COST EFFECTIVENESS
AND
INCREMENTAL ANALYSIS ADDENDUM

VEGETATION ANALYSIS SUMMARY
WITH
HABITAT SUITABILITY INDICES
AND
HABITAT UNITS BY ZONE

Riverside Oxbow – Bottomland Hardwood Restoration

HABITAT IMPROVEMENT ALTERNATIVES	
Scale 0 - No Action	$0.00
Scale 1 - 10- one inch caliper containerized trees, 10 - one gallon containerized shrubs with appropriate selective thinning, girding, and nest boxes, etc. per acre	$2,500.00
Scale 2 - 5 - one inch caliper containerized trees, 5 - one gallon containerized shrubs with appropriate selective thinning, girding, and nest boxes, etc. per acre	$1,300.00
Scale 3 - 2 - one inch caliper containerized trees, 2 - one gallon containerized shrubs with appropriate selective thinning, girding, and nest boxes, etc. per acre	$500.00
REFORESTATION ALTERNATIVES	
Scale 0 - No Action	$0.00
Scale 1 - 60 - one-inch caliper trees; 30 - one-gallon containerized shrubs and 100 seedlings per acre with native grasses and irrigation	$11,350.00
Scale 2 - 40 - one-inch caliper trees; 20 - one-gallon containerized shrubs and 150 seedlings per acre with native grasses and irrigation	$9,100.00
Scale 3 - 20 - one-inch caliper trees; 10 - one-gallon containerized shrubs and 200 seedlings per acre with native grasses and irrigation	$6,850.00
Scale 4 - 300 bare root seedlings per acre	$6,600.00

BENEFITS BY RESTORATION ALTERNATIVE

	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
HABITAT IMPROVEMENT ALTERNATIVES	0.36	0.33	0.30	0.25	0.20	
Scale 0 - No Action	0.36	0.35	1.26	5.50	5.63	0.25
HU/Acre						

	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
Scale 1 - 10 - one inch caliper containerized trees, 10 - one gallon containerized shrubs with appropriate selective thinning, girding, and nest boxes, etc. per acre	0.36	0.40	0.50	0.80	0.90	
HU/Acre	0.36	0.38	1.80	13.00	21.25	0.71

	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
Scale 2 - 5 - one inch caliper containerized trees, 5 - one gallon containerized shrubs with appropriate selective thinning, girding, and nest boxes, etc. per acre	0.36	0.40	0.47	0.80	0.90	
HU/Acre	0.36	0.38	1.74	12.70	21.25	0.71

Scale 3 - 2 - one inch caliper containerized trees, 2 - one gallon containerized	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
shrubs with appropriate selective thinning, girding, and nest boxes, etc. per acre	0.36	0.40	0.43	0.70	0.80	
HU/Acre	0.36	0.38	1.66	11.30	18.75	0.63
REFORESTATION ALTERNATIVES	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
Scale 0 - No Action	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00
Scale 1 - 60 - one-inch caliper trees; 30 - one-gallon containerized shrubs and	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
100 seedlings per acre with native grasses and irrigation	0.00	0.15	0.48	0.72	0.88	
HU/Acre	0.00	0.08	1.26	12.00	20.00	0.65
Scale 2 - 40 - one-inch caliper trees; 20 - one-gallon containerized shrubs and	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
150 seedlings per acre with native grasses and irrigation	0.00	0.15	0.45	0.70	0.85	
HU/Acre	0.00	0.08	1.20	11.50	19.38	0.63
Scale 3 - 20 - one-inch caliper trees; 10 - one-gallon containerized shrubs and	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
200 seedlings per acre with native grasses and irrigation	0.00	0.05	0.25	0.48	0.63	
HU/Acre	0.00	0.03	0.60	7.30	13.87	0.43
Scale 4 - 300 bare root seedlings per acre	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
with native grasses and irrigation	0.00	0.00	0.20	0.50	0.65	
HU/Acre	0.00	0.00	0.40	7.00	14.37	0.43
NATIVE GRASS BUFFER ALTERNATIVES	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
Scale 0 - No Action	0.50	0.50	0.45	0.35	0.30	
HU/Acre	0.50	0.50	1.90	8.00	8.13	0.36
	TYO	1 YR	5 YR	25 YR	50 YR	AAHU
Scale 1 - 50 foot wide on each side of riparian corridor	0.50	0.60	0.75	0.75	0.75	
HU/Acre	0.50	0.55	2.70	15.00	18.75	0.73
	TYO	1 YR	5 YR	25 YR	50 YR	
Scale 1 - 50 foot wide on each side of riparian corridor	0.50	0.70	0.85	0.85	0.85	
HU/Acre	0.50	0.60	3.10	17.00	21.25	0.82

Existing Conditions (April 03)

Existing Conditions	Oxbow North					
	water	wetlands	forest	grassland	disturbed	
seg id						Sum
ng1	0	0	0	1.64	1.52	
bf5	0	0	0.02	0.13	0.72	
rp1	0	0	2.04	2.42	1.16	
bf3	0	0	0.51	4.27	0.26	
bf1	0	0	0.04	1.22	2.24	
rp2	0	1.18	5.4	10.87	1.49	
bf2	0	0	0.13	4.26	1	
rp3	0.08	0.2	3.78	3.72	0.15	
ng13	0.16	0	0.39	11.94	2.65	
lk2	1.42	0.5	0.77	0.29	0	
lk7	0	0	0.05	0	0	
lk8	0	0.24	0.16	0.03	0	
rp4	0.02	0.1	12.76	9.37	0.66	
bf4	0	0	0.21	18.06	0	
bf6	0	0	0	0.7	0	
Acres	1.68	2.22	26.26	68.92	11.85	110.93
H S I	0.4	0.52	0.58	0.77	0	
HU's	0.672	1.1544	15.2308	53.0684	0	70.1256

Revised	Oxbow North					
	water	wetlands	forest	grassland	disturbed	
seg id						Sum
ng1	0	0	0	1.64	1.52	
bf5	0	0	0.02	0.13	0.72	
rp1	0	0	2.04	2.42	1.16	
bf3	0	0	0.51	4.27	0.26	
bf1	0	0	0.04	1.22	0	
rp2	0	1.18	4.64	7.87	1.49	
bf2	0	0	0.13	4.26	1	
rp3	0.08	0.2	3.78	3.72	0.15	
ng13	0.16	0	0.39	11.94	2.65	
lk2	1.42	0.5	0.77	0.29	0	
lk7	0	0	0.05	0	0	
lk8	0	0.24	0.16	0.03	0	
rp4	0.02	0.1	12.76	9.37	0.66	
bf4	0	0	0.21	18.06	0	
bf6	0	0	0	0.7	0	
Acres	1.68	2.22	25.5	65.92	9.61	104.93
H S I	0.4	0.52	0.58	0.77	0	
HU's	0.672	1.1544	14.79	50.7584	0	67.3748

Existing Conditions	Oxbow South					
	water	wetlands	forest	grassland	disturbed	
wet 5	0	0	0	3.04	0	
ng8	0	0	0	2.4	1.11	
ng7	0	0	0	11.45	0	
rp7	0	3.08	0.22	0.97	0.2	
rp8	0	0	0.07	10.38	0.14	
bf7				0.93		
Acres	0	3.08	0.29	29.17	1.47	34.01
hsi index	0.4	0.52	0.58	0.77	0	
HU's	0	1.6016	0.1682	22.4609	0	24.2307

Revised	Oxbow South					
	water	wetlands	forest	grassland	disturbed	
wet 5	0	0	0	3.04	0	
ng8	0	0	0	2.4	1.11	
ng7	0	0	0	11.45	0	
rp7	0	0.14	0.22	0.97	0.2	
rp8	0	0	0.07	8.04	0.14	
bf7				0.93		
	0	0.14	0.29	26.83	1.45	28.71
h s index	0.4	0.52	0.58	0.77	0	
HU's	0	0.0728	0.1682	20.6591	0	20.9001

Existing Conditions	Gateway Park South					
	water	wetlands	forest	grassland	disturbed	
ng9	0.01	0	0	15.49	0.03	
bf12				1.43		
rp11(1)	0.17	0.34	9.69	6	3.4	
rp12(1)	0.11	0.79	6.04	2.41	0.02	
Acres	0.29	1.13	15.73	25.33	3.45	45.93
hsi index	0.4	0.52	0.53	0.13	0	
HU's	0.116	0.5876	8.3369	3.2929	0	12.3334

