APPENDICES

Appendix A

Recommended Plan Cost Estimates

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #1 (Option #2) Convey Water to Montague via Reconstructed Raised Edge Road and Storm Sewer
Location: Sauganash and Tarrant Drive

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Asphaltic Trench (10' wide)	L.F.	1,150.00	$40.00	$	46,000
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.	400.00	$75.00	$	30,000
3	Asphaltic Road Swale	L.F.	600.00	$2.50	$	1,500
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.	1.00	$5,000.00	$	5,000
	Subtotal:				$	*82,500*
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.	60	$60.00	$	3,600
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.	990	$65.00	$	64,350
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.	290	$75.00	$	21,750
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	$	-
15	24" RCP CL3 Storm w/ Spoil Backfill	L.F.		$85.00	$	-
16	30" RCP CL3 Storm w/ Granular Backfill	L.F.	210	$100.00	$	21,000
17	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$	-
18	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
19	72" Storm Manhole	E.A.	1	$4,000.00	$	4,000
20	60" Storm Manhole	E.A.	1	$3,000.00	$	3,000
21	48" Storm Manhole	E.A.	4	$2,250.00	$	9,000
22	WisDOT Field Inlet	E.A.	3	$2,500.00	$	7,500
23	Storm Inlet	E.A.	8	$2,000.00	$	16,000
24	12" RCP End Section	E.A.		$500.00	$	-
25	15" RCP End Section	E.A.	1	$750.00	$	750
26	18" RCP End Section	E.A.		$1,000.00	$	-
27	21" RCP End Section	E.A.		$1,350.00	$	-
28	24" RCP End Section	E.A.		$1,500.00	$	-
29	30" RCP End Section	E.A.	1	$2,000.00	$	2,000
30	36" RCP End Section	E.A.		$2,500.00	$	-
31	42" RCP End Section	E.A.		$3,000.00	$	-
32	Road Swale w/ Channel Erosion Mat	L.F.	400	$10.00	$	4,000
33	Riprap Apron	E.A.	1	$500.00	$	500
34	Restoration	L.S.	1	$5,000.00	$	5,000
35	Erosion Control	L.S.	1	$5,000.00	$	5,000
	Subtotal:				$	*167,450*

Total Preliminary Estimated Construction Cost:	**$**	**249,950**
30% Contingency, Legal, Engineering:	**$**	**74,985**
Total Preliminary Estimated Project Cost:	**$**	**325,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #1 (Option #3) Storm Water Detention Facility
Location: Sauganash and Tarrant Drive

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price	Total Price
	Street Items				
1	Full Depth Road Reconstruct (24' wide)	L.F.		$225.00	
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.		$75.00	
3	Asphaltic Road Swale	L.F.		$2.50	
4	Concrete Curb & Gutter	L.F.		$17.50	
5	Traffic Control	L.S.		$5,000.00	
	Subtotal:				
	Storm Sewer				
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.		$60.00	
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.		$75.00	
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	
15	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	
18	72" Storm Manhole	E.A.		$4,000.00	
19	60" Storm Manhole	E.A.		$3,000.00	
20	48" Storm Manhole	E.A.		$2,250.00	
21	WisDOT Field Inlet	E.A.		$2,500.00	
22	Storm Inlet	E.A.		$2,000.00	
23	12" RCP End Section	E.A.		$500.00	
24	15" RCP End Section	E.A.		$750.00	
25	18" RCP End Section	E.A.		$1,000.00	
26	21" RCP End Section	E.A.		$1,350.00	
27	24" RCP End Section	E.A.		$1,500.00	
28	30" RCP End Section	E.A.		$2,000.00	
29	36" RCP End Section	E.A.		$2,500.00	
30	42" RCP End Section	E.A.		$3,000.00	
31	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	
32	Riprap Apron	E.A.		$500.00	
33	Restoration	L.S.	1	$5,000.00	$5,000
34	Erosion Control	L.S.	1	$5,000.00	$5,000
35	Pond	C.Y.	4600	$25.00	$115,000
36	Pond Control Structures & Piping	L.S.	1	$20,000.00	$20,000
37	Pond Plantings & Restoration	L.S.	1	$20,000.00	$20,000
	Subtotal:				*$165,000*

Total Preliminary Estimated Construction Cost:	**$**	**165,000**
30% Contingency, Legal, Engineering:	**$**	**49,500**
Total Preliminary Estimated Project Cost:	**$**	**215,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #2 (Option #1) New Storm Sewer Inlet, CL-3 Matting and Rip-Rap Ditch Checks (Mohr Rd.)
Location: Southside of Mohr Road.

