were limited to wetland communities that exhibited high water levels. Hummocks data were collected in all community types that exhibited a SHWL above the ground surface. Hummocks were frequently observed throughout PD5 supporting a variety of fern species. The most abundant fern species observed atop hummocks included royal fern (*Osmunda regalis*), swamp fern, and Virginia chain fern (*Woodwardia virginica*). There was an average of 45 hummocks per TP within PD5 with an average area of 5.9 square meters and height of 0.68 meters (measured from substrate to top of hummock). Hummock area ranged from 0.06 to 39.95 square meters and height ranged from 0.12 to 1.52 meters.

Non-Forested Herbaceous Marsh (PD7, 11, 12, 14, 15 and 19 – 7.96 Acres)

This community type includes non-forested wetlands that consist of shallow freshwater herbaceous marshes that fall within the overall footprint of the Prairie Dog Wetland. This community type supports a diverse array of herbaceous groundcover species. The following paragraph describes vegetative groundcover composition for this community type.

Groundcover Stratum (*all species <18 inches in height*)

A total of 54 groundcover species and two non-nuisance NLAs were recorded within six predetermined transects that bisected the non-forested Herbaceous Marsh communities. Total vegetative groundcover was 84.4% of which 59.1% consisted of non-nuisance, non-exotic wetland species. Maidencane (*Panicum hemitomon*), flat-joint carpet grass (*Axonopus furcatus*), and softrush (*Juncus effusus*) were the most abundant groundcover species and provided 10.8%, 8.6% and 8.1% total percent cover, respectively. Total cover provided by nuisance and/or exotic vegetation (FLEPPC, 2013) was 6.8%. Facultative (FAC), Upland (UPL), non-nuisance NLA species, unclassified species (-), and open water/bare ground/dead vegetation accounted for the remaining total cover percentages. Total and relative cover per species, status, and cover totals per species status are provided in Appendix A.

Mesic Oak & Cabbage Palm Hammock (PD8 and PD 16 – 3.28 Acres)

This community type encompasses two previously mapped communities similar in vegetative composition and is characterized as mesic oak and cabbage palm hammock. This community supports a moderate diversity of tree species and low to moderate diversity of shrub and herbaceous groundcover species. The following paragraphs describe this community type per vegetation strata.

Canopy Stratum (*woody species with a DBH ≥ 4 inches*)

A total of two TPs located at predetermined locations throughout this community were utilized to record tree and shrub data. A total of five tree species were recorded in these TPs. A total of 98 trees were sampled within the TPs which equates to a density of 249 TPA for the community. Average height and DBH for all trees sampled was 29 ft. and 10.3 inches, respectively. The most abundant tree species was laurel oak. Percent composition for this species was 51.0% or 127 TPA. Tree densities ranged from 151 TPA (PD16-TP1) to 273 TPA (PD16-TP2) for all TPs sampled within PD16. Detailed tree data by species are provided in Appendix A.

Sub-canopy/Shrub Stratum (*woody species with a DBH ≤ 4 inches*)

A total of eight shrub species were recorded in two SPs nested within the above referenced TPs. A total of 84 shrubs were sampled within the nested shrub plots which equates to 1,872 SPA for the community. The most abundant shrub species recorded was Walter viburnum (*Viburnum obovatum*) with a percent composition of 45.3% or 696 SPA. Shrub densities ranged from 1,064 SPA (PD16-SP2) to2,451 SPA (PD16-SP1) for all nested SPs sampled within PD16. Detailed shrub data per species are provided Appendix A.

Groundcover Stratum (*all species <18 inches in height*)

A total of 46 groundcover species were recorded within four predetermined transects that bisected the PD8 and 16 community. Total vegetative groundcover was 42.5% of which 15.4% consisted of non-nuisance, non-exotic wetland species. Lizard's tail and Caesar weed -a Class I invasive exotic species as listed by FLEPPC were the most abundant groundcover species and provided 7.8% and 5.7% total percent cover, respectively. Total cover provided by nuisance and/or exotic vegetation (FLEPPC, 2013) was 6.1%. Facultative (FAC), Upland (UPL), non-nuisance NLA species, unclassified species (-), and open water/bare ground/dead vegetation accounted for the remaining total cover percentages. Total and relative cover per species, status, and cover totals per species status are provided in Appendix A.

Cabbage Palm Hammock (PD 9 and PD 10 – 5.34 Acres)

This community type encompasses two previously mapped communities similar in vegetative composition characterized as cabbage palm hammock. This community supports a moderate diversity of tree species and high diversity of shrub and herbaceous groundcover species. The following paragraphs describe this community type per vegetation strata.

Canopy Stratum (*woody species with a DBH ≥ 4 inches*)

A total of two TPs located at predetermined locations throughout this community were utilized to record tree and shrub data. A total of seven tree species were recorded in three TPs located in predetermined locations throughout PD10. A total of 101 trees were sampled within the TPs which equates to a density of 236 TPA for the community. Average height and DBH for all trees sampled was 30 ft. and 10.2 inches, respectively. Cabbage palm, popash, and American elm were the dominant tree species within this community. Percent composition for these species ranged from a low of 16.9% or 40 TPA for American elm to a high of 34.7% or 82 TPA for cabbage palm. Tree densities ranged from 213 TPA (PD10-TP2A) and 226 TPA (PD10-TP1A) for all TPs sampled in PD10. Detailed tree data by species are provided in Appendix A.

Sub-canopy/Shrub Stratum (*woody species with a DBH ≤ 4 inches*)

A total of seven shrub species were recorded in two SPs nested within the above referenced TPs. A total of 68 shrubs were sampled within the nested shrub plots which equates to 1,873 SPA for the community. Shrub density was high largely because of high concentrations of saw palmetto which accounted for 35 of the 68 total shrubs sampled. Percent composition for saw palmetto was 51.5% or 964 SPA. The next most abundant shrub species recorded was cabbage palm with a percent composition of 27.9% or 523 SPA. Shrub densities ranged from 1,523 SPA (PD10-SP2A) and 4,230 SPA (PD10-SP1A) for all nested SPs sampled within PD9/10. Detailed shrub data per species are provided Appendix A.

Groundcover Stratum (*all species <18 inches in height*)

A total of 37 groundcover species were recorded within four predetermined transects that bisected the PD9 and 10 community. Total vegetative groundcover was 40.9%; 12.0% consisted of non-nuisance, non-exotic wetland species. Wild coffee was the most abundant groundcover species within this community and provided 10.8% total cover. Total cover provided by nuisance

and/or exotic vegetation (FLEPPC, 2013) was 2.8%. Facultative (FAC), Upland (UPL), non-nuisance NLA species, unclassified species (-), and open water/bare ground/dead vegetation accounted for the remaining total cover percentages. Total and relative cover per species, status, and cover totals per species status are provided in Appendix A.

Popash Forested Wetlands (PD13 and 17 – 7.00 Acres)

This community type encompasses two previously mapped communities similar in vegetative composition and is characterized as popash forested wetland. This community supports a moderate diversity of tree species and low diversity of shrub and herbaceous groundcover species. The following paragraphs describe this community type per vegetation strata.

Canopy Stratum (*woody species with a DBH ≥ 4 inches*)

A total of four TPs located at predetermined locations throughout this community were utilized to record tree and shrub data. TPs were located within PD17 only. PD13 was too small to incorporate sampling TPs, thus the following results report averages for tree and shrub specimens sampled within PD17 TPs only.

A total of six tree species were recorded in four TPs located in predetermined locations throughout PD17. A total of 766 trees were sampled within the TPs which equates to a density of 835 TPA for the community. Average height and DBH for all trees sampled was 29.3 feet and 5.8 inches, respectively. Popash was the dominant tree species. Percent composition for this species was 94.5% or 789 TPA. Tree densities ranged from 760 TPA (PD17-TP1) to 1,002 TPA (PD17-TP4) for all TPs sampled within PD 17. Detailed tree data by species are provided in Appendix A.

Sub-canopy/Shrub Stratum (*woody species with a DBH ≤ 4 inches*)

A total of four shrub species were recorded in four SPs nested within the above referenced TPs. A total of 157 shrubs were sampled within the nested shrub plots which equates to 1,312 SPA for the community. Shrub density was high largely because of high prevalence of popash saplings which accounted for 150 of the 157 total shrubs sampled. Percent composition for popash was 95.6% or 1,253 SPA. Shrub densities ranged from 844 SPA (PD17-SP2) to 1,889 SPA (PD17-SP3) for all nested SPs sampled within PD17. Detailed shrub data per species are provided Appendix A.

Groundcover Stratum (*all species <18 inches in height*)

A total of 28 groundcover species and one non-nuisance NLA were recorded within three predetermined transects that bisected the PD13/17 community. Total vegetative groundcover was 20.4% of which 18.0% consisted of non-nuisance, non-exotic wetland species. Lizard's tail was the most abundant groundcover species and provided 13.6% total cover for the community. Total cover provided by nuisance and/or exotic vegetation (FLEPPC, 2013) was 0.5%. Facultative (FAC), Upland (UPL), non-nuisance NLA species, unclassified species (-), and open water/bare ground/dead vegetation accounted for the remaining total cover percentages. Total and relative cover per species, status, and cover totals per species status are provided in Appendix A.

Hummock Data

Hummock observations were limited to wetland communities that exhibited high water levels. Hummocks data were collected in all community types that exhibited a SHWL above the ground surface. Hummock presence was infrequent throughout the Popash Forested Wetland Community (PD13 and 17). Red maple was the most common species noted atop hummocks for this community. Average hummock area was 1.73 square meters and average height was 0.56 meters (measured from substrate to top of hummock). Hummock area ranged from 1.67 to 1.86 square meters and height ranged from 0.53 to 0.58 meters.

Carolina Willow Wetlands (PD18 – 0.79 Acres)

PD18 is the smallest community type within the southern portion of the Prairie Dog Wetland and is characterized as Carolina Willow (*Salix caroliniana*) Wetlands. This community type supports a low diversity of tree and herbaceous groundcover species. The following paragraphs describe the PD18 community type per vegetation strata.

Canopy Stratum (*woody species with a DBH ≥ 4 inches*)

A total of three tree species were recorded in 1 TP located in a predetermined location within PD18. A total of 40 trees were sampled within the TP which equates to a density of 177 TPA for the community. Average height and DBH for all trees sampled was 21 feet and 5.4 inches respectively. Carolina willow was the dominant tree species with a percent composition of 65.0% or 115 TPA. Detailed tree data by species are provided in Appendix A.

Sub-canopy/Shrub Stratum (*woody species with a DBH ≤ 4 inches*)

No specimen within the one shrub plot nested in the TP met the above referenced shrub criteria thus no shrubs were recorded within this community.

Groundcover Stratum (*all species <18 inches in height*)

A total of four groundcover species and two non-nuisance NLAs were recorded within one predetermined transect that bisected the PD18 community. Total vegetative groundcover was 44.8% of which 2.3% consisted of non-nuisance, non-exotic wetland species. Water spangles and water lettuce (*Pistia stratiotes*) -a Class I invasive exotic species as listed by FLEPPC were the most abundant groundcover species and provided 23.8% and 18.8% total percent cover, respectively. Total cover provided by nuisance and/or exotic vegetation (FLEPPC, 2013) was 67.5%; all of which consisted of NLA species that are typical for mature, deep hardwood wetland systems. Facultative (FAC), Upland (UPL), non-nuisance NLA species, unclassified species (-), and open water/bare ground/dead vegetation accounted for the remaining total cover percentages. Total and relative cover per species, status, and cover totals per species status are provided in Appendix A.

Hummock Data

Hummock observations were limited to wetland communities that exhibited high water levels. Hummocks data were collected in all community types that exhibited a SHWL above the ground surface. Hummock presence was infrequent throughout the Popash Forested Wetland

Community (18). A variety of tree, shrub, and herbaceous species was observed atop hummocks in this community. Average hummock area was 1.22 square meters and average height was 0.67 meters (measured from substrate to top of hummock). Hummock area ranged from 0.12 to 2.23 square meters and height ranged from 0.58 to 0.74 meters.

3.2 Soils

The attached Site-Specific Soil Map was created utilizing a very high level intensity mapping strategy. Through the investigation, nine similar USDA NRCS soil map units were identified within the jurisdictional wetland boundary. Four soil map units were identified outside the jurisdictional wetland boundary, thereby supporting the jurisdictional wetland determination and adding purity to the soil survey. A brief discussion of each similar USDA NRCS soil map unit encountered within the jurisdictional wetland boundary is found below. In addition, typical soil profile descriptions are provided as Appendix B.

Floridana & Popash - These soils consist of level, poorly to very poorly drained sandy soils. These soils occur in nearly level pine and saw palmetto flatwoods interspersed with small, grassy wet depressions, cypress ponds and swamps. They may have a dark colored subsoil at a depth of less than 30 inches Below Land Surface (bls) over loamy material. Each map unit is sandy to a depth of 20 to 40 or more inches bls and are loamy below. **Floridana** soils are very poorly drained with a surface layer about 15 inches thick. In the upper 4 inches it is black mucky fine sand, and in the lower 11 inches it is very dark gray fine sand. The subsurface layer is gray fine sand about 17 inches thick. The subsoil is dark gray sandy clay loam to a depth of 44 inches and gray sandy loam to a depth of 80 inches or more. It has lenses and pockets of loamy fine sand and fine sand. **Popash** soils are very poorly drained. Typically, the surface layer in the upper 8 inches is black mucky fine sand, and in the lower 11 inches it is black fine sand. The subsurface layer is gray fine sand about 25 inches thick. The subsoil to a depth of 60 inches is grayish brown sandy clay loam[1].

Bradenton & Chobee – These soils consist of nearly level, poorly to very poorly drained soils that are subject to frequent flooding. They consist of low first bottoms of rivers, streams and drainageways. They are interspersed with shallow river and creek channels. **Bradenton** soils are poorly drained, typically with a dark gray fine sand surface layer about 6 inches thick. The subsurface layer is grayish brown fine sand about 10 inches thick. The subsoil is light brownish gray sandy clay loam about 13 inches thick. The substratum is gray sandy clay loam to a depth of 80 inches. **Chobee** soils are very poorly drained. Typically, the surface layer is black sandy clay loam about 22 inches thick. The subsoil is dark gray sandy clay loam to a depth of 40 inches and gray sandy clay loam to a depth of 80 inches bls[1].

Kaliga – Kaliga soils are nearly level, very poorly drained organic soils. The organic material extends to between 16 and 51 inches bls, underlain by loamy sediments. This map unit is generally found in hardwood and cypress swamps. Typically, the surface layer is black muck about 28 inches thick. Below the muck there is very dark grayish brown loamy fine sand to a depth of 34 inches and dark gray sandy clay loam to 80 inches bls[1].

[1] Soil Survey of Hardee County, June 1984.

Nittaw – Nittaw soils consist of very poorly drained, slowly permeable soils that formed in thick deposits of clayey marine sediments. They occur in well-defined drainageways, broad, nearly level swamps and marshes. They are subject to standing and flooding water above the soil surface for 6 months or more in most years. The surface layer typically consists of muck to about 6 inches. Below the muck black fine sand exists to about 15 inches. Gray and light gray sandy clay exists to 70 inches bls, underlain by fine sand to 83 inches bls[2].

Placid – Placid soils consist of deep, very poorly drained acid soils that formed in thick beds of marine sand. They are found in wet depressions in the flatwoods in which they are generally ponded for 6 months or more during average years. Typically, the surface layer is very dark gray to black fine sand to a depth of 18 inches. The subsoil to a depth of 80 inches is grayish brown to light brownish gray fine sand[1].

Holopaw – This map unit consists of nearly level, poorly drained soils that formed in stratified, unconsolidated marine sand and sandy clay loam. They are on broad, low-lying flats and in poorly defined drainageways. The surface layer usually consists of black fine sand about 3 inches thick. The subsurface layer consists of gray and light gray fine sand to 60 inches bls, underlain by a loamy gray subsoil to 80 inches bls[1].

Manatee – Manatee soils consist of very poorly drained, moderately permeable soils that formed in sandy and loamy marine sediments. They are found in depressions. In most years, if the soils are not drained, they are covered by shallow water for more than 6 months. The surface generally consists of black mucky fine over black fine sand to 9 inches. The subsurface consists of dark gray loamy fine sand and sandy loam. The subsoil is light brownish gray to light gray sandy loam to sandy clay loam[1].

Seasonal High Saturation (SHS) exists at or above the soil surface for each of the similar USDA NRCS soil map units encountered and depicted on the attached Soil Survey Map. These soils belong to the Hydrologic Group "D", indicating a poorly to very poorly drained (SHS 0 to 18 inches bls) hydrologic regime under unaltered/undrained conditions. Therefore, upon wetland reclamation/restoration following mining activities, it is imperative that the wetland system be created utilizing the same hydrologic soils group as in the existing condition. This will ensure appropriate water holding capacities, permeabilities, etc. given that hydrology is reintroduced accordingly. It is critical to re-establish the appropriate hydrologic conditions such that Hydrologic Group D classified soils will exist. Such establishment will promote similar organic matter accumulations, soil morphology and vegetative structures.

Based on the presence of organic accumulations and redoximorphic features (concentrations as soft masses and/or pore linings and organic depletions) the depth to SHS exists between 0 and 55 inches bls in the investigative area. The depth to SHS exists between 0 and 6 inches bls within the limits of the attached Site-Specific Soil Map (Note: The limits of the attached map correspond to the limits of the jurisdictional wetland boundary as confirmed by the Florida Department of Environmental Protection, 2014).

[2] United States Department of Agriculture's Natural Resources Conservation Service Official Soil Series Description Website (https://soilseries.sc.egov.usda.gov).

Investigative Results (August 2014 report) Table*

Soil Sample Location	Depth to SHS (in. bls)	SHS/Hydric Soil Indicator**	Depth to Free Water (in. bls)	NRCS Map Unit at Location (similar)
PD1-TP1	0	A1, A2, A3 & A8	0	Kaliga muck
PD1-TP2	0	A8	0	Bradenton loamy fine sand, frequently flooded
PD1-TP3	0	A8	2	Chobee fine sandy loam, frequently flooded
PD1-TP4	0	A8	2	Chobee fine sandy loam, frequently flooded
PD1-TP5	0	A8	10	Bradenton loamy fine sand, frequently flooded
PD1-TP6	0	A8	0	Bradenton loamy fine sand, frequently flooded
PD1-TP7	0	A8	4	Floridana mucky fine sand, depressional
PD1-TP8	0	A8	4	Floridana mucky fine sand, depressional
PD1-TP9	0	A8 & F13	1	Chobee fine sandy loam, frequently flooded
PD2-TP1	0	A7	18	Bradenton loamy fine sand, frequently flooded
PD2-TP2	4	F3	18	Bradenton loamy fine sand, frequently flooded
PD4-TP1	0	F13	15	Bradenton loamy fine sand, frequently flooded
PD4-TP2	0	F13	15	Bradenton loamy fine sand, frequently flooded
PD5-TP1	0	A7	0	Chobee fine sandy loam, frequently flooded
PD5-TP2	0	A2, A3 & A8	2	Bradenton loamy fine sand, frequently flooded
PD5-TP3	0	A8	0	Bradenton loamy fine sand, frequently flooded
PD5-TP4	0	A7 & A8	+4	Bradenton loamy fine sand, frequently flooded
PD5-TP5	0	A1, A2, A3 & A8	+24	Kaliga muck
PD5-TP6	0	A1, A2, A3 & A8	+24	Kaliga muck
PD5-TP7	0	S7	2	Bradenton loamy fine sand, frequently flooded
PD5-TP10	0	A2, A3 & A8	+24	Popash mucky fine sand
PD5-TP11	0	A2, A3 & A8	+24	Popash mucky fine sand
PD5-TP12	0	A2, A3 & A8	+24	Popash mucky fine sand
PD5-TP13	0	A1, A2, A3 & A8	0	Kaliga muck
PD5-TP14	0	A7& A8	0	Placid fine sand, depressional
PD5-TP15	0	A7, A8 & F13	0	Manatee mucky fine sand, depressional
PD5-TP16	0	A7, A8 & S7	2	Holopaw fine sand
PD6-TP1	0	A8	10	Pomona fine sand

Soil Sample Location	Depth to SHS (in. bls)	SHS/Hydric Soil Indicator**	Depth to Free Water (in. bls)	NRCS Map Unit at Location (similar)
PD-7	0	A7 & A8	18	Chobee fine sandy loam, frequently flooded
PD8-TP1	24	RC	36	Sparr fine sand
PD9-TP1	30	RC	50	Sparr fine sand
PD10-TP1	12	NA	24	Bradenton loamy fine sand
PD10-TP1A	0	A8	12	Chobee fine sandy loam, frequently flooded
PD10-TP2	12	NA	30	Bradenton loamy fine sand
PD10-TP2A	0	A7	12	Chobee fine sandy loam, frequently flooded
PD10-TP3	12	NA	24	Bradenton loamy fine sand
PD-11	0	A7 & A8	16	Placid fine sand, depressional
PD-12	12	RC	30	Smyrna sand
PD-13	0	F13	4	Chobee fine sandy loam, frequently flooded
PD-14	0	S7	17	Holopaw fine sand
PD-15	0	A7	17	Chobee fine sandy loam, frequently flooded
PD16-TP1	0	A8 & F13	20	Chobee fine sandy loam, frequently flooded
PD16-TP2	8	NA	18	Bradenton loamy fine sand
PD17-TP1	0	A8	6	Chobee fine sandy loam, frequently flooded
PD17-TP2	0	A7 & A8	2	Bradenton loamy fine sand, frequently flooded
PD17-TP3	0	A7	12	Bradenton loamy fine sand, frequently flooded
PD17-TP4	0	A7	2	Floridana mucky fine sand, depressional
PD19	0	A6	20	Floridana mucky fine sand, depressional

*In order to determine similar USDA soil map unit the following criteria were assessed at each pedon/soil description location: soil texture, soil color, redoximorphic features, depth to SHS, depth to diagnostic soil horizons, and landscape position. Laboratory analysis for select pedons included pH, organic carbon content, particle size distribution (i.e., texture), and cation exchange capacity.

**RD – redox depletions. [2]RC – redox concentrations.
A1 – Histosol. A2 – Histic Epipedon. A3 – Black Histic. A6 – Organic Bodies. A7 - 5 cm Mucky Mineral. A8 - Muck Presence. F3 - Depleted Matrix. S5 - Sandy Redox. S7 - Dark Surface. F13 – Umbric Surface.

3.3 Hydrology

A total of 39 (SHWL) were observed and marked in five separate community types where hydrologic indicators were noted above the soil. The elevation of 10, 24, and five SHWLs were surveyed within the PD1, PD5, and PD17/18 communities by a PSM. The SHWL ranged from 93.85 in the northern portion of the wetland (PD1) to 92.37 in the southern portion (PD17/18). Ground elevations varied similarly, with the highest average ground surface elevation found in PD1 (93.16) and the lowest in PD17/18 (91.56). The seasonal high water depth ranged from 0.69 feet in PD1 to 1.07 feet in PD5. It was also evident from the data collection efforts that, in general, the water levels annually recede below the ground surface during the dry season in PD1 and PD17/18, whereas PD5 does not appear to dry out at any time during most years.

Community	SHW Elevation (ft.)	Average Ground Elevation (ft.)	Seasonal High Water Depth (ft.)	Seasonal Fluctuation* (ft.)
PD1	93.9	93.2	0.7	3.5
PD5	92.9	91.8	1.1	1
PD17/18	92.4	91.6	0.8	4.6

*Based on Period of Record water level data and estimates made during field observations.

Hydrographs were created using data provided by Mosaic from piezometers in the vicinity of the Prairie Dog (Piezometers 2661, 2662, and 2663). The locations of these piezometers are shown on the Sampling Location Map. Hydrographs and associated piezometer data are attached in Appendix C.

4.0 DISCUSSION

In addition to the numerical and descriptive data provided on vegetation, soils and hydrology above, Flatwoods documented site conditions and sampling efforts through the collection of photographs (Appendix D). This photographic documentation spans approximately eight months and includes over 150 photos that are organized chronologically and include information in the caption regarding general subject (i.e., biological indicator of SHWL, soil profile, etc.) and the general location where it was taken (e.g., PD16-TP2 northeast corner looking south).

Reclamation plans are not typically designed to achieve one-to-one replacement of specific wetlands, however the information collected and reported herein will allow for such replacement of the Prairie Dog wetland within the Ona Mine post reclamation landscape. The Prairie Dog wetland exists in a north/south orientation within the current landscape. The northern portion is higher in elevation, whereas the southern end is lower and is the single point of hydrologic discharge from the system. The post reclamation Prairie Dog wetland is oriented east/west with the eastern portion being higher in elevation and a similar single-discharge point at the western end. The different portions of the systems (both existing and reclaimed) are described hereafter as upper, middle and lower for clarity.

The proposed post reclamation topography of the Prairie Dog wetland and the surrounding area was iteratively designed based on review of existing topography, comments from the FDEP and data

collection efforts described in previous sections of this report. Cross sections were developed for the post reclamation Prairie Dog wetland to demonstrate the similarity between pre-mining and post reclamation conditions (Appendices E and F). Notable features within this topographic design are described below.

An abrupt change in elevation exists immediately upslope of the upper end of the existing Prairie Dog and has been replicated in the post reclamation design. This change in elevation allows for seepage to provide a source of water that is consistent in quantity and quality with that which exists in the current landscape.

Two topographic "saddles" exist within the current Prairie Dog wetland that retards hydrologic flow from upstream to downstream. These saddles allow for a separate and distinct SHWL to exist within the upper, middle and lower areas. The post reclamation Prairie Dog design has similar features that are designed to retard the flow of water from upstream to downstream. In addition, the modeled hydroperiods for the post reclamation Prairie Dog wetland has three separate and distinct elevations separated by these saddles. While the raw elevations in the post reclamation Prairie Dog wetland are approximately 0.5 feet higher than the existing wetland, the modeled water depth within each zone is nearly identical.