Existing Conditions	Gateway Central					
	water	wetlands	forest	grassland	disturbed	
ng6(1)	0	0	0	0.71	0.12	
rp9	0	0	0.05	0.53	1.21	
rp10	0	0	0.24	3.18	0.27	
bf10	0	0	0	0	1	
bf11	0	0	0	0.96	0.92	
ng4	0	0	0	0	1.77	
ng5	0	0	0	0.44	2.13	
rp11(1)	0.17	0.34	9.69	3.4	0.18	
Acres	0.17	0.34	9.98	9.22	7.6	27.31
hsi index	0.4	0.52	0.53	0.13	0	
HU's	0.068	0.1768	5.2894	1.1986	0	6.7328

Existing Conditions	Gateway Beach					
	water	wetlands	forest	grassland	disturbed	
ng11	0	0.42	12.21	66.75	41.78	
fp1	0	0.63	10.23	12.14	6.68	
lk9	0	0	0	0	0.12	
lk10	0	0	0	0	0.11	
lk11	0	0	0	0	0.7	
lk12	0	0	0.1	0.06	0	
lk13	0	0	0.78	0	0	
lk14	0	0	0.3	0	0	
lk3	0.3	0.85	0.06	6.66	2.27	
lk4	0	0	0	1.3	0	
lk5	0	0	0.09	0	0	
Acres	0.3	1.9	23.77	86.91	47.12	160
hsi index	0.4	0.4	0.4	0.13	0	
HU's	0.12	0.76	9.508	11.2983	0	21.6863

Revised	Gateway Beach					
	water	wetlands	forest	grassland	disturbed	
ng11	0	0.42	9.21	56.73	30.26	
fp1	0	0.63	8.23	12.14	6.68	
lk9	0	0	0	0	0.12	
lk10	0	0	0	0	0.11	
lk11	0	0	0	0	0.7	
lk12	0	0	0.1	0.06	0	
lk13	0	0	0.78	0	0	
lk14	0	0	0.3	0	0	
lk3	0.3	0.85	0.06	6.66	2.27	
lk4	0	0	0	1.3	0	
lk5	0	0	0.09	0	0	
Acres	0.3	1.9	18.77	76.89	40.14	138
hsi index	0.4	0.4	0.4	0.13	0	
HU's	0.12	0.76	7.508	9.9957	0	18.3837

Existing Conditions	Oxbow Central					
	water	wetlands	forest	grassland	disturbed	
cp1	0	0	0.17	31.28	8.13	
ng6(2)	0	0	0	3.79	0.59	
ng3	0	0	0	5.55	0	
ng2	0	0	0.03	49.34	13.16	
rv7	0	0	0	0.3	0	
ss1	0	0	0.02	0	0	
wet1	0	0	0	2.36	0.44	
wet2	0	0	0	1.14	0	
wet3	0	0	0	3.08	0.05	
lk1	0	0	0	5.1	0	
Acres	0	0	0.22	101.94	22.37	124.53
hsi index	0	0	0.1	0.77	0	
HU's	0	0	0.022	78.4938	0	78.5158

Revised (removed potential park lands)				Oxbow Central		
	water	wetlands	forest	grassland	disturbed	
cp1	0	0	0.17	13.28	8.13	
ng6(2)	0	0	0	3.36	0.59	
ng3	0	0	0	4.55	0	
ng2	0	0	0.03	29.34	13.16	
rv7	0	0	0	0.3	0	
ss1	0	0	0.02	0	0	
wet1	0	0	0	2.36	0.44	
wet2	0	0	0	1.14	0	
wet3	0	0	0	3.08	0.05	
lk1	0	0	0	5.1	0	
Acres	0	0	0.22	62.51	22.37	85.1
hsi index	0	0	0.1	0.77	0	
HU's	0	0	0.022	48.1327	0	48.1547

Existing Conditions		Gateway Park East Corridor				
	water	wetlands	forest	grassland	disturbed	
rp15	0	0	36.5	0	0	
wet6	0	0.06	1.88	4.69	0	
ws1	0	0	0.9	0.35	0	
ws2	0	0	2.53	0.06	0	
ws3	0	0	0.34	0.36	0	
ws4	0	0	0.49	0.03	0	
ws5	0	0	0.47	0.11	0	
wet4	0	0	2.04	2.04	0	
ng12	0	0	4.6	1.38	0	
lk6	0	1.04	2.95	8.79	0	
rp11(2)	0.32	1.49	18.55	6.5	0.34	
rp12(2)	0.4	3.03	23.28	9.27	0.09	
bf13	0	0	2.48	1.36	0	
Acres	0.72	5.62	97.01	34.94	0.43	138.72
hsi index	0.4	0.38	0.64	0.13	0	
HU's	0.288	2.1356	62.0864	4.5422	0	69.0522

Existing Conditions		Gateway Park				
	water	wetlands	forest	grassland	disturbed	
ng11	0	0	9.21	56.73	30.26	
fp1	0	0	8.23	12.14	6.68	
lk9	0	0	0	0	0.12	
lk10	0	0	0	0	0.11	
lk11	0	0	0	0	0.7	
lk12	0	0	0.1	0.06	0	
lk13	0	0	0.78	0	0	
lk14	0	0	0.3	0	0	
lk3	0	0	0.06	6.66	2.27	
lk4	0	0	0	1.3	0	
lk5	0	0	0.09	0	0	
Acres	0	0	68.6	120.09	68.4	257.09
hsi index	0.4	0.4	0.4	0.13	0	
HU's	0	0	27.44	15.6117	0	43.0517

Existing Conditions	Tandy Hills					
	water	wetlands	forest	grassland	disturbed	
Acres	0	0.8	59.87	90.27	7.71	158.65
hsi index	0	0	0.41	0.49	0	
HU's	0	0	24.5467	44.2323	0	68.779

AVERAGE ANNUALIZED HABITAT UNITS
BY ZONE

Riverside Oxbow Future Conditior AAHU's April-03

	Oxbow North				AAHU's
without project	TY0	1 YR	10 YR	50 YR	
	67.38	34.2	20.9	20.9	
	67.38	50.79	247.95	836	**23.57**
Acquistion of Real Estate	TY0	1 YR	10 YR	50 YR	
	67.38	39.4	34.2	34.2	
	67.38	53.39	331.2	1368	35.69
with plantings 50' grass buffer (18.2 ac)	TY0	1 YR	10 YR	50 YR	
presumes flow in oxbow	3.45	5	12.5	26.57	
	3.45	4.225	78.75	781.4	17.02
with plantings 100' grass buffer (36.4 ac)	TY0	1 YR	10 YR	50 YR	
presumes flow in oxbow	6.92	9.1	29.12	35.67	
	6.92	8.01	171.99	1295.8	29.07
Upstream culvert, Weir Upstream, Beach Culvert	TY0	1 YR	10 YR	50 YR	
(low flows only)	6.1	14.06	25.73	32.76	
	6.1	10.08	179.055	1169.8	26.77
Upstream culvert, Weir at Beach, Beach Culvert	TY0	1 YR	10 YR	50 YR	
(low flows only, periodically wets 7000 lin ft)	6.1	16.39	30.06	36.09	
	6.1	11.245	209.025	1323	30.38
Upstream culvert, Weir near confluence, Beach Culvert	TY0	1 YR	10 YR	50 YR	
(low flows only, periodically wets 7915 lin ft temporarily)	6.1	17.41	32.07	37.71	
	6.1	11.755	222.66	1395.6	32.08
Upstream culvert, Weir Upstream, Beach Bridge	TY0	1 YR	10 YR	50 YR	
(low flows only)	6.1	17.99	32.94	39.37	
	6.1	12.045	229.185	1446.2	33.21

Upstream culvert, Weir at Beach, Beach Bridge	TY0		1 YR	10 YR	50 YR	
(low flows only, periodically wets 7000 lin ft)		6.1	19.01	36.37	41.38	
		6.1	12.555	249.21	1555	35.74
Upstream culvert, Weir near confluence, Beach Bridge	TY0		1 YR	10 YR	50 YR	
(low flows only, periodically wets 7915 lin ft)		6.1	22	38.83	44.25	
		6.1	14.05	273.735	1661.6	38.34
Remove plug, Weir Upstream, Beach Culvert	TY0		1 YR	10 YR	50 YR	
(high flows also)		6.1	18.55	31.42	35.84	
		6.1	12.325	224.865	1345.2	31.15
Remove plug, Weir at Beach, Beach Culvert	TY0		1 YR	10 YR	50 YR	
(high flows also, wets 7000 lin ft)		6.1	23.1	34.37	39.02	
		6.1	14.6	258.615	1467.8	34.26
Remove plug, Weir near confluence, Beach Culvert	TY0		1 YR	10 YR	50 YR	
(high flows also, wets 7915 lin ft temporarily)		6.1	23.49	37.17	42.19	
		6.1	14.795	272.97	1587.2	36.88
Remove plug, Weir Upstream, Beach Bridge	TY0		1 YR	10 YR	50 YR	
(high flows also)		6.1	23.9	37.27	41.68	
		6.1	15	275.265	1579	36.77
Remove plug, Weir at Beach, Beach Bridge	TY0		1 YR	10 YR	50 YR	
(high flows also, wets 7000 lin ft)		6.1	26.15	39.23	43.83	
		6.1	16.125	294.21	1661.2	38.78
Remove plug, Weir near confluence, Beach Bridge	TY0		1 YR	10 YR	50 YR	
(high flows also, wets 7915 lin ft)		6.1	27.62	47.55	53.17	
		6.1	16.86	338.265	2014.4	46.58
Water Control/Repair Spillway North Pond	TY0		1 YR	10 YR	50 YR	
		3.78	7.55	12.08	14.8	
		3.78	5.665	88.335	537.6	12.46