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Full Depth Road Reconstruct (24' wide)	L.F.		$225.00	$	-
2	Asphaltic Road 2" Mill & Overlay (24' wide) Trench Patch	L.F.	50.00	$75.00	$	3,750
3	Asphaltic Road Swale	L.F.		$2.50	$	-
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.		$5,000.00	$	-
					$	-
	Subtotal:				*$*	*3,750*
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.		$60.00	$	-
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$	-
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.	80	$75.00	$	6,000
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	$	-
15	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	$	-
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$	-
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
18	72" Storm Manhole	E.A.		$4,000.00	$	-
19	60" Storm Manhole	E.A.		$3,000.00	$	-
20	48" Storm Manhole	E.A.		$2,250.00	$	-
21	WisDOT Field Inlet	E.A.	1	$2,500.00	$	2,500
22	Storm Inlet	E.A.		$2,000.00	$	-
23	12" RCP End Section	E.A.		$500.00	$	-
24	15" RCP End Section	E.A.		$750.00	$	-
25	18" RCP End Section	E.A.	1	$1,000.00	$	1,000
26	21" RCP End Section	E.A.		$1,350.00	$	-
27	24" RCP End Section	E.A.		$1,500.00	$	-
28	30" RCP End Section	E.A.		$2,000.00	$	-
29	36" RCP End Section	E.A.		$2,500.00	$	-
30	42" RCP End Section	E.A.		$3,000.00	$	-
31	Road Swale w/ Channel Erosion Mat	L.F.	600	$10.00	$	6,000
32	Ditch Checks	E.A.	4	$100.00	$	400
33	Riprap Apron	E.A.	1	$500.00	$	500
34	Restoration	L.S.	1	$5,000.00	$	5,000
35	Erosion Control	L.S.	1	$5,000.00	$	5,000
	Subtotal:				*$*	*26,400*

Total Preliminary Estimated Construction Cost:	**$**	**30,150**
30% Contingency, Legal, Engineering:	**$**	**9,045**
Total Preliminary Estimated Project Cost:	**$**	**39,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #2 (Option #2) Explore Indian Hills SWMP Remedies, Size Storm Under Indian Hills Road.
Location: Indian Hills Road.

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Full Depth Road Reconstruct (24' wide)	L.F.		$225.00	$	-
2	Asphaltic Road 2" Mill & Overlay (24' wide) Trench Patch	L.F.	50.00	$75.00	$	3,750
3	Asphaltic Road Swale	L.F.		$2.50	$	-
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.		$5,000.00	$	-
					$	-
	Subtotal:				$	*3,750*
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.		$60.00	$	-
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$	-
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.		$75.00	$	-
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.	300	$90.00	$	27,000
15	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	$	-
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.	50	$120.00	$	6,000
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
18	72" Storm Manhole	E.A.	1	$4,000.00	$	4,000
19	60" Storm Manhole	E.A.	1	$3,000.00	$	3,000
20	48" Storm Manhole	E.A.		$2,250.00	$	-
21	WisDOT Field Inlet	E.A.		$2,500.00	$	-
22	Storm Inlet	E.A.		$2,000.00	$	-
23	12" RCP End Section	E.A.		$500.00	$	-
24	15" RCP End Section	E.A.		$750.00	$	-
25	18" RCP End Section	E.A.		$1,000.00	$	-
26	21" RCP End Section	E.A.		$1,350.00	$	-
27	24" RCP End Section	E.A.	2	$1,500.00	$	3,000
28	30" RCP End Section	E.A.		$2,000.00	$	-
29	36" RCP End Section	E.A.	1	$2,500.00	$	2,500
30	42" RCP End Section	E.A.		$3,000.00	$	-
31	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	$	-
32	Riprap Apron	E.A.	1	$500.00	$	500
33	Restoration	L.S.	1	$5,000.00	$	5,000
34	Erosion Control	L.S.	1	$5,000.00	$	5,000
	Subtotal:				$	*56,000*

Total Preliminary Estimated Construction Cost:	**$**	**59,750**
30% Contingency, Legal, Engineering:	**$**	**17,925**
Total Preliminary Estimated Project Cost:	**$**	**78,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #2 (Option #4) Storm Sewer Under Indian Hills Road.
Location: Indian Hills Road.