Mosaic will leave some areas roughly graded and will install stumps, logs, and shrubs several inches above the seasonal high water line to provide hummocks and increase habitat heterogeneity. Snags will also be placed within the forested wetlands to encourage wildlife usage. Within 60 days of final grading, the final contours of the Prairie Dog wetland shall be surveyed in accordance with general survey procedures utilizing a 50-foot grid and spot elevations to 0.1 of a foot. An as-built contour map will be generated to show 0.5-foot contours and the 0.1-foot spot elevations, extending at least 200-feet into the adjacent uplands. The contour maps will reference NGVD and be certified by a land surveyor or professional engineer registered in the State of Florida. All topographic maps shall meet the minimum technical standards as set forth in Chapter 472, F.S.

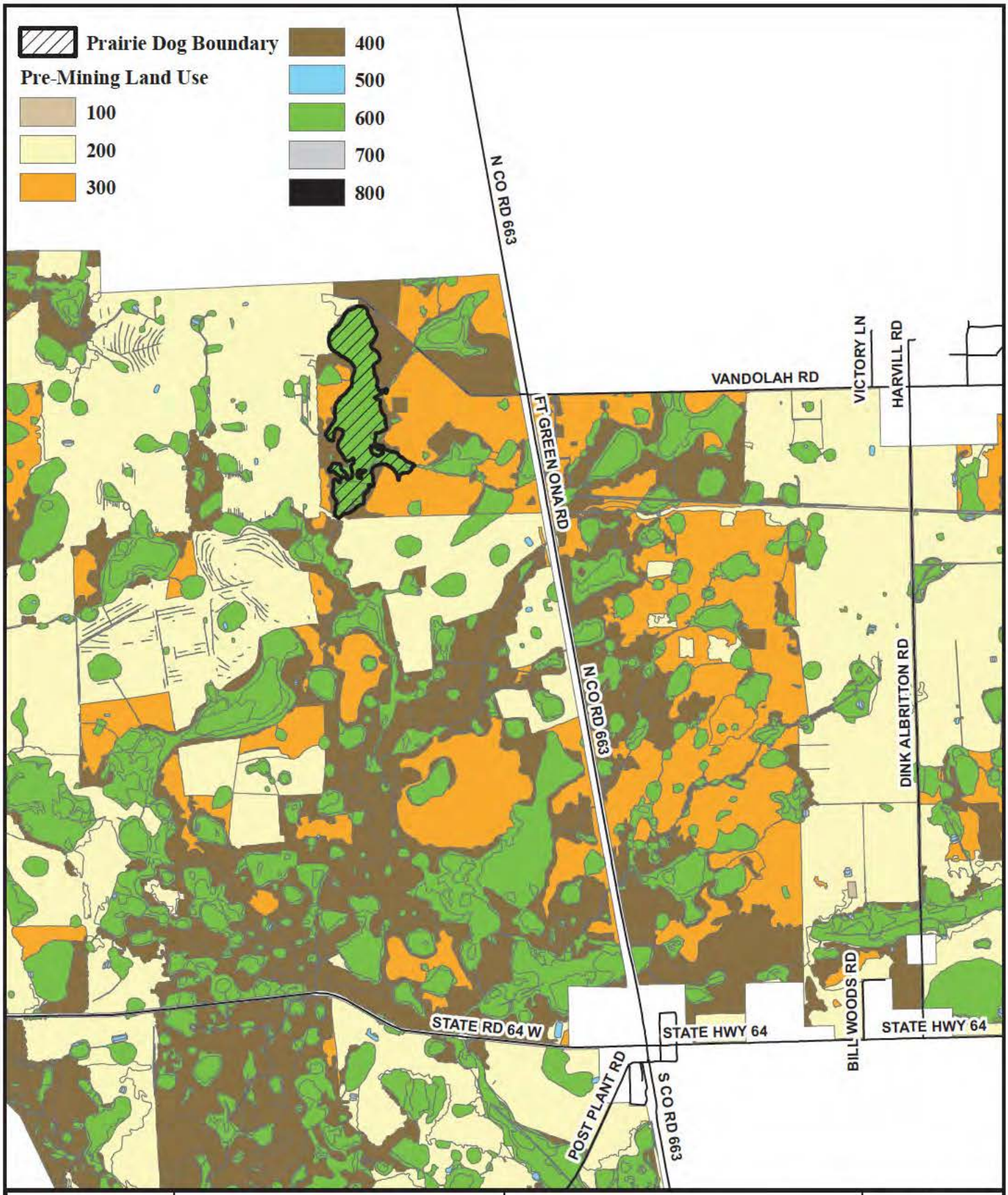
Each of the community type mapped in the current Prairie Dog wetland is also proposed to be created in the post reclamation Prairie Dog wetland, with the exception of the Carolina willow dominated habitat. Discussions with the FDEP led to the replacement of this community with a deeper Herbaceous Marsh with the understanding that Carolina willow may recruit into the zone if the conditions were favorable.

The FLUCFCS Level III map shows three land cover types within the Prairie Dog wetlands (see Pre and Post Land Cover Maps). The proportion of the three land cover types is similar in the current and the post reclamation Prairie Dog wetlands. Mosaic has provided planting lists for each of these three land cover types in previous submittals. While the post reclamation planting plans for two of these community types (Freshwater Marsh – 641 and Inland Ponds and Sloughs – 616) will be identical to previous submittals, the Mixed Hardwood Wetland (617) planting plan will be modified for the post reclamation Prairie Dog wetland to replicate the diversity found in the current landscape. Each community type proposed has a specific planting plan that was based on the Mixed Wetland Hardwood planting plan, but was modified based on data collection in the current landscape. Species composition and dominance were primary considerations in the development of these lists. The result of this effort is eight specific planting lists that will be used in the post reclamation landscape (Appendix G).

Twenty-five percent of trees planted in the post reclamation Prairie Dog wetland will be 1-gallon size, while sixty percent will be 3-gallon and fifteen percent will be 5-gallon. Direct transfer of small shrubs and trees from future mining areas may also be utilized in the reclamation. Additional plantings of 1-gallon shrubs and shade tolerant herbaceous vegetation shall occur after establishment of suitable canopy/subcanopy cover (by year 7) within the forested portions of the Prairie Dog wetland, as listed on the planting list of the target community types.

Muck depth within the existing Prairie Dog wetland was correlated with community type and a maximum muck depth for each was assigned in the post reclamation landscape (see Pre and Post Muck Depth Maps). This, coupled with the commitment to grade overburden and limit the sand tailings cap in the middle portion of the post reclamation Prairie Dog wetland, will serve to provide similar soil conditions as are found within the current landscape. Additional overburden may be added to the surface soils, as needed, to enhance water holding capacity, cation-exchange capacity, and nutrient retention, provided that the infiltration zone remains composed of predominantly of sandy material and could be classified as sand, loamy sand, or sandy loam pursuant to the USDA-NRCS soil texture classification.

The detailed data collection and analysis conducted and reported herein will provide the basis for site-specific mitigation plan that is greatly enhanced relative to traditional methods. While the cost makes it impracticable for large-scale implementation, the intent of this enhanced mitigation plan is to meet the requirements of Sections 10.3-10.3.8 of the Environmental Resource Permit Applicant's Handbook Volume I. The assessment and enhanced post reclamation design contained within this report provides far greater detail and specificity than is required for typical mitigation projects, which will provide greater assurance that existing functions will be replaced. Overall, the mitigation proposed in the Ona ERP Application provides regional ecological value, greater habitat connectivity and greater long term functional viability than a mining and mitigation scenario which simply preserves the prairie dog wetland.



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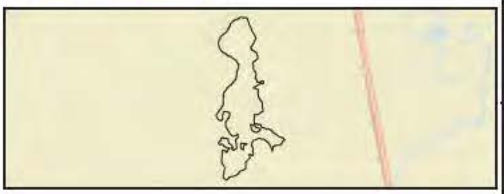
FLATWOODS Consulting Group

PRAIRIE DOG
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA



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PRE MINING LOCATION MAP

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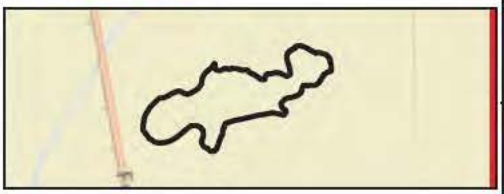
FLATWOODS Consulting Group

PRAIRIE DOG
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA



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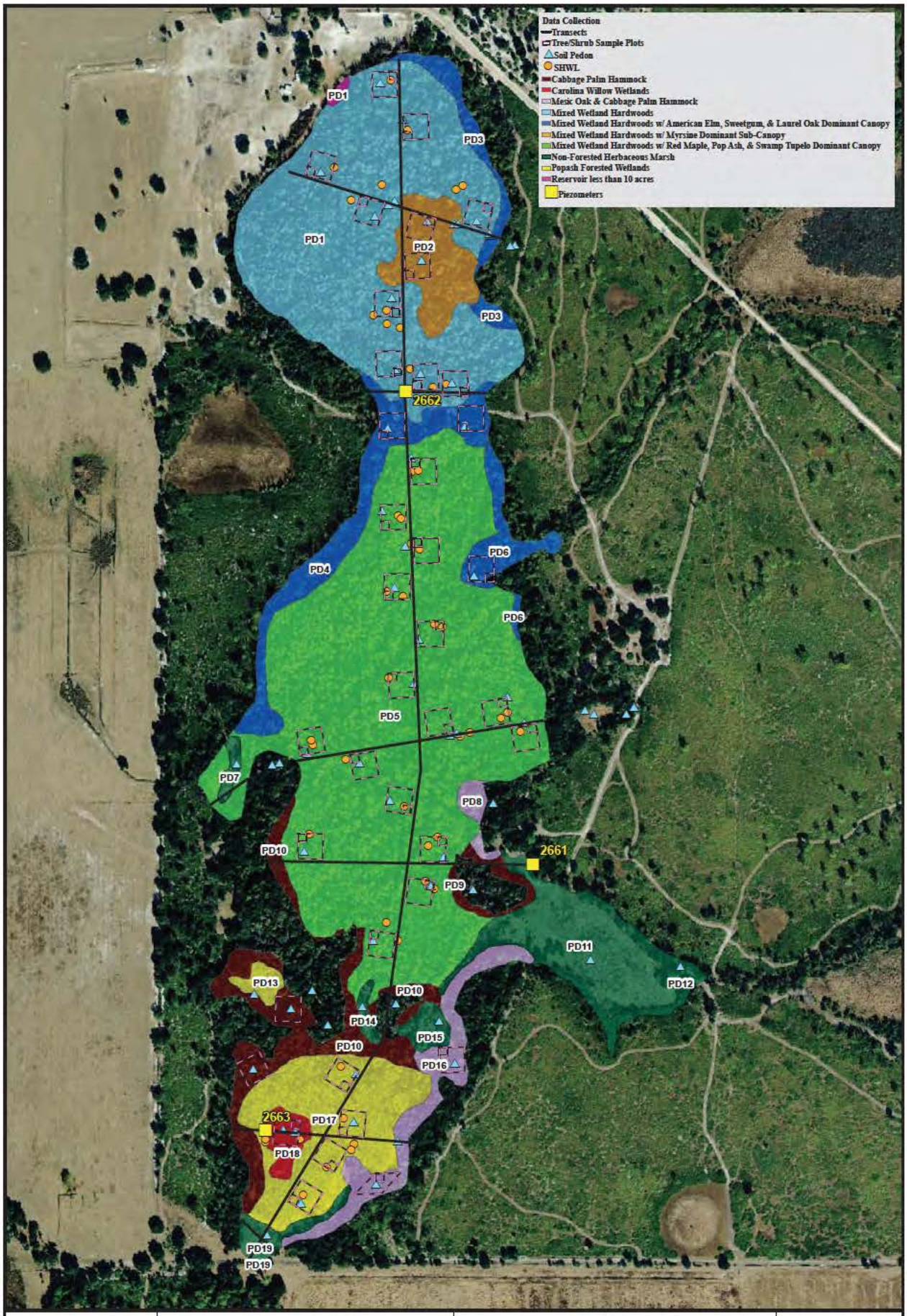

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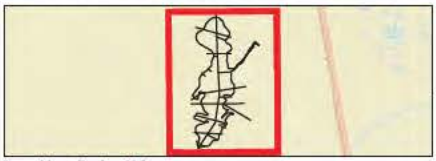
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA



Source Mosaic Fertilizer LLC

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SAMPLING LOCATION MAP

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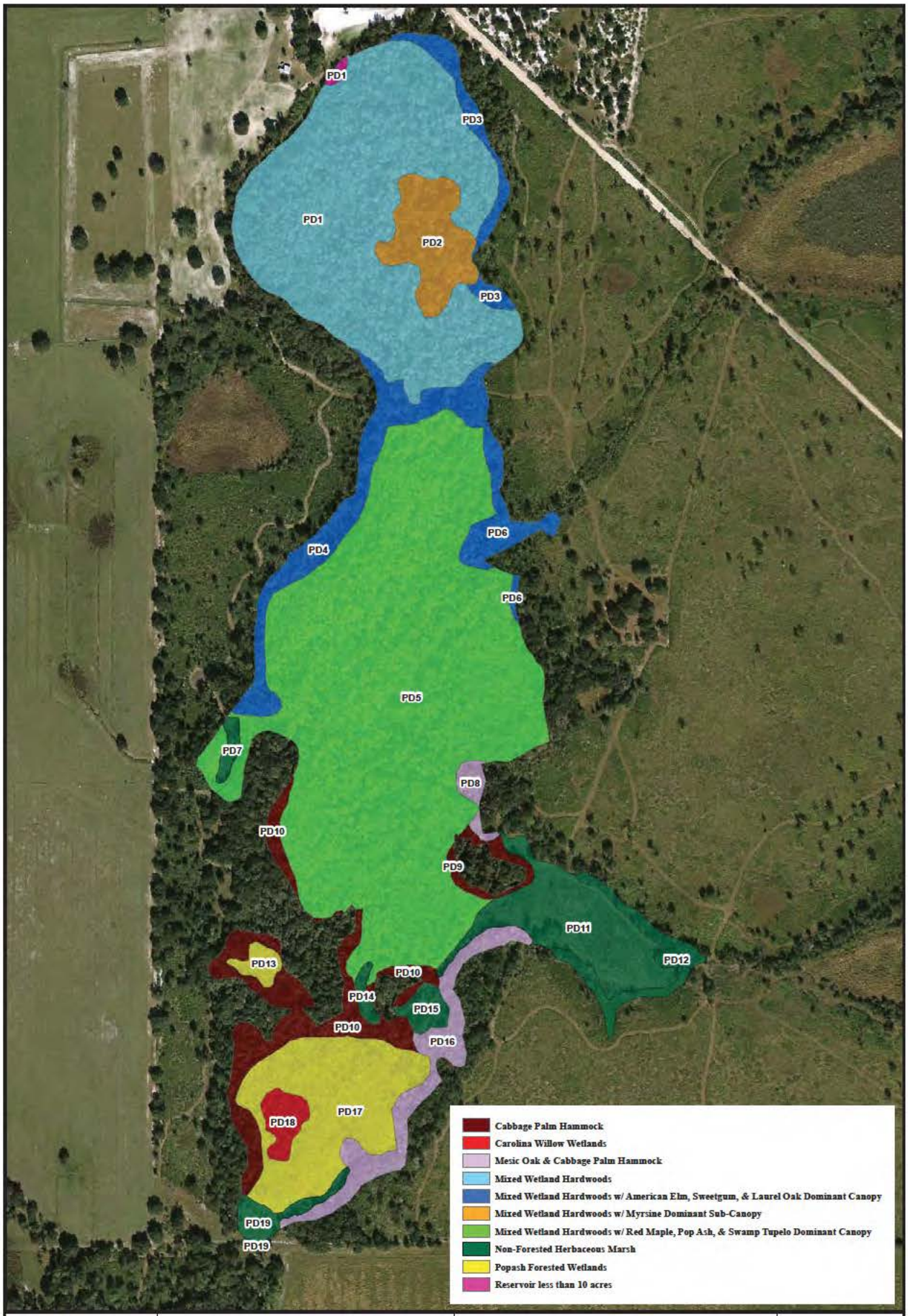

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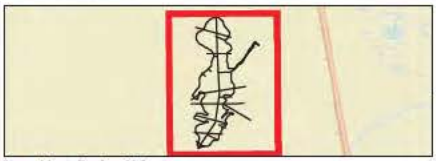
1 in = 350 feet

FLATWOODS Consulting Group

PRAIRIE DOG
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA



Source Mosaic Fertilizer LLC

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2013 DOMINANT VEGETATION MAP

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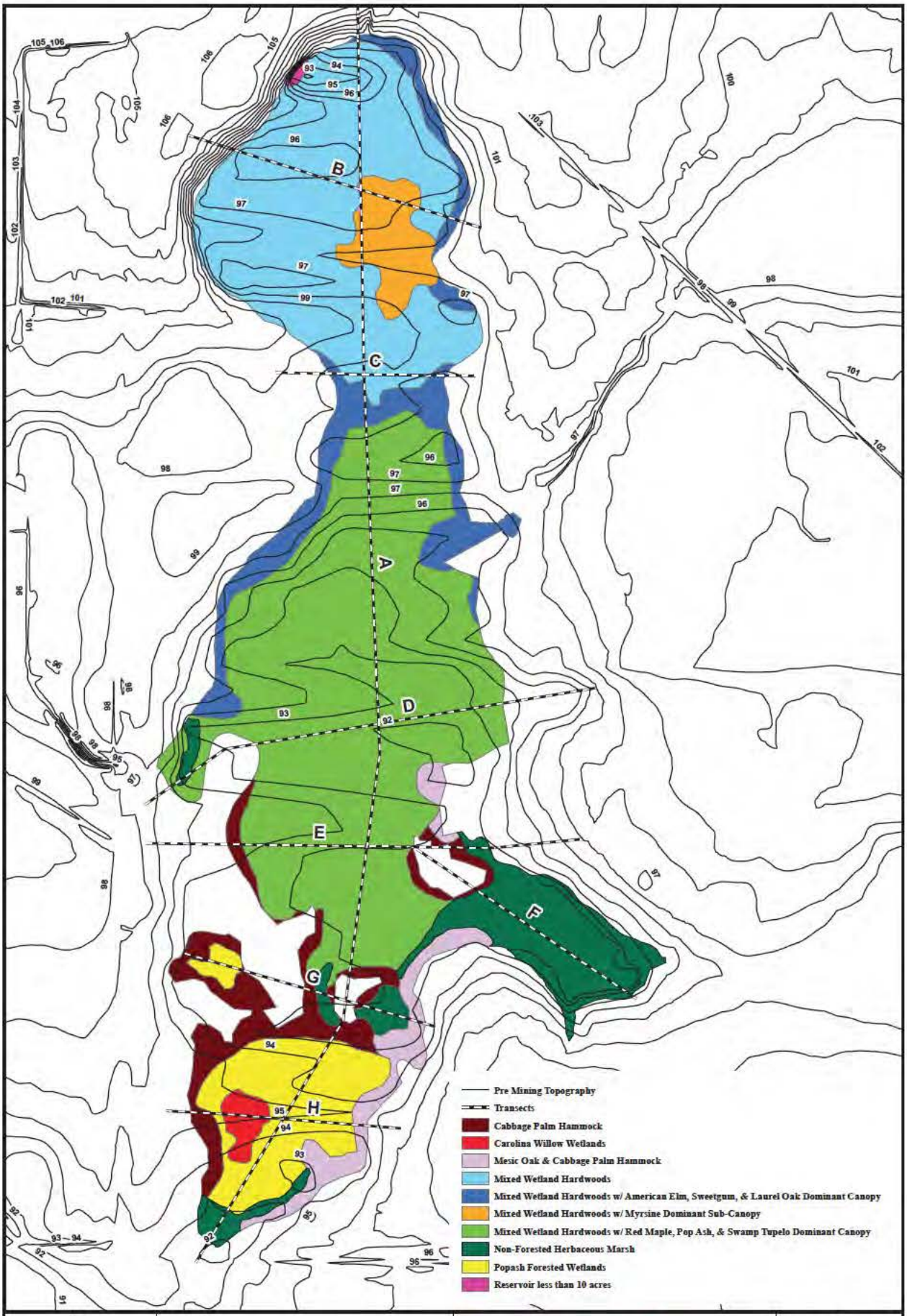

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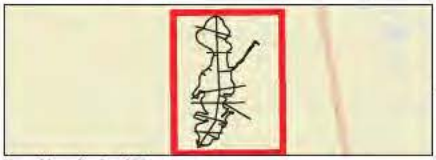
FLATWOODS Environmental Group

PRAIRIE DOG
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA



Source: Mosaic Fertilizer, LLC

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PRE MINING TOPOGRAPHY MAP

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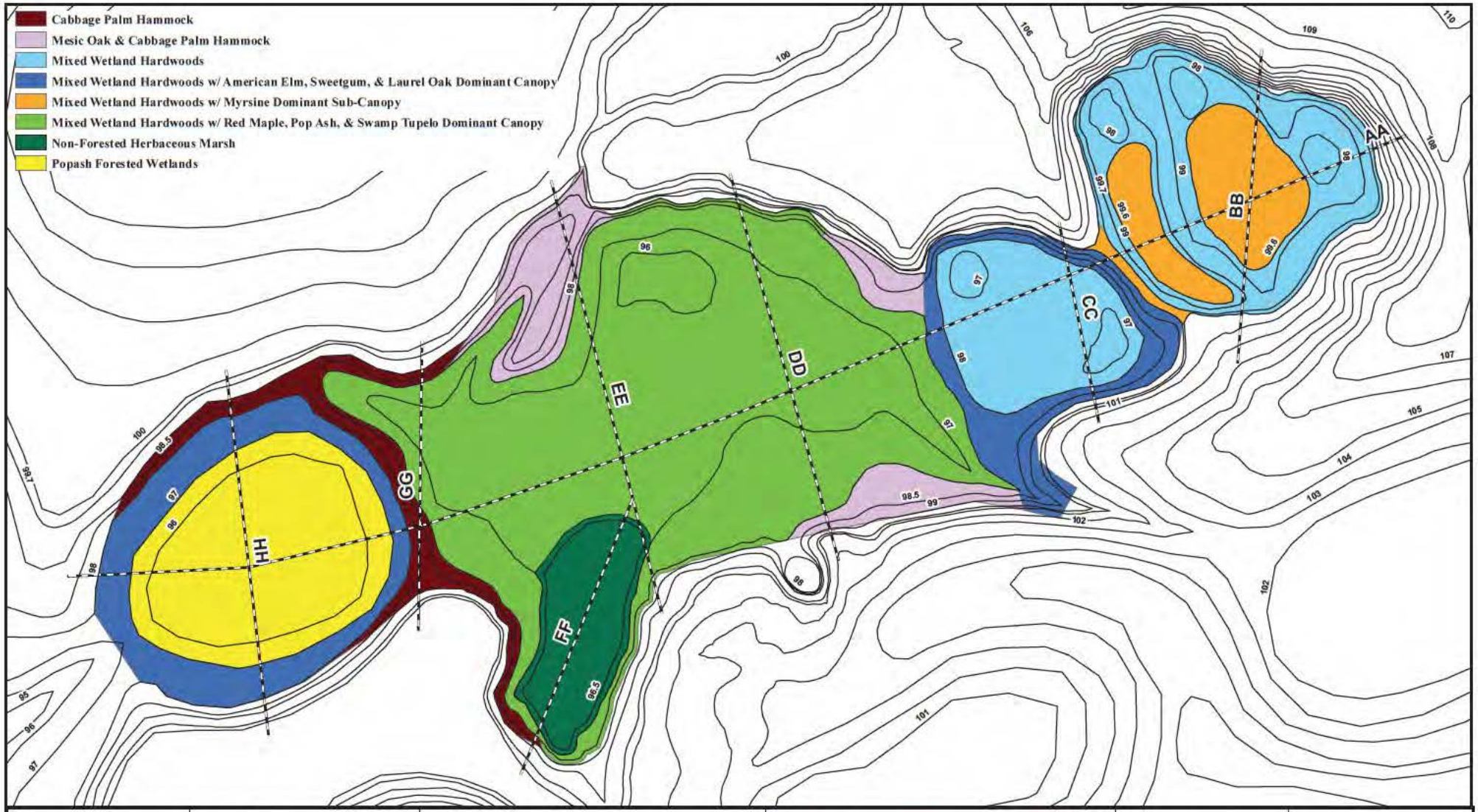

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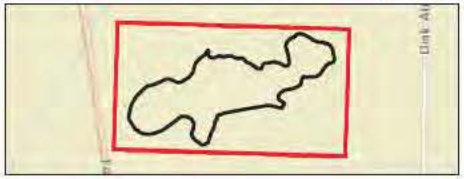
PRAIRIE DOG
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA

