

## APPENDIX 2

**Table 1: ASSIGNMENT OF LAND USE CATEGORIES FOR GWLF ANALYSIS**

<b>IDNR Land Cover Description</b>	<b>GWLF Land Cover Description</b>
Shallow Marsh-Emergent Wetland	1.Wetland
Deep Marsh- Emergent Wetland	
Seasonal/Temporary flooded Wetland	
Shallow Water Wetland	
Floodplain Forest	2.Forest
Partial Forest/Savannah Upland	
Upland Forest	
Coniferous Forest	
Other Small Grains and Hay	3.Hay/Pasture
Rural Grassland	
Corn	4.Row Crops
Soybeans	
Winter Wheat	
Low Density Urban	5.Low Density Development (< 1unit per 1.2 acres)
Medium Density Urban	6.High Density Development (≥ 1unit per 1.2 acres)
High Density Urban	
Barren and Exposed Land	7.Transitional/Quarries
Urban Grassland	8.Turfgrass/Golf Course
Open Water	9.Water

## APPENDIX 3

### GWLF RESULTS: DETAILED MONTHLY LOADS BY SUBWATERD

#### The Lower Tyler Creek Subwatershed

Existing Loading Estimates			Future Scenario	
Pollutant	Lbs/Yr	Contribution Index	Lbs/Yr	Contribution Index
Total N	20331.3	80	18694.6	90
Total P	1300.5	58	1046.2	67
Sediment*	782.5	63	703.7	72
Stream Bank Sediment	410.5		484.0	
Runoff*	1469	104	1531	99

\*Sediment in Ton/Yr and Runoff in Ac-ft/Yr

Existing Loading Estimates by Source				
Source	Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
Wetland	491.7	1.0	68.9	3.5
Hay/Pasture	649.9	21.3	418.5	53.4
High-Density Development	1608.7	16.7	5015.0	556.1
Low-Density Development	397.8	6.8	27.4	3.7
Forest	568.3	1.4	22.0	2.6
Row Crops	664.7	301.5	2628.9	509.8
Transitional	2.5	2.8	22.3	4.5
Turfgrass/Golf Course	580.7	20.5	270.9	30.7
Water	43.7	-	-	-
Stream bank	-	410.5	41.1	18.1
Groundwater	-	-	11816.2	118.2
<b>Total</b>	<b>5008</b>	<b>782.5</b>	<b>20331.3</b>	<b>1300.5</b>

Future Scenario			
Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
491.7	1.0	68.9	3.5
526.3	17.0	337.3	42.8
1608.7	16.9	5061.9	561.3
901.9	15.6	143.0	19.1
568.3	1.4	21.8	2.5
336.1	147.1	1298.6	250.1
2.5	2.3	19.3	3.8
528.8	18.2	244.2	27.4
43.7	-	-	-
	484.0	48.4	21.3
	-	11451.2	114.5
<b>5008</b>	<b>703.7</b>	<b>18694.6</b>	<b>1046.2</b>

## The Central Tyler Creek Subwatershed

Existing Loading Estimates		
Pollutant	Lbs/Yr	Contribution Index
Total N	22863.8	86
Total P	1660.8	71
Sediment*	979.3	76
Stream Bank Sediment	204.0	
Runoff*	1617	111

Future Scenario	
Lbs/Yr	Contribution Index
18532.3	86
1001.9	62
743.3	74
346.0	
1875	116

\*Sediment in Ton/Yr and Runoff in Ac-ft/Yr

Existing Loading Estimates by Source				
Source	Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
Wetland	971.1	2.1	235.4	10.2
Hay/Pasture	672.1	18.3	410.2	49.5
High-Density Development	649.9	6.7	812.5	90.1
Low-Density Development	410.2	6.9	28.9	3.9
Forest	279.2	0.7	10.5	1.2
Row Crops	1692.7	715.8	7964.0	1326.9
Transitional	7.4	8.9	79.1	15.1
Turfgrass/Golf Course	457.1	16.1	212.9	24.1
Water	54.3	-	-	-
Stream bank	-	204.0	20.4	9.0
Groundwater	-	-	13089.9	130.9
<b>Total</b>	<b>5194.0</b>	<b>979.3</b>	<b>22863.8</b>	<b>1660.8</b>