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Full Depth Road Reconstruct (24' wide)	L.F.		$225.00	$	-
2	Asphaltic Road 2" Mill & Overlay (24' wide) Trench Patch	L.F.	50.00	$75.00	$	3,750
3	Asphaltic Road Swale	L.F.		$2.50	$	-
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.		$5,000.00	$	-
	Subtotal:				$	*3,750*
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.		$60.00	$	-
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$	-
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.		$75.00	$	-
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.	50	$90.00	$	4,500
15	24" RCP CL3 Storm w/ Spoil Backfill	L.F.	300	$85.00	$	25,500
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$	-
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
18	72" Storm Manhole	E.A.		$4,000.00	$	-
19	60" Storm Manhole	E.A.		$3,000.00	$	-
20	48" Storm Manhole	E.A.	2	$2,250.00	$	4,500
21	WisDOT Field Inlet	E.A.		$2,500.00	$	-
22	Storm Inlet	E.A.		$2,000.00	$	-
23	12" RCP End Section	E.A.		$500.00	$	-
24	15" RCP End Section	E.A.		$750.00	$	-
25	18" RCP End Section	E.A.		$1,000.00	$	-
26	21" RCP End Section	E.A.		$1,350.00	$	-
27	24" RCP End Section	E.A.	2	$1,500.00	$	3,000
28	30" RCP End Section	E.A.		$2,000.00	$	-
29	36" RCP End Section	E.A.		$2,500.00	$	-
30	42" RCP End Section	E.A.		$3,000.00	$	-
31	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	$	-
32	Riprap Apron	E.A.	1	$500.00	$	500
33	Restoration	L.S.	1	$5,000.00	$	5,000
34	Erosion Control	L.S.	1	$5,000.00	$	5,000
	Subtotal:				$	*48,000*

Total Preliminary Estimated Construction Cost:	**$**	**51,750**
30% Contingency, Legal, Engineering:	**$**	**15,525**
Total Preliminary Estimated Project Cost:	**$**	**67,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #2 (Option #5) Storm Sewer in Brickley Drive
Location: Brickley Drive

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Full Depth Road Reconstruct (24' wide)	L.F.		$225.00	$	-
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.	1,000.00	$75.00	$	75,000
3	Asphaltic Road Swale	L.F.		$2.50	$	-
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.	1.00	$5,000.00	$	5,000
					$	-
	Subtotal:				$	*80,000*
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.	150	$60.00	$	9,000
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$	-
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.		$75.00	$	-
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.	1200	$90.00	$	108,000
15	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	$	-
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$	-
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
18	72" Storm Manhole	E.A.		$4,000.00	$	-
19	60" Storm Manhole	E.A.		$3,000.00	$	-
20	48" Storm Manhole	E.A.	6	$2,250.00	$	13,500
21	WisDOT Field Inlet	E.A.		$2,500.00	$	-
22	Storm Inlet	E.A.	10	$2,000.00	$	20,000
23	12" RCP End Section	E.A.		$500.00	$	-
24	15" RCP End Section	E.A.		$750.00	$	-
25	18" RCP End Section	E.A.		$1,000.00	$	-
26	21" RCP End Section	E.A.		$1,350.00	$	-
27	24" RCP End Section	E.A.	3	$1,500.00	$	4,500
28	30" RCP End Section	E.A.		$2,000.00	$	-
29	36" RCP End Section	E.A.		$2,500.00	$	-
30	42" RCP End Section	E.A.		$3,000.00	$	-
31	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	$	-
32	Riprap Apron	E.A.	3	$500.00	$	1,500
33	Restoration	L.S.	1	$5,000.00	$	5,000
34	Erosion Control	L.S.	1	$5,000.00	$	5,000
35	Pond	C.Y.	4300	$25.00	$	107,500
36	Pond Control Structures & Piping	L.S.	1	$20,000.00	$	20,000
37	Pond Plantings & Restoration	L.S.	1	$20,000.00	$	20,000
	Subtotal:				$	*314,000*

Total Preliminary Estimated Construction Cost:	**$**	**394,000**
30% Contingency, Legal, Engineering:	**$**	**118,200**
Total Preliminary Estimated Project Cost:	**$**	**512,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #2 (Option #6) Pond Lots 60-62 of Indian Hills on Mesita Rd
Location: Indian Hills Road.