Post Reclamation Topo
Post Reclamation Transects



POST RECLAMATION TOPOGRAPHY MAP

FLATWOODS Consulting Group

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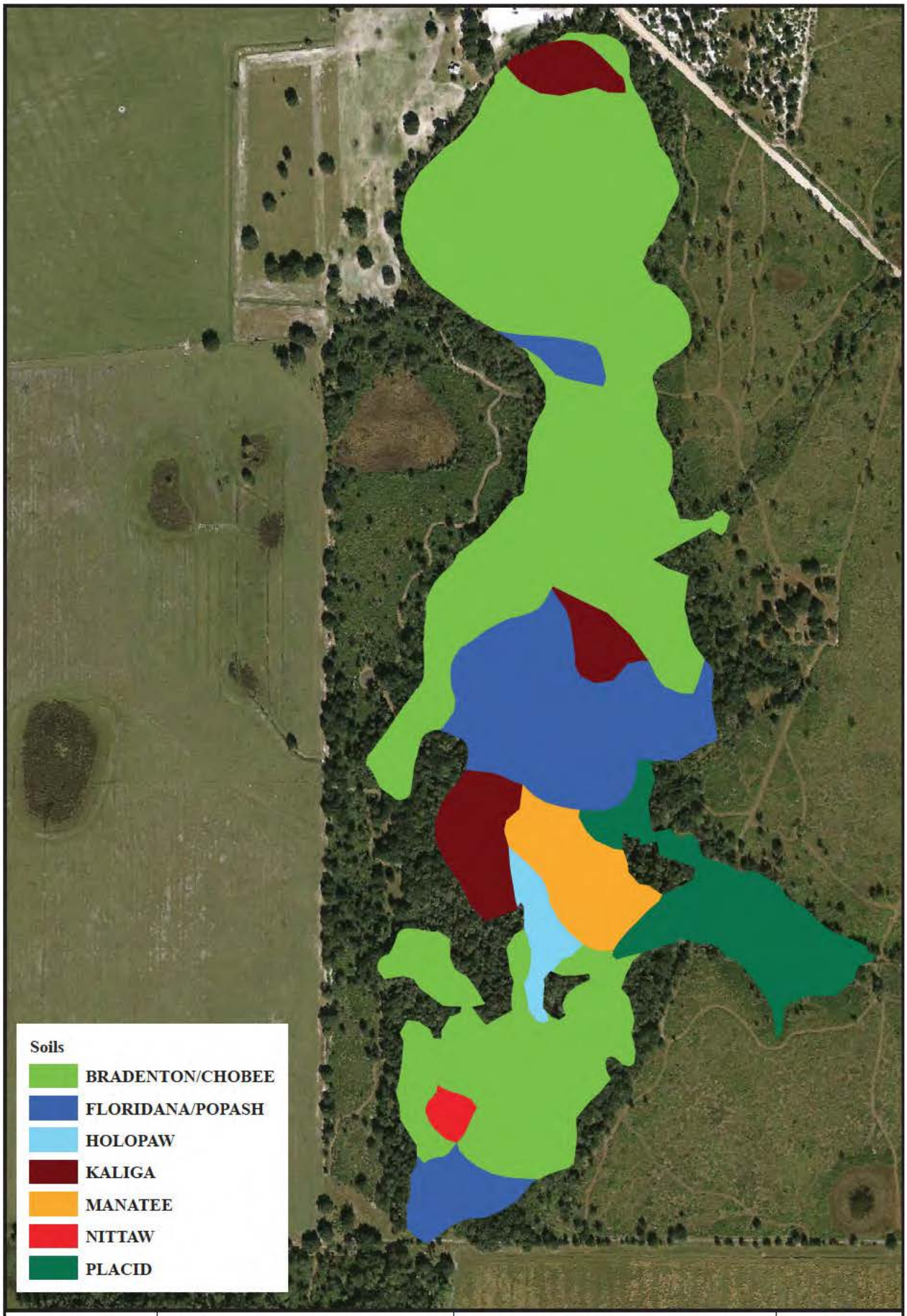

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FLATWOODS Consulting Group

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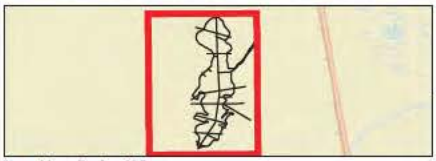
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA



Source Mosaic Fertilizer LLC

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SITE SPECIFIC SOIL MAP

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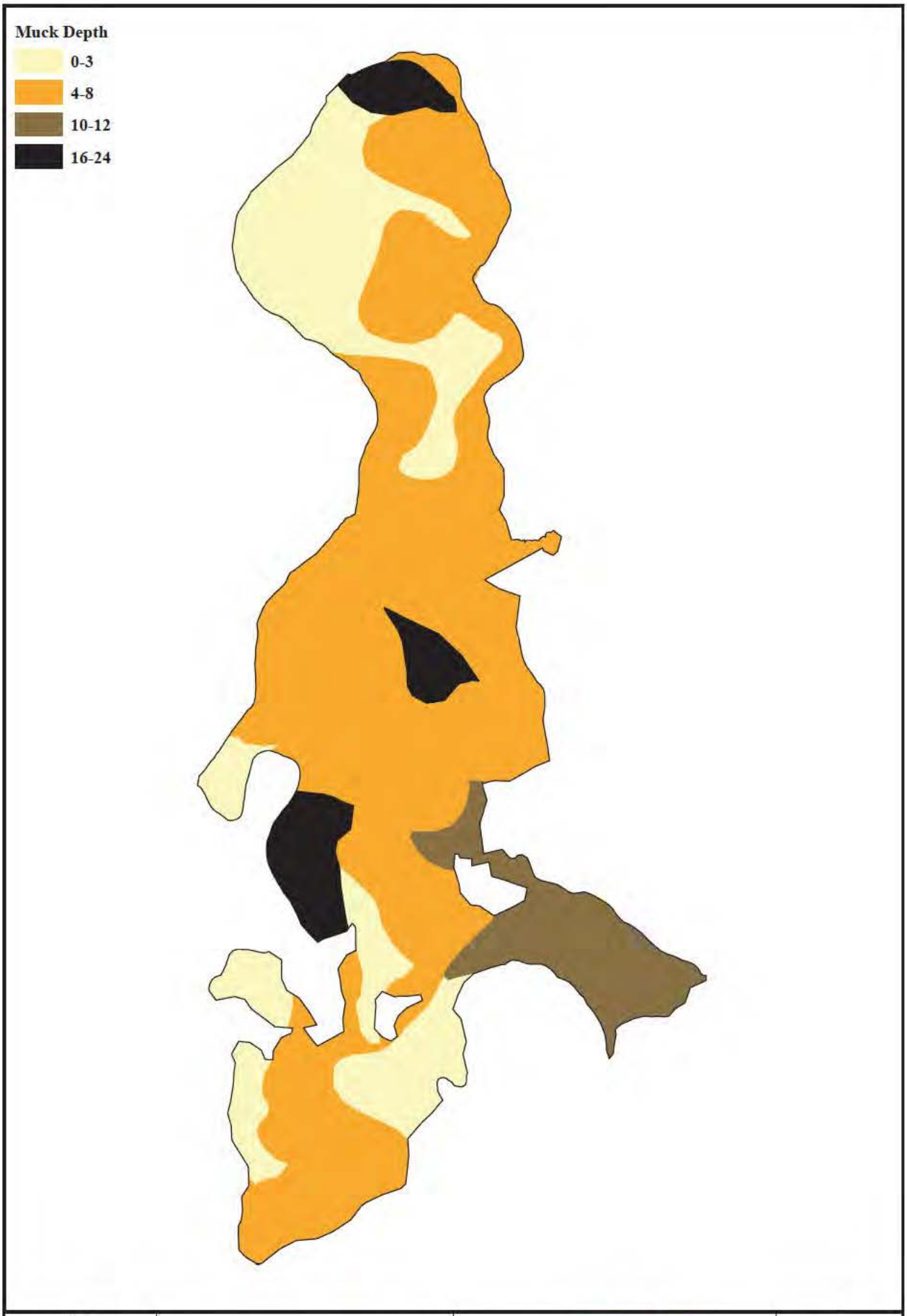

Feet

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1 in = 350 feet

FLATWOODS Consulting Group

PRAIRIE DOG WETLAND
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA

Source: Mosaic Fertilizer LLC

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PRE MINING MUCK DEPTH MAP

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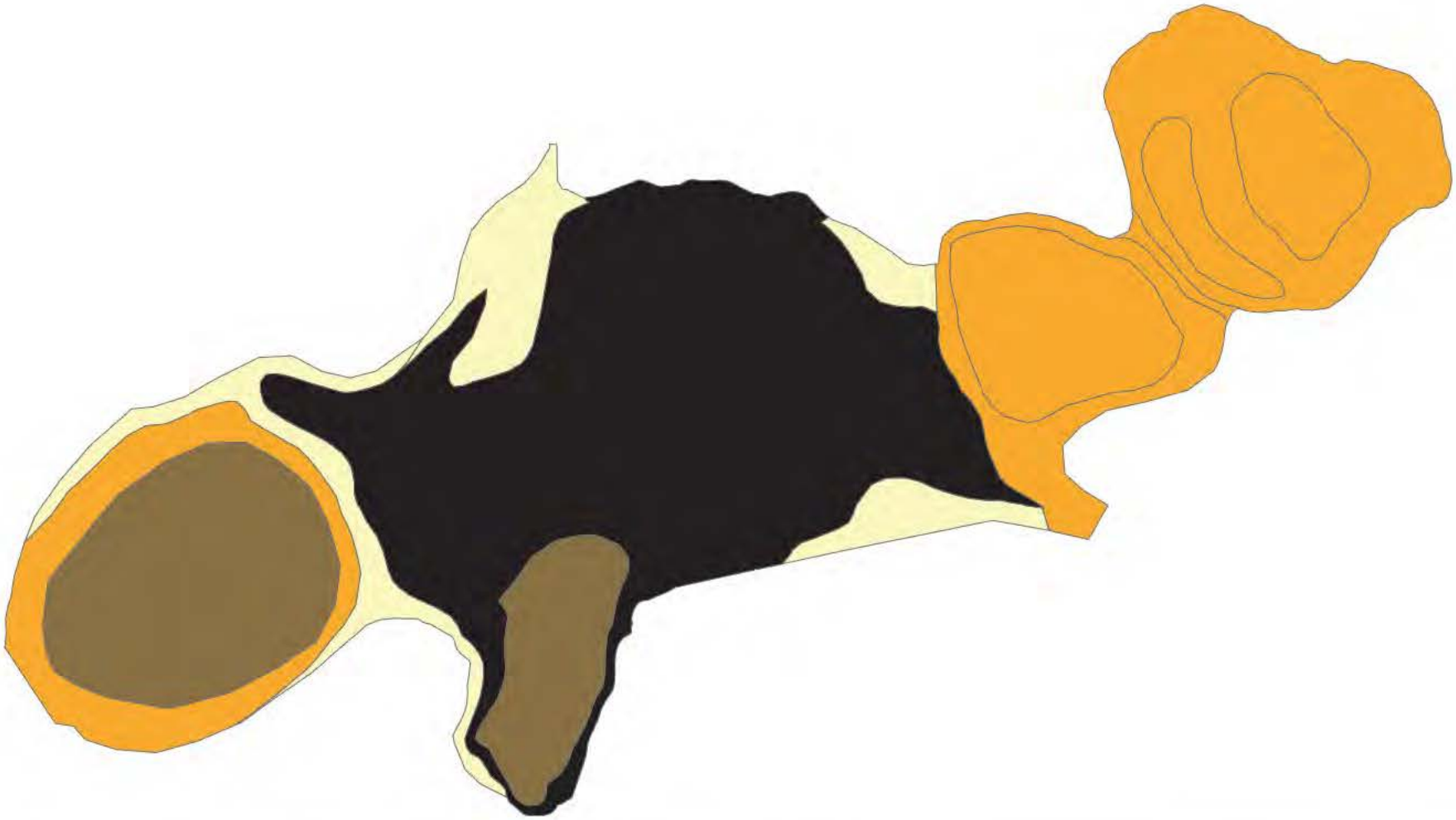

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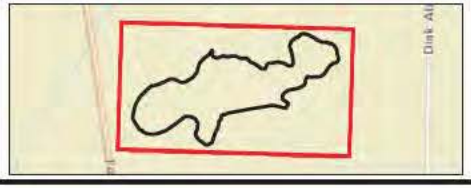
1 in = 350 feet

PRAIRIE DOG
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA

Muck Depth
- 0-3
- 4-8
- 10-12
- 16-24



POST RECLAMATION MUCK DEPTH MAP

FLATWOODS Consulting Group

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Feet

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1 in = 350 feet

FLATWOODS Consulting Group

PRAIRIE DOG WETLAND
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA

Source: Mosaic Fertilizer LLC

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PRE MINING LANDCOVER MAP

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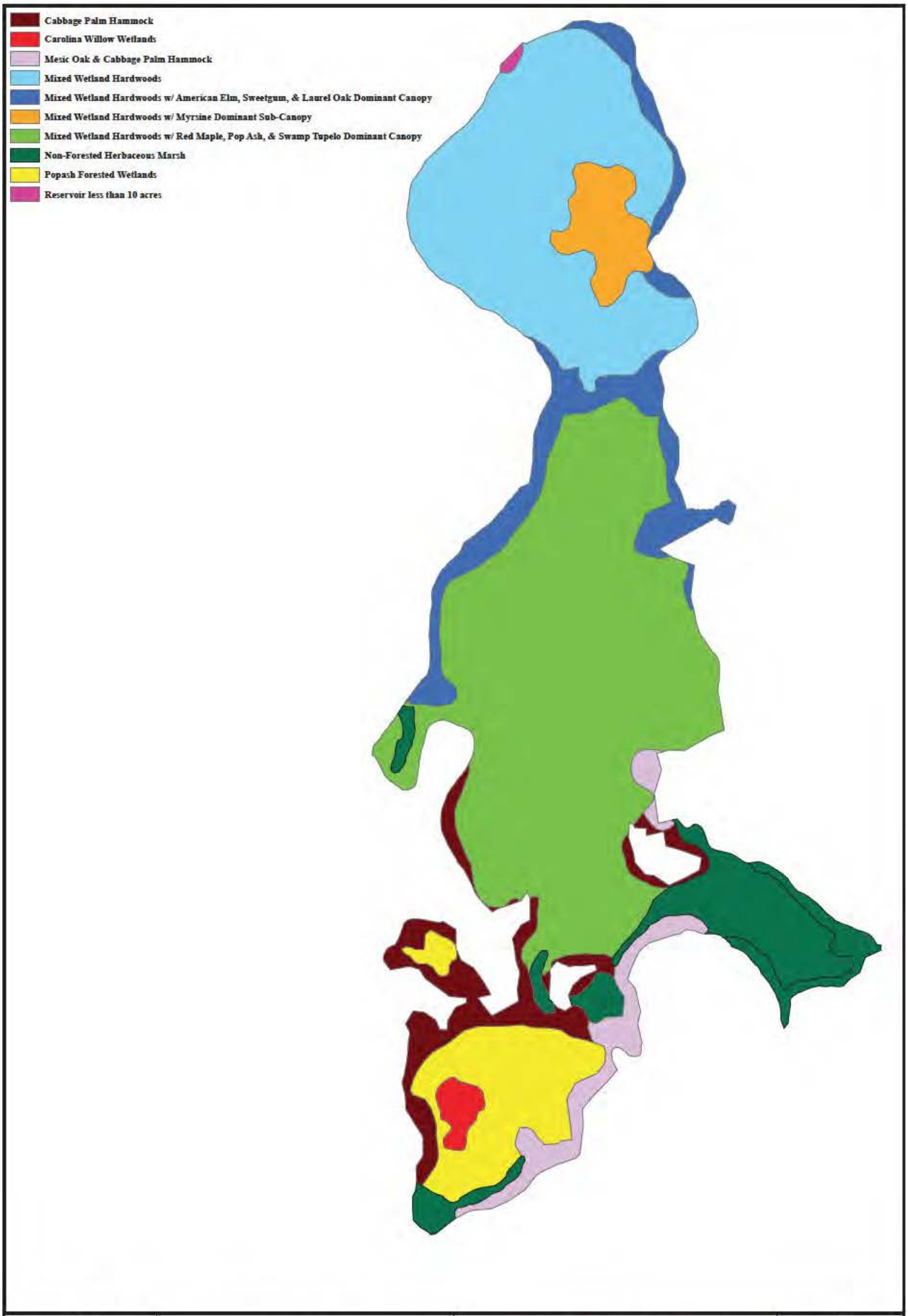

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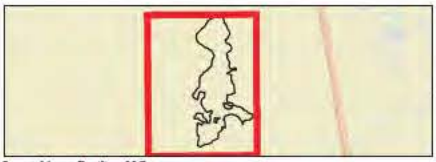
FLATWOODS Consulting Group

PRAIRIE DOG
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA



Source: Mosaic Fertilizer LLC

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PRE MINING DETAILED LAND COVER MAP

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1 in = 350 feet

PRAIRIE DOG
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA

Post Reclamation Land Use

- 616 - Inland Pond and Sloughs
- 617 - Mixed Wetland Hardwoods
- 641 - Freshwater Marshes

POST RECLAMATION LANDCOVER MAP

FLATWOODS Consulting Group

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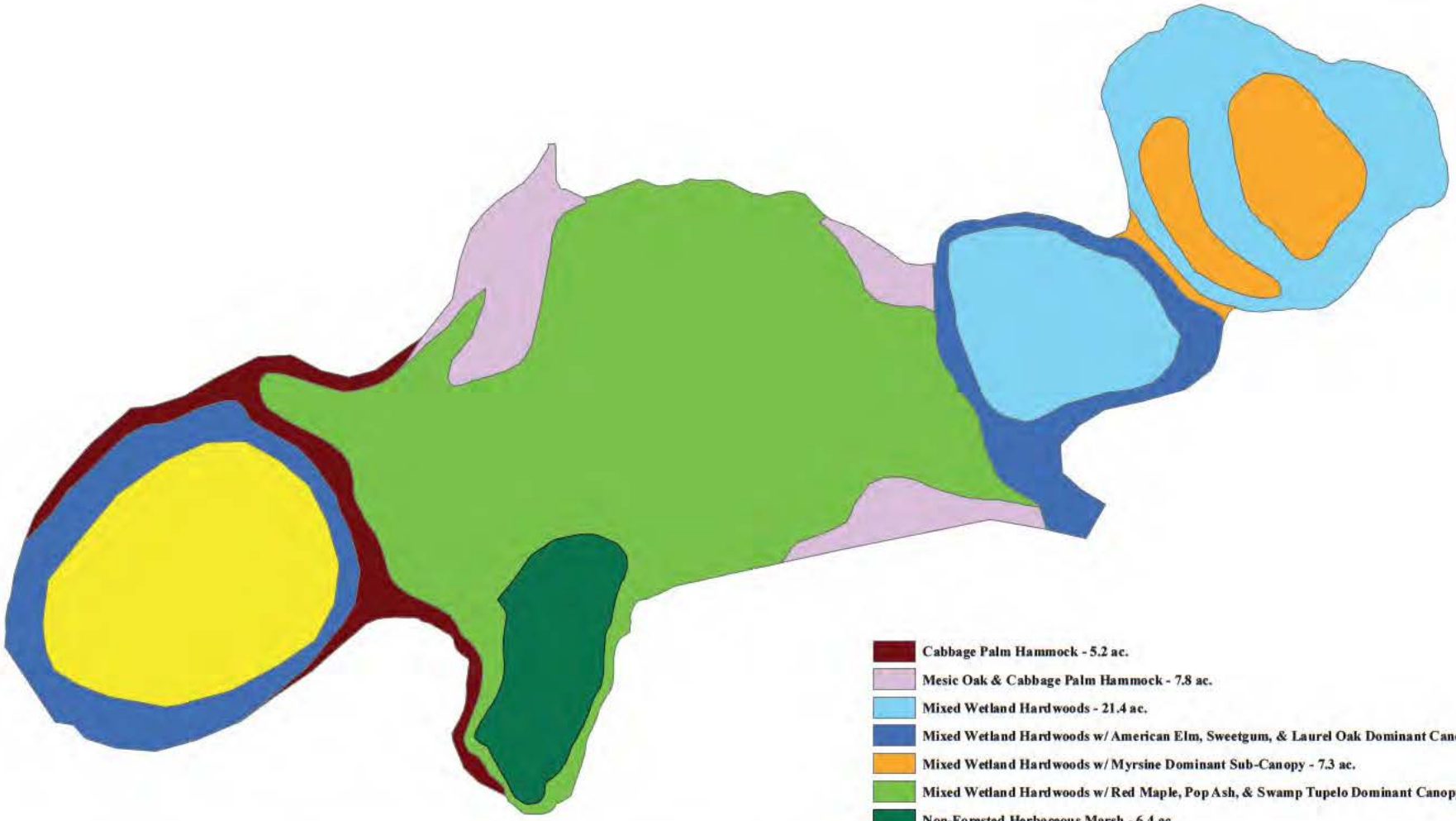

Cabbage Palm Hammock - 5.2 ac.
Mesic Oak & Cabbage Palm Hammock - 7.8 ac.
Mixed Wetland Hardwoods - 21.4 ac.
Mixed Wetland Hardwoods w/ American Elm, Sweetgum, & Laurel Oak Dominant Canopy - 13.7 ac.
Mixed Wetland Hardwoods w/ Myrsine Dominant Sub-Canopy - 7.3 ac.
Mixed Wetland Hardwoods w/ Red Maple, Pop Ash, & Swamp Tupelo Dominant Canopy - 50.0 ac.
Non-Forested Herbaceous Marsh - 6.4 ac.
Popash Forested Wetlands - 15.3 ac.

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Feet
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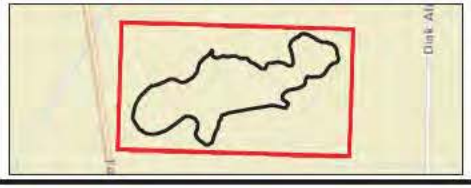
1 in = 350 feet

PRAIRIE DOG
MOSAIC FERTILIZER, LLC

HARDEE COUNTY, FLORIDA

Ona Mine



POST
RECLAMATION
DETAILED
LANDCOVER
MAP

FLATWOODS
Consulting Group

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APPENDIX A
EXISTING VEGETATIVE DATA

PD1 Tree Data by Species

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION			TOTAL NUMBER	DENSITY (trees/acre)	SPECIES COMPOSITION %	AVERAGE HEIGHT (ft)	AVERAGE DBH (inches)
				LIVE	STRESSED	TIP DIE BACK					
Acer rubrum	Red maple	FACW	FACW	41	3	1	45	23	11.1%	33.0	9.8
Carya aquatica	Water hickory	OBL	OBL	35			35	18	8.7%	36.8	10.3
Fraxinus caroliniana	Pop ash	OBL	OBL	32	1	2	35	18	8.7%	38.1	12.8
Liquidambar styraciflua	Sweetgum	FACW	FAC	84	3	1	88	45	21.6%	38.5	10.2
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	65	1	1	67	34	16.3%	44.0	13.9
Persea palustris	Swamp bay	OBL	OBL	5			5	3	1.4%	26.0	5.5
Quercus laurifolia	Laurel oak	FACW	FACW	29			29	15	7.2%	29.7	6.9
Quercus nigra	Water oak	FACW	FAC	4			4	2	1.0%	27.5	7.8
Sabal palmetto	Cabbage palm	FAC	FAC	6			6	3	1.4%	18.3	15.3
Ulmus americana	American elm	FACW	FACW	93			93	47	22.6%	33.5	7.1
TOTALS - AVERAGES				**394**	**8**	**5**	**407**	**208**	**100.0%**	**36.3**	**10.1**

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	TREE DATA PER SAMPLE TREE PLOT (TP)									MIN DENSITY trees/acre	MAX DENSITY trees/acre
				TP1	TP2	TP3	TP4	TP5	TP6	TP7	TP8	TP9		
Fraxinus caroliniana	Pop ash	OBL	OBL				2	3	17	3	8	2	0	9
Acer rubrum	Red maple	FACW	FACW	8	6	9	3	3	3	5	3	5	28	23
Quercus laurifolia	Laurel oak	FACW	FACW		1	2	1	5	6	9	2	3	5	14
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	5	5	2		10		5	12	28	23	129
Ulmus americana	American elm	FACW	FACW	8	3	22	8	5	22	8	6	11	14	51
Quercus nigra	Water oak	FACW	FAC			2		1				1	0	5
Liquidambar styraciflua	Sweetgum	FACW	FAC	11	2	16	4	20	4	14	5	13	9	60
Persea palustris	Swamp bay	OBL	OBL	3	1	1							5	0
Carya aquatica	Water hickory	OBL	OBL		12	4	20						55	0
Sabal palmetto	Cabbage palm	FAC	FAC					2	3		1		0	0
TOTALS - AVERAGES				**35**	**30**	**58**	**38**	**49**	**55**	**44**	**37**	**63**	**139**	**291**