Oxbow South

	TY0	1 YR	10 YR	50 YR	AAHU
without	20.18	3.73	3.73	3.73	
	20.18	11.955	33.57	149.2	**4.21**
Acquisition of real estate	TY0	1 YR	10 YR	50 YR	AAHU
	20.18	18	15	10	
	20.18	19.09	148.5	500	13.49
With plantings	TY0	1 YR	10 YR	50 YR	AAHU
	3.73	6.89	18.73	26.89	
	3.73	5.31	115.29	912.4	20.33

Gateway South

	TY0	1 YR	10 YR	50 YR	AAHU
without	6.17	5	4	2.5	
	6.17	5.585	40.5	130	**3.57**
Acquisition	TY0	1 YR	10 YR	50 YR	AAHU
	6.17	6.5	7	8.5	
	6.17	6.335	60.75	310	7.51
With Plantings	TY0	1 YR	10 YR	50 YR	AAHU
	6.17	12	31	43	
	6.17	9.085	193.5	1480	33.11

Gateway Central

	TY0	1 YR	10 YR	50 YR	AAHU
without	6.73	5.5	4.2	3	
	6.73	6.115	43.65	144	**3.93**
	TY0	1 YR	10 YR	50 YR	AAHU
Real Estate Acquisition	6.73	6.75	7.8	10.5	
	6.73	6.74	65.475	366	8.72

	TY0	1 YR	10 YR	50 YR	AAHU
With Plantings	6.73	10	20	25.4	
	6.73	8.365	135	908	20.75

Gateway Beach

	TY0	1 YR	10 YR	50 YR	AAHU
without	18.38	14	10.5	8	
	18.38	16.19	110.25	370	**10.09**

	TY0	1 YR	10 YR	50 YR	AAHU
Acquisition	18.38	19	19.5	20.5	
	18.38	18.69	173.25	800	19.81

	TY0	1 YR	10 YR	50 YR	AAHU
With plantings	10	18.8	47	79.9	
	10	14.4	296.1	2538	56.05

	TY0	1 YR	10 YR	50 YR	AAHU
With contoured wetland	8.39	10.25	15.4	15.4	
	8.39	9.32	115.425	616	14.69

	TY0	1 YR	10 YR	50 YR	AAHU
With water control & plants	8.39	18.3	25.7	37.4	
	8.39	13.345	198	1262	29.05

	TY0	1 YR	10 YR	50 YR	AAHU
Water control, plants, water supply	8.39	19.05	30.1	39.6	
	8.39	13.72	221.175	1394	32.10

	TY0	1 YR	10 YR	50 YR	AAHU
Water control, plants, water supply & remove road	8.39	21.95	34.5	43.12	
	8.39	15.17	254.025	1552.4	35.88

Oxbow Central

	TY0	1 YR	10 YR	50 YR	AAHU
without	48.15	25.15	8.15	8.15	
	48.15	36.65	149.85	326	**10.99**
	TY0	1 YR	10 YR	50 YR	AAHU
Acquisition/Preservation	48.15	46	42	40	
	48.15	47.075	396	1640	41.79
	TY0	1 YR	10 YR	50 YR	AAHU
With plantings	9.37	10.81	50.47	61.29	
	9.37	10.09	275.76	2235.2	49.62
	TY0	1 YR	10 YR	50 YR	AAHU
With contoured wetland 5.1 ac	0	1.02	1.53	1.79	
	0	0.51	11.475	66.4	1.54
	TY0	1 YR	10 YR	50 YR	AAHU
With contoured wetland 12.3 ac	0	2.46	3.69	4.31	
	0	1.23	27.675	160	3.70
	TY0	1 YR	10 YR	50 YR	AAHU
With contoured wetland 17.8	0	3.56	5.34	6.23	
	0	1.78	40.05	231.4	5.36
	TY0	1 YR	10 YR	50 YR	AAHU
With water control & plants- 5.1	0	2.04	3.06	3.06	
	0	1.02	22.95	122.4	2.87
	TY0	1 YR	10 YR	50 YR	AAHU
With water control & plants - 12.3	0	5.54	8	8.36	
	0	2.77	60.93	327.2	7.66
	TY0	1 YR	10 YR	50 YR	AAHU
With water control & plants - 17.8	0	8.01	11.57	12.1	
	0	4.005	88.11	473.4	11.09
	TY0	1 YR	10 YR	50 YR	AAHU

Water control, plants, water supply - 5.1		0	2.3	3.47	3.98	
		0	1.15	25.965	149	3.45
	TY0	1 YR	10 YR	50 YR	AAHU	
Water control, plants, water supply - 12.3		0	6.15	11.69	12.05	
		0	3.075	80.28	474.8	10.94
	TY0	1 YR	10 YR	50 YR	AAHU	
Water control, plants, water supply - 17.8		0	8.9	16.91	17.44	
		0	4.45	116.145	687	15.84

Gateway East

	TY0	1 YR	10 YR	50 YR	AAHU
without	69.05	68	65	60	
	69.05	68.525	598.5	2500	**63.45**
	TY0	1 YR	10 YR	50 YR	AAHU
Acquisition	69.05	68	65	60	
	69.05	68.525	598.5	2500	63.45
	TY0	1 YR	10 YR	50 YR	AAHU
With plantings	63.17	42.15	73.77	89.57	
	63.17	52.66	521.64	3266.8	76.55
	TY0	1 YR	10 YR	50 YR	AAHU
With wetland complex 15 acres	0	3	4.5	5.25	
	0	1.5	33.75	195	4.51
	TY0	1 YR	10 YR	50 YR	AAHU
With wetland complex 26.8 acres	0	5.36	8.04	9.38	
	0	2.68	60.3	348.4	8.07
	TY0	1 YR	10 YR	50 YR	AAHU
With wetland complex 35 acres	0	7	10.5	12.25	
	0	3.5	78.75	455	10.53

	TY0	1 YR	10 YR	50 YR	AAHU
With water control and plants - 15 ac	0	6	9	9	
	0	3	67.5	360	8.44
	TY0	1 YR	10 YR	50 YR	AAHU
With water control and plants - 26.8 ac ac	0	12.06	17.42	18.22	
	0	6.03	132.66	712.8	16.70
	TY0	1 YR	10 YR	50 YR	AAHU
With water control and plants - 35 ac	0	14	22.75	23.8	
	0	7	165.375	931	21.63
	TY0	1 YR	10 YR	50 YR	AAHU
Water control, plants, water supply - 15 ac	0	6.75	10.2	11.7	
	0	3.375	76.275	438	10.15
	TY0	1 YR	10 YR	50 YR	AAHU
Water control, plants, water supply - 26.8 ac	0	13.4	25.46	26.26	
	0	6.7	174.87	1034.4	23.84
	TY0	1 YR	10 YR	50 YR	AAHU
Water control, plants, water supply - 26.8 ac	0	17.5	33.25	34.3	
	0	8.75	228.375	1351	31.14
	TY0	1 YR	10 YR	50 YR	AAHU
Water control -u-shaped wetland	4.8	6	9.6	10.8	
	4.8	5.4	70.2	408	9.58

Tandy

	TY0	1 YR	10 YR	50 YR	AAHU
without	68.78	65	50	40	
	68.78	66.89	517.5	1800	**48.10**
	TY0	1 YR	10 YR	50 YR	AAHU
Acquisition All	68.78	65	55	45	
	68.78	66.89	540	2000	52.46