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Full Depth Road Reconstruct (24' wide)	L.F.		$225.00	$	-
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.		$75.00	$	-
3	Asphaltic Road Swale	L.F.		$2.50	$	-
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.		$5,000.00	$	-
				$0.00		
	Subtotal:				*$*	-
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.		$60.00	$	-
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$	-
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.	100	$75.00	$	7,500
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	$	-
15	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	$	-
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$	-
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
18	72" Storm Manhole	E.A.		$4,000.00	$	-
19	60" Storm Manhole	E.A.		$3,000.00	$	-
20	48" Storm Manhole	E.A.		$2,250.00	$	-
21	WisDOT Field Inlet	E.A.		$2,500.00	$	-
22	Storm Inlet	E.A.		$2,000.00	$	-
23	12" RCP End Section	E.A.		$500.00	$	-
24	15" RCP End Section	E.A.		$750.00	$	-
25	18" RCP End Section	E.A.		$1,000.00	$	-
26	21" RCP End Section	E.A.		$1,350.00	$	-
27	24" RCP End Section	E.A.		$1,500.00	$	-
28	30" RCP End Section	E.A.		$2,000.00	$	-
29	36" RCP End Section	E.A.		$2,500.00	$	-
30	42" RCP End Section	E.A.		$3,000.00	$	-
31	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	$	-
32	Riprap Apron	E.A.	1	$500.00	$	500
33	Restoration	L.S.	1	$5,000.00	$	5,000
34	Erosion Control	L.S.	1	$5,000.00	$	5,000
35	Pond	C.Y.	1650	$25.00	$	41,250
36	Pond Control Structures & Piping	L.S.	1	$20,000.00	$	20,000
37	Pond Plantings & Restoration	L.S.	1	$20,000.00		$20,000
	Subtotal:				*$*	*99,250*

Total Preliminary Estimated Construction Cost:	**$**	**99,250**
30% Contingency, Legal, Engineering:	**$**	**29,775**
Total Preliminary Estimated Project Cost:	**$**	**129,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #3 (Option #2) Storm Sewer through Wooded Lot
Location: Sauganash and Tarrant Drive

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Asphaltic Trench (10' wide)	L.F.	230.00	$40.00	$	9,200
2	Asphaltic Road 2" Mill & Overlay (24' wide) Trench patch	L.F.	400.00	$75.00	$	30,000
3	Asphaltic Road Swale	L.F.	400.00	$2.50	$	1,000
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.	1.00	$5,000.00	$	5,000
	Subtotal:				$	*45,200*
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.	50	$60.00	$	3,000
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$	-
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.		$75.00	$	-
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.	410	$90.00	$	36,900
15	24" HDPE Storm Directionally Drilled	L.F.	295	$120.00	$	35,400
16	30" HDPE Storm Directionally Drilled	L.F.	300	$160.00	$	48,000
17	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$	-
18	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
19	72" Storm Manhole	E.A.		$4,000.00	$	-
20	60" Storm Manhole	E.A.	3	$3,000.00	$	9,000
21	48" Storm Manhole	E.A.	3	$2,250.00	$	6,750
22	WisDOT Field Inlet	E.A.		$2,500.00	$	-
23	Storm Inlet	E.A.	4	$2,000.00	$	8,000
24	12" RCP End Section	E.A.		$500.00	$	-
25	15" RCP End Section	E.A.		$750.00	$	-
26	18" RCP End Section	E.A.		$1,000.00	$	-
27	21" RCP End Section	E.A.		$1,350.00	$	-
28	24" RCP End Section	E.A.		$1,500.00	$	-
29	30" RCP End Section	E.A.	1	$2,000.00	$	2,000
30	36" RCP End Section	E.A.		$2,500.00	$	-
31	42" RCP End Section	E.A.		$3,000.00	$	-
32	Tree Clearing	S.Y.	60	$10.00	$	600
33	Riprap Apron	E.A.	1	$500.00	$	500
34	Restoration	L.S.	1	$5,000.00	$	5,000
35	Erosion Control	L.S.	1	$5,000.00	$	5,000
	Subtotal:				$	*160,150*

Total Preliminary Estimated Construction Cost:	**$**	**205,350**
30% Contingency, Legal, Engineering:	**$**	**61,605**
Total Preliminary Estimated Project Cost:	**$**	**267,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #3 (Option #3B) New Outfall Location with Option 2
Location: Sauganash and Tarrant Drive