PD1 Shrub Data by Species

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION	TOTAL NUMBER	DENSITY (shrubs/acre)	SPECIES COMPOSITION %
				LIVE			
Acer rubrum	Red maple	FACW	FACW	7	7	30	1.6%
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	FAC	12	12	52	2.8%
Callicarpa americana	American beauty-berry	UPL	FACU	1	1	4	0.2%
Carya aquatica	Water hickory	OBL	OBL	10	10	44	2.4%
Cephalanthus occidentalis	Buttonbush	OBL	OBL	5	5	22	1.2%
Cornus foemina	Swamp dogwood	FACW	FACW	2	2	9	0.5%
Fraxinus caroliniana	Pop ash	OBL	OBL	42	42	183	9.9%
Ilex cassine	Dahoon holly	OBL	FACW	9	9	39	2.1%
Itea virginica	Virginia willow	OBL	FACW	73	73	318	17.2%
Liquidambar styraciflua	Sweetgum	FACW	FAC	49	49	213	11.5%
Magnolia virginiana	Sweetbay	OBL	FACW	46	46	200	10.8%
Myrica cerifera	Wax myrtle	FAC	FAC	112	112	488	26.4%
Persea palustris	Swamp bay	OBL	OBL	16	16	70	3.8%
Quercus laurifolia	Laurel oak	FACW	FACW	26	26	113	6.1%
Sabal palmetto	Cabbage palm	FAC	FAC	6	6	26	1.4%
Salix caroliniana	Southern willow	OBL	OBL	1	1	4	0.2%
Sambucus nigra subsp. canadensis	Elderberry	FAC	FACW	1	1	4	0.2%
Serenoa repens	Saw palmetto	UPL	FACU	3	3	13	0.7%
Ulmus americana	American elm	FACW	FACW	1	1	4	0.2%
Vaccinium corymbosum	Highbush blueberry	FACW	FACW	3	3	13	0.7%
TOTALS - AVERAGES				**425**	**425**	**1849**	**100.0%**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	SHRUB PLOT (SP)									TOTAL NUMBER SP6	MIN DENSITY (shrubs/acre)	TOTAL NUMBER SP5	MAX DENSITY (shrubs/acre)
				SP1	SP2	SP3	SP4	SP5	SP6	SP7	SP8	SP9				
Acer rubrum	Red maple	FACW	FACW		5	2								0		0
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	FAC							1	2	9		0		0
Callicarpa americana	American beauty-berry	UPL	FACU		1		9							0		0
Carya aquatica	Water hickory	OBL	OBL						1				1	22		0
Cephalanthus occidentalis	Buttonbush	OBL	OBL									2		0		0
Cornus foemina	Swamp dogwood	FACW	FACW	5										0		0
Fraxinus caroliniana	Pop ash	OBL	OBL		12	1		5			16	8		0	5	198
Ilex cassine	Dahoon holly	OBL	FACW	2			7							0		0
Itea virginica	Virginia willow	OBL	FACW	5	32	18	18							0		0
Liquidambar styraciflua	Sweetgum	FACW	FAC	1	1	15	1	3	10	15	1	2	10	220	3	119
Magnolia virginiana	Sweetbay	OBL	FACW		2	4		44		32	6	24		0	44	1742
Myrica cerifera	Wax myrtle	FAC	FAC	24	4	5		11		2				0	11	436
Persea palustris	Swamp bay	OBL	OBL	3	6	4	3							0		0
Quercus laurifolia	Laurel oak	FACW	FACW	1				2	12	5	3	3	12	264	2	79
Sabal palmetto	Cabbage palm	FAC	FAC							1				0		0
Salix caroliniana	Southern willow	OBL	OBL		1									0		0
Sambucus nigra subsp. canadensis	Elderberry	FAC	FACW						2		1		2	44		0
Serenoa repens	Saw palmetto	UPL	FACU		1			1	3			1	3	66	1	40
Ulmus americana	American elm	FACW	FACW						1				1	22		0
Vaccinium corymbosum	Highbush blueberry	OBL	OBL				3							0		0
TOTALS - AVERAGES				**41**	**65**	**49**	**41**	**66**	**29**	**56**	**29**	**49**	**29**	**638**	**66**	**2614**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

PD1 Herbaceous Data by Species

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Vegetative Species (Except Non-Nuisance NLAs)				
Acer rubrum	Red maple	FACW	0.4	0.6
Acrostichum danaeifolium	Giant leather fern	OBL	5.5	7.7
Ampelopsis arborea	Pepper-vine	-	0.4	0.6
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	0.2	0.2
Bacopa monnieri	Water hyssop	OBL	0.0	0.0
Blechnum serrulatum	Swamp fern	FACW	1.5	2.1
Carex elliottii	Elliot's sedge	OBL	1.0	1.4
Cephalanthus occidentalis	Buttonbush	OBL	1.8	2.5
Commelina diffusa	Dayflower	FACW	0.3	0.4
Dichanthelium ensifolium var. breve	Witchgrass	UPL	0.2	0.2
Dichanthelium sp.	Panic grass	UPL	0.7	0.9
Eupatorium capillifolium	Dogfennel	FAC	0.0	0.0
Fraxinus caroliniana	Pop ash	OBL	0.1	0.1
Hydrocotyle umbellata	Pennywort	FACW	1.6	2.3
Liquidambar styraciflua	Sweetgum	FACW	0.3	0.4
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.2	0.3
Osmunda cinnamomea	Cinnamon fern	FACW	0.2	0.2
Osmunda regalis var. spectabilis	Royal fern	OBL	0.2	0.2
Parthenocissus quinquefolia	Virginia creeper	-	0.3	0.4
Paspalum conjugatum	Sour paspalum	FAC	0.3	0.5
Peltandra sp.	Arrow arum	OBL	0.1	0.1
Polygonum hydropiperoides	Mild waterpepper	OBL	0.2	0.3
Pontederia cordata	Pickerelweed	OBL	0.3	0.5
Psychotria nervosa	Wild coffee	FAC	3.3	4.7
Rhynchospora miliacea	Millet beakrush	OBL	2.0	2.8
Rhynchospora sp.	Beakrush	FACW	0.3	0.4
Sabal palmetto	Cabbage palm	FAC	0.2	0.2
Salvinia minima	Water spangles	NLA (1)	16.7	23.4

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Saururus cernuus	Lizard's tail	OBL	25.7	36.1
Serenoa repens	Saw palmetto	UPL	0.0	0.0
Thelypteris sp.	Shield fern	FACW	1.2	1.6
Ulmus americana	American elm	FACW	0.2	0.3
Unidentified forb	Unidentified forb	-	0.4	0.5
Urena lobata	Caesarweed	UPL (1)	0.3	0.5
Vitis rotundifolia	Muscadine grape	-	0.0	0.0
Woodwardia areolata	Netted chainfern	OBL	2.8	4.0
Woodwardia virginica	Virginia chainfern	FACW	2.5	3.5
Total All Vegetative Species (Except Non-Nuisance NLAs)			**71.3**	**100.0**
Only Non-Exotic, Non-Nuisance Wetland Species				
Acer rubrum	Red maple	FACW	0.4	0.6
Acrostichum danaeifolium	Giant leather fern	OBL	5.5	7.7
Bacopa monnieri	Water hyssop	OBL	0.0	0.0
Blechnum serrulatum	Swamp fern	FACW	1.5	2.1
Carex elliottii	Elliot's sedge	OBL	1.0	1.4
Cephalanthus occidentalis	Buttonbush	OBL	1.8	2.5
Commelina diffusa	Dayflower	FACW	0.3	0.4
Fraxinus caroliniana	Pop ash	OBL	0.1	0.1
Hydrocotyle umbellata	Pennywort	FACW	1.6	2.3
Liquidambar styraciflua	Sweetgum	FACW	0.3	0.4
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.2	0.3
Osmunda cinnamomea	Cinnamon fern	FACW	0.2	0.2
Osmunda regalis var. spectabilis	Royal fern	OBL	0.2	0.2
Peltandra sp.	Arrow arum	OBL	0.1	0.1
Polygonum hydropiperoides	Mild waterpepper	OBL	0.2	0.3
Pontederia cordata	Pickerelweed	OBL	0.3	0.5
Rhynchospora miliacea	Millet beakrush	OBL	2.0	2.8
Rhynchospora sp.	Beakrush	FACW	0.3	0.4
Saururus cernuus	Lizard's tail	OBL	25.7	36.1

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Thelypteris sp.	Shield fern	FACW	1.2	1.6
Ulmus americana	American elm	FACW	0.2	0.3
Woodwardia areolata	Netted chainfern	OBL	2.8	4.0
Woodwardia virginica	Virginia chainfern	FACW	2.5	3.5
Total Non-Exotic, Non-Nuisance Wetland Species			**48.3**	**67.7**
All Wetland Species				
Acer rubrum	Red maple	FACW	0.4	0.6
Acrostichum danaeifolium	Giant leather fern	OBL	5.5	7.7
Bacopa monnieri	Water hyssop	OBL	0.0	0.0
Blechnum serrulatum	Swamp fern	FACW	1.5	2.1
Carex elliottii	Elliot's sedge	OBL	1.0	1.4
Cephalanthus occidentalis	Buttonbush	OBL	1.8	2.5
Commelina diffusa	Dayflower	FACW	0.3	0.4
Fraxinus caroliniana	Pop ash	OBL	0.1	0.1
Hydrocotyle umbellata	Pennywort	FACW	1.6	2.3
Liquidambar styraciflua	Sweetgum	FACW	0.3	0.4
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.2	0.3
Osmunda cinnamomea	Cinnamon fern	FACW	0.2	0.2
Osmunda regalis var. spectabilis	Royal fern	OBL	0.2	0.2
Peltandra sp.	Arrow arum	OBL	0.1	0.1
Polygonum hydropiperoides	Mild waterpepper	OBL	0.2	0.3
Pontederia cordata	Pickerelweed	OBL	0.3	0.5
Rhynchospora miliacea	Millet beakrush	OBL	2.0	2.8
Rhynchospora sp.	Beakrush	FACW	0.3	0.4
Saururus cernuus	Lizard's tail	OBL	25.7	36.1
Thelypteris sp.	Shield fern	FACW	1.2	1.6
Ulmus americana	American elm	FACW	0.2	0.3
Woodwardia areolata	Netted chainfern	OBL	2.8	4.0
Woodwardia virginica	Virginia chainfern	FACW	2.5	3.5
Total Wetland Species			**48.3**	**67.7**

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Facultative Species				
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	0.2	0.2
Eupatorium capillifolium	Dogfennel	FAC	0.0	0.0
Paspalum conjugatum	Sour paspalum	FAC	0.3	0.5
Psychotria nervosa	Wild coffee	FAC	3.3	4.7
Sabal palmetto	Cabbage palm	FAC	0.2	0.2
Total Facultative Species			**4.0**	**5.7**
All Upland Species				
Dichanthelium ensifolium var. breve	Witchgrass	UPL	0.2	0.2
Dichanthelium sp.	Panic grass	UPL	0.7	0.9
Serenoa repens	Saw palmetto	UPL	0.0	0.0
Urena lobata	Caesarweed	UPL (1)	0.3	0.5
Total Upland Species			**1.2**	**1.7**
All Unclassified Species (-)				
Ampelopsis arborea	Pepper-vine	-	0.4	0.6
Parthenocissus quinquefolia	Virginia creeper	-	0.3	0.4
Unidentified forb	Unidentified forb	-	0.4	0.5
Vitis rotundifolia	Muscadine grape	-	0.0	0.0
Total Unclassified Species (-)			**1.1**	**1.5**
Nuisance / Exotic Species (CAT I, II, & Common N/E Species)				
Salvinia minima	Water spangles	NLA (1)	16.7	23.4
Urena lobata	Caesarweed	UPL (1)	0.3	0.5
Total CAT I, II, IV Nuisance / Exotic Species			**17.0**	**23.9**
Nuisance / Exotic Species - Non-Native				
Total Non-Native Nuisance / Exotic Species			**0.0**	**0.0**
All Nuisance / Exotic Species				
Salvinia minima	Water spangles	NLA (1)	16.7	23.4
Urena lobata	Caesarweed	UPL (1)	0.3	0.5
Total Nuisance / Exotic Species			**17.0**	**23.9**

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Non-Listed Aquatic (NLA) Species				
Lemna obscura	Duckweed	NLA	0.7	N/A
Salvinia minima	Water spangles	NLA (1)	16.7	23.4
Total Non-Listed Aquatic (NLA) Species			**17.4**	N/A
Open Water / NLA			**3.0**	N/A
Bare Ground / Dead Vegetation			**30.1**	N/A

* Non-exotic, Non-nuisance wetland species observed in fruit or flower:

** Values of 0.0% are less than 0.5%

(1) - FLEPCC Category I Nuisance / Exotic

(2) - FLEPCC Category II Nuisance / Exotic

(3) - Non-Native Species per Wunderlin, 1989, USF Atlas of Florida Vascular Plants

(4) - Commonly Identified Nuisance Species

PD2 Tree Data by Species

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION			TOTAL NUMBER	DENSITY (trees/acre)	SPECIES COMPOSITION %	AVERAGE HEIGHT (ft)	AVERAGE DBH (inches)
				LIVE	STRESSED	TIP DIE BACK					
Celtis laevigata	Sugarberry	FACW	FACW	9			9	20	12.0%	37.2	6.9
Fraxinus caroliniana	Pop ash	OBL	OBL	1			1	2	1.2%	55.0	19.0
Liquidambar styraciflua	Sweetgum	FACW	FAC	1			1	2	1.2%	55.0	15.0
Magnolia grandiflora	Southern magnolia	UPL	FAC	12		1	13	29	17.4%	37.3	7.5
Myrsine sp.	Myrsine	-	-	1			1	2	1.2%	30.0	4.5
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	4			4	9	5.4%	43.8	10.8
Sabal palmetto	Cabbage palm	FAC	FAC	24			24	54	32.3%	24.5	15.0
Ulmus americana	American elm	FACW	FACW	19	2	1	22	49	29.3%	47.3	18.4
TOTALS - AVERAGES				**71**	**2**	**2**	**75**	**167**	**100.0%**	**36.8**	**13.4**

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	TREE PLOT (TP)		MIN TP DENSITY (trees/acre)	MAX TP DENSITY (trees/acre)
				TP1	TP2		
Celtis laevigata	Sugarberry	FACW	FACW	1		0	5
Fraxinus caroliniana	Pop ash	OBL	OBL	3	1	4	14
Liquidambar styraciflua	Sweetgum	FACW	FAC	8	14	61	37
Magnolia grandiflora	Southern magnolia	UPL	FAC	1		0	5
Myrsine sp.	Myrsine	-	-		9	39	0
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	13		0	60
Sabal palmetto	Cabbage palm	FAC	FAC	11	13	57	51
Ulmus americana	American elm	FACW	FACW		1	4	0
TOTALS - AVERAGES				**37**	**38**	**165**	**172**

PD2 Shrub Data by Species

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION	TOTAL NUMBER	DENSITY (shrubs/acre)	SPECIES COMPOSITION %
				LIVE			
Celtis laevigata	Sugarberry	FACW	FACW	1	1	18	0.2%
Myrsine sp.	Myrsine	-	-	426	426	7774	93.2%
Sabal palmetto	Cabbage palm	FAC	FAC	10	10	182	2.2%
Serenoa repens	Saw palmetto	UPL	FACU	19	19	347	4.2%
Ulmus americana	American elm	FACW	FACW	1	1	18	0.2%
TOTALS - AVERAGES				**457**	**457**	**8339**	**100.0%**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	SHRUB PLOT (SP)		TOTAL NUMBER SP1	MIN DENSITY (shrubs/acre)	TOTAL NUMBER SP2	MAX DENSITY (shrubs/acre)
				SP1	SP2				
Celtis laevigata	Sugarberry	FACW	FACW	1		1	34	0	0
Myrsine sp.	Myrsine	-	-	197	229	197	6651	229	9096
Sabal palmetto	Cabbage palm	FAC	FAC	3	7	3	101	7	278
Serenoa repens	Saw palmetto	UPL	FACU	7	12	7	236	12	477
Ulmus americana	American elm	FACW	FACW	1		1	34	0	0
TOTALS - AVERAGES				**209**	**248**	**209**	**7056**	**248**	**9851**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

PD2 Herbaceous Data by Species

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Vegetative Species (Except Non-Nuisance NLAs)				
Acer rubrum	Red maple	FACW	0.1	0.1
Acrostichum danaeifolium	Giant leather fern	OBL	12.1	21.1
Callicarpa americana	American beauty-berry	UPL	1.8	3.1
Liquidambar styraciflua	Sweetgum	FACW	0.4	0.7
Magnolia virginiana	Sweetbay	OBL	2.2	3.8
Parthenocissus quinquefolia	Virginia creeper	-	1.1	1.9
Psychotria nervosa	Wild coffee	FAC	36.2	63.2
Serenoa repens	Saw palmetto	UPL	0.4	0.7
Thelypteris sp.	Shield fern	FACW	3.1	5.4
Total All Vegetative Species (Except Non-Nuisance NLAs)			**57.3**	**100.0**
Only Non-Exotic, Non-Nuisance Wetland Species				
Acer rubrum	Red maple	FACW	0.1	0.1
Acrostichum danaeifolium	Giant leather fern	OBL	12.1	21.1
Liquidambar styraciflua	Sweetgum	FACW	0.4	0.7
Magnolia virginiana	Sweetbay	OBL	2.2	3.8
Thelypteris sp.	Shield fern	FACW	3.1	5.4
Total Non-Exotic, Non-Nuisance Wetland Species			**17.8**	**31.1**
All Wetland Species				
Acer rubrum	Red maple	FACW	0.1	0.1
Acrostichum danaeifolium	Giant leather fern	OBL	12.1	21.1
Liquidambar styraciflua	Sweetgum	FACW	0.4	0.7
Magnolia virginiana	Sweetbay	OBL	2.2	3.8
Thelypteris sp.	Shield fern	FACW	3.1	5.4
Total Wetland Species			**17.8**	**31.1**
All Facultative Species				
Psychotria nervosa	Wild coffee	FAC	36.2	63.2
Total Facultative Species			**36.2**	**63.2**
All Upland Species				
Callicarpa americana	American beauty-berry	UPL	1.8	3.1

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Upland Species				
Serenoa repens	Saw palmetto	UPL	0.4	0.7
Total Upland Species			**2.2**	**3.8**
All Unclassified Species (-)				
Parthenocissus quinquefolia	Virginia creeper	-	1.1	1.9
Total Unclassified Species (-)			**1.1**	**1.9**
Nuisance / Exotic Species (CAT I, II, & Common N/E Species)				
Total CAT I, II, IV Nuisance / Exotic Species			**0.0**	**0.0**
Nuisance / Exotic Species - Non-Native				
Total Non-Native Nuisance / Exotic Species			**0.0**	**0.0**
All Nuisance / Exotic Species				
Total Nuisance / Exotic Species			**0.0**	**0.0**
All Non-Listed Aquatic (NLA) Species				
Total Non-Listed Aquatic (NLA) Species			**0.0**	**N/A**
Open Water / NLA			**0.0**	**N/A**
Bare Ground / Dead Vegetation			**44.8**	**N/A**

* Non-exotic, Non-nuisance wetland species observed in fruit or flower:

** Values of 0.0% are less than 0.5%

(1) - FLEPCC Category I Nuisance / Exotic

(2) - FLEPCC Category II Nuisance / Exotic

(3) - Non-Native Species per Wunderlin, 1989, USF Atlas of Florida Vascular Plants

(4) - Commonly Identified Nuisance Species

PD3, 4 & 6 Tree Data by Species

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION		TOTAL NUMBER	DENSITY (trees/acre)	SPECIES COMPOSITION %	AVERAGE HEIGHT (ft)	AVERAGE DBH (inches)
				LIVE	TIP DIE BACK					
Acer rubrum	Red maple	FACW	FACW	1		1	1	0.7%	40.0	5.0
Carya aquatica	Water hickory	OBL	OBL	3		3	4	2.8%	35.0	7.0
Celtis laevigata	Sugarberry	FACW	FACW	1		1	1	0.7%	25.0	5.3
Fraxinus caroliniana	Pop ash	OBL	OBL	1		1	1	0.7%	35.0	16.0
Ilex cassine	Dahoon holly	OBL	FACW	1		1	1	0.7%	23.0	6.0
Liquidambar styraciflua	Sweetgum	FACW	FAC	19		19	28	19.3%	33.9	9.0
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	2		2	3	2.1%	29.0	12.5
Quercus laurifolia	Laurel oak	FACW	FACW	19		19	28	19.3%	32.6	8.7
Quercus nigra	Water oak	FACW	FAC	15		15	22	15.2%	23.1	7.3
Sabal palmetto	Cabbage palm	FAC	FAC	4		4	6	4.1%	21.3	16.5
Ulmus americana	American elm	FACW	FACW	33	1	34	50	34.5%	34.9	12.9
TOTALS - AVERAGES				**99**	**1**	**100**	**145**	**100.0%**	**31.7**	**10.3**

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	WETLAND COMMUNITY (PD) TREE PLOT (TP)			TOTAL NUMBER PD4 TP1	MIN DENSITY (trees/acre)	TOTAL NUMBER PD4 TP2	MAX DENSITY (trees/acre)
				PD4 TP1	PD4 TP2	PD6 TP1				
Acer rubrum	Red maple	FACW	FACW		1		0	0	1	4
Carya aquatica	Water hickory	OBL	OBL	3			3	13	0	0
Celtis laevigata	Sugarberry	FACW	FACW		1		0	0	1	4
Fraxinus caroliniana	Pop ash	OBL	OBL			1	0	0	0	0
Ilex cassine	Dahoon holly	OBL	FACW			1	0	0	0	0
Liquidambar styraciflua	Sweetgum	FACW	FAC	5	10	4	5	22	10	43
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL			2	0	0	0	0
Quercus laurifolia	Laurel oak	FACW	FACW	9	4	6	9	40	4	17
Quercus nigra	Water oak	FACW	FAC	3	1	11	3	13	1	4
Sabal palmetto	Cabbage palm	FAC	FAC	2	1	1	2	9	1	4
Ulmus americana	American elm	FACW	FACW	9	18	7	9	40	18	78
TOTALS - AVERAGES				**31**	**36**	**33**	**31**	**137**	**36**	**154**

PD3, 4 & 6 Shrub Data by Species

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION	TOTAL NUMBER	DENSITY (shrubs/acre)	SPECIES COMPOSITION %
				LIVE			
Baccharis halimifolia	Eastern false-willow	FAC	FAC	6	6	94	2.9%
Callicarpa americana	American beauty-berry	UPL	FACU	4	4	62	1.9%
Carya aquatica	Water hickory	OBL	OBL	2	2	31	1.0%
Fraxinus caroliniana	Pop ash	OBL	OBL	1	1	16	0.5%
Liquidambar styraciflua	Sweetgum	FACW	FAC	5	5	78	2.4%
Myrica cerifera	Wax myrtle	FAC	FAC	7	7	109	3.4%
Persea borbonia	Red bay	OBL	FACW	1	1	16	0.5%
Quercus nigra	Water oak	FACW	FAC	14	14	218	6.8%
Sabal minor	Dwarf palmetto	FACW	FACW	2	2	31	1.0%
Sabal palmetto	Cabbage palm	FAC	FAC	21	21	328	10.2%
Serenoa repens	Saw palmetto	UPL	FACU	140	140	2185	68.0%
Ulmus americana	American elm	FACW	FACW	3	3	47	1.5%
TOTALS - AVERAGES				**206**	**206**	**3215**	**100.0%**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	WETLAND COMMUNITY (PD) SHRUB PLOT (SP)			TOTAL NUMBER PD6 SP1	MIN DENSITY (shrubs/acre)	TOTAL NUMBER PD4 SP2	MAX DENSITY (shrubs/acre)
				PD4 SP1	PD4 SP2	PD6 SP1				
Baccharis halimifolia	Eastern false-willow	FAC	FAC		6			0	6	332
Callicarpa americana	American beauty-berry	UPL	FACU	3	1			0	1	55
Carya aquatica	Water hickory	OBL	OBL	2				0		0
Fraxinus caroliniana	Pop ash	OBL	OBL		1			0	1	55
Liquidambar styraciflua	Sweetgum	FACW	FAC	1		4	4	174		0
Myrica cerifera	Wax myrtle	FAC	FAC		7			0	7	388
Persea borbonia	Red bay	OBL	FACW			1	1	43		0
Quercus nigra	Water oak	FACW	FAC		2	12	12	522	2	111
Sabal minor	Dwarf palmetto	FACW	FACW	1		1	1	43		0
Sabal palmetto	Cabbage palm	FAC	FAC	21				0		0
Serenoa repens	Saw palmetto	UPL	FACU	27	76	37	37	1608	76	4211
Ulmus americana	American elm	FACW	FACW	1	2			0	2	111
TOTALS - AVERAGES				**56**	**95**	**55**	**55**	**2390**	**95**	**5263**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

PD3, 4 & 6 Herbaceous Data by Species

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Vegetative Species (Except Non-Nuisance NLAs)				
Acer rubrum	Red maple	FACW	0.1	0.2
Ampelopsis arborea	Pepper-vine	-	0.4	0.7
Andropogon virginicus var. glaucus	Chalky bluestem	FAC	2.0	3.7
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	1.4	2.5
Callicarpa americana	American beauty-berry	UPL	1.0	1.9
Carex elliottii	Elliot's sedge	OBL	2.5	4.6
Centella asiatica	Spadeleaf	FACW	0.1	0.2
Commelina diffusa	Dayflower	FACW	0.5	0.8
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.1	0.2
Desmodium triflorum	Beggarweed	UPL (3)	0.5	0.9
Dichanthelium sp.	Panic grass	UPL	0.6	1.0
Dichondra carolinensis	Carolina pony-foot	FAC	0.1	0.2
Digitaria sp.	Crabgrass	-	0.1	0.1
Erechtites hieracifolius	Fireweed	FAC	0.1	0.1
Galium tinctorium	Stiff marsh bedstraw	FACW	0.2	0.3
Hydrocotyle umbellata	Pennywort	FACW	0.3	0.5
Lindernia grandiflora	False pimpernel	FACW	0.1	0.1
Ludwigia peruviana	Primrose willow	OBL (1)	0.3	0.5
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.1	0.2
Magnolia virginiana	Sweetbay	OBL	0.2	0.3
Mikania scandens	Climbing hempvine	- (4)	0.2	0.3
Osmunda cinnamomea	Cinnamon fern	FACW	7.0	13.0
Osmunda regalis var. spectabilis	Royal fern	OBL	0.5	0.9
Parthenocissus quinquefolia	Virginia creeper	-	0.2	0.4
Paspalum conjugatum	Sour paspalum	FAC	2.3	4.2
Paspalum notatum	Bahia grass	UPL (3)	3.8	7.0
Psychotria nervosa	Wild coffee	FAC	2.5	4.6
Quercus laurifolia	Laurel oak	FACW	0.2	0.3