	TY0	1 YR	10 YR	50 YR	AAHU
without East	50.72	47	40	35	
	50.72	48.86	391.5	1500	39.04
	TY0	1 YR	10 YR	50 YR	AAHU
Acquisition East	50.72	47	44	38	
	50.72	48.86	409.5	1640	42.14
	TY0	1 YR	10 YR	50 YR	AAHU
without West	17.78	16	13	10	
	17.78	16.89	130.5	460	12.26
	TY0	1 YR	10 YR	50 YR	AAHU
Acquisition West	17.78	16	14	12	
	17.78	16.89	135	520	13.52
	TY0	1 YR	10 YR	50 YR	AAHU
without West + Lower East	41.57	38	32	28	
	41.57	39.785	315	1200	31.30
	TY0	1 YR	10 YR	50 YR	AAHU
Acquisition West + Lower East	41.57	38	35	31	
	41.57	39.785	328.5	1320	33.92
	TY0	1 YR	10 YR	50 YR	AAHU
Perimeter fencing	68.78	68	70	72	
	68.78	68.39	621	2840	70.55
	TY0	1 YR	10 YR	50 YR	AAHU
Clean up slab & parking lot, includes topsoil and plantings - All	68.78	70	75	80	
	68.78	69.39	652.5	3100	76.29
	TY0	1 YR	10 YR	50 YR	AAHU
Erosion control, includes topsoil and plantings - All	68.78	82	105	115	
	68.78	95	841.5	4400	105.99

	TY0	1 YR	10 YR	50 YR	AAHU
Erosion control (West & Lower East), includes topsoil and plantings	41.75	65	75	92	
74 ac in East and 40 ac in West	41.75	53.375	630	3340	79.71
	TY0	1 YR	10 YR	50 YR	AAHU
Erosion control (West), includes topsoil and plantings	17.78	30	50	60	
	17.78	23.89	360	2200	51.01
	TY0	1 YR	10 YR	50 YR	AAHU
Removal of exotic invaders in grasslands - All	68.78	80	90	105	
	68.78	74.39	765	3900	94.28
	TY0	1 YR	10 YR	50 YR	AAHU
Removal of exotic invaders in grasslands - East	68.78	80	90	105	
	68.78	74.39	765	3900	94.28
	TY0	1 YR	10 YR	50 YR	AAHU
Removal of exotic invaders in understory with replanting of natives - All	68.78	80	90	112	
	68.78	74.39	765	4040	97.02
	TY0	1 YR	10 YR	50 YR	AAHU
Removal of exotic invaders in understory with replanting of natives - East	68.78	80	90	112	
	68.78	74.39	765	4040	97.02
	TY0	1 YR	10 YR	50 YR	AAHU
Removal of exotic invaders in understory with replanting of natives - West & Lower East	68.78	80	90	112	
	68.78	74.39	765	4040	97.02

ANNUALIZED COSTS FOR RESTORATION
AND
REAL ESTATE
BY ZONE

RIVERSIDE OXBOW ECOSYSTEM RESTORATION
Habitat Improvement and Reforestation Alternatives
COST ANALYSIS

INVESTMENT COST	HI-0	HI-1	HI-2	HI-3	R-0	R-1	R-2	R-3	R-4
FIRST COST	$0	$432,500	$224,900	$86,500	$0	$794,500	$637,000	$479,500	$462,000
ANNUAL INTEREST RATE (decimal)	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50	50	50	50
CONSTRUCTION PERIOD (months)	12	12	12	12	12	12	12	12	12
INTEREST DURING CONSTRUCTIOI	$0	$13,643	$7,095	$2,729	$0	$25,063	$20,755	$15,126	$14,574
INVESTMENT COST	$0	$446,143	$231,995	$89,229	$0	$819,563	$678,685	$494,626	$476,574
AVERAGE ANNUAL CHARGES									
INTEREST	$0	$26,211	$13,630	$5,242	$0	$48,149	$39,873	$29,059	$27,999
AMORTIZATION	$0	$1,602	$833	$320	$0	$2,942	$2,436	$1,776	$1,711
OPERATIONS & MAINTENANCE	$0	$0	$0	$0	$0	$0	$1,000	$1,000	$1,000
REPLACEMENTS	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$0	$27,813	$14,463	$5,563	$0	$51,092	$43,309	$31,835	$30,710

RIVERSIDE OXBOW ECOSYSTEM RESTORATION
Oxbow North Zone
COST ANALYSIS Revised 8/8/02

INVESTMENT COST	Maitenance access	Culvert	Plug	N Pond H20 Control	In-stream Weir	Boulder clusters	Beach Culvert	Beach Bridge
FIRST COST	$52,972	$97,884	$268,159	$28,700	$49,105	$15,000	$246,579	$435,830
ANNUAL INTEREST RATE (decima	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50	50	50
CONSTRUCTION PERIOD (months	12	12	12	12	12	12	12	12
INTEREST DURING CONSTRUCTI	$1,671	$3,088	$8,459	$905	$1,549	$473	$7,778	$13,748
INVESTMENT COST	$54,643	$100,972	$276,618	$29,605	$50,654	$15,473	$254,357	$449,578
AVERAGE ANNUAL CHARGES								
INTEREST	$3,210	$5,932	$16,251	$1,739	$2,976	$909	$14,943	$26,413
AMORTIZATION	$196	$362	$993	$106	$182	$56	$913	$1,614
OPERATIONS & MAINTENANCE	$4,000	$4,000	$1,500	$500	$1,500	$1,000	$3,000	$500
REPLACEMENTS	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$7,406	$10,295	$18,744	$2,346	$4,658	$1,965	$18,857	$28,527

INVESTMENT COST	Culvert with weir	Beach Culv. + Weir	Reforestation	Habitat Improvement	Grass Buffer 100'	Grass Buffer 50'	Grass/Tree Mottes
FIRST COST	$141,989	$326,912	$182,000	$26,429	$127,400	$63,700	$62,220
ANNUAL INTEREST RATE (decima	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50	50
CONSTRUCTION PERIOD (months	12	12	12	12	12	12	12
INTEREST DURING CONSTRUCTI	$4,479	$10,313	$5,741	$834	$4,019	$2,009	$1,963
INVESTMENT COST	$146,468	$337,225	$187,741	$27,263	$131,419	$65,709	$64,183
AVERAGE ANNUAL CHARGES							
INTEREST	$8,605	$19,812	$11,030	$1,602	$7,721	$3,860	$3,771
AMORTIZATION	$526	$1,211	$674	$98	$472	$236	$230
OPERATIONS & MAINTENANCE	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000
REPLACEMENTS	$0	$0	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$13,131	$25,023	$15,704	$5,700	$12,193	$8,096	$8,001

RIVERSIDE OXBOW ECOSYSTEM RESTORATION
Oxbow Center Zone
COST ANALYSIS Revised 8/8/02

INVESTMENT COST	Plantings	Wetplex 5.1	Wetplex 12.3	Wetplex 17.8	Perm. Pump	Temp. Pump	12.3 Plants and Cont	Grass/Tree Mottes
FIRST COST	$453,420	$75,413	$181,879	$351,707	$58,449	$19,361	$246,579	$371,420
ANNUAL INTEREST RATE (decimal)	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50	50	50
CONSTRUCTION PERIOD (months)	12	12	12	12	12	12	12	12
INTEREST DURING CONSTRUCTIC	$14,303	$2,379	$5,737	$11,095	$1,844	$611	$7,778	$11,717
INVESTMENT COST	$467,723	$77,792	$187,616	$362,802	$60,293	$19,972	$254,357	$383,137

AVERAGE ANNUAL CHARGES

INTEREST	$27,479	$4,570	$11,022	$21,315	$3,542	$1,173	$14,943	$22,509
AMORTIZATION	$1,679	$279	$674	$1,302	$216	$72	$913	$1,375
OPERATIONS & MAINTENANCE	$5,000	$1,000	$1,000	$1,000	$500	$2,000	$1,000	$1,000
REPLACEMENTS	$0	$0	$0	$0	$0	$1,162	$0	$0
TOTAL ANNUAL CHARGES	$34,158	$5,850	$12,696	$23,617	$4,259	$4,407	$16,857	$24,885

INVESTMENT COST	Plantings	5.1 Plants & Contr	17.8 Plants and con	Super 5.1	Super 17.8	Super 12.3
FIRST COST	$453,420	$121,613	$441,907	$179,062	$500,356	$305,028
ANNUAL INTEREST RATE (decimal)	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50
CONSTRUCTION PERIOD (months)	12	12	12	12	12	12
INTEREST DURING CONSTRUCTIC	$14,303	$3,836	$13,940	$5,649	$15,784	$9,622
INVESTMENT COST	$467,723	$125,449	$455,847	$184,711	$516,140	$314,650