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price	Total Price
	Street Items				
1	Asphaltic Trench (10' wide)	L.F.		$40.00	$ -
2	Asphaltic Road 2" Mill & Overlay (24' wide) Trench patch	L.F.		$75.00	$ -
3	Asphaltic Road Swale	L.F.		$2.50	$ -
4	Concrete Curb & Gutter	L.F.		$17.50	$ -
5	Traffic Control	L.S.		$5,000.00	$ -
	Subtotal:				$ -
	Storm Sewer				
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.		$60.00	$ -
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$ -
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.		$75.00	$ -
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$ -
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.	-200	$90.00	$ (18,000)
15	24" RCP CL3 Storm w/ Spoil Backfill	L.F.		$85.00	$ -
16	30" HDPE Storm Directionally Drilled	L.F.		$160.00	$ -
17	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$ -
18	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$ -
19	72" Storm Manhole	E.A.		$4,000.00	$ -
20	60" Storm Manhole	E.A.	-1	$3,000.00	$ (3,000)
21	48" Storm Manhole	E.A.		$2,250.00	$ -
22	WisDOT Field Inlet	E.A.		$2,500.00	$ -
23	Storm Inlet	E.A.		$2,000.00	$ -
24	12" RCP End Section	E.A.		$500.00	$ -
25	15" RCP End Section	E.A.		$750.00	$ -
26	18" RCP End Section	E.A.		$1,000.00	$ -
27	21" RCP End Section	E.A.		$1,350.00	$ -
28	24" RCP End Section	E.A.		$1,500.00	$ -
29	30" RCP End Section	E.A.		$2,000.00	$ -
30	36" RCP End Section	E.A.		$2,500.00	$ -
31	42" RCP End Section	E.A.		$3,000.00	$ -
32	Tree Clearing	S.Y.		$10.00	$ -
33	Riprap Apron	E.A.		$500.00	$ -
34	Restoration	L.S.		$5,000.00	$ -
35	Erosion Control	L.S.		$5,000.00	$ -
	Subtotal:				$ *(21,000)*

Total Preliminary Estimated Construction Cost:	**$**	**(21,000)**
30% Contingency, Legal, Engineering:	**$**	**(6,300)**
Total Preliminary Estimated Project Cost:	**$**	**(27,000)**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #3 (Option #4) Extend Storm Sewer along Sauganash and local tributaries
Location: Sauganash and Tarrant Drive

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Asphaltic Trench (10' wide)	L.F.		$40.00	$	-
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.	1,800.00	$75.00	$	135,000
3	Asphaltic Road Swale	L.F.		$2.50	$	-
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.		$5,000.00	$	-
	Subtotal:				$	*135,000*
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.	275	$60.00	$	16,500
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.	320	$65.00	$	20,800
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.	1135	$75.00	$	85,125
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	$	-
15	24" RCP CL3 Storm w/ Spoil Backfill	L.F.		$85.00	$	-
16	30" RCP CL3 Storm w/ Spoil Backfill	L.F.		$95.00	$	-
17	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$	-
18	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
19	72" Storm Manhole	E.A.		$4,000.00	$	-
20	60" Storm Manhole	E.A.		$3,000.00	$	-
21	48" Storm Manhole	E.A.	10	$2,250.00	$	22,500
22	WisDOT Field Inlet	E.A.		$2,500.00	$	-
23	Storm Inlet	E.A.	14	$2,000.00	$	28,000
24	12" RCP End Section	E.A.	1	$500.00	$	500
25	15" RCP End Section	E.A.		$750.00	$	-
26	18" RCP End Section	E.A.		$1,000.00	$	-
27	21" RCP End Section	E.A.		$1,350.00	$	-
28	24" RCP End Section	E.A.		$1,500.00	$	-
29	30" RCP End Section	E.A.		$2,000.00	$	-
30	36" RCP End Section	E.A.		$2,500.00	$	-
31	42" RCP End Section	E.A.		$3,000.00	$	-
32	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	$	-
33	Riprap Apron	E.A.		$500.00	$	-
34	Restoration	L.S.	1	$5,000.00	$	5,000
35	Erosion Control	L.S.	1	$5,000.00	$	5,000
	Subtotal:				$	*183,425*

Total Preliminary Estimated Construction Cost:	**$**	**318,425**
30% Contingency, Legal, Engineering:	**$**	**95,528**
Total Preliminary Estimated Project Cost:	**$**	**414,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #3 (Option #5) Detention Facility
Location: Sauganash and Tarrant Drive