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Quercus nigra	Water oak	FACW	0.3	0.5
Rhynchospora miliacea	Millet beakrush	OBL	3.3	6.0
Rubus sp.	Blackberry	FAC	0.2	0.3
Saururus cernuus	Lizard's tail	OBL	3.3	6.0
Serenoa repens	Saw palmetto	UPL	3.0	5.6
Smilax bona-nox	Saw greenbrier	-	0.4	0.7
Smilax laurifolia	Laurel greenbrier	-	0.5	0.9
Thelypteris sp.	Shield fern	FACW	0.1	0.2
Toxicodendron radicans	Poison ivy	-	1.0	1.8
Ulmus americana	American elm	FACW	0.3	0.5
Urena lobata	Caesarweed	UPL (1)	3.2	5.9
Vallisneria americana	Tape-grass	OBL	0.4	0.7
Viburnum obovatum	Walter viburnum	FACW	1.0	1.9
Vitis rotundifolia	Muscadine grape	-	2.9	5.3
Woodwardia areolata	Netted chainfern	OBL	5.0	9.3
Woodwardia virginica	Virginia chainfern	FACW	2.7	4.9
Total All Vegetative Species (Except Non-Nuisance NLAs)			**53.8**	**100.0**
Only Non-Exotic, Non-Nuisance Wetland Species				
Acer rubrum	Red maple	FACW	0.1	0.2
Carex elliottii	Elliot's sedge	OBL	2.5	4.6
Centella asiatica	Spadeleaf	FACW	0.1	0.2
Commelina diffusa	Dayflower	FACW	0.5	0.8
Galium tinctorium	Stiff marsh bedstraw	FACW	0.2	0.3
Hydrocotyle umbellata	Pennywort	FACW	0.3	0.5
Lindernia grandiflora	False pimpernel	FACW	0.1	0.1
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.1	0.2
Magnolia virginiana	Sweetbay	OBL	0.2	0.3
Osmunda cinnamomea	Cinnamon fern	FACW	7.0	13.0
Osmunda regalis var. spectabilis	Royal fern	OBL	0.5	0.9
Quercus laurifolia	Laurel oak	FACW	0.2	0.3

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Quercus nigra	Water oak	FACW	0.3	0.5
Rhynchospora miliacea	Millet beakrush	OBL	3.3	6.0
Saururus cernuus	Lizard's tail	OBL	3.3	6.0
Thelypteris sp.	Shield fern	FACW	0.1	0.2
Ulmus americana	American elm	FACW	0.3	0.5
Vallisneria americana	Tape-grass	OBL	0.4	0.7
Viburnum obovatum	Walter viburnum	FACW	1.0	1.9
Woodwardia areolata	Netted chainfern	OBL	5.0	9.3
Woodwardia virginica	Virginia chainfern	FACW	2.7	4.9
Total Non-Exotic, Non-Nuisance Wetland Species			**27.7**	**51.4**
All Wetland Species				
Acer rubrum	Red maple	FACW	0.1	0.2
Carex elliottii	Elliot's sedge	OBL	2.5	4.6
Centella asiatica	Spadeleaf	FACW	0.1	0.2
Commelina diffusa	Dayflower	FACW	0.5	0.8
Galium tinctorium	Stiff marsh bedstraw	FACW	0.2	0.3
Hydrocotyle umbellata	Pennywort	FACW	0.3	0.5
Lindernia grandiflora	False pimpernel	FACW	0.1	0.1
Ludwigia peruviana	Primrose willow	OBL (1)	0.3	0.5
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.1	0.2
Magnolia virginiana	Sweetbay	OBL	0.2	0.3
Osmunda cinnamomea	Cinnamon fern	FACW	7.0	13.0
Osmunda regalis var. spectabilis	Royal fern	OBL	0.5	0.9
Quercus laurifolia	Laurel oak	FACW	0.2	0.3
Quercus nigra	Water oak	FACW	0.3	0.5
Rhynchospora miliacea	Millet beakrush	OBL	3.3	6.0
Saururus cernuus	Lizard's tail	OBL	3.3	6.0
Thelypteris sp.	Shield fern	FACW	0.1	0.2
Ulmus americana	American elm	FACW	0.3	0.5
Vallisneria americana	Tape-grass	OBL	0.4	0.7

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Viburnum obovatum	Walter viburnum	FACW	1.0	1.9
Woodwardia areolata	Netted chainfern	OBL	5.0	9.3
Woodwardia virginica	Virginia chainfern	FACW	2.7	4.9
Total Wetland Species			**27.9**	**51.9**
All Facultative Species				
Andropogon virginicus var. glaucus	Chalky bluestem	FAC	2.0	3.7
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	1.4	2.5
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.1	0.2
Dichondra carolinensis	Carolina pony-foot	FAC	0.1	0.2
Erechtites hieracifolius	Fireweed	FAC	0.1	0.1
Paspalum conjugatum	Sour paspalum	FAC	2.3	4.2
Psychotria nervosa	Wild coffee	FAC	2.5	4.6
Rubus sp.	Blackberry	FAC	0.2	0.3
Total Facultative Species			**8.5**	**15.8**
All Upland Species				
Callicarpa americana	American beauty-berry	UPL	1.0	1.9
Desmodium triflorum	Beggarweed	UPL (3)	0.5	0.9
Dichanthelium sp.	Panic grass	UPL	0.6	1.0
Paspalum notatum	Bahia grass	UPL (3)	3.8	7.0
Serenoa repens	Saw palmetto	UPL	3.0	5.6
Urena lobata	Caesarweed	UPL (1)	3.2	5.9
Total Upland Species			**12.0**	**22.2**
All Unclassified Species (-)				
Ampelopsis arborea	Pepper-vine	-	0.4	0.7
Digitaria sp.	Crabgrass	-	0.1	0.1
Mikania scandens	Climbing hempvine	- (4)	0.2	0.3
Parthenocissus quinquefolia	Virginia creeper	-	0.2	0.4
Smilax bona-nox	Saw greenbrier	-	0.4	0.7
Smilax laurifolia	Laurel greenbrier	-	0.5	0.9
Toxicodendron radicans	Poison ivy	-	1.0	1.8

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Vitis rotundifolia	Muscadine grape	-	2.9	5.3
Total Unclassified Species (-)			**5.5**	**10.1**
Nuisance / Exotic Species (CAT I, II, & Common N/E Species)				
Ludwigia peruviana	Primrose willow	OBL (1)	0.3	0.5
Mikania scandens	Climbing hempvine	- (4)	0.2	0.3
Urena lobata	Caesarweed	UPL (1)	3.2	5.9
Total CAT I, II, IV Nuisance / Exotic Species			**3.6**	**6.6**
Nuisance / Exotic Species - Non-Native				
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.1	0.2
Desmodium triflorum	Beggarweed	UPL (3)	0.5	0.9
Paspalum notatum	Bahia grass	UPL (3)	3.8	7.0
Total Non-Native Nuisance / Exotic Species			**4.4**	**8.1**
All Nuisance / Exotic Species				
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.1	0.2
Desmodium triflorum	Beggarweed	UPL (3)	0.5	0.9
Ludwigia peruviana	Primrose willow	OBL (1)	0.3	0.5
Mikania scandens	Climbing hempvine	- (4)	0.2	0.3
Paspalum notatum	Bahia grass	UPL (3)	3.8	7.0
Urena lobata	Caesarweed	UPL (1)	3.2	5.9
Total Nuisance / Exotic Species			**7.9**	**14.7**
All Non-Listed Aquatic (NLA) Species				
Total Non-Listed Aquatic (NLA) Species			**0.0**	**N/A**
Open Water / NLA			**0.0**	**N/A**
Bare Ground / Dead Vegetation			**47.2**	**N/A**

* Non-exotic, Non-nuisance wetland species observed in fruit or flower:

** Values of 0.0% are less than 0.5%

(1) - FLEPCC Category I Nuisance / Exotic

(2) - FLEPCC Category II Nuisance / Exotic

(3) - Non-Native Species per Wunderlin, 1989, USF Atlas of Florida Vascular Plants

(4) - Commonly Identified Nuisance Species

PD5 Tree Data by Species

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION			TOTAL NUMBER	DENSITY (trees/acre)	SPECIES COMPOSITION %	AVERAGE HEIGHT (ft)	AVERAGE DBH (inches)
				LIVE	STRESSED	TIP DIE BACK					
Acer rubrum	Red maple	FACW	FACW	194	11	15	220	62	27.2%	32.3	7.4
Carya aquatica	Water hickory	OBL	OBL	2			2	1	0.4%	60.0	13.5
Celtis laevigata	Sugarberry	FACW	FACW	1			1	0	0.0%	30.0	6.0
Cephalanthus occidentalis	Buttonbush	OBL	OBL	4			4	1	0.4%	15.5	5.4
Fraxinus caroliniana	Pop ash	OBL	OBL	149	4	36	189	53	23.2%	37.4	11.0
Ilex cassine	Dahoon holly	OBL	FACW	42			42	12	5.3%	23.5	5.2
Liquidambar styraciflua	Sweetgum	FACW	FAC	28	1	4	33	9	3.9%	35.4	11.6
Magnolia virginiana	Sweetbay	OBL	FACW	11			11	3	1.3%	22.8	5.4
Myrica cerifera	Wax myrtle	FAC	FAC	1			1	0	0.0%	18.0	4.5
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	131	6	16	153	43	18.9%	41.2	14.0
Persea borbonia	Red bay	OBL	FACW	2			2	1	0.4%	28.5	8.8
Persea palustris	Swamp bay	OBL	OBL	32			32	9	3.9%	28.6	6.0
Quercus laurifolia	Laurel oak	FACW	FACW	26	3		29	8	3.5%	27.5	7.5
Sabal palmetto	Cabbage palm	FAC	FAC	4			4	1	0.4%	26.4	5.0
Salix caroliniana	Southern willow	OBL	OBL	25			25	7	3.1%	19.5	12.5
Ulmus americana	American elm	FACW	FACW	59	3	1	63	18	7.9%	32.2	7.8
TOTALS - AVERAGES				**711**	**28**	**72**	**811**	**228**	**100.0%**	**34.1**	**9.5**

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	TREE PLOT (TP)															TOTAL NUMBER TP6	MIN DENSITY (trees/acre)	TOTAL NUMBER TP13	MAX DENSITY (trees/acre)
				TP 1	TP 2	TP 3	TP 4	TP 5	TP 6	TP 8	TP 9	TP 10	TP 11	TP 12	TP 13	TP 14	TP 15	TP 16				
Fraxinus caroliniana	Pop ash	OBL	OBL	11	7	40	19	34	21	10		6	36	2	1	2			21	90	1	4
Acer rubrum	Red maple	FACW	FACW	11	1	7	2	8	7	20	60	3	15	21	18	16	18	13	7	30	18	79
Quercus laurifolia	Laurel oak	FACW	FACW	2	4	1	2		1	1	1	2	1		2	1	3	8	1	4	2	9
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	1	18		16	8		12	5	10		6	35	15	6	21		0	35	153
Ulmus americana	American elm	FACW	FACW	17	9	4	5					6			13			9		0	13	57
Liquidambar styraciflua	Sweetgum	FACW	FAC	2	25	2		1				3								0		0
Celtis laevigata	Sugarberry	FACW	FACW												1					0	1	4
Persea palustris	Swamp bay	OBL	OBL			4	1	4		6	3	1		9		4				0		0
Carya aquatica	Water hickory	OBL	OBL			2														0		0
Persea borbonia	Red bay	OBL	FACW								2									0		0
Ilex cassine	Dahoon holly	OBL	FACW	4		2	2	6	1	3	10	1				8	5		1	4		0
Salix caroliniana	Southern willow	OBL	OBL								1					1	22	1		0		0
Sabal palmetto	Cabbage palm	FAC	FAC		1							2						1		0		0
Magnolia virginiana	Sweetbay	OBL	FACW					1			2	8								0		0
Cephalanthus occidentalis	Buttonbush	OBL	OBL														3	1		0		0
Myrica cerifera	Wax myrtle	FAC	FAC														1			0		0
TOTALS - AVERAGES				**48**	**65**	**62**	**47**	**62**	**30**	**52**	**84**	**42**	**52**	**38**	**70**	**47**	**58**	**54**	**30**	**128**	**70**	**306**

PD5 Shrub Data by Species

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION	TOTAL NUMBER	DENSITY (shrubs/acre)	SPECIES COMPOSITION %
				LIVE			
Acer rubrum	Red maple	FACW	FACW	86	86	194	10.3%
Celtis laevigata	Sugarberry	FACW	FACW	1	1	2	0.1%
Cephalanthus occidentalis	Buttonbush	OBL	OBL	93	93	209	11.1%
Cornus foemina	Swamp dogwood	FACW	FACW	56	56	126	6.7%
Fraxinus caroliniana	Pop ash	OBL	OBL	91	91	205	10.9%
Ilex cassine	Dahoon holly	OBL	FACW	66	66	149	7.9%
Ilex decidua	Deciduous holly	FACW	FACW	5	5	11	0.6%
Itea virginica	Virginia willow	OBL	FACW	118	118	266	14.1%
Liquidambar styraciflua	Sweetgum	FACW	FAC	11	11	25	1.3%
Lyonia lucida	Fetter-bush	FACW	FACW	39	39	88	4.7%
Magnolia virginiana	Sweetbay	OBL	FACW	11	11	25	1.3%
Myrica cerifera	Wax myrtle	FAC	FAC	175	175	394	20.9%
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	5	5	11	0.6%
Persea palustris	Swamp bay	OBL	OBL	29	29	65	3.5%
Quercus laurifolia	Laurel oak	FACW	FACW	11	11	25	1.3%
Quercus nigra	Water oak	FACW	FAC	3	3	7	0.4%
Sabal minor	Dwarf palmetto	FACW	FACW	1	1	2	0.1%
Sabal palmetto	Cabbage palm	FAC	FAC	14	14	32	1.7%
Salix caroliniana	Southern willow	OBL	OBL	5	5	11	0.6%
Ulmus americana	American elm	FACW	FACW	16	16	36	1.9%
TOTALS - AVERAGES				**836**	**836**	**1883**	**100.0%**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

FLATWOODS Consulting Group

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	SHRUB PLOTS (SP)														TOTAL NUMBER SP13	MIN DENSITY (shrubs/acre)	TOTAL NUMBER SP12	MAX DENSITY (shrubs/acre)
				SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 8	SP 9	SP 10	SP 12	SP 13	SP 14	SP 15	SP 16				
Acer rubrum	Red maple	FACW	FACW	20		3	4		5	6	13		25	2	2	6		2	61	25	718
Celtis laevigata	Sugarberry	FACW	FACW									1							0		0
Cephalanthus occidentalis	Buttonbush	OBL	OBL					12	5	19			23			27			0	23	661
Cornus foemina	Swamp dogwood	FACW	FACW	14		8		3	1										0		0
Fraxinus caroliniana	Pop ash	OBL	OBL	2	5	7	11	15	10	5		6							0		0
Ilex cassine	Dahoon holly	OBL	FACW	5		21	23		5	6	2				1	3			0		0
Itea virginica	Virginia willow	OBL	FACW	4	2		3	16	15	14			48	3		2		3	92	48	1379
Liquidambar styraciflua	Sweetgum	FACW	FAC	1	1	1						8							0		0
Lyonia lucida	Fetter-bush	FACW	FACW							3			10		10	9	7		0	10	287
Magnolia virginiana	Sweetbay	OBL	FACW									11							0		0
Myrica cerifera	Wax myrtle	FAC	FAC	34	9			2	18	14	14	7	9	5	25	36	1	5	153	9	259
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL		1							1			3				0		0
Persea palustris	Swamp bay	OBL	OBL			2			1	2		1	10	2	1	6		2	61	10	287
Quercus laurifolia	Laurel oak	FACW	FACW				5								1	1	3		0		0
Quercus nigra	Water oak	FACW	FAC		1							2							0		0
Sabal minor	Dwarf palmetto	FACW	FACW												1				0		0
Sabal palmetto	Cabbage palm	FAC	FAC		2						1			3	2		6	3	92		0
Salix caroliniana	Southern willow	OBL	OBL													5			0		0
Ulmus americana	American elm	FACW	FACW	5	3	1			1							1	4		0		0
TOTALS - AVERAGES				**85**	**24**	**43**	**46**	**48**	**61**	**69**	**30**	**37**	**125**	**15**	**46**	**96**	**21**	**15**	**459**	**125**	**3591**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

PD5 Herbaceous Data by Species

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Vegetative Species (Except Non-Nuisance NLAs)				
Acer rubrum	Red maple	FACW	0.2	0.2
Acrostichum danaeifolium	Giant leather fern	OBL	3.3	3.5
Alternanthera philoxeroides	Alligatorweed	OBL (2)	0.0	0.0
Axonopus furcatus	Flat-joint carpet grass	FAC	0.8	0.8
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	0.1	0.1
Bidens laevis	Bur-marigold	OBL	1.3	1.4
Blechnum serrulatum	Swamp fern	FACW	6.9	7.3
Callicarpa americana	American beauty-berry	UPL	0.0	0.0
Carex elliottii	Elliot's sedge	OBL	1.8	2.0
Carex longii	Long's sedge	FACW	0.9	0.9
Centella asiatica	Spadeleaf	FACW	0.0	0.0
Cephalanthus occidentalis	Buttonbush	OBL	0.2	0.2
Coreopsis sp.	Tickseed	FACW	0.0	0.0
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.0	0.0
Cyperus ovatus	Purple flatsedge	FAC	0.1	0.1
Cyperus sp.	Flatsedge	FACW	0.0	0.0
Cyperus surinamensis	Tropical flatsedge	FACW	0.0	0.0
Eupatorium capillifolium	Dogfennel	FAC	0.2	0.2
Fraxinus caroliniana	Pop ash	OBL	0.0	0.0
Galium tinctorium	Stiff marsh bedstraw	FACW	0.1	0.1
Gamochaeta sp.	Cudweed	UPL	0.0	0.0
Hydrocotyle umbellata	Pennywort	FACW	1.2	1.3
Hypericum mutilum	Dwarf St. John's-wort	FACW	0.1	0.1
Itea virginica	Virginia willow	OBL	0.3	0.4
Juncus effusus subsp. solutus	Softrush	OBL	0.4	0.4
Ludwigia peruviana	Primrose willow	OBL (1)	0.2	0.2
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.1	0.1
Mikania scandens	Climbing hempvine	- (4)	0.3	0.3
Osmunda cinnamomea	Cinnamon fern	FACW	2.9	3.1

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Osmunda regalis var. spectabilis	Royal fern	OBL	6.6	7.0
Oxalis corniculata	Common yellow wood sorrel	UPL	0.2	0.2
Panicum hemitomon	Maidencane	OBL	0.2	0.2
Parthenocissus quinquefolia	Virginia creeper	-	0.2	0.2
Paspalum sp.	Paspalum	-	1.3	1.4
Peltandra sp.	Arrow arum	OBL	0.9	0.9
Pistia stratiotes	Water-lettuce	NLA (1)	0.3	0.3
Polygonum hydropiperoides	Mild waterpepper	OBL	0.0	0.0
Pontederia cordata	Pickerelweed	OBL	1.5	1.6
Rhynchospora miliacea	Millet beakrush	OBL	0.6	0.6
Richardia sp.	Mexican clover	- (3)	0.0	0.0
Salvinia minima	Water spangles	NLA (1)	38.0	40.3
Sambucus nigra subsp. canadensis	Elderberry	FAC	1.2	1.3
Saururus cernuus	Lizard's tail	OBL	12.8	13.6
Scoparia dulcis	Licorice weed	FAC	0.0	0.0
Setaria parviflora	Knotroot foxtail	FAC	0.2	0.2
Smilax bona-nox	Saw greenbrier	-	0.1	0.1
Thalia geniculata	Alligatorflag	OBL	2.3	2.4
Toxicodendron radicans	Poison ivy	-	0.2	0.2
Ulmus americana	American elm	FACW	0.0	0.0
Vallisneria americana	Tape-grass	OBL	0.3	0.3
Vigna luteola	Hairypod cowpea	-	0.1	0.1
Vitis rotundifolia	Muscadine grape	-	0.1	0.1
Woodwardia virginica	Virginia chainfern	FACW	5.4	5.8
Total All Vegetative Species (Except Non-Nuisance NLAs)			**94.4**	**100.0**
Only Non-Exotic, Non-Nuisance Wetland Species				
Acer rubrum	Red maple	FACW	0.2	0.2
Acrostichum danaeifolium	Giant leather fern	OBL	3.3	3.5
Bidens laevis	Bur-marigold	OBL	1.3	1.4
Blechnum serrulatum	Swamp fern	FACW	6.9	7.3
Carex elliottii	Elliot's sedge	OBL	1.8	2.0

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Carex longii	Long's sedge	FACW	0.9	0.9
Centella asiatica	Spadeleaf	FACW	0.0	0.0
Cephalanthus occidentalis	Buttonbush	OBL	0.2	0.2
Coreopsis sp.	Tickseed	FACW	0.0	0.0
Cyperus sp.	Flatsedge	FACW	0.0	0.0
Cyperus surinamensis	Tropical flatsedge	FACW	0.0	0.0
Fraxinus caroliniana	Pop ash	OBL	0.0	0.0
Galium tinctorium	Stiff marsh bedstraw	FACW	0.1	0.1
Hydrocotyle umbellata	Pennywort	FACW	1.2	1.3
Hypericum mutilum	Dwarf St. John's-wort	FACW	0.1	0.1
Itea virginica	Virginia willow	OBL	0.3	0.4
Juncus effusus subsp. solutus	Softrush	OBL	0.4	0.4
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.1	0.1
Osmunda cinnamomea	Cinnamon fern	FACW	2.9	3.1
Osmunda regalis var. spectabilis	Royal fern	OBL	6.6	7.0
Panicum hemitomon	Maidencane	OBL	0.2	0.2
Peltandra sp.	Arrow arum	OBL	0.9	0.9
Polygonum hydropiperoides	Mild waterpepper	OBL	0.0	0.0
Pontederia cordata	Pickerelweed	OBL	1.5	1.6
Rhynchospora miliacea	Millet beakrush	OBL	0.6	0.6
Saururus cernuus	Lizard's tail	OBL	12.8	13.6
Thalia geniculata	Alligatorflag	OBL	2.3	2.4
Ulmus americana	American elm	FACW	0.0	0.0
Vallisneria americana	Tape-grass	OBL	0.3	0.3
Woodwardia virginica	Virginia chainfern	FACW	5.4	5.8
Total Non-Exotic, Non-Nuisance Wetland Species			**50.7**	**53.7**
	All Wetland Species			
Acer rubrum	Red maple	FACW	0.2	0.2
Acrostichum danaeifolium	Giant leather fern	OBL	3.3	3.5
Alternanthera philoxeroides	Alligatorweed	OBL (2)	0.0	0.0
Bidens laevis	Bur-marigold	OBL	1.3	1.4

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Blechnum serrulatum	Swamp fern	FACW	6.9	7.3
Carex elliottii	Elliot's sedge	OBL	1.8	2.0
Carex longii	Long's sedge	FACW	0.9	0.9
Centella asiatica	Spadeleaf	FACW	0.0	0.0
Cephalanthus occidentalis	Buttonbush	OBL	0.2	0.2
Coreopsis sp.	Tickseed	FACW	0.0	0.0
Cyperus sp.	Flatsedge	FACW	0.0	0.0
Cyperus surinamensis	Tropical flatsedge	FACW	0.0	0.0
Fraxinus caroliniana	Pop ash	OBL	0.0	0.0
Galium tinctorium	Stiff marsh bedstraw	FACW	0.1	0.1
Hydrocotyle umbellata	Pennywort	FACW	1.2	1.3
Hypericum mutilum	Dwarf St. John's-wort	FACW	0.1	0.1
Itea virginica	Virginia willow	OBL	0.3	0.4
Juncus effusus subsp. solutus	Softrush	OBL	0.4	0.4
Ludwigia peruviana	Primrose willow	OBL (1)	0.2	0.2
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.1	0.1
Osmunda cinnamomea	Cinnamon fern	FACW	2.9	3.1
Osmunda regalis var. spectabilis	Royal fern	OBL	6.6	7.0
Panicum hemitomon	Maidencane	OBL	0.2	0.2
Peltandra sp.	Arrow arum	OBL	0.9	0.9
Polygonum hydropiperoides	Mild waterpepper	OBL	0.0	0.0
Pontederia cordata	Pickerelweed	OBL	1.5	1.6
Rhynchospora miliacea	Millet beakrush	OBL	0.6	0.6
Saururus cernuus	Lizard's tail	OBL	12.8	13.6
Thalia geniculata	Alligatorflag	OBL	2.3	2.4
Ulmus americana	American elm	FACW	0.0	0.0
Vallisneria americana	Tape-grass	OBL	0.3	0.3
Woodwardia virginica	Virginia chainfern	FACW	5.4	5.8
Total Wetland Species			**50.9**	**53.9**
All Facultative Species				
Axonopus furcatus	Flat-joint carpet grass	FAC	0.8	0.8

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	0.1	0.1
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.0	0.0
Cyperus ovatus	Purple flatsedge	FAC	0.1	0.1
Eupatorium capillifolium	Dogfennel	FAC	0.2	0.2
Sambucus nigra subsp. canadensis	Elderberry	FAC	1.2	1.3
Scoparia dulcis	Licorice weed	FAC	0.0	0.0
Setaria parviflora	Knotroot foxtail	FAC	0.2	0.2
Total Facultative Species			**2.6**	**2.7**
All Upland Species				
Callicarpa americana	American beauty-berry	UPL	0.0	0.0
Gamochaeta sp.	Cudweed	UPL	0.0	0.0
Oxalis corniculata	Common yellow wood sorrel	UPL	0.2	0.2
Total Upland Species			**0.3**	**0.3**
All Unclassified Species (-)				
Mikania scandens	Climbing hempvine	- (4)	0.3	0.3
Parthenocissus quinquefolia	Virginia creeper	-	0.2	0.2
Paspalum sp.	Paspalum	-	1.3	1.4
Richardia sp.	Mexican clover	- (3)	0.0	0.0
Smilax bona-nox	Saw greenbrier	-	0.1	0.1
Toxicodendron radicans	Poison ivy	-	0.2	0.2
Vigna luteola	Hairypod cowpea	-	0.1	0.1
Vitis rotundifolia	Muscadine grape	-	0.1	0.1
Total Unclassified Species (-)			**2.4**	**2.6**
Nuisance / Exotic Species (CAT I, II, & Common N/E Species)				
Alternanthera philoxeroides	Alligatorweed	OBL (2)	0.0	0.0
Ludwigia peruviana	Primrose willow	OBL (1)	0.2	0.2
Mikania scandens	Climbing hempvine	- (4)	0.3	0.3
Pistia stratiotes	Water-lettuce	NLA (1)	0.3	0.3
Salvinia minima	Water spangles	NLA (1)	38.0	40.3
Total CAT I, II, IV Nuisance / Exotic Species			**38.8**	**41.1**
Nuisance / Exotic Species - Non-Native				