AVERAGE ANNUAL CHARGES

INTEREST	$27,479	$7,370	$26,781	$10,852	$30,323	$18,486
AMORTIZATION	$1,679	$450	$1,636	$663	$1,853	$1,130
OPERATIONS & MAINTENANCE	$5,000	$1,000	$1,000	$1,500	$1,500	$1,500
REPLACEMENTS	$0	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$34,158	$8,821	$29,418	$13,015	$33,676	$21,115

RIVERSIDE OXBOW ECOSYSTEM RESTORATION
Oxbow South Zone
COST ANALYSIS Revised 8/8/02

INVESTMENT COST	Plantings	Reforestation	Habitat Improvement	Grass Buffer	Grass/Tree Mottes
FIRST COST	$108,790	$18,200	$10,140	$3,150	$77,300
ANNUAL INTEREST RATE (decimal)	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50
CONSTRUCTION PERIOD (months)	12	12	12	12	12
INTEREST DURING CONSTRUCTIC	$3,432	$574	$320	$99	$2,438
INVESTMENT COST	$112,222	$18,774	$10,460	$3,249	$79,738
AVERAGE ANNUAL CHARGES					
INTEREST	$6,593	$1,103	$615	$191	$4,685
AMORTIZATION	$403	$67	$38	$12	$286
OPERATIONS & MAINTENANCE	$1,000	$1,000	$1,000	$1,000	$1,000
REPLACEMENTS	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$7,996	$2,170	$1,652	$1,203	$5,971

RIVERSIDE OXBOW ECOSYSTEM RESTORATION
Gateway Center Zone
COST ANALYSIS Revised 8/8/02

INVESTMENT COST	Plantings	Reforestation	Habitat Improvement	Grass Buffer	Grass/Tree Mottes
FIRST COST	$96,980	$13,650	$12,610	$11,200	$66,930
ANNUAL INTEREST RATE (decimal)	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50
CONSTRUCTION PERIOD (months)	12	12	12	12	12
INTEREST DURING CONSTRUCTIO	$3,059	$431	$398	$353	$2,111
INVESTMENT COST	$100,039	$14,081	$13,008	$11,553	$69,041
AVERAGE ANNUAL CHARGES					
INTEREST	$5,877	$827	$764	$679	$4,056
AMORTIZATION	$359	$51	$47	$41	$248
OPERATIONS & MAINTENANCE	$1,000	$1,000	$1,000	$1,000	$1,000
REPLACEMENTS	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$7,236	$1,878	$1,811	$1,720	$5,304

RIVERSIDE OXBOW ECOSYSTEM RESTORATION
Gateway South Zone
COST ANALYSIS Revised 8/8/02

INVESTMENT COST	Plantings	Reforestation	Habitat Improvement	Grass Buffer	Grass/Tree Mottes
FIRST COST	$227,050	$121,030	$20,410	$4,550	$81,060
ANNUAL INTEREST RATE (decimal)	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50
CONSTRUCTION PERIOD (months)	12	12	12	12	12
INTEREST DURING CONSTRUCTIC	$7,162	$3,818	$644	$144	$2,557
INVESTMENT COST	$234,212	$124,848	$21,054	$4,694	$83,617
AVERAGE ANNUAL CHARGES					
INTEREST	$13,760	$7,335	$1,237	$276	$4,913
AMORTIZATION	$841	$448	$76	$17	$300
OPERATIONS & MAINTENANCE	$1,500	$1,000	$1,000	$1,000	$1,000
REPLACEMENTS	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$16,101	$8,783	$2,312	$1,293	$6,213

RIVERSIDE OXBOW ECOSYSTEM RESTORATION
Gateway Beach Zone
COST ANALYSIS Revised 8/8/02

INVESTMENT COST	Forest pond veg	Recontouring	+ Control, Plants	+ Supply	+ Road Removal	Grass/Tree Mottes Water Supply		Remove Road
FIRST COST	$145,000	$65,623	$239,323	$297,772	$318,607	$513,315	$58,449	$20,835
ANNUAL INTEREST RATE (decimal)	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50	50	50
CONSTRUCTION PERIOD (months)	12	12	12	12	12	12	12	12
INTEREST DURING CONSTRUCTION	$4,574	$2,070	$7,550	$9,393	$10,051	$16,193	$1,844	$657
INVESTMENT COST	$149,574	$67,693	$246,873	$307,165	$328,658	$529,508	$60,293	$21,492
AVERAGE ANNUAL CHARGES								
INTEREST	$8,787	$3,977	$14,504	$18,046	$19,309	$31,109	$3,542	$1,263
AMORTIZATION	$537	$243	$886	$1,103	$1,180	$1,901	$216	$77
OPERATIONS & MAINTENANCE	$5,000	$1,000	$1,000	$1,000	$2,000	$1,000	$500	$500
REPLACEMENTS	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$14,324	$5,220	$16,390	$20,149	$22,489	$34,010	$4,259	$1,840

RIVERSIDE OXBOW ECOSYSTEM RESTORATION
Gateway East Zone
COST ANALYSIS Revised 8/8/02

INVESTMENT COST	Plantings	Wetplex 15	Wetplex 26.8	Wetplex 35	Plants + Control	Water Supply	Grass/Tree Mottes	Grass Buffer
FIRST COST	$306,065	$325,709	$581,934	$859,988	$116,700	$58,449	$20,835	$13,300
ANNUAL INTEREST RATE (decimal	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50	50	50
CONSTRUCTION PERIOD (months)	12	12	12	12	12	12	12	12
INTEREST DURING CONSTRUCTIC	$9,655	$10,275	$18,357	$27,129	$3,681	$1,844	$657	$420
INVESTMENT COST	$315,720	$335,984	$600,291	$887,117	$120,381	$60,293	$21,492	$13,720
AVERAGE ANNUAL CHARGES								
INTEREST	$18,549	$19,739	$35,267	$52,118	$7,072	$3,542	$1,263	$806
AMORTIZATION	$1,133	$1,206	$2,155	$3,185	$432	$216	$77	$49
OPERATIONS & MAINTENANCE	$5,000	$1,500	$2,000	$2,500	$500	$500	$500	$500
REPLACEMENTS	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$24,682	$22,445	$39,422	$57,803	$8,005	$4,259	$1,840	$1,355

INVESTMENT COST	Reforestatior	Habitat Impr.	Water Control	15 + plants, etc.	26.8 + plants, etc.	35 + plants, etc.	Super 15	Super 26.8	Super 35
FIRST COST	$63,700	$126,230	$28,700	$425,709	$697,434	$997,988	$454,409	$727,334	$1,026,688
ANNUAL INTEREST RATE (decimal	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50	50	50	50
CONSTRUCTION PERIOD (months)	12	12	12	12	12	12	12	12	12
INTEREST DURING CONSTRUCTIC	$2,009	$3,982	$905	$13,429	$22,001	$31,482	$14,335	$22,944	$32,387
INVESTMENT COST	$65,709	$130,212	$29,605	$439,138	$719,435	$1,029,470	$468,744	$750,278	$1,059,075
AVERAGE ANNUAL CHARGES									
INTEREST	$3,860	$7,650	$1,739	$25,799	$42,267	$60,481	$27,539	$44,079	$62,221
AMORTIZATION	$236	$467	$106	$1,577	$2,583	$3,696	$1,683	$2,694	$3,802
OPERATIONS & MAINTENANCE	$500	$500	$500	$500	$500	$500	$500	$500	$500
REPLACEMENTS	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$4,596	$8,617	$2,346	$27,876	$45,350	$64,677	$29,721	$47,272	$66,523

RIVERSIDE OXBOW ECOSYSTEM RESTORATION
Tandy Zone
COST ANALYSIS Revised 8/8/02

INVESTMENT COST	Fencing	Repair erosion	Remove & Replant	Remove slab and Repair	Grasslands	Understory
FIRST COST	$76,125	$221,363	$216,000	$168,840	$72,000	$192,400
ANNUAL INTEREST RATE (decimal)	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50
CONSTRUCTION PERIOD (months)	12	12	12	12	12	12
INTEREST DURING CONSTRUCTIO	$2,401	$6,983	$6,814	$5,326	$2,271	$6,069
INVESTMENT COST	$78,526	$228,346	$222,814	$174,166	$74,271	$198,469
AVERAGE ANNUAL CHARGES						
INTEREST	$4,613	$13,415	$13,090	$10,232	$4,363	$11,660
AMORTIZATION	$282	$820	$800	$625	$267	$713
OPERATIONS & MAINTENANCE	$1,500	$5,000	$5,000	$5,000	$5,000	$5,000
REPLACEMENTS	$0	$0	$0	$0	$0	$0
TOTAL ANNUAL CHARGES	$6,395	$19,235	$18,890	$15,858	$9,630	$17,373