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Full Depth Road Reconstruct (24' wide)	L.F.		$225.00	$	-
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.		$75.00	$	-
3	Asphaltic Road Swale	L.F.		$2.50	$	-
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.		$5,000.00	$	-
				$0.00		
	Subtotal:				*$*	-
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.		$60.00	$	-
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$	-
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.		$75.00	$	-
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	$	-
15	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	$	-
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$	-
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
18	72" Storm Manhole	E.A.		$4,000.00	$	-
19	60" Storm Manhole	E.A.		$3,000.00	$	-
20	48" Storm Manhole	E.A.		$2,250.00	$	-
21	WisDOT Field Inlet	E.A.		$2,500.00	$	-
22	Storm Inlet	E.A.		$2,000.00	$	-
23	12" RCP End Section	E.A.		$500.00	$	-
24	15" RCP End Section	E.A.		$750.00	$	-
25	18" RCP End Section	E.A.		$1,000.00	$	-
26	21" RCP End Section	E.A.		$1,350.00	$	-
27	24" RCP End Section	E.A.		$1,500.00	$	-
28	30" RCP End Section	E.A.		$2,000.00	$	-
29	36" RCP End Section	E.A.		$2,500.00	$	-
30	42" RCP End Section	E.A.		$3,000.00	$	-
31	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	$	-
32	Riprap Apron	E.A.		$500.00	$	-
33	Restoration	L.S.	1	$5,000.00	$	5,000
34	Erosion Control	L.S.	1	$5,000.00	$	5,000
35	Pond	C.Y.	2400	$25.00	$	60,000
36	Pond Control Structures & Piping	L.S.	1	$20,000.00	$	20,000
37	Pond Plantings & Restoration	L.S.	1	$20,000.00	$	20,000
	Subtotal:				*$*	*110,000*

Total Preliminary Estimated Construction Cost:	**$**	**110,000**
30% Contingency, Legal, Engineering:	**$**	**33,000**
Total Preliminary Estimated Project Cost:	**$**	**143,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #4 (Option #1) Install berm along south side of STH 67 R.O.W.
Location: Hwy 67 & Main Street

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Full Depth Road Reconstruct (24' wide)	L.F.		$225.00	$	-
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.		$75.00	$	-
3	Asphaltic Road Swale	L.F.		$2.50	$	-
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.	0.25	$5,000.00	$	1,250
	Subtotal:				$	*1,250*
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.		$60.00	$	-
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$	-
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.		$75.00	$	-
13	18" RCP CL3 Storm w/ Spoil Backfill	L.F.		$70.00	$	-
14	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
15	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	$	-
16	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	$	-
17	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$	-
18	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
19	72" Storm Manhole	E.A.		$4,000.00	$	-
20	60" Storm Manhole	E.A.		$3,000.00	$	-
21	48" Storm Manhole	E.A.		$2,250.00	$	-
22	WisDOT Field Inlet	E.A.		$2,500.00	$	-
23	Storm Inlet	E.A.		$2,000.00	$	-
24	12" RCP End Section	E.A.		$500.00	$	-
25	15" RCP End Section	E.A.		$750.00	$	-
26	18" RCP End Section	E.A.		$1,000.00	$	-
27	21" RCP End Section	E.A.		$1,350.00	$	-
28	24" RCP End Section	E.A.		$1,500.00	$	-
29	30" RCP End Section	E.A.		$2,000.00	$	-
30	36" RCP End Section	E.A.		$2,500.00	$	-
31	42" RCP End Section	E.A.		$3,000.00	$	-
32	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	$	-
33	Riprap Apron	E.A.		$500.00	$	-
34	Restoration	L.S.	0.25	$5,000.00	$	1,250
35	Erosion Control	L.S.	0.25	$5,000.00	$	1,250
36	Berm Construction	L.F.	150	$150.00	$	22,500
	Subtotal:				$	*25,000*

Total Preliminary Estimated Construction Cost:	**$**	**26,250**
30% Contingency, Legal, Engineering:	**$**	**7,875**
Total Preliminary Estimated Project Cost:	**$**	**34,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #4 (Option #2A) Reditch down to Main St.
Location: Hwy 67 & Main Street

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price		Total Price
	Street Items					
1	Full Depth Road Reconstruct (24' wide)	L.F.		$225.00	$	-
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.		$75.00	$	-
3	Asphaltic Trench (10' wide)	L.F.	40.00	$40.00	$	1,600
4	Concrete Curb & Gutter	L.F.		$17.50	$	-
5	Traffic Control	L.S.	1.00	$5,000.00	$	5,000
	Subtotal:				$	*6,600*
	Storm Sewer					
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.		$60.00	$	-
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$	-
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.	50	$75.00	$	3,750
13	18" RCP CL3 Storm w/ Spoil Backfill	L.F.	70	$70.00	$	4,900
14	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$	-
15	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	$	-
16	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	$	-
17	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$	-
18	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$	-
19	72" Storm Manhole	E.A.		$4,000.00	$	-
20	60" Storm Manhole	E.A.		$3,000.00	$	-
21	48" Storm Manhole	E.A.		$2,250.00	$	-
22	WisDOT Field Inlet	E.A.		$2,500.00	$	-
23	Storm Inlet	E.A.		$2,000.00	$	-
24	12" RCP End Section	E.A.		$500.00	$	-
25	15" RCP End Section	E.A.		$750.00	$	-
26	18" RCP End Section	E.A.	2	$1,000.00	$	2,000
27	21" RCP End Section	E.A.		$1,350.00	$	-
28	24" RCP End Section	E.A.		$1,500.00	$	-
29	30" RCP End Section	E.A.		$2,000.00	$	-
30	36" RCP End Section	E.A.		$2,500.00	$	-
31	42" RCP End Section	E.A.		$3,000.00	$	-
32	Road Swale w/ Channel Erosion Mat	L.F.	700	$10.00	$	7,000
33	Riprap Apron	E.A.	2	$500.00	$	1,000
34	Restoration	L.S.	1	$5,000.00	$	5,000
35	Erosion Control	L.S.	1	$5,000.00	$	5,000
36	Berm Construction	L.F.		$150.00	$	-
	Subtotal:				$	*28,650*