Future Scenario			
Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
971.1	2.1	235.4	10.2
486.8	12.7	294.2	35.1
649.9	5.6	960.0	106.5
1579.0	22.4	440.5	58.7
279.2	0.7	10.6	1.2
780.9	331.8	3683.5	614.5
7.4	8.4	67.7	13.8
385.5	13.5	179.4	20.3
54.2	-	-	-
-	346.0	34.6	15.2
-	-	12626.3	126.3
<b>5194.0</b>	<b>743.3</b>	<b>18532.3</b>	<b>1001.9</b>

## The Upper Tyler Creek Subwatershed

Existing Loading Estimates		
Pollutant	Lbs/Yr	Contribution Index
Total N	33669.1	104
Total P	3161.2	110
Sediment*	1755.5	111
Stream Bank Sediment	141.0	
Runoff*	1571	88

Future Scenario	
Lbs/Yr	Contribution Index
29804.6	113
2444.7	124
1469.2	119
251.8	
1735	88

\*Sediment in Ton/Yr and Runoff in Ac-ft/Yr

Existing Loading Estimates by Source				
Source	Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
Wetland	729.0	1.6	102.9	5.3
Hay/Pasture	1322.0	41.3	839.1	105.5
High-Density Development	121.1	0.8	26.7	3.0
Low-Density Development	247.1	3.5	8.8	1.2
Forest	232.3	0.4	7.8	0.7
Row Crops	3563.3	1559.1	17079.2	2871.8
Transitional	4.9	4.9	41.1	8.2
Turfgrass/Golf Course	108.7	2.9	44.9	4.3
Water	37.6	-	-	-
Stream bank	-	141.0	14.1	6.2
Groundwater	-	-	15504.5	155.1
Total	6366	1755.5	33669.1	3161.2

Future Scenario			
Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
729	1.6	103.0	5.3
1089.7	33.8	690.1	86.6
163.1	1.5	45.8	5.1
1154	17.0	200.0	26.7
227.3	0.4	7.7	0.7
2720.6	1155.7	12832.3	2140.7
2.5	2.6	21.3	4.3
173	4.8	169.9	7.2
106.8	-	-	-
-	251.8	25.2	11.1
-	-	15709.5	157.1
6366	1469.2	29804.6	2444.7

## The Sandy Creek Subwatershed

Existing Loading Estimates		
Pollutant	Lbs/Yr	Contribution Index
Total N	9514.4	84
Total P	848.5	85
Sediment*	515.2	93
Stream Bank Sediment	62.4	
Runoff*	631	101

Future Scenario	
Lbs/Yr	Contribution Index
5953.3	65
279.3	41
223.0	52
112.1	
737	107

\*Sediment in Ton/Yr and Runoff in Ac-ft/Yr

Existing Loading Estimates by Source				
Source	Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
Wetland	190.3	0.4	27.1	1.4
Hay/Pasture	140.8	4.9	92.3	12.0
High-Density Development	447.3	5.4	453.2	50.3
Low-Density Development	155.7	2.7	4.2	0.6
Forest	126	0.3	4.5	0.5
Row Crops	805.6	424.5	3540.3	706.4
Transitional	2.5	3.2	28.1	5.4
Turfgrass/Golf Course	301.5	11.3	144.9	17.0
Water	47.3	-	-	-
Stream bank	-	62.4	6.2	2.8
Groundwater	-	-	5213.5	52.1
Total	2217	515.2	9514.4	848.5