RIVERSIDE OXBOW ECOSYSTEM RESTORATION
Real Estate
COST ANALYSIS

INVESTMENT COST	OXBOW - S	OXBOW - C	OXBOW - N	GATEWAY - C	GATEWAY - S	GATEWAY - B	GATEWAY - E	TANDY PARK
FIRST COST	$74,775	$340,440	$882,660	$235,160	$221,160	$552,000	$657,930	$2,105,000
ANNUAL INTEREST RATE (decimal)	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50	50	50
TOTAL ANNUAL CHARGES	$4,630	$21,078	$54,650	$14,560	$13,693	$34,177	$40,736	$130,331

INVESTMENT COST	TANDY WEST	TANDY CENTER	TANDY EAST	TANDY ALL	TANDY - COM	TANDY W + LOWER E	TANDY LOWER EAST
FIRST COST	$2,003,600	$648,900	$2,444,400	$5,096,900	$4,448,000	$3,483,600	$1,480,000
ANNUAL INTEREST RATE (decimal)	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875	0.05875
PROJECT LIFE (years)	50	50	50	50	50	50	50
TOTAL ANNUAL CHARGES	$124,053	$40,177	$151,345	$315,575	$275,398	$215,687	$91,634

COST EFFECTIVENESS AND INCREMENTAL ANALYSIS SUMMARY SHEETS FOR PRELIMINARY ICA's

REFORESTATION AND HABITAT IMPROVEMENT, OXBOW CENTER, GATEWAY EAST, TANDY

SCENARIO STATISTICS

04/05/2003 5:10 PM

SCENARIO: Wooded Habita Restoration of Wooded Habitat

FILE: C:\IWRPLAN\Data\RiversideTrees.mdb

COST VARIABLE: Costs Annualized Costs per $1000s **SENSITIVITY:** Expected

OUTPUT VARIABLE: AAHU Average Annual Habitat Units **SENSITIVITY:** Expected

CREATED: 4/5/2003 5:07:00 PM **EDITED:** **ANALYZED:** 4/5/2003 5:07:00 PM

POSSIBLE COMBINATIONS: 20 **COST EFFECTIVE:** 9

ACTUAL COMBINATIONS: 16 **BEST BUY:** 5

CONSTRAINT GROUP: NONE

EXCLUDED SOLUTIONS

DERIVED VARIABLES

DEPENDENCY / NON-COMBINABILITY

Dependency

R H

SOLUTION LEGEND

Solution / Scale Code		Solution Description	Scale Description
H	0	Habitat Improvement	No Action
H	1	Habitat Improvement	10 trees, 7 shrubs and forest manageme
H	2	Habitat Improvement	5 trees, 5 shrubs, and forest manageme
H	3	Habitat Improvement	2 trees, 2 shrubs, and forest manageme
R	0	Reforestation	No Action
R	1	Reforestation	60 trees, 30 shrubs, 100 seedlings
R	2	Reforestation	40 trees, 20 shrubs, 150 seedlings
R	3	Reforestation	20 trees, 10 shrubs, 200 seedlings
R	4	Reforestation	300 bare root seedlings

Counter	Plan Code	AAHU	Costs
1	H0R0	43.25	0
2	H1R0	122.83	27813
3	H1R1	168.33	78905
4	H1R2	166.93	71122
5	H1R3	152.93	59648
6	H1R4	152.93	58523
7	H2R0	122.83	14463
8	H2R1	168.33	65555
9	H2R2	166.93	57772
10	H2R3	152.93	46298
11	H2R4	152.93	45173
12	H3R0	108.99	5563
13	H3R1	154.49	56655
14	H3R2	153.09	48872
15	H3R3	139.09	37398
16	H3R4	139.09	36273

INPUT DATA

CODE	AAHU	Costs
H 0	43.25	0
H 1	122.83	27813
H 2	122.83	14463
H 3	108.99	5563
R 0	0	0
R 1	45.5	51092
R 2	44.1	43309
R 3	30.1	31835
R 4	30.1	30710

SCENARIO STATISTICS

04/05/2003 5:09 PM

SCENARIO: Wooded Habita Restoration of Wooded Habitat
FILE: C:\IWRPLAN\Data\RiversideTrees.mdb
COST VARIABLE: Costs Annualized Costs per $1000s **SENSITIVITY:** Expected
OUTPUT VARIABLE: AAHU Average Annual Habitat Units **SENSITIVITY:** Expected
CREATED: 4/5/2003 5:07:00 PM **EDITED:** **ANALYZED:** 4/5/2003 5:07:00 PM

POSSIBLE COMBINATIONS: 20
ACTUAL COMBINATIONS: 16
COST EFFECTIVE: 9
BEST BUY: 5

CONSTRAINT GROUP: NONE

EXCLUDED SOLUTIONS

DERIVED VARIABLES

DEPENDENCY / NON-COMBINABILITY

Dependency

R H

SOLUTION LEGEND

Solution / Scale Code		Solution Description	Scale Description
H	0	Habitat Improvement	No Action
H	1	Habitat Improvement	10 trees, 7 shrubs and forest manageme
H	2	Habitat Improvement	5 trees, 5 shrubs, and forest manageme
H	3	Habitat Improvement	2 trees, 2 shrubs, and forest manageme
R	0	Reforestation	No Action
R	1	Reforestation	60 trees, 30 shrubs, 100 seedlings
R	2	Reforestation	40 trees, 20 shrubs, 150 seedlings
R	3	Reforestation	20 trees, 10 shrubs, 200 seedlings
R	4	Reforestation	300 bare root seedlings

Incremental Cost Of Best Buy Plan Combinations (Ordered By Output)

Scenario: Wooded Habit

Counter	Plan Code	AAHU (Hus)	Costs ($1000s)	Avg. Cost $1000s / Hus	Inc. Cost ($1000s)	Inc. Output (Hus)	Incremental Cost Per Output
1	H0 R0	43.25	0.00	0.0000	0.0000	43.2500	0
2	H3 R0	108.99	5,563.00	51.0414	5,563.0000	65.7400	84.62124
3	H2 R0	122.83	14,463.00	117.7481	8,900.0000	13.8400	643.0636
4	H2 R2	166.93	57,772.00	346.0852	43,309.0000	44.1000	982.0635
5	H2 R1	168.33	65,555.00	389.4434	7,783.0000	1.4000	5559.286

SCENARIO STATISTICS

04/04/2003 11:34 AM

SCENARIO: OXC Wetlands Oxbow Center Wetland Complex

FILE: C:\IWRPLAN\Data\OXC 3.mdb

COST VARIABLE: Costs Annualized Costs **SENSITIVITY:** Expected

OUTPUT VARIABLE: AAHUs Average Annualized Habitat Units **SENSITIVITY:** Expected

CREATED: 4/4/2003 11:31:00 A **EDITED:** **ANALYZED:** 4/4/2003 11:31:00 A

POSSIBLE COMBINATIONS: 10 **COST EFFECTIVE:** 8

ACTUAL COMBINATIONS: 10 **BEST BUY:** 3

CONSTRAINT GROUP: NONE

EXCLUDED SOLUTIONS

DERIVED VARIABLES

DEPENDENCY / NON-COMBINABILITY **All Solutions are Mutually Exclusive**

SOLUTION LEGEND

Solution / Scale Code		Solution Description	Scale Description
A	0	Wetland Complex	No Action
A	1	Wetland Complex	Contour 5.1 ac wetland
A	2	Wetland Complex	5.1 + plants + water control
A	3	Wetland Complex	5.1 + plants + water control +water supp
A	4	Wetland Complex	Contour 12.3 ac wetland
A	5	Wetland Complex	12.3 + plants + water control
A	6	Wetland Complex	12.3 + plants + water control + water su
A	7	Wetland Complex	Contour 17.8 ac wetland
A	8	Wetland Complex	17.8 + plants + water control
A	9	Wetland Complex	17.8 + plants + water control + water su

Counter	Plan Code	AAHUs	Costs
1	A0	0	0
2	A1	1.54	5850
3	A2	2.87	8821
4	A3	3.45	13015
5	A4	3.7	12696
6	A5	7.66	16857
7	A6	10.94	21115
8	A7	5.36	23617
9	A8	11.09	29418
10	A9	15.84	33676

INPUT DATA

CODE	AAHUs	Costs
A 0	0	0
A 1	1.54	5850
A 2	2.87	8821
A 3	3.45	13015
A 4	3.7	12696
A 5	7.66	16857
A 6	10.94	21115
A 7	5.36	23617
A 8	11.09	29418
A 9	15.84	33676