Total Preliminary Estimated Construction Cost:	**$**	**35,250**
30% Contingency, Legal, Engineering:	**$**	**10,575**
Total Preliminary Estimated Project Cost:	**$**	**46,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #4 (Option #3) Storm Sewer and Detention Facility
Location: Hwy 67 & Main Street

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price	Total Price
	Street Items				
1	Full Depth Road Reconstruct (24' wide)	L.F.		$225.00	$ -
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.		$75.00	$ -
3	Asphaltic Road Swale	L.F.		$2.50	$ -
4	Concrete Curb & Gutter	L.F.		$17.50	$ -
5	Traffic Control	L.S.		$5,000.00	$ -
	Subtotal:				$ -
	Storm Sewer				
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.		$60.00	$ -
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	$ -
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.		$75.00	$ -
13	18" RCP CL3 Storm w/ Spoil Backfill	L.F.		$70.00	$ -
14	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	$ -
15	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	$ -
16	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	$ -
17	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	$ -
18	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	$ -
19	72" Storm Manhole	E.A.		$4,000.00	$ -
20	60" Storm Manhole	E.A.		$3,000.00	$ -
21	48" Storm Manhole	E.A.		$2,250.00	$ -
22	WisDOT Field Inlet	E.A.		$2,500.00	$ -
23	Storm Inlet	E.A.		$2,000.00	$ -
24	12" RCP End Section	E.A.		$500.00	$ -
25	15" RCP End Section	E.A.		$750.00	$ -
26	18" RCP End Section	E.A.		$1,000.00	$ -
27	21" RCP End Section	E.A.		$1,350.00	$ -
28	24" RCP End Section	E.A.		$1,500.00	$ -
29	30" RCP End Section	E.A.		$2,000.00	$ -
30	36" RCP End Section	E.A.		$2,500.00	$ -
31	42" RCP End Section	E.A.		$3,000.00	$ -
32	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	$ -
33	Riprap Apron	E.A.	2	$500.00	$ 1,000
34	Restoration	L.S.	1	$5,000.00	$ 5,000
35	Erosion Control	L.S.	1	$5,000.00	$ 5,000
36	Pond	C.Y.	5000	$25.00	$ 125,000
37	Pond Control Structures & Piping	L.S.	1	$20,000.00	$ 20,000
38	Pond Plantings & Restoration	L.S.	1	$20,000.00	$ 20,000
	Subtotal:				*$ 176,000*

Total Preliminary Estimated Construction Cost:	**$**	**176,000**
30% Contingency, Legal, Engineering:	**$**	**52,800**
Total Preliminary Estimated Project Cost:	**$**	**229,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #5 (Option #1) Shabbona Drive Storm Sewer Relay/Extension
Location: Shabbona Drive