Future Scenario			
Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
190.3	0.4	27.0	1.4
51.9	1.5	32.2	3.9
447.3	5.6	463.5	51.4
976.1	19.7	195.5	26.1
126	0.3	4.5	0.5
148.3	71.9	753.0	130.1
2.5	3.2	24.8	5.2
227.3	8.3	107.8	12.5
47.3	-	-	-
-	112.1	11.2	4.9
-	-	4333.7	43.3
2217	223.0	5953.3	279.3

## The Lower Pingree Creek Subwatershed

Existing Loading Estimates		
Pollutant	Lbs/Yr	Contribution Index
Total N	8240.6	89
Total P	820.6	100
Sediment*	460.0	101
Stream Bank Sediment	27.4	
Runoff*	491	96

Future Scenario	
Lbs/Yr	Contribution Index
4371.5	58
273.0	48
212.4	60
80.3	
587	104

\*Sediment in Ton/Yr and Runoff in Ac-ft/Yr

Existing Loading Estimates by Source				
Source	Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
Wetland	331.1	0.7	80.4	3.5
Hay/Pasture	244.6	7.2	152.8	18.9
High-Density Development	29.7	0.2	1.8	0.2
Low-Density Development	135.9	2.1	2.9	0.4
Forest	103.8	0.2	3.7	0.4
Row Crops	845.1	415.2	4323.3	749.3
Transitional	2.5	2.6	21.5	4.4
Turfgrass/Golf Course	126	4.3	57.9	6.4
Water	6.3	-	-	-
Stream bank	-	27.4	2.7	1.2
Groundwater	-	-	3593.6	35.9
Total	1825	460.0	8240.6	820.6

Future Scenario			
Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
331.1	0.7	80.4	3.5
74.1	1.8	44.1	5.2
29.7	0.2	1.9	0.2
1018.1	16.6	209.9	28.0
103.8	0.2	3.7	0.4
232.3	109.0	1157.4	198.2
2.5	2.6	21.5	4.3
27.2	0.9	12.3	1.3
6.2	-	-	-
-	80.3	8.0	3.5
-	-	2832.5	28.3
1825	212.4	4371.5	273.0

## The Upper Pingree Creek Subwatershed

Existing Loading Estimates		
Pollutant	Lbs/Yr	Contribution Index
Total N	37756.7	138
Total P	3893.2	161
Sediment*	1983.3	148
Stream Bank Sediment	98.7	
Runoff*	1518	101

Future Scenario	
Lbs/Yr	Contribution Index
30723.3	138
3015.7	181
1698.0	163
240.4	
1588	96

\*Sediment in Ton/Yr and Runoff in Ac-ft/Yr

Existing Loading Estimates by Source				
Source	Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
Wetland	150.7	0.3	36.3	1.5
Hay/Pasture	590.6	19.1	1207.3	98.7
High-Density Development	44.5	0.3	3.8	0.4
Low-Density Development	163.1	2.5	4.2	0.6
Forest	59.3	0.1	5.1	0.3
Row Crops	4304.6	1854.8	25126.2	3662.5
Transitional	4.9	6.1	48.2	10.0
Turfgrass/Golf Course	39.5	1.3	17.6	1.9
Water	3.8	-	-	-
Stream bank	-	98.7	9.9	4.3
Groundwater	-	-	11298.3	113.0
Total	5361	1983.3	37756.7	3893.2

Future Scenario			
Area Acres	Sediment Ton	Total N Lbs	Total P Lbs
150.7	0.3	36.4	1.5
400.3	12.9	817.7	66.8
44.5	0.3	3.8	0.4
1532.1	21.6	411.2	54.8
64.2	0.1	5.5	0.4
3128.3	1415.2	18664.1	2762.6
4.9	6.2	48.5	10.1
32.1	1.0	14.1	1.5
3.9	-	-	-
-	240.4	24.0	10.6
-	-	10698.0	107.0
5361	1698.0	30723.3	3015.7