SCENARIO STATISTICS

04/04/2003 11:33 AM

SCENARIO: OXC Wetlands Oxbow Center Wetland Complex

FILE: C:\IWRPLAN\Data\OXC 3.mdb

COST VARIABLE: Costs Annualized Costs **SENSITIVITY:** Expected

OUTPUT VARIABLE: AAHUs Average Annualized Habitat Units **SENSITIVITY:** Expected

CREATED: 4/4/2003 11:31:00 A **EDITED:** **ANALYZED:** 4/4/2003 11:31:00 A

POSSIBLE COMBINATIONS: 10 **COST EFFECTIVE:** 8

ACTUAL COMBINATIONS: 10 **BEST BUY:** 3

CONSTRAINT GROUP: NONE

EXCLUDED SOLUTIONS

DERIVED VARIABLES

DEPENDENCY / NON-COMBINABILITY **All Solutions are Mutually Exclusive**

SOLUTION LEGEND

Solution / Scale Code		Solution Description	Scale Description
A	0	Wetland Complex	No Action
A	1	Wetland Complex	Contour 5.1 ac wetland
A	2	Wetland Complex	5.1 + plants + water control
A	3	Wetland Complex	5.1 + plants + water control +water supp
A	4	Wetland Complex	Contour 12.3 ac wetland
A	5	Wetland Complex	12.3 + plants + water control
A	6	Wetland Complex	12.3 + plants + water control + water su
A	7	Wetland Complex	Contour 17.8 ac wetland
A	8	Wetland Complex	17.8 + plants + water control
A	9	Wetland Complex	17.8 + plants + water control + water su

Incremental Cost Of Best Buy Plan Combinations (Ordered By Output)

Scenario: OXC Wetland

Counter	Plan Code	AAHUs (AAHUs)	Costs (Costs)	Avg. Cost Costs / AAHUs	Inc. Cost (Costs)	Inc. Output (AAHUs)	Incremental Cost Per Output
1	A0	0.00	0.00	0.0000	0.0000	0.0000	0
2	A6	10.94	21,115.00	1,930.0730	21,115.0000	10.9400	1930.073
3	A9	15.84	33,676.00	2,126.0100	12,561.0000	4.9000	2563.469

SCENARIO STATISTICS

04/04/2003 11:23 AM

SCENARIO: GWE 4 Wetlan Gateway East Wetland Complex Combinations

FILE: C:\IWRPLAN\Data\GWE 4.mdb

COST VARIABLE: Costs Annualized Costs **SENSITIVITY:** Expected

OUTPUT VARIABLE: AAHUs Average Annual Habitat Units **SENSITIVITY:** Expected

CREATED: 4/4/2003 11:18:00 A **EDITED:** **ANALYZED:** 4/4/2003 11:18:00 A

POSSIBLE COMBINATIONS: 10 **COST EFFECTIVE:** 7

ACTUAL COMBINATIONS: 10 **BEST BUY:** 3

CONSTRAINT GROUP: NONE

EXCLUDED SOLUTIONS

DERIVED VARIABLES

DEPENDENCY / NON-COMBINABILITY **All Solutions are Mutually Exclusive**

SOLUTION LEGEND

Solution / Scale Code		Solution Description	Scale Description
A	0	Wetland Complex in GWE	No Action
A	1	Wetland Complex in GWE	15 acre wetland
A	2	Wetland Complex in GWE	15 + plants + water control
A	3	Wetland Complex in GWE	15 + plants + water control + water supp
A	4	Wetland Complex in GWE	26.8 acre wetland
A	5	Wetland Complex in GWE	26.8 + plants + water control
A	6	Wetland Complex in GWE	26.8 + plants + water control + water su
A	7	Wetland Complex in GWE	35 acre wetland
A	8	Wetland Complex in GWE	35 + plants + water control
A	9	Wetland Complex in GWE	35 + plants + water control + water supp

All Plan Combinations

Counter	Plan Code	AAHUs	Costs
1	A0	0	0
2	A1	4.51	22445
3	A2	8.44	27876
4	A3	10.15	29721
5	A4	8.07	39422
6	A5	16.7	45350
7	A6	23.84	47272
8	A7	10.53	57803
9	A8	21.63	64677
10	A9	31.14	66523

INPUT DATA

CODE	AAHUs	Costs
A 0	0	0
A 1	4.51	22445
A 2	8.44	27876
A 3	10.15	29721
A 4	8.07	39422
A 5	16.7	45350
A 6	23.84	47272
A 7	10.53	57803
A 8	21.63	64677
A 9	31.14	66523

SCENARIO STATISTICS

04/04/2003 11:22 AM

SCENARIO: GWE 4 Wetlan Gateway East Wetland Complex Combinations

FILE: C:\IWRPLAN\Data\GWE 4.mdb

COST VARIABLE: Costs Annualized Costs **SENSITIVITY:** Expected

OUTPUT VARIABLE: AAHUs Average Annual Habitat Units **SENSITIVITY:** Expected

CREATED: 4/4/2003 11:18:00 A **EDITED:** **ANALYZED:** 4/4/2003 11:18:00 A

POSSIBLE COMBINATIONS: 10 **COST EFFECTIVE:** 7

ACTUAL COMBINATIONS: 10 **BEST BUY:** 3

CONSTRAINT GROUP: NONE

EXCLUDED SOLUTIONS

DERIVED VARIABLES

DEPENDENCY / NON-COMBINABILITY **All Solutions are Mutually Exclusive**

SOLUTION LEGEND

Solution / Scale Code		Solution Description	Scale Description
A	0	Wetland Complex in GWE	No Action
A	1	Wetland Complex in GWE	15 acre wetland
A	2	Wetland Complex in GWE	15 + plants + water control
A	3	Wetland Complex in GWE	15 + plants + water control + water supp
A	4	Wetland Complex in GWE	26.8 acre wetland
A	5	Wetland Complex in GWE	26.8 + plants + water control
A	6	Wetland Complex in GWE	26.8 + plants + water control + water su
A	7	Wetland Complex in GWE	35 acre wetland
A	8	Wetland Complex in GWE	35 + plants + water control
A	9	Wetland Complex in GWE	35 + plants + water control + water supp

Incremental Cost Of Best Buy Plan Combinations (Ordered By Output)

Scenario: GWE 4 Wetla

Counter	Plan Code	AAHUs (AAHUs)	Costs (Costs)	Avg. Cost Costs / AAHUs	Inc. Cost (Costs)	Inc. Output (AAHUs)	Incremental Cost Per Output
1	A0	0.00	0.00	0.0000	0.0000	0.0000	0
2	A6	23.84	47,272.00	1,982.8860	47,272.0000	23.8400	1982.886
3	A9	31.14	66,523.00	2,136.2560	19,251.0000	7.3000	2637.123

SCENARIO STATISTICS

04/04/2003 1:55 PM

SCENARIO: Tandy Increme Increment Breakdown of Tandy

FILE: C:\IWRPLAN\Data\Tandy Increment.mdb

COST VARIABLE: Costs Average Annualized Costs **SENSITIVITY:** Expected

OUTPUT VARIABLE: AAHUs Average Annual Habitat Units **SENSITIVITY:** Expected

CREATED: 4/4/2003 1:53:00 PM **EDITED:** **ANALYZED:** 4/4/2003 1:53:00 PM

POSSIBLE COMBINATIONS: 512 **COST EFFECTIVE:** 19

ACTUAL COMBINATIONS: 113 **BEST BUY:** 4

CONSTRAINT GROUP: NONE

EXCLUDED SOLUTIONS

DERIVED VARIABLES

DEPENDENCY / NON-COMBINABILITY

Dependency	Non-Combinability
ABC	D B
AB	B D
AC	
AD	

ACD
H AB
H ABC
H BC
I AB
I AD
I ABC
I ADC
I DC
I BC
B
C
E C
F A
F B
F C
F D
A
H B
I B
I D
E AC
E BC
E DC
E ABC
E ACD

SOLUTION LEGEND

Solution / Scale Code		Solution Description	Scale Description
A	0	Tandy Commercial	No Action
A	1	Tandy Commercial	Acquire Tandy Commercial
B	0	Tandy East	No Action
B	1	Tandy East	Acquire Tandy East
C	0	Tandy West	No Action
C	1	Tandy West	Acquire Tandy West
D	0	Tandy Lower East	No Action
D	1	Tandy Lower East	Acquire Tandy Lower East
E	0	Erosion Control	No Action
E	1	Erosion Control	Erosion control
F	0	Perimeter Fencing	No Action
F	1	Perimeter Fencing	Perimeter fencing
G	0	Slab and parking remove & repa	No Action
G	1	Slab and parking remove & repa	Remove slab and parking and repair
H	0	Invasion control grasslands	No Action
H	1	Invasion control grasslands	Control grassland invasion
I	0	Invasion control understory	No Action
I	1	Invasion control understory	Control understoruy invasion