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.0	0.0
Richardia sp.	Mexican clover	- (3)	0.0	0.0
Total Non-Native Nuisance / Exotic Species			**0.1**	**0.1**
All Nuisance / Exotic Species				
Alternanthera philoxeroides	Alligatorweed	OBL (2)	0.0	0.0
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.0	0.0
Ludwigia peruviana	Primrose willow	OBL (1)	0.2	0.2
Mikania scandens	Climbing hempvine	- (4)	0.3	0.3
Pistia stratiotes	Water-lettuce	NLA (1)	0.3	0.3
Richardia sp.	Mexican clover	- (3)	0.0	0.0
Salvinia minima	Water spangles	NLA (1)	38.0	40.3
Total Nuisance / Exotic Species			**38.9**	**41.2**
All Non-Listed Aquatic (NLA) Species				
Lemna obscura	Duckweed	NLA	2.9	N/A
Pistia stratiotes	Water-lettuce	NLA (1)	0.3	0.3
Salvinia minima	Water spangles	NLA (1)	38.0	40.3
Spirodela polyrhiza	Duckweed	NLA	0.2	N/A
Total Non-Listed Aquatic (NLA) Species			**41.3**	**N/A**
Open Water / NLA			**7.5**	**N/A**
Bare Ground / Dead Vegetation			**7.6**	**N/A**

* Non-exotic, Non-nuisance wetland species observed in fruit or flower:

** Values of 0.0% are less than 0.5%

(1) - FLEPCC Category I Nuisance / Exotic

(2) - FLEPCC Category II Nuisance / Exotic

(3) - Non-Native Species per Wunderlin, 1989, USF Atlas of Florida Vascular Plants

(4) - Commonly Identified Nuisance Species

PD7, 11,12,14,15 and 19 Herbaceous Data by Species

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Vegetative Species (Except Non-Nuisance NLAs)				
Acer rubrum	Red maple	FACW	0.1	0.1
Axonopus furcatus	Flat-joint carpet grass	FAC	8.6	10.2
Axonopus sp.	Carpet grass	FAC	0.4	0.5
Bacopa caroliniana	Blue hyssop	OBL	1.8	2.2
Callicarpa americana	American beauty-berry	UPL	0.3	0.3
Carex longii	Long's sedge	FACW	2.1	2.5
Centella asiatica	Spadeleaf	FACW	1.4	1.6
Cirsium sp.	Thistle	UPL	0.1	0.2
Cladium jamaicense	Sawgrass	OBL	0.6	0.7
Commelina diffusa	Dayflower	FACW	0.6	0.7
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.0	0.0
Cynodon dactylon	Bermuda grass	UPL (3)	1.0	1.2
Cyperus odoratus	Fragrant flatsedge	FACW	0.1	0.1
Cyperus ovatus	Purple flatsedge	FAC	0.6	0.7
Cyperus polystachyos	Manyspike flatsedge	FACW	0.1	0.1
Digitaria serotina	Hairy crabgrass	FAC	2.5	3.0
Diodia virginiana	Rough button-weed	FACW	1.3	1.6
Drymaria cordata	West Indian chickweed	FAC	0.0	0.0
Eleocharis sp.	Spikerush	OBL	0.1	0.1
Eleocharis vivipara	Spikerush	OBL	4.9	5.8
Eragrostis elliottii	Elliot's lovegrass	FAC	1.0	1.2
Erechtites hieracifolius	Fireweed	FAC	0.1	0.1
Eupatorium capillifolium	Dogfennel	FAC	0.2	0.3
Hydrocotyle umbellata	Pennywort	FACW	1.2	1.5
Hypericum mutilum	Dwarf St. John's-wort	FACW	0.1	0.1
Iris hexagona	Iris	OBL	3.7	4.4
Juncus effusus subsp. solutus	Softrush	OBL	8.1	9.6
Leersia hexandra	Southern cutgrass	OBL	0.3	0.3
Ludwigia repens	Red-leaf ludwigia	OBL	0.4	0.5

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Lycopus rubellus	Taper-leaf bugleweed	OBL	1.0	1.2
Lythrum alatum var. lanceolatum	Winged lythrum	OBL	0.5	0.6
Mikania scandens	Climbing hempvine	- (4)	0.1	0.1
Oxalis corniculata	Common yellow wood sorrel	UPL	0.4	0.5
Panicum hemitomon	Maidencane	OBL	10.8	12.8
Paspalum conjugatum	Sour paspalum	FAC	1.5	1.7
Paspalum laeve	Field paspalum	FACW	4.7	5.6
Paspalum notatum	Bahia grass	UPL (3)	5.2	6.2
Phyla nodiflora	Frog-fruit	FAC	0.8	1.0
Polygonum hydropiperoides	Mild waterpepper	OBL	4.4	5.3
Polygonum punctatum	Dotted smartweed	OBL	1.8	2.1
Pontederia cordata	Pickerelweed	OBL	0.6	0.8
Psychotria nervosa	Wild coffee	FAC	0.2	0.2
Ptilimnium capillaceum	Mock bishopsweed	FACW	0.3	0.4
Rhexia mariana	Meadow-beauty	FACW	0.1	0.1
Rhynchospora inundata	Horned beakrush	OBL	0.9	1.0
Rubus sp.	Blackberry	FAC	0.6	0.7
Sacciolepis indica	Glenwood grass	FAC	0.1	0.1
Saururus cernuus	Lizard's tail	OBL	6.8	8.1
Scoparia dulcis	Licorice weed	FAC	0.0	0.0
Smilax bona-nox	Saw greenbrier	-	0.6	0.8
Thalia geniculata	Alligatorflag	OBL	0.3	0.3
Toxicodendron radicans	Poison ivy	-	0.3	0.3
Ulmus americana	American elm	FACW	0.1	0.2
Urena lobata	Caesarweed	UPL (1)	0.4	0.5
Total All Vegetative Species (Except Non-Nuisance NLAs)			**84.4**	**100.0**
Only Non-Exotic, Non-Nuisance Wetland Species				
Acer rubrum	Red maple	FACW	0.1	0.1
Bacopa caroliniana	Blue hyssop	OBL	1.8	2.2
Carex longii	Long's sedge	FACW	2.1	2.5
Centella asiatica	Spadeleaf	FACW	1.4	1.6

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Cladium jamaicense	Sawgrass	OBL	0.6	0.7
Commelina diffusa	Dayflower	FACW	0.6	0.7
Cyperus odoratus	Fragrant flatsedge	FACW	0.1	0.1
Cyperus polystachyos	Manyspike flatsedge	FACW	0.1	0.1
Diodia virginiana	Rough button-weed	FACW	1.3	1.6
Eleocharis sp.	Spikerush	OBL	0.1	0.1
Eleocharis vivipara	Spikerush	OBL	4.9	5.8
Hydrocotyle umbellata	Pennywort	FACW	1.2	1.5
Hypericum mutilum	Dwarf St. John's-wort	FACW	0.1	0.1
Iris hexagona	Iris	OBL	3.7	4.4
Juncus effusus subsp. solutus	Softrush	OBL	8.1	9.6
Leersia hexandra	Southern cutgrass	OBL	0.3	0.3
Ludwigia repens	Red-leaf ludwigia	OBL	0.4	0.5
Lycopus rubellus	Taper-leaf bugleweed	OBL	1.0	1.2
Lythrum alatum var. lanceolatum	Winged lythrum	OBL	0.5	0.6
Panicum hemitomon	Maidencane	OBL	10.8	12.8
Paspalum laeve	Field paspalum	FACW	4.7	5.6
Polygonum hydropiperoides	Mild waterpepper	OBL	4.4	5.3
Polygonum punctatum	Dotted smartweed	OBL	1.8	2.1
Pontederia cordata	Pickerelweed	OBL	0.6	0.8
Ptilimnium capillaceum	Mock bishopsweed	FACW	0.3	0.4
Rhexia mariana	Meadow-beauty	FACW	0.1	0.1
Rhynchospora inundata	Horned beakrush	OBL	0.9	1.0
Saururus cernuus	Lizard's tail	OBL	6.8	8.1
Thalia geniculata	Alligatorflag	OBL	0.3	0.3
Ulmus americana	American elm	FACW	0.1	0.2
Total Non-Exotic, Non-Nuisance Wetland Species			**59.1**	**70.1**
All Wetland Species				
Acer rubrum	Red maple	FACW	0.1	0.1
Bacopa caroliniana	Blue hyssop	OBL	1.8	2.2
Carex longii	Long's sedge	FACW	2.1	2.5

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Centella asiatica	Spadeleaf	FACW	1.4	1.6
Cladium jamaicense	Sawgrass	OBL	0.6	0.7
Commelina diffusa	Dayflower	FACW	0.6	0.7
Cyperus odoratus	Fragrant flatsedge	FACW	0.1	0.1
Cyperus polystachyos	Manyspike flatsedge	FACW	0.1	0.1
Diodia virginiana	Rough button-weed	FACW	1.3	1.6
Eleocharis sp.	Spikerush	OBL	0.1	0.1
Eleocharis vivipara	Spikerush	OBL	4.9	5.8
Hydrocotyle umbellata	Pennywort	FACW	1.2	1.5
Hypericum mutilum	Dwarf St. John's-wort	FACW	0.1	0.1
Iris hexagona	Iris	OBL	3.7	4.4
Juncus effusus subsp. solutus	Softrush	OBL	8.1	9.6
Leersia hexandra	Southern cutgrass	OBL	0.3	0.3
Ludwigia repens	Red-leaf ludwigia	OBL	0.4	0.5
Lycopus rubellus	Taper-leaf bugleweed	OBL	1.0	1.2
Lythrum alatum var. lanceolatum	Winged lythrum	OBL	0.5	0.6
Panicum hemitomon	Maidencane	OBL	10.8	12.8
Paspalum laeve	Field paspalum	FACW	4.7	5.6
Polygonum hydropiperoides	Mild waterpepper	OBL	4.4	5.3
Polygonum punctatum	Dotted smartweed	OBL	1.8	2.1
Pontederia cordata	Pickerelweed	OBL	0.6	0.8
Ptilimnium capillaceum	Mock bishopsweed	FACW	0.3	0.4
Rhexia mariana	Meadow-beauty	FACW	0.1	0.1
Rhynchospora inundata	Horned beakrush	OBL	0.9	1.0
Saururus cernuus	Lizard's tail	OBL	6.8	8.1
Thalia geniculata	Alligatorflag	OBL	0.3	0.3
Ulmus americana	American elm	FACW	0.1	0.2
Total Wetland Species			**59.1**	**70.1**
All Facultative Species				
Axonopus furcatus	Flat-joint carpet grass	FAC	8.6	10.2
Axonopus sp.	Carpet grass	FAC	0.4	0.5

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.0	0.0
Cyperus ovatus	Purple flatsedge	FAC	0.6	0.7
Digitaria serotina	Hairy crabgrass	FAC	2.5	3.0
Drymaria cordata	West Indian chickweed	FAC	0.0	0.0
Eragrostis elliottii	Elliot's lovegrass	FAC	1.0	1.2
Erechtites hieracifolius	Fireweed	FAC	0.1	0.1
Eupatorium capillifolium	Dogfennel	FAC	0.2	0.3
Paspalum conjugatum	Sour paspalum	FAC	1.5	1.7
Phyla nodiflora	Frog-fruit	FAC	0.8	1.0
Psychotria nervosa	Wild coffee	FAC	0.2	0.2
Rubus sp.	Blackberry	FAC	0.6	0.7
Sacciolepis indica	Glenwood grass	FAC	0.1	0.1
Scoparia dulcis	Licorice weed	FAC	0.0	0.0
Total Facultative Species			**16.7**	**19.8**
All Upland Species				
Callicarpa americana	American beauty-berry	UPL	0.3	0.3
Cirsium sp.	Thistle	UPL	0.1	0.2
Cynodon dactylon	Bermuda grass	UPL (3)	1.0	1.2
Oxalis corniculata	Common yellow wood sorrel	UPL	0.4	0.5
Paspalum notatum	Bahia grass	UPL (3)	5.2	6.2
Urena lobata	Caesarweed	UPL (1)	0.4	0.5
Total Upland Species			**7.5**	**8.9**
All Unclassified Species (-)				
Mikania scandens	Climbing hempvine	- (4)	0.1	0.1
Smilax bona-nox	Saw greenbrier	-	0.6	0.8
Toxicodendron radicans	Poison ivy	-	0.3	0.3
Total Unclassified Species (-)			**1.0**	**1.2**
Nuisance / Exotic Species (CAT I, II, & Common N/E Species)				
Mikania scandens	Climbing hempvine	- (4)	0.1	0.1
Urena lobata	Caesarweed	UPL (1)	0.4	0.5
Total CAT I, II, IV Nuisance / Exotic Species			**0.5**	**0.6**

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Nuisance / Exotic Species - Non-Native				
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.0	0.0
Cynodon dactylon	Bermuda grass	UPL (3)	1.0	1.2
Paspalum notatum	Bahia grass	UPL (3)	5.2	6.2
Total Non-Native Nuisance / Exotic Species			**6.3**	**7.5**
All Nuisance / Exotic Species				
Cuphea carthagenensis	Columbia waxweed	FAC (3)	0.0	0.0
Cynodon dactylon	Bermuda grass	UPL (3)	1.0	1.2
Mikania scandens	Climbing hempvine	- (4)	0.1	0.1
Paspalum notatum	Bahia grass	UPL (3)	5.2	6.2
Urena lobata	Caesarweed	UPL (1)	0.4	0.5
Total Nuisance / Exotic Species			**6.8**	**8.0**
All Non-Listed Aquatic (NLA) Species				
Total Non-Listed Aquatic (NLA) Species			**0.0**	**N/A**
Open Water / NLA			**0.4**	**N/A**
Bare Ground / Dead Vegetation			**17.2**	**N/A**

* Non-exotic, Non-nuisance wetland species observed in fruit or flower:

** Values of 0.0% are less than 0.5%

(1) - FLEPCC Category I Nuisance / Exotic

(2) - FLEPCC Category II Nuisance / Exotic

(3) - Non-Native Species per Wunderlin, 1989, USF Atlas of Florida Vascular Plants

(4) - Commonly Identified Nuisance Species

PD16 Tree Data by Species

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION		TOTAL NUMBER	DENSITY (trees/acre)	SPECIES COMPOSITION %	AVERAGE HEIGHT (ft)	AVERAGE DBH (inches)
				LIVE	STRESSED					
Fraxinus caroliniana	Pop ash	OBL	OBL	6		6	15	6.0%	26.7	4.4
Quercus laurifolia	Laurel oak	FACW	FACW	48	2	50	127	51.0%	27.3	10.1
Quercus nigra	Water oak	FACW	FAC	11		11	28	11.2%	34.1	13.6
Sabal palmetto	Cabbage palm	FAC	FAC	5		5	13	5.2%	15.6	11.6
Ulmus americana	American elm	FACW	FACW	26		26	66	26.5%	33.1	12.9
TOTALS - AVERAGES				**96**	**2**	**98**	**249**	**100.0%**	**28.9**	**10.9**

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	PD16 TP1	PD16 TP2	TOTAL NUMBER PD16 TP1	MIN DENSITY (trees/acre)	TOTAL NUMBER PD16 TP2	MAX DENSITY (trees/acre)
	Sugarberry	FACW	FACW			8	38	0	0
Fraxinus caroliniana	Pop ash	OBL	OBL		6		0	6	33
Quercus laurifolia	Laurel oak	FACW	FACW	23	27	1	5	27	147
Quercus nigra	Water oak	FACW	FAC	2	9		0	9	49
Sabal palmetto	Cabbage palm	FAC	FAC	5		10	47	0	0
Ulmus americana	American elm	FACW	FACW	18	8	13	61	8	44
TOTALS - AVERAGES				**48**	**50**	**32**	**151**	**50**	**273**

PD16 Shrub Data by Species

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION	TOTAL NUMBER	DENSITY (shrubs/acre)	SPECIES COMPOSITION %
				LIVE			
Baccharis halimifolia	Eastern false-willow	FAC	FAC	1	1	18	1.2%
Fraxinus caroliniana	Pop ash	OBL	OBL	1	1	18	1.2%
Myrica cerifera	Wax myrtle	FAC	FAC	32	32	586	38.1%
Quercus laurifolia	Laurel oak	FACW	FACW	4	4	73	4.7%
Quercus nigra	Water oak	FACW	FAC	1	1	18	1.2%
Sabal palmetto	Cabbage palm	FAC	FAC	3	3	55	3.6%
Serenoa repens	Saw palmetto	UPL	FACU	4	4	73	4.7%
Viburnum obovatum	Walter viburnum	FACW	FACW	38	38	696	45.3%
TOTALS - AVERAGES				**84**	**84**	**1537**	**100.0%**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	PD16 SP1	PD16 SP2	TOTAL NUMBER PD16 SP2	MIN DENSITY (shrubs/acre)	TOTAL NUMBER PD16 SP1	MAX DENSITY (shrubs/acre)
Baccharis halimifolia	Eastern false-willow	FAC	FAC	1			0		0
Callicarpa americana	American beauty-berry	UPL	FACU				0	9	329
Fraxinus caroliniana	Pop ash	OBL	OBL		1	1	37		0
Myrica cerifera	Wax myrtle	FAC	FAC	8	24	24	880		0
Quercus laurifolia	Laurel oak	FACW	FACW	2	2	2	73		0
Quercus nigra	Water oak	FACW	FAC		1	1	37		0
Sabal minor	Dwarf palmetto	FACW	FACW				0	2	73
Sabal palmetto	Cabbage palm	FAC	FAC	2	1	1	37	10	366
Serenoa repens	Saw palmetto	UPL	FACU	4			0	46	1683
Viburnum obovatum	Walter viburnum	FACW	FACW	38			0		0
TOTALS - AVERAGES				**55**	**29**	**29**	**1064**	**67**	**2451**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

PD8 and PD16 Herbaceous Data by Species

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Vegetative Species (Except Non-Nuisance NLAs)				
Acer rubrum	Red maple	FACW	0.2	0.4
Ampelopsis arborea	Pepper-vine	-	0.4	1.0
Amphicarpum muhlenbergianum	Goobergrass	FACW	0.2	0.5
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	4.7	11.0
Bacopa caroliniana	Blue hyssop	OBL	0.5	1.1
Bidens alba	White beggar-ticks	FAC	0.1	0.3
Boehmeria cylindrica	Small-spike false nettle	OBL	0.5	1.1
Callicarpa americana	American beauty-berry	UPL	0.2	0.5
Centella asiatica	Spadeleaf	FACW	0.4	0.9
Cladium jamaicense	Sawgrass	OBL	0.5	1.1
Commelina diffusa	Dayflower	FACW	0.2	0.4
Dichanthelium sp.	Panic grass	UPL	1.4	3.3
Dichondra carolinensis	Carolina pony-foot	FAC	1.3	3.1
Drymaria cordata	West Indian chickweed	FAC	0.1	0.2
Eupatorium capillifolium	Dogfennel	FAC	0.1	0.2
Galactia elliotii	Milkpea	UPL	0.7	1.6
Galium tinctorium	Stiff marsh bedstraw	FACW	0.4	0.9
Hydrocotyle umbellata	Pennywort	FACW	0.2	0.5
Hypericum myrtifolium	Myrtleleaf St. John's-wort	FACW	0.1	0.3
Ipomoea sp.	Morning glory	-	0.1	0.3
Juncus effusus subsp. solutus	Softrush	OBL	0.5	1.2
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.6	1.4
Macroptilium lathyroides	Phaseolus	- (3)	0.2	0.5
Melothria pendula	Creeping cucumber	-	0.2	0.5
Oxalis corniculata	Common yellow wood sorrel	UPL	0.8	1.8
Panicum hemitomon	Maidencane	OBL	0.3	0.7
Panicum sp.	Panic grass	-	0.1	0.2
Parthenocissus quinquefolia	Virginia creeper	-	0.1	0.3
Paspalum conjugatum	Sour paspalum	FAC	2.5	5.8

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Paspalum notatum	Bahia grass	UPL (3)	0.2	0.5
Psychotria nervosa	Wild coffee	FAC	0.4	0.9
Pteridium aquilinum var. pseudocaudatum	Tailed bracken	UPL	1.2	2.8
Quercus laurifolia	Laurel oak	FACW	0.4	0.9
Rhus copallinum	Winged sumac	UPL	0.4	0.9
Rubus sp.	Blackberry	FAC	1.2	2.8
Saururus cernuus	Lizard's tail	OBL	7.8	18.3
Scleria sp.	Nutrush	FACW	0.6	1.4
Serenoa repens	Saw palmetto	UPL	2.0	4.7
Smilax bona-nox	Saw greenbrier	-	1.2	2.8
Smilax sp.	Greenbriar	-	0.6	1.4
Solidago sp.	Goldenrod	-	0.2	0.5
Toxicodendron radicans	Poison ivy	-	0.5	1.1
Ulmus americana	American elm	FACW	1.6	3.8
Urena lobata	Caesarweed	UPL (1)	5.7	13.4
Viburnum obovatum	Walter viburnum	FACW	0.5	1.2
Vitis rotundifolia	Muscadine grape	-	0.6	1.4
Total All Vegetative Species (Except Non-Nuisance NLAs)			**42.5**	**100.0**
Only Non-Exotic, Non-Nuisance Wetland Species				
Acer rubrum	Red maple	FACW	0.2	0.4
Amphicarpum muhlenbergianum	Goobergrass	FACW	0.2	0.5
Bacopa caroliniana	Blue hyssop	OBL	0.5	1.1
Boehmeria cylindrica	Small-spike false nettle	OBL	0.5	1.1
Centella asiatica	Spadeleaf	FACW	0.4	0.9
Cladium jamaicense	Sawgrass	OBL	0.5	1.1
Commelina diffusa	Dayflower	FACW	0.2	0.4
Galium tinctorium	Stiff marsh bedstraw	FACW	0.4	0.9
Hydrocotyle umbellata	Pennywort	FACW	0.2	0.5
Hypericum myrtifolium	Myrtleleaf St. John's-wort	FACW	0.1	0.3
Juncus effusus subsp. solutus	Softrush	OBL	0.5	1.2
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.6	1.4

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Panicum hemitomon	Maidencane	OBL	0.3	0.7
Quercus laurifolia	Laurel oak	FACW	0.4	0.9
Saururus cernuus	Lizard's tail	OBL	7.8	18.3
Scleria sp.	Nutrush	FACW	0.6	1.4
Ulmus americana	American elm	FACW	1.6	3.8
Viburnum obovatum	Walter viburnum	FACW	0.5	1.2
Total Non-Exotic, Non-Nuisance Wetland Species			**15.4**	**36.2**
All Wetland Species				
Acer rubrum	Red maple	FACW	0.2	0.4
Amphicarpum muhlenbergianum	Goobergrass	FACW	0.2	0.5
Bacopa caroliniana	Blue hyssop	OBL	0.5	1.1
Boehmeria cylindrica	Small-spike false nettle	OBL	0.5	1.1
Centella asiatica	Spadeleaf	FACW	0.4	0.9
Cladium jamaicense	Sawgrass	OBL	0.5	1.1
Commelina diffusa	Dayflower	FACW	0.2	0.4
Galium tinctorium	Stiff marsh bedstraw	FACW	0.4	0.9
Hydrocotyle umbellata	Pennywort	FACW	0.2	0.5
Hypericum myrtifolium	Myrtleleaf St. John's-wort	FACW	0.1	0.3
Juncus effusus subsp. solutus	Softrush	OBL	0.5	1.2
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.6	1.4
Panicum hemitomon	Maidencane	OBL	0.3	0.7
Quercus laurifolia	Laurel oak	FACW	0.4	0.9
Saururus cernuus	Lizard's tail	OBL	7.8	18.3
Scleria sp.	Nutrush	FACW	0.6	1.4
Ulmus americana	American elm	FACW	1.6	3.8
Viburnum obovatum	Walter viburnum	FACW	0.5	1.2
Total Wetland Species			**15.4**	**36.2**
All Facultative Species				
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	4.7	11.0
Bidens alba	White beggar-ticks	FAC	0.1	0.3
Dichondra carolinensis	Carolina pony-foot	FAC	1.3	3.1

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Drymaria cordata	West Indian chickweed	FAC	0.1	0.2
Eupatorium capillifolium	Dogfennel	FAC	0.1	0.2
Paspalum conjugatum	Sour paspalum	FAC	2.5	5.8
Psychotria nervosa	Wild coffee	FAC	0.4	0.9
Rubus sp.	Blackberry	FAC	1.2	2.8
Total Facultative Species			**10.4**	**24.4**
All Upland Species				
Callicarpa americana	American beauty-berry	UPL	0.2	0.5
Dichanthelium sp.	Panic grass	UPL	1.4	3.3
Galactia elliotii	Milkpea	UPL	0.7	1.6
Oxalis corniculata	Common yellow wood sorrel	UPL	0.8	1.8
Paspalum notatum	Bahia grass	UPL (3)	0.2	0.5
Pteridium aquilinum var. pseudocaudatum	Tailed bracken	UPL	1.2	2.8
Rhus copallinum	Winged sumac	UPL	0.4	0.9
Serenoa repens	Saw palmetto	UPL	2.0	4.7
Urena lobata	Caesarweed	UPL (1)	5.7	13.4
Total Upland Species			**12.5**	**29.4**
All Unclassified Species (-)				
Ampelopsis arborea	Pepper-vine	-	0.4	1.0
Ipomoea sp.	Morning glory	-	0.1	0.3
Macroptilium lathyroides	Phaseolus	- (3)	0.2	0.5
Melothria pendula	Creeping cucumber	-	0.2	0.5
Panicum sp.	Panic grass	-	0.1	0.2
Parthenocissus quinquefolia	Virginia creeper	-	0.1	0.3
Smilax bona-nox	Saw greenbrier	-	1.2	2.8
Smilax sp.	Greenbriar	-	0.6	1.4
Solidago sp.	Goldenrod	-	0.2	0.5
Toxicodendron radicans	Poison ivy	-	0.5	1.1
Vitis rotundifolia	Muscadine grape	-	0.6	1.4
Total Unclassified Species (-)			**4.2**	**10.0**

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Nuisance / Exotic Species (CAT I, II, & Common N/E Species)				
Urena lobata	Caesarweed	UPL (1)	5.7	13.4
Total CAT I, II, IV Nuisance / Exotic Species			**5.7**	**13.4**
Nuisance / Exotic Species - Non-Native				
Macroptilium lathyroides	Phaseolus	- (3)	0.2	0.5
Paspalum notatum	Bahia grass	UPL (3)	0.2	0.5
Total Non-Native Nuisance / Exotic Species			**0.4**	**0.9**
All Nuisance / Exotic Species				
Macroptilium lathyroides	Phaseolus	- (3)	0.2	0.5
Paspalum notatum	Bahia grass	UPL (3)	0.2	0.5
Urena lobata	Caesarweed	UPL (1)	5.7	13.4
Total Nuisance / Exotic Species			**6.1**	**14.3**
All Non-Listed Aquatic (NLA) Species				
Total Non-Listed Aquatic (NLA) Species			**0.0**	**N/A**
Open Water / NLA			**0.0**	**N/A**
Bare Ground / Dead Vegetation			**57.7**	**N/A**

* Non-exotic, Non-nuisance wetland species observed in fruit or flower:

** Values of 0.0% are less than 0.5%

(1) - FLEPCC Category I Nuisance / Exotic

(2) - FLEPCC Category II Nuisance / Exotic

(3) - Non-Native Species per Wunderlin, 1989, USF Atlas of Florida Vascular Plants

(4) - Commonly Identified Nuisance Species

PD10 Tree Data by Species

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION		TOTAL NUMBER	DENSITY (trees/acre)	SPECIES COMPOSITION %	AVERAGE HEIGHT (ft)	AVERAGE DBH (inches)
				LIVE	STRESSED					
Celtis laevigata	Sugarberry	FACW	FACW	2		2	5	2.1%	30.0	6.5
Fraxinus caroliniana	Pop ash	OBL	OBL	17	6	23	54	22.9%	24.8	6.1
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	3	1	4	9	3.8%	40.0	12.8
Quercus laurifolia	Laurel oak	FACW	FACW	16		16	37	15.7%	33.1	10.5
Quercus virginiana	Live oak	UPL	FACU	4		4	9	3.8%	43.8	24.4
Sabal palmetto	Cabbage palm	FAC	FAC	35		35	82	34.7%	27.1	12.6
Ulmus americana	American elm	FACW	FACW	17		17	40	16.9%	33.8	7.2
TOTALS - AVERAGES				**94**	**7**	**101**	**236**	**100.0%**	**29.9**	**10.2**

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	PD10 TP1A	PD10 TP2A	TOTAL NUMBER PD10 TP2A	MIN DENSITY (trees/acre)	TOTAL NUMBER PD10 TP1A	MAX DENSITY (trees/acre)
Fraxinus caroliniana	Pop ash	OBL	OBL	6	11	11	52	6	28
Quercus laurifolia	Laurel oak	FACW	FACW	9	7	7	33	9	41
Sabal palmetto	Cabbage palm	FAC	FAC	21	14	14	67	21	97
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL		3	3	14	0	0
Ulmus americana	American elm	FACW	FACW	10	7	7	33	10	46
Celtis laevigata	Sugarberry	FACW	FACW	2		0	0	2	9
Quercus virginiana	Live oak	UPL	FACU	1	3	3	14	1	5
TOTALS - AVERAGES				**49**	**45**	**45**	**213**	**49**	**226**

PD10 Shrub Data by Species

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION	TOTAL NUMBER	DENSITY (shrubs/acre)	SPECIES COMPOSITION %
				LIVE			
Carya aquatica	Water hickory	OBL	OBL	3	3	83	4.4%
Fraxinus caroliniana	Pop ash	OBL	OBL	4	4	110	5.9%
Myrica cerifera	Wax myrtle	FAC	FAC	1	1	28	1.5%
Quercus laurifolia	Laurel oak	FACW	FACW	2	2	55	2.9%
Sabal palmetto	Cabbage palm	FAC	FAC	19	19	523	27.9%
Serenoa repens	Saw palmetto	UPL	FACU	35	35	964	51.5%
Ulmus americana	American elm	FACW	FACW	4	4	110	5.9%
TOTALS - AVERAGES				**68**	**68**	**1873**	**100.0%**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	WETLAND COMMUNITY (PD) SHRUB PLOTS (SP)		TOTAL NUMBER PD10 SP2A	DENSITY (shrubs/acre)	TOTAL NUMBER PD10 SP1A	DENSITY (shrubs/acre)
				PD10 SP1A	PD10 SP2A				
Carya aquatica	Water hickory	OBL	OBL	3		0	0	3	200
Fraxinus caroliniana	Pop ash	OBL	OBL	3	1	1	47	3	200
Myrica cerifera	Wax myrtle	FAC	FAC		1	1	47	0	0
Quercus laurifolia	Laurel oak	FACW	FACW		2	2	94	0	0
Sabal palmetto	Cabbage palm	FAC	FAC	7	12	12	563	7	467
Serenoa repens	Saw palmetto	UPL	FACU	34	1	1	47	34	2267
Ulmus americana	American elm	FACW	FACW	4		0	0	4	267
TOTALS - AVERAGES				**51**	**17**	**17**	**798**	**51**	**3401**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

PD9 and PD10 Herbaceous Data by Species

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Vegetative Species (Except Non-Nuisance NLAs)				
Acer rubrum	Red maple	FACW	0.1	0.2
Ampelopsis arborea	Pepper-vine	-	0.2	0.4
Andropogon virginicus	Broomsedge bluestem	FAC	0.8	2.0
Axonopus furcatus	Flat-joint carpet grass	FAC	2.7	6.6
Axonopus sp.	Carpet grass	FAC	0.8	2.0
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	3.1	7.6
Bidens alba	White beggar-ticks	FAC	0.8	2.0
Callicarpa americana	American beauty-berry	UPL	0.4	0.9
Carex longii	Long's sedge	FACW	0.1	0.3
Centella asiatica	Spadeleaf	FACW	0.1	0.2
Commelina diffusa	Dayflower	FACW	0.5	1.3
Dichanthelium sp.	Panic grass	UPL	0.5	1.2
Galactia elliotii	Milkpea	UPL	0.1	0.2
Hydrocotyle umbellata	Pennywort	FACW	0.7	1.7
Hypericum mutilum	Dwarf St. John's-wort	FACW	0.2	0.5
Juncus effusus subsp. solutus	Softrush	OBL	0.2	0.5
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.3	0.7
Myrica cerifera	Wax myrtle	FAC	0.6	1.5
Parthenocissus quinquefolia	Virginia creeper	-	0.9	2.2
Paspalum conjugatum	Sour paspalum	FAC	0.0	0.1
Paspalum notatum	Bahia grass	UPL (3)	1.9	4.6
Peltandra sp.	Arrow arum	OBL	1.7	4.1
Psychotria nervosa	Wild coffee	FAC	10.8	26.3
Quercus virginiana	Live oak	UPL	0.1	0.2
Rhynchospora miliacea	Millet beakrush	OBL	0.8	2.0
Rubus sp.	Blackberry	FAC	0.2	0.5
Sabal palmetto	Cabbage palm	FAC	0.2	0.5
Saururus cernuus	Lizard's tail	OBL	6.2	15.2
Scoparia dulcis	Licorice weed	FAC	0.0	0.1

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Serenoa repens	Saw palmetto	UPL	0.4	1.0
Smilax bona-nox	Saw greenbrier	-	1.8	4.3
Smilax sp.	Greenbriar	-	0.2	0.5
Toxicodendron radicans	Poison ivy	-	0.8	1.8
Ulmus americana	American elm	FACW	0.8	2.0
Urena lobata	Caesarweed	UPL (1)	0.9	2.2
Viburnum obovatum	Walter viburnum	FACW	0.2	0.5
Vitis rotundifolia	Muscadine grape	-	0.6	1.5
Total All Vegetative Species (Except Non-Nuisance NLAs)			**40.9**	**100.0**
Only Non-Exotic, Non-Nuisance Wetland Species				
Acer rubrum	Red maple	FACW	0.1	0.2
Carex longii	Long's sedge	FACW	0.1	0.3
Centella asiatica	Spadeleaf	FACW	0.1	0.2
Commelina diffusa	Dayflower	FACW	0.5	1.3
Hydrocotyle umbellata	Pennywort	FACW	0.7	1.7
Hypericum mutilum	Dwarf St. John's-wort	FACW	0.2	0.5
Juncus effusus subsp. solutus	Softrush	OBL	0.2	0.5
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.3	0.7
Peltandra sp.	Arrow arum	OBL	1.7	4.1
Rhynchospora miliacea	Millet beakrush	OBL	0.8	2.0
Saururus cernuus	Lizard's tail	OBL	6.2	15.2
Ulmus americana	American elm	FACW	0.8	2.0
Viburnum obovatum	Walter viburnum	FACW	0.2	0.5
Total Non-Exotic, Non-Nuisance Wetland Species			**12.0**	**29.4**
All Wetland Species				
Acer rubrum	Red maple	FACW	0.1	0.2
Carex longii	Long's sedge	FACW	0.1	0.3
Centella asiatica	Spadeleaf	FACW	0.1	0.2
Commelina diffusa	Dayflower	FACW	0.5	1.3
Hydrocotyle umbellata	Pennywort	FACW	0.7	1.7
Hypericum mutilum	Dwarf St. John's-wort	FACW	0.2	0.5

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Juncus effusus subsp. solutus	Softrush	OBL	0.2	0.5
Lycopus rubellus	Taper-leaf bugleweed	OBL	0.3	0.7
Peltandra sp.	Arrow arum	OBL	1.7	4.1
Rhynchospora miliacea	Millet beakrush	OBL	0.8	2.0
Saururus cernuus	Lizard's tail	OBL	6.2	15.2
Ulmus americana	American elm	FACW	0.8	2.0
Viburnum obovatum	Walter viburnum	FACW	0.2	0.5
Total Wetland Species			**12.0**	**29.4**
All Facultative Species				
Andropogon virginicus	Broomsedge bluestem	FAC	0.8	2.0
Axonopus furcatus	Flat-joint carpet grass	FAC	2.7	6.6
Axonopus sp.	Carpet grass	FAC	0.8	2.0
Baccharis sp.(either glomerifolia or halimifolia)	False-willow	FAC	3.1	7.6
Bidens alba	White beggar-ticks	FAC	0.8	2.0
Myrica cerifera	Wax myrtle	FAC	0.6	1.5
Paspalum conjugatum	Sour paspalum	FAC	0.0	0.1
Psychotria nervosa	Wild coffee	FAC	10.8	26.3
Rubus sp.	Blackberry	FAC	0.2	0.5
Sabal palmetto	Cabbage palm	FAC	0.2	0.5
Scoparia dulcis	Licorice weed	FAC	0.0	0.1
Total Facultative Species			**20.2**	**49.4**
All Upland Species				
Callicarpa americana	American beauty-berry	UPL	0.4	0.9
Dichanthelium sp.	Panic grass	UPL	0.5	1.2
Galactia elliotii	Milkpea	UPL	0.1	0.2
Paspalum notatum	Bahia grass	UPL (3)	1.9	4.6
Quercus virginiana	Live oak	UPL	0.1	0.2
Serenoa repens	Saw palmetto	UPL	0.4	1.0
Urena lobata	Caesarweed	UPL (1)	0.9	2.2
Total Upland Species			**4.3**	**10.4**

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Unclassified Species (-)				
Ampelopsis arborea	Pepper-vine	-	0.2	0.4
Parthenocissus quinquefolia	Virginia creeper	-	0.9	2.2
Smilax bona-nox	Saw greenbrier	-	1.8	4.3
Smilax sp.	Greenbriar	-	0.2	0.5
Toxicodendron radicans	Poison ivy	-	0.8	1.8
Vitis rotundifolia	Muscadine grape	-	0.6	1.5
Total Unclassified Species (-)			**4.4**	**10.8**
Nuisance / Exotic Species (CAT I, II, & Common N/E Species)				
Urena lobata	Caesarweed	UPL (1)	0.9	2.2
Total CAT I, II, IV Nuisance / Exotic Species			**0.9**	**2.2**
Nuisance / Exotic Species - Non-Native				
Paspalum notatum	Bahia grass	UPL (3)	1.9	4.6
Total Non-Native Nuisance / Exotic Species			**1.9**	**4.6**
All Nuisance / Exotic Species				
Paspalum notatum	Bahia grass	UPL (3)	1.9	4.6
Urena lobata	Caesarweed	UPL (1)	0.9	2.2
Total Nuisance / Exotic Species			**2.8**	**6.8**
All Non-Listed Aquatic (NLA) Species				
Total Non-Listed Aquatic (NLA) Species			**0.0**	**N/A**
Open Water / NLA			**0.0**	**N/A**
Bare Ground / Dead Vegetation			**59.1**	**N/A**

* Non-exotic, Non-nuisance wetland species observed in fruit or flower:

** Values of 0.0% are less than 0.5%

(1) - FLEPCC Category I Nuisance / Exotic

(2) - FLEPCC Category II Nuisance / Exotic

(3) - Non-Native Species per Wunderlin, 1989, USF Atlas of Florida Vascular Plants

(4) - Commonly Identified Nuisance Species

PD13 and 17 Tree Data by Species

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION	TOTAL NUMBER	DENSITY (trees/acre)	SPECIES COMPOSITION %	AVERAGE HEIGHT (ft)	AVERAGE DBH (inches)
				LIVE					
Acer rubrum	Red maple	FACW	FACW	8	8	9	1.1%	31.5	8.0
Fraxinus caroliniana	Pop ash	OBL	OBL	724	724	789	94.5%	28.9	5.5
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	16	16	17	2.0%	40.1	10.6
Quercus laurifolia	Laurel oak	FACW	FACW	6	6	7	0.8%	38.8	6.8
Sabal palmetto	Cabbage palm	FAC	FAC	3	3	3	0.4%	18.0	18.3
Ulmus americana	American elm	FACW	FACW	9	9	10	1.2%	37.9	6.9
TOTALS - AVERAGES				**766**	**766**	**835**	**100.0%**	**29.3**	**5.8**

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	TREE PLOT (TP)				TOTAL NUMBER PD17 TP1	MIN DENSITY (trees/acre)	TOTAL NUMBER PD17 TP4	MAX DENSITY (trees/acre)
				TP1	TP2	TP3	TP4				
Acer rubrum	Red maple	FACW	FACW	3	2	3		3	13		0
Fraxinus caroliniana	Pop ash	OBL	OBL	165	178	161	221	165	712	221	1002
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	3	5	8		3	13		0
Quercus laurifolia	Laurel oak	FACW	FACW	2		4		2	9		0
Sabal palmetto	Cabbage palm	FAC	FAC	2		1		2	9		0
Ulmus americana	American elm	FACW	FACW	1	4	4		1	4		0
TOTALS - AVERAGES				**176**	**189**	**181**	**221**	**176**	**760**	**221**	**1002**

PD13 and 17 Shrub Data by Species

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION	TOTAL NUMBER	DENSITY (shrubs/acre)	SPECIES COMPOSITION %
				LIVE			
Fraxinus caroliniana	Pop ash	OBL	OBL	150	150	1253	95.6%
Myrica cerifera	Wax myrtle	FAC	FAC	4	4	33	2.5%
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL	1	1	8	0.6%
Quercus laurifolia	Laurel oak	FACW	FACW	2	2	17	1.3%
TOTALS - AVERAGES				**157**	**157**	**1311**	**100.0%**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

DATA INCLUDES ALL WOODY SPECIES < 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	SHRUB PLOTS (SP)				TOTAL NUMBER PD17 SP2	MIN DENSITY (shrubs/acre)	TOTAL NUMBER PD17 SP3	MAX DENSITY (shrubs/acre)
				SP1	SP2	SP3	SP4				
Fraxinus caroliniana	Pop ash	OBL	OBL	26	28	47	49	28	844	47	1716
Myrica cerifera	Wax myrtle	FAC	FAC			4			0	4	146
Nyssa sylvatica var. biflora	Swamp tupelo	OBL	OBL			1			0	1	37
Quercus laurifolia	Laurel oak	FACW	FACW	1			1		0		0
TOTALS - AVERAGES				**27**	**28**	**52**	**50**	**28**	**844**	**52**	**1899**

*Shrubs are defined as any woody tree or shrub species >18" in height and DBH<4"

PD13 and 17 Herbaceous Data by Species

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Vegetative Species (Except Non-Nuisance NLAs)				
Acer rubrum	Red maple	FACW	0.6	2.8
Bidens laevis	Bur-marigold	OBL	0.1	0.3
Boehmeria cylindrica	Small-spike false nettle	OBL	0.1	0.3
Carex longii	Long's sedge	FACW	0.1	0.3
Carex sp.	Sedge	FACW	0.2	0.8
Commelina diffusa	Dayflower	FACW	0.9	4.4
Cyperus sp.	Flatsedge	FACW	0.0	0.2
Dichanthelium sp.	Panic grass	UPL	0.1	0.3
Drymaria cordata	West Indian chickweed	FAC	0.7	3.3
Eleocharis vivipara	Spikerush	OBL	0.1	0.3
Eupatorium capillifolium	Dogfennel	FAC	0.8	3.9
Eupatorium leptophyllum	Falsefennel	OBL	0.1	0.5
Fraxinus caroliniana	Pop ash	OBL	1.4	7.0
Hydrocotyle umbellata	Pennywort	FACW	0.1	0.5
Micranthemum umbrosum	Shade mudflower	OBL	0.1	0.3
Panicum hemitomon	Maidencane	OBL	0.2	0.8
Parthenocissus quinquefolia	Virginia creeper	-	0.1	0.3
Paspalum notatum	Bahia grass	UPL (3)	0.0	0.2
Paspalum sp.	Paspalum	-	0.1	0.3
Peltandra sp.	Arrow arum	OBL	0.1	0.5
Pistia stratiotes	Water-lettuce	NLA (1)	0.2	0.8
Pluchea odorata	Sweetscent	FACW	0.2	0.8
Polygonum sp.	Smartweed	OBL	0.0	0.2
Quercus laurifolia	Laurel oak	FACW	0.1	0.3
Salvinia minima	Water spangles	NLA (1)	0.3	1.6
Saururus cernuus	Lizard's tail	OBL	13.6	66.7
Ulmus americana	American elm	FACW	0.3	1.3
Unidentified forb	Unidentified forb	-	0.2	0.8
Total All Vegetative Species (Except Non-Nuisance NLAs)			**20.4**	**100.0**

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Only Non-Exotic, Non-Nuisance Wetland Species				
Acer rubrum	Red maple	FACW	0.6	2.8
Bidens laevis	Bur-marigold	OBL	0.1	0.3
Boehmeria cylindrica	Small-spike false nettle	OBL	0.1	0.3
Carex longii	Long's sedge	FACW	0.1	0.3
Carex sp.	Sedge	FACW	0.2	0.8
Commelina diffusa	Dayflower	FACW	0.9	4.4
Cyperus sp.	Flatsedge	FACW	0.0	0.2
Eleocharis vivipara	Spikerush	OBL	0.1	0.3
Eupatorium leptophyllum	Falsefennel	OBL	0.1	0.5
Fraxinus caroliniana	Pop ash	OBL	1.4	7.0
Hydrocotyle umbellata	Pennywort	FACW	0.1	0.5
Micranthemum umbrosum	Shade mudflower	OBL	0.1	0.3
Panicum hemitomon	Maidencane	OBL	0.2	0.8
Peltandra sp.	Arrow arum	OBL	0.1	0.5
Pluchea odorata	Sweetscent	FACW	0.2	0.8
Polygonum sp.	Smartweed	OBL	0.0	0.2
Quercus laurifolia	Laurel oak	FACW	0.1	0.3
Saururus cernuus	Lizard's tail	OBL	13.6	66.7
Ulmus americana	American elm	FACW	0.3	1.3
Total Non-Exotic, Non-Nuisance Wetland Species			**18.0**	**88.4**
All Wetland Species				
Acer rubrum	Red maple	FACW	0.6	2.8
Bidens laevis	Bur-marigold	OBL	0.1	0.3
Boehmeria cylindrica	Small-spike false nettle	OBL	0.1	0.3
Carex longii	Long's sedge	FACW	0.1	0.3
Carex sp.	Sedge	FACW	0.2	0.8
Commelina diffusa	Dayflower	FACW	0.9	4.4
Cyperus sp.	Flatsedge	FACW	0.0	0.2
Eleocharis vivipara	Spikerush	OBL	0.1	0.3
Eupatorium leptophyllum	Falsefennel	OBL	0.1	0.5

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Fraxinus caroliniana	Pop ash	OBL	1.4	7.0
Hydrocotyle umbellata	Pennywort	FACW	0.1	0.5
Micranthemum umbrosum	Shade mudflower	OBL	0.1	0.3
Panicum hemitomon	Maidencane	OBL	0.2	0.8
Peltandra sp.	Arrow arum	OBL	0.1	0.5
Pluchea odorata	Sweetscent	FACW	0.2	0.8
Polygonum sp.	Smartweed	OBL	0.0	0.2
Quercus laurifolia	Laurel oak	FACW	0.1	0.3
Saururus cernuus	Lizard's tail	OBL	13.6	66.7
Ulmus americana	American elm	FACW	0.3	1.3
Total Wetland Species			**18.0**	**88.4**
All Facultative Species				
Drymaria cordata	West Indian chickweed	FAC	0.7	3.3
Eupatorium capillifolium	Dogfennel	FAC	0.8	3.9
Total Facultative Species			**1.5**	**7.2**
All Upland Species				
Dichanthelium sp.	Panic grass	UPL	0.1	0.3
Paspalum notatum	Bahia grass	UPL (3)	0.0	0.2
Total Upland Species			**0.1**	**0.5**
All Unclassified Species (-)				
Unidentified forb	Unidentified forb	-	0.2	0.8
Parthenocissus quinquefolia	Virginia creeper	-	0.1	0.3
Paspalum sp.	Paspalum	-	0.1	0.3
Total Unclassified Species (-)			**0.3**	**1.5**
Nuisance / Exotic Species (CAT I, II, & Common N/E Species)				
Pistia stratiotes	Water-lettuce	NLA (1)	0.2	0.8
Salvinia minima	Water spangles	NLA (1)	0.3	1.6
Total CAT I, II, IV Nuisance / Exotic Species			**0.5**	**2.5**
Nuisance / Exotic Species - Non-Native				
Paspalum notatum	Bahia grass	UPL (3)	0.0	0.2

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Total Non-Native Nuisance / Exotic Species			**0.0**	**0.2**
All Nuisance / Exotic Species				
Paspalum notatum	Bahia grass	UPL (3)	0.0	0.2
Pistia stratiotes	Water-lettuce	NLA (1)	0.2	0.8
Salvinia minima	Water spangles	NLA (1)	0.3	1.6
Total Nuisance / Exotic Species			**0.5**	**2.6**
All Non-Listed Aquatic (NLA) Species				
Lemna obscura	Duckweed	NLA	0.2	N/A
Pistia stratiotes	Water-lettuce	NLA (1)	0.2	0.8
Salvinia minima	Water spangles	NLA (1)	0.3	1.6
Total Non-Listed Aquatic (NLA) Species			**0.7**	**N/A**
Open Water / NLA			**15.8**	**N/A**
Bare Ground / Dead Vegetation			**63.9**	**N/A**

* Non-exotic, Non-nuisance wetland species observed in fruit or flower:

** Values of 0.0% are less than 0.5%

(1) - FLEPCC Category I Nuisance / Exotic

(2) - FLEPCC Category II Nuisance / Exotic

(3) - Non-Native Species per Wunderlin, 1989, USF Atlas of Florida Vascular Plants

(4) - Commonly Identified Nuisance Species

PD18 Tree Data by Species

DATA INCLUDES ALL TREES ≥ 4.0 INCHES DBH

SPECIES	COMMON NAME	CH 62-340 STATUS	USACE STATUS	CONDITION	TOTAL NUMBER	DENSITY (trees/acre)	SPECIES COMPOSITION %	AVERAGE HEIGHT (ft)	AVERAGE DBH (inches)
				LIVE					
Acer rubrum	Red maple	FACW	FACW	13	13	58	32.8%	26.4	6.2
Fraxinus caroliniana	Pop ash	OBL	OBL	1	1	4	2.3%	42.0	5.0
Salix caroliniana	Southern willow	OBL	OBL	26	26	115	65.0%	16.7	4.9
TOTALS - AVERAGES				**40**	**40**	**177**	**100.0%**	**20.5**	**5.4**

PD18 Herbaceous Data by Species

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
All Vegetative Species (Except Non-Nuisance NLAs)				
Pistia stratiotes	Water-lettuce	NLA (1)	18.8	41.9
Salvinia minima	Water spangles	NLA (1)	23.8	53.1
Nymphoides aquatica	Floating-heart	OBL	0.5	1.1
Thalia geniculata	Alligatorflag	OBL	1.8	3.9
Total All Vegetative Species (Except Non-Nuisance NLAs)			**44.8**	**100.0**
Only Non-Exotic, Non-Nuisance Wetland Species				
Nymphoides aquatica	Floating-heart	OBL	0.5	1.1
Thalia geniculata	Alligatorflag	OBL	1.8	3.9
Total Non-Exotic, Non-Nuisance Wetland Species			**2.3**	**5.0**
All Wetland Species				
Nymphoides aquatica	Floating-heart	OBL	0.5	1.1
Thalia geniculata	Alligatorflag	OBL	1.8	3.9
Total Wetland Species			**2.3**	**5.0**
All Facultative Species				
Total Facultative Species			**0.0**	**0.0**
All Upland Species				
Total Upland Species			**0.0**	**0.0**
All Unclassified Species (-)				
Total Unclassified Species (-)			**0.0**	**0.0**
Nuisance / Exotic Species (CAT I, II, & Common N/E Species)				
Pistia stratiotes	Water-lettuce	NLA (1)	18.8	41.9
Salvinia minima	Water spangles	NLA (1)	23.8	53.1
Total CAT I, II, IV Nuisance / Exotic Species			**42.5**	**95.0**
Nuisance / Exotic Species - Non-Native				
Total Non-Native Nuisance / Exotic Species			**0.0**	**0.0**
All Nuisance / Exotic Species				
Pistia stratiotes	Water-lettuce	NLA (1)	18.8	41.9
Salvinia minima	Water spangles	NLA (1)	23.8	53.1

SPECIES	COMMON NAME	CH 62-340 F.A.C.	TOTAL % COVER ALL QUADRATS**	RELATIVE % COVER ALL QUADRATS **
Total Nuisance / Exotic Species			**42.5**	**95.0**
All Non-Listed Aquatic (NLA) Species				
Azolla filiculoides	American waterfern	NLA	2.5	N/A
Lemna obscura	Duckweed	NLA	22.5	N/A
Pistia stratiotes	Water-lettuce	NLA (1)	18.8	41.9
Salvinia minima	Water spangles	NLA (1)	23.8	53.1
Total Non-Listed Aquatic (NLA) Species			**67.5**	**N/A**
Open Water / NLA			**55.3**	**N/A**
Bare Ground / Dead Vegetation			**0.0**	**N/A**

* Non-exotic, Non-nuisance wetland species observed in fruit or flower:

** Values of 0.0% are less than 0.5%

(1) - FLEPCC Category I Nuisance / Exotic

(2) - FLEPCC Category II Nuisance / Exotic

(3) - Non-Native Species per Wunderlin, 1989, USF Atlas of Florida Vascular Plants

(4) - Commonly Identified Nuisance Species

APPENDIX B
EXISTING SOILS DATA

TYPICAL SOIL PROFILE DESCRIPTIONS

Typical soil profiles encountered during the investigation follow. Typical pH and % Organic Carbon values used in map unit determination are also included. Cation Exchange Capacity (a measure of base saturation) was intended to be used in map unit determination. However, during initial laboratory analysis it was determined that due to the presence and abundance of calcium carbonate nodules in many of the recorded soil profiles the base saturation would be sufficiently elevated such to classify the soils as having alfic horizons. This conclusion thereby aided in distinguishing between map units as Alfisols, Mollisols, etc., without Cation Exchange Capacity analysis. The soil Subgroup as defined in USDA's "*Keys to Soil Taxonomy*", Twelfth Edition, 2014 in italics.