Counter	Plan Code	Costs	AAHUs
1	A0B0C0D0E0F0G0H0I0	0	0
2	A0B0C0D1E0F0G0H0I0	91634	1.33
3	A0B0C0D1E0F0G0H0I1	109007	34.36
4	A0B0C0D1E0F1G0H0I0	98029	7.89
5	A0B0C0D1E0F1G0H0I1	115402	40.92
6	A0B0C1D0E0F0G0H0I0	124053	0.82
7	A0B0C1D0E0F1G0H0I0	130448	7.38
8	A0B0C1D0E1F0G0H0I0	143288	42.12
9	A0B0C1D0E1F1G0H0I0	149683	48.68
10	A0B0C1D1E0F0G0H0I0	215687	2.15
11	A0B0C1D1E0F0G0H0I1	233060	35.18
12	A0B0C1D1E0F1G0H0I0	222082	8.71

Counter	Plan Code	Costs	AAHUs
13	A0B0C1D1E0F1G0H0I1	239455	41.74
14	A0B0C1D1E1F0G0H0I0	234922	43.45
15	A0B0C1D1E1F0G0H0I1	252295	76.48
16	A0B0C1D1E1F1G0H0I0	241317	50.01
17	A0B0C1D1E1F1G0H0I1	258690	83.04
18	A0B1C0D0E0F0G0H0I0	151345	1.57
19	A0B1C0D0E0F0G0H0I1	168718	34.6
20	A0B1C0D0E0F0G0H1I0	160975	31.85
21	A0B1C0D0E0F0G0H1I1	178348	64.88
22	A0B1C0D0E0F1G0H0I0	157740	8.13
23	A0B1C0D0E0F1G0H0I1	175113	41.16
24	A0B1C0D0E0F1G0H1I0	167370	38.41

Counter	Plan Code	Costs	AAHUs
25	A0B1C0D0E0F1G0H1I1	184743	71.44
26	A0B1C1D0E0F0G0H0I0	275398	2.39
27	A0B1C1D0E0F0G0H0I1	292771	35.42
28	A0B1C1D0E0F0G0H1I0	285028	32.67
29	A0B1C1D0E0F0G0H1I1	302401	65.7
30	A0B1C1D0E0F1G0H0I0	281793	8.95
31	A0B1C1D0E0F1G0H0I1	299166	41.98
32	A0B1C1D0E0F1G0H1I0	291423	39.23
33	A0B1C1D0E0F1G0H1I1	308796	72.26
34	A0B1C1D0E1F0G0H0I0	294633	43.69
35	A0B1C1D0E1F0G0H0I1	312006	76.72
36	A0B1C1D0E1F0G0H1I0	304263	73.97

Counter	Plan Code	Costs	AAHUs
37	A0B1C1D0E1F0G0H1I1	321636	107
38	A0B1C1D0E1F1G0H0I0	301028	50.25
39	A0B1C1D0E1F1G0H0I1	318401	83.28
40	A0B1C1D0E1F1G0H1I0	310658	80.53
41	A0B1C1D0E1F1G0H1I1	328031	113.56
42	A1B0C1D0E0F0G0H0I0	164230	1.97
43	A1B0C1D0E0F0G1H0I0	180088	14.26
44	A1B0C1D0E0F1G0H0I0	170625	8.53
45	A1B0C1D0E0F1G1H0I0	186483	20.82
46	A1B0C1D0E1F0G0H0I0	183465	43.27
47	A1B0C1D0E1F0G1H0I0	199323	55.56
48	A1B0C1D0E1F1G0H0I0	189860	49.83

Counter	Plan Code	Costs	AAHUs
49	A1B0C1D0E1F1G1H0I0	205718	62.12
50	A1B0C1D1E0F0G0H0I0	255864	3.3
51	A1B0C1D1E0F0G0H0I1	273237	36.33
52	A1B0C1D1E0F0G1H0I0	271722	15.59
53	A1B0C1D1E0F0G1H0I1	289095	48.62
54	A1B0C1D1E0F1G0H0I0	262259	9.86
55	A1B0C1D1E0F1G0H0I1	279632	42.89
56	A1B0C1D1E0F1G1H0I0	278117	22.15
57	A1B0C1D1E0F1G1H0I1	295490	55.18
58	A1B0C1D1E1F0G0H0I0	275099	44.6
59	A1B0C1D1E1F0G0H0I1	292472	77.63
60	A1B0C1D1E1F0G1H0I0	290957	56.89

Counter	Plan Code	Costs	AAHUs
61	A1B0C1D1E1F0G1H0I1	308330	89.92
62	A1B0C1D1E1F1G0H0I0	281494	51.16
63	A1B0C1D1E1F1G0H0I1	298867	84.19
64	A1B0C1D1E1F1G1H0I0	297352	63.45
65	A1B0C1D1E1F1G1H0I1	314725	96.48
66	A1B1C0D0E0F0G0H0I0	191522	2.72
67	A1B1C0D0E0F0G0H0I1	208895	35.75
68	A1B1C0D0E0F0G0H1I0	201152	33
69	A1B1C0D0E0F0G0H1I1	218525	66.03
70	A1B1C0D0E0F0G1H0I0	207380	15.01
71	A1B1C0D0E0F0G1H0I1	224753	48.04
72	A1B1C0D0E0F0G1H1I0	217010	45.29

Counter	Plan Code	Costs	AAHUs
73	A1B1C0D0E0F0G1H1I1	234383	78.32
74	A1B1C0D0E0F1G0H0I0	197917	9.28
75	A1B1C0D0E0F1G0H0I1	215290	42.31
76	A1B1C0D0E0F1G0H1I0	207547	39.56
77	A1B1C0D0E0F1G0H1I1	224920	72.59
78	A1B1C0D0E0F1G1H0I0	213775	21.57
79	A1B1C0D0E0F1G1H0I1	231148	54.6
80	A1B1C0D0E0F1G1H1I0	223405	51.85
81	A1B1C0D0E0F1G1H1I1	240778	84.88
82	A1B1C1D0E0F0G0H0I0	315575	3.54
83	A1B1C1D0E0F0G0H0I1	332948	36.57
84	A1B1C1D0E0F0G0H1I0	325205	33.82

Counter	Plan Code	Costs	AAHUs
85	A1B1C1D0E0F0G0H1I1	342578	66.85
86	A1B1C1D0E0F0G1H0I0	331433	15.83
87	A1B1C1D0E0F0G1H0I1	348806	48.86
88	A1B1C1D0E0F0G1H1I0	341063	46.11
89	A1B1C1D0E0F0G1H1I1	358436	79.14
90	A1B1C1D0E0F1G0H0I0	321970	10.1
91	A1B1C1D0E0F1G0H0I1	339343	43.13
92	A1B1C1D0E0F1G0H1I0	331600	40.38
93	A1B1C1D0E0F1G0H1I1	348973	73.41
94	A1B1C1D0E0F1G1H0I0	337828	22.39
95	A1B1C1D0E0F1G1H0I1	355201	55.42
96	A1B1C1D0E0F1G1H1I0	347458	52.67

Counter	Plan Code	Costs	AAHUs
97	A1B1C1D0E0F1G1H1I1	364831	85.7
98	A1B1C1D0E1F0G0H0I0	334810	44.84
99	A1B1C1D0E1F0G0H0I1	352183	77.87
100	A1B1C1D0E1F0G0H1I0	344440	75.12
101	A1B1C1D0E1F0G0H1I1	361813	108.15
102	A1B1C1D0E1F0G1H0I0	350668	57.13
103	A1B1C1D0E1F0G1H0I1	368041	90.16
104	A1B1C1D0E1F0G1H1I0	360298	87.41
105	A1B1C1D0E1F0G1H1I1	377671	120.44
106	A1B1C1D0E1F1G0H0I0	341205	51.4
107	A1B1C1D0E1F1G0H0I1	358578	84.43
108	A1B1C1D0E1F1G0H1I0	350835	81.68

Counter	Plan Code	Costs	AAHUs
109	A1B1C1D0E1F1G0H1I1	368208	114.71
110	A1B1C1D0E1F1G1H0I0	357063	63.69
111	A1B1C1D0E1F1G1H0I1	374436	96.72
112	A1B1C1D0E1F1G1H1I0	366693	93.97
113	A1B1C1D0E1F1G1H1I1	384066	127