Bradenton loamy fine sand, frequently flooded (*Typic Ochraqualfs*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 6	Black (10YR 2/1) mucky fine sand; mix of organic matter and light gray fine sand grains.	5.6 – 7.8	2 - 8
6 – 10	Dark gray (10YR 4/1) fine sand.	5.6 – 7.3	-
10 – 15	Dark yellowish brown (10YR 4/4) fine sand.	5.6 – 7.3	-
15 – 20	Gray (10YR 5/1) fine sand; common fine dark yellowish brown (10YR 4/4) redox concentrations as pore linings.	6.1 - 8.4	-
20 – 25	Gray (10YR 5/1) sandy loam and sandy clay loam; common fine dark yellowish brown (10YR 4/4) redox concentrations as pore linings.	6.1 - 8.4	-
25 - 36	Gray (10YR 6/1) sandy clay loam; common fine yellowish brown (10YR 5/8) redox concentrations; common medium white calcium carbonate nodules.	6.1 - 8.4	-
36 - 60	Gray (10YR 6/1) sandy loam; common fine yellowish brown (10YR 5/8) redox concentrations; few to common small to medium white calcium carbonate nodules.	7.4 – 8.4	-

Chobee fine sandy loam, frequently flooded (*Typic Argiaquolls*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 3	Very dark grayish brown (10YR 3/2) loam.	6.1 – 7.3	2 - 7
3 - 11	Gray (10YR 5/1) silt loam.	6.1 – 7.3	
11 - 21	White (10YR 8/1) sandy clay loam; common medium white (10YR 8/1) calcium carbonate nodules.	6.1 – 7.3	-
21 - 28	Gray (10YR 6/1) sandy loam; common to many medium white (10YR 8/1) calcium carbonate nodules.	6.1 – 7.3	-
28 - 48	Gray (10YR 6/1) and light gray (10YR 7/1) sandy clay loam; common to many medium white (10YR 8/1) calcium carbonate nodules.	7.4 – 8.4	-

Popash mucky fine sand (*Typic Unbraqualfs*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 6	Black (10YR 2/1) mucky fine sand.	3.6 – 6.5	6 - 12
6 - 46	Light brownish gray (10YR 6/2) and grayish brown (10YR 5/2) fine sand.	3.6 – 7.3	-
46 - 55	Grayish brown (10YR 5/2) sandy loam and sandy clay loam; few to common light olive brown (2.5Y 4/6) concentrations.	5.6 – 7.3	-

Pomona fine sand (*Ultic Haplaquods*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 10	Black (10YR 2/1) fine sand.	3.6 – 5.5	1 - 2
10 - 14	Very dark gray (10YR 3/1) fine sand.	3.6 – 6.5	-
14 - 28	Light brownish gray (10YR 6/2) fine sand.	3.6 – 6.5	-
28 - 36	Dark brown (10YR 3/3) and pale brown (10YR 6/3) fine sand.	3.6 – 5.5	-
36 – 60	Grayish brown (10YR 5/2) sandy clay loam with tongues of grayish brown (10YR 5/2) fine sand; common fine prominent yellowish brown (10YR 5/8) redox concentrations.	3.6 – 5.5	-

Floridana mucky fine sand, depressional (*Arenic Argiaquolls*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 8	Black (10YR 2/1) mucky fine sand and mucky sandy loam.	4.5 – 8.4	6 - 15
8 - 18	Black (10YR 2/1) and very dark gray (10YR 3/1) fine sand.	4.5 – 8.4	-
18 - 36	Gray (10YR 5/1 & 2.5Y 6/1) fine sand; common fine prominent brownish yellow (10YR 6/8) redox concentrations as soft masses and pore linings.	4.5 – 8.4	-
36 – 60	Gray (10YR 6/1) sandy loam and sandy clay loam; few to common light olive brown (2.5Y 5/6) and pale yellowish green (5GY 6/2) mottles.	4.5 – 8.4	-

Smyrna fine sand (*Aeric Haplaquods*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 4	Very dark gray (10YR 3/1) fine sand.	3.6 – 7.3	1 - 5
4 - 9	Gray (10YR 5/1) fine sand.	3.6 – 7.3	-
9 - 15	Very dark brown (10YR 2/2) fine sand; sand grains coated with iron complexed with organic matter.	3.6 – 7.3	-
15 – 30	Dark gray (10YR 4/1) grading to gray (10YR 6/1) fine sand; few small iron nodules.	3.6 – 7.3	-
30 – 46	Light brownish gray (10YR 6/2) grading to white (10YR 8/1) fine sand.	4.5 – 5.5	-
46 – 60	Very dark grayish brown (10YR 3/2) fine sand and loamy sand; few to common fine brownish yellow (10YR 6/8) redox concentrations as soft masses.	4.5 – 5.5	-

Placid fine sand, depressional (*Typic Humaquepts*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 4	Black (10YR 2/1) muck.	3.6 – 5.5	2 - 10
4 - 10	Black (10YR 2/1) mucky fine sand.	3.6 – 5.5	-
10 - 14	Black (10YR 2/1), very dark gray (10YR 3/1) and gray (10YR 5/1) fine sand.	3.6 – 5.5	-
14 - 24	Very dark grayish brown (10YR 3/2), grayish brown (10YR 5/2) and gray (10YR 6/1) fine sand.	3.6 – 5.5	-
24 - 60	Light brownish gray (10YR 6/2) grading to white (10YR 8/1) fine sand and loamy sand; common fine prominent brownish yellow (10YR 6/8) and brownish yellow (10YR 6/6) redox concentrations as soft masses.	3.6 – 5.5	-

Sparr fine sand (*Grossaerenic Paleudults*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 4	Very dark gray (10YR 3/1) fine sand.	4.5 – 6.5	1 - 3
4 - 8	Very dark brown (7.5YR 2.5/2) fine sand and loamy sand.	4.5 – 6.5	-
8 - 12	Dark grayish brown (10YR 4/2) fine sand.	4.5 – 6.5	-
12 - 33	Light gray (10YR 7/2) fine sand and loamy sand.	4.5 – 6.5	-
33 - 60	White (10YR 8/1) fine sand and loamy sand; common fine prominent brownish yellow (10YR 6/8 & 10YR 6/6) redox concentrations as soft masses.	4.5 – 6.5	-
60 – 72	Light gray (10YR 7/2) sandy loam and sandy clay loam; common to many distinct brownish yellow (10YR 6/6) redox concentrations as soft masses; few to common plinthite nodules.	4.5 – 6.5	-

Holopaw fine sand (*Grossarenic Ochraqualfs*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 4	Black (10YR 2/1) fine sand; few to common fine prominent reddish yellow (10YR 6/8) redox concentrations as pore linings.	5.1 – 7.3	1 - 4
4 - 12	Pale brown (10YR 6/3) and grayish brown (10YR 5/2) fine sand; few to common fine prominent brownish yellow (10YR 6/8) redox concentrations as pore linings.	5.1 – 7.3	-
12 - 50	Gray (10YR 6/1) and light gray (10YR 7/1) fine sand and loamy sand; few iron concretions.	5.1 – 7.3	-
50 - 60	Light gray (10YR 7/2) fine sand and loamy sand.	5.1 – 7.3	-
60 – 72	White (10YR 8/1) sandy clay loam; common fine prominent brownish yellow (10YR 6/8 & 10YR 6/6) redox concentrations as soft masses; few calcium carbonate accumulations.	5.1 – 8.4	-

Manatee mucky fine sand, depressional (*Typic Argiaquolls*):

Depth (in.)	Description	pH	% Organic Carbon
+12 – 0	Dark reddish brown (5YR 2.5/2) mucky peat.	5.6 – 7.8	4 - 15
0 - 4	Black (10YR 2/1) mucky sandy loam.	5.6 – 7.8	4 - 15
4 - 12	Black (10YR 2/1) sandy loam.	5.6 – 7.8	4 - 15
12 - 36	Light gray (10YR 7/1) sandy loam with brownish yellow (10YR 6/8) redox concentrations as soft masses.	6.6 – 8.4	-

Electra fine sand (*Ultic Haplohumods*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 5	Dark gray (10YR 4/1) fine sand.	3.6 – 6.5	1 - 2
5 - 34	Light brownish gray (10YR 6/2) fine sand with light gray (10YR 7/1) depletions below 30 inches.	3.6 – 6.5	-
34 - 44	Dark brown (7.5YR 3/2) fine sand; sand grains coated with iron complexed with organic matter.	3.6 – 6.5	-
44 - 51	Yellowish brown (10YR 5/4) fine sand.	3.6 – 6.5	-
51 - 65	Pale brown (10YR 6/3) sandy loam and light gray (10YR 7/2) sandy clay loam; common fine prominent brownish yellow (10YR 6/8) redox concentrations as soft masses and pore linings.	3.6 – 6.5	-

Kaliga muck (*Terric Medisaprists*):

Depth (in.)	Description	pH	% Organic Carbon
0 – 16	Black (10YR 2/1) muck.	3.6 – 4.4	50 - 97
16 - 60	Black (10YR 2/1) sandy loam.	4.5 – 7.3	-

Nittaw sandy clay loam, frequently flooded (*Typic Argiaquolls*):

Depth (in.)	Description
0 – 4	Black (10YR 2/1) muck.
4 - 26	Black (10YR 2/1) sandy clay; few fine distinct olive yellow (5Y 6/6) redox concentrations.
26 - 41	Gray (10YR 5/1) clay; few fine distinct olive yellow (5Y 6/6) and reddish brown (5YR 4/4) redox concentrations.

APPENDIX C
EXISTING HYDROLOGY DATA

Table 1. Seasonal High Water (SHW) Elevations

Location	SHW Elevation	Ground Elevation	Seasonal High Water Depth (ft.)
Mixed Wetland Hardwoods (PD1-19.56 Acres)			
PD1 TP1 SHW	94.27	93.4	0.87
PD1 TP2 SHW	93.98	93	0.98
PD1 TP3 SHW	94	93.4	0.6
PD1 TP6 SHW-1	93.71	93.3	0.41
PD1 TP6 SHW-2	93.81	93	0.81
PD1 TP7 SHW-1	93.78	93.2	0.58
PD1 TP7 SHW-2	93.75	93.1	0.65
PD1 TP8 SHW-2	94.21	93.3	0.91
PD1 TP9 SHW-1	93.54	92.9	0.64
PD1 TP9 SHW-2	93.49	93	0.49
Mixed Wetland Hardwoods w/ Red Maple, Pop Ash, & Swamp Tupelo Dominant Canopy (PD5-35.34 Acres)			
PD5 TP1 SHW-1	92.75	91	1.75
PD5 TP1 SHW-2	92.98	91.4	1.58
PD5-TP6	92.87	91.8	1.07
PD5 TP10 SHW-1	93.03	92.3	0.73
PD5 TP10 SWH-2	92.57	91.9	0.67
PD5 TP12 SHW-1	92.86	91.1	1.76
PD5 TP12 SHW-2	92.9	91.3	1.6
PD5 TP13 SHW-1	92.65	91.9	0.75
PD5 TP14 SHW-1	92.87	92.5	0.37
PD5 TP14 SHW-2	92.85	92.1	0.75
PD5 TP15 SHW-1	92.97	91.9	1.07
PD5 TP15 SHW-2	92.9	91.9	1.0
PD5 TP16 SHW-1	92.78	91.7	1.08
PD5 TP16 SHW-2	92.77	91.9	0.87
PD5 TP2 SHW-1	92.64	92.08	0.56
PD5 TP2 SHW-2	93.02	92.4	0.62
PD5 TP3 SHW-1	92.74	91.8	0.94
PD5 TP3 SHW-2	92.84	91.7	1.14

Location	SHW Elevation	Ground Elevation	Seasonal High Water Depth (ft.)
PD5 TP4 SHW-1	92.9	91.7	1.2
PD5 TP4 SHW-1	92.82	91.3	1.52
PD5 TP4 SHW-2	92.78	91.8	0.98
PD5 TP5 SHW-1	93.3	92.1	1.2
PD5 TP5 SHW-2	92.74	91.3	1.44
PD5 TP7 SHW-2	92.97	92	0.97
Popash Forested Wetlands (PD13 and 17 – 7.00 Acres)			
PD17 TP 1 SHW	92.35	91.4	0.95
PD17 TP2 SH	92.38	91.9	0.48
PD17 TP3 SHW	92.33	91.7	0.63
PD17-TP4	92.35	91.7	0.65
Carolina Willow Wetlands (PD18-0.79 Acres)			
PD18 TP1 SHW	92.46	91.1	1.36

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION OF EXISTING CONDITIONS

SMG 11-11-13

Along northern side of PD2

Along northern side of PD2

PD5 typical view of vegetation along the eastern side

PD5 typical view of vegetation along the eastern side

PD13 habitat was virtually identical to that found within PD17; no tree plots were located in this area

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PD15 from western edge looking east

PD16-TP1 northwest looking southeast

PD16-TP1 northeast looking south

PD16-TP1 southeast looking west

PD16-TP1 southwest corner looking northeast

PD16-TP2 northeast corner looking south

PD16-TP2 southwest corner looking northeast; Note that the shape of this tree plot was adjusted in the field to account for the upland areas and other habitat types that were constricting the shape.

PD17-TP1 northwest corner looking southeast

PD17-TP2 southwest corner looking north

PD17-TP2 northeast corner looking southwest

PD17-TP3 southeast corner looking northwest

PD17-TP3 from the northwest corner looking southeast

PD17-TP4 typical view in area with herbaceous layer of lizards tail

PD17-TP4 southeast corner looking northwest

PD17-TP4 typical view without lizards tail herbaceous layer

PD17

Representative hummock within PD17; these are mainly limited to maple trees within this area

Green fly orchid (*Encyclia tampensis*) one of the epiphytes commonly found throughout PD17

Green fly orchid (*Encyclia tampensis*) one of the epiphytes commonly found throughout PD17

Green fly orchid (*Encyclia tampensis*) one of the epiphytes commonly found throughout PD17

CEK 11-18-13

PD17-TP1 representative photo of shrub stratum taken from the shrub plot northwest point facing into the plot

Representative photo of PD17-TP1 canopy

PD17-TP1 photo of seasonal high wetland line

Photo of seasonal high wetland mark in tree plot 2 of PD17 this is a stain line and adventitious root

PD17-TP2 Hummock 1

PD17-TP2 Hummock 2

Representative photo of PD17 pop ash community taken from the tree plot 3 TP3 southeast corner

Representative photo of the canopy PD17 TP3 from the southeast corner facing northwest

Representative photo of shrub taken from the northeast corner of the shrub plot in TP3

Photo of seasonal high wetland elevation for TP3 in PD17. This is a buttress mark and stain line on a *Nyssa*.

Example of hydrologic indicators in PD17-TP3 showing stain line and large adventitious roots on an *Acer Rubrum*

Photo of hummocks in PD17-TP3

Seasonal High Wetland mark on PD17-TP4 on an adventitious root

MTP 11-18-13

PD17-TP4 from the soil location looking west in the pop ash community

PD17-TP4 from the soil location view to the north at the east edge of the community type. Note: lizard tail dominant ground cover.

PD17-TP4 view to the south from the northwest corner of the tree plot

SMG 11-18-13

PD10-TP1-Soil

PD10-TP2

PD10-TP3 - Soils

PD13-Soils

PD16-TP1-Soil

PD16-TP1 – Soil profile; top left hand corner is the surface, the immediate foreground on left hand side is the mid-soil and on right hand side at the bottom is the sub-soil 5 ft. below the surface

PD16-TP2 Soil

PD17-TP1 Soil – Location of soil boring

Location of PD17-TP2 Soil

PD17-TP3 Soil

PD17-TP4–Soil; Note the green color that Oren says may be glauconite

PD17-TP4 Soil; location of the boring

PD19-Soil

MTP 12-3-13

PD6-TP1 standing at southeast corner view to the west

PD6-TP1 standing at southwest corner of tree plot view to the north

PD6-TP1 standing at southwest corner of tree plot view to the south

PD16-TP1 from northeast corner of tree plot view to the north

PD16-TP1 from northeast corner of tree plot view to the east

PD16-TP1 from northeast corner of tree plot view to the south

PD16-TP1 from northeast corner of tree plot view to the west

PD16-TP1 from southeast tree plot corner view to the north

PD16-TP1 from southeast tree plot corner view to the east

PD16-TP1 from southeast tree plot corner view to the south

PD16-TP1 from southeast tree plot corner view to the west

PD16-TP2 view to the north

PD16-TP2 view to the east

PD16-TP2 view to the south

PD16-TP2 view to the west

PD16-TP2 northwest corner view to the north

PD16-TP2 northwest corner view to the east

PD16-TP2 northwest corner view to the south

PD16-TP2 northwest corner view to the west at the community edge to PD17 – view into the fraxinus community at the corner of PD16 oak hummock community

SMG 12-12-13

PD1-TP1 northeast looking west

PD1 TP1 northwest looking south

Approximately 50 ft. south of the northwest corner of PD1-TP1 looking east

PD1-TP2 southwest looking northeast

CEK 12-11-13

Soil pedon for PD1-TP5 with first 12" on top left of photo

Another photo of soil pedon for PD1-TP5 with top 12" on top right of photo

Close-up of soil pedon PD1-TP5 showing the first12" and the last 36"-48"

Another photo of soil pedon for PD1-TP5 with top 12" on top right of photo

Photo of soil pedon for PD1-TP7 top 12" are on top left of photo

2nd photo of soil pedon for PD1-TP7 where top 12" are on top right of photo

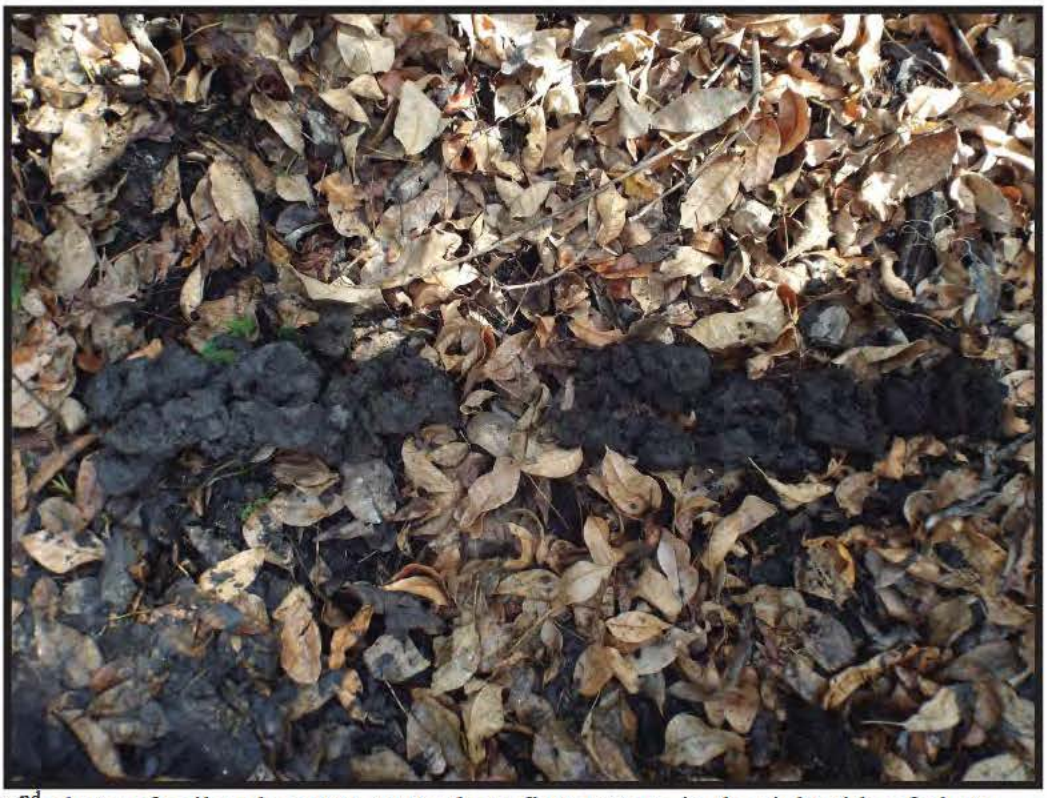
Close-up photo of soil pedon 12”-24” from PD1-TP7

Photo of soil pedon for PD1-TP8 first 12” is on top of photo

2nd photo of soil pedon for PD1-TP8 where first 12" is on right of photo

Close-up image of last photo - soil pedon for PD1-TP8

Photo of soil pedon for PD1-TP9 where top 12" are on top of photo



2nd photo of soil pedon PD1-TP9 where first 12" are in the right side of photo

Soil pedon for PD2-TP1 with first 12" on top left of photo

Photo of soil pedon at PD2-TP2 first 12" on top left corner of photo

Another view of soil pedon at PD2-TP2 first 12" on top right corner of photo

Close-up of 0-12" and 36"-48" of soil pedon within PD2-TP2

Photo of soil pedon for PD4-TP1 where the first 12" are in the upper left of photo

2nd view of soil pedon PD4-TP1 where the first foot is in upper right hand corner of photo

Close-up of 36”-48” within soil pedon for PD4-TP1

Soil pedon for PD4-TP2 with the first 12” in the upper left of photo

Another view of soil pedon for PD4-TP2 first 12" on top right of photo

Typical representation of PD6-TP1 showing the severe hog damage

Typical representation of PD6-TP1 showing the severe hog damage

Typical representation of PD6-TP1 showing the severe hog damage

Typical representation of PD6-TP1 showing the severe hog damage

Typical representation of PD6-TP1 showing the severe hog damage

Soil pedon for PD6-TP1 where the first 12" are in the top left corner of photo

2nd photo of soil pedon for PD6-TP1 where the first 12" are in the top right corner of photo

Soil pedon PD6-TP1 close-up of 36”-48”

Close-up of the first 12”within PD6-TP1 soil pedon

Typical representation of PD6-TP1 showing the severe hog damage

CEK 12-12-13

PD1-TP1 representative habitat

PD1-TP1 soil sample 0-48"

PD1-TP3 habitat soil

PD1-TP3 soil sample 0-36"on the left, 36"-53" on the right

PD1-TP4 representative habitat soil

PD1-TP4 soil sample same as PD1-TP3

PD1-TP6 representative habitat soil

PD1-TP6 soil sample

PD7 representative habitat soil

PD7 soil sample 0-36"on the left, 36"-60" on the right

Representative habitat PD11 soil

PD11 soil sample 0-36"on the left, 36"-60" on the right

Representative habitat PD12 soil pedon

PD12 soil sample 0-36" on the left, 36"-60" on the right

PD12 soil sample 0-36"on the left, 36"-60" on the right

PD14 soil representative habitat

PD14 soil sample 0-36"on the left, 36"-60" on the right

PD15 representative habitat

PD15 soil sample 0-36”on the left, 36”-60” on the right