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price	Total Price
	Street Items				
1	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.	1,200.00	$75.00	$90,000.00
2	Asphaltic Trench (10' wide)	L.F.	2,000.00	$40.00	$80,000.00
3	Concrete Curb & Gutter	L.F.	2,000.00	$17.50	$35,000.00
4	Traffic Control	L.S.	2.00	$5,000.00	$10,000.00
	Subtotal:				*$215,000.00*
	Storm Sewer				
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.	670	$60.00	$40,200.00
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.	250	$75.00	$18,750.00
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.	350	$90.00	$31,500.00
15	30" RCP CL3 Storm w/ Granular Backfill	L.F.	1350	$100.00	$135,000.00
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	
18	72" Storm Manhole	E.A.		$4,000.00	
19	60" Storm Manhole	E.A.	11	$3,000.00	$33,000.00
20	48" Storm Manhole	E.A.	5	$2,250.00	$11,250.00
21	WisDOT Field Inlet	E.A.		$2,500.00	
22	Storm Inlet	E.A.	11	$2,000.00	$22,000.00
23	12" RCP End Section	E.A.		$500.00	
24	15" RCP End Section	E.A.		$750.00	
25	18" RCP End Section	E.A.		$1,000.00	
26	21" RCP End Section	E.A.		$1,350.00	
27	24" RCP End Section	E.A.		$1,500.00	
28	30" RCP End Section	E.A.	1	$2,000.00	$2,000.00
29	36" RCP End Section	E.A.		$2,500.00	
30	42" RCP End Section	E.A.		$3,000.00	
31	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	
32	Riprap Apron	E.A.	2	$500.00	$1,000.00
33	Restoration	L.S.	2	$5,000.00	$10,000.00
34	Erosion Control	L.S.	1	$5,000.00	$5,000.00
	Subtotal:				*$309,700.00*

Total Preliminary Estimated Construction Cost:	**$**	**524,700**
30% Contingency, Legal, Engineering:	**$**	**157,410**
Total Preliminary Estimated Project Cost:	**$**	**682,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #5 (Option #3) Proprietary Mechanical Water Quality Device
Location: Shabbona Drive

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price	Total Price
	Street Items				
1	Asphaltic Trench (10' wide)	L.F.	20.00	$40.00	$800.00
2	Traffic Control	L.S.	0.50	$5,000.00	$2,500.00
	Subtotal:				*$3,300.00*
	Storm Sewer				
10	Mechanical Water Quality Structure	E.A.	1.00	$75,000.00	$75,000.00
	Subtotal:				*$75,000.00*

Total Preliminary Estimated Construction Cost:	**$**	**78,300**
30% Contingency, Legal, Engineering:	**$**	**23,490**
Total Preliminary Estimated Project Cost:	**$**	**102,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Hot Spot #5 (Option #4) Relay Outfall Pipe Down Slope in Abbey
Location: Shabbona Drive

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price	Total Price
	Street Items				
1	Asphaltic Trench (10' wide)	L.F.	140.00	$40.00	$5,600.00
2	Traffic Control	L.S.	0.50	$5,000.00	$2,500.00
	Subtotal:				*$8,100.00*
	Storm Sewer				
10	30" RCP CL3 Storm w/ Granular Backfill	L.F.	140.00	$100.00	$14,000.00
11	30" RCP CL3 Storm w/ Spoil Backfill	L.F.	350.00	$95.00	$33,250.00
12	72" Storm Manhole	E.A.	2.00	$4,000.00	$8,000.00
13	30" RCP End Section	E.A.	1.00	$2,000.00	$2,000.00
14	Erosion Control	L.S.	1.00	$5,000.00	$5,000.00
15	Restoration	L.S.	1.00	$5,000.00	$5,000.00
16	Tree Clearing	S.Y.	900.00	$10.00	$9,000.00
17	Riprap Apron	E.A.	1.00	$500.00	$500.00
	Subtotal:				*$76,750.00*

Total Preliminary Estimated Construction Cost:	**$**	**84,850**
30% Contingency, Legal, Engineering:	**$**	**25,455**
Total Preliminary Estimated Project Cost:	**$**	**110,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Problem Area 1 - Curb and Gutter, Storm Sewer
Location: Lakeshore Drive at N. Lower Gardens Road

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price	Total Price
	Street Items				
1	Asphaltic Trench (3' wide)	L.F.	3,400.00	$15.00	$51,000.00
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.		$75.00	
3	Asphaltic Road Swale	L.F.		$2.50	
4	Concrete Curb & Gutter	L.F.	3,400.00	$17.50	$59,500.00
5	Traffic Control	L.S.	1.00	$5,000.00	$5,000.00
	Subtotal:				*$115,500.00*
	Storm Sewer				
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.	500	$60.00	$30,000.00
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.	300	$65.00	$19,500.00
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.	300	$75.00	$22,500.00
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	
15	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	
18	72" Storm Manhole	E.A.		$4,000.00	
19	60" Storm Manhole	E.A.		$3,000.00	
20	48" Storm Manhole	E.A.	6	$2,250.00	$13,500.00
21	WisDOT Field Inlet	E.A.		$2,500.00	
22	Storm Inlet	E.A.	10	$2,000.00	$20,000.00
23	12" RCP End Section	E.A.		$500.00	
24	15" RCP End Section	E.A.		$750.00	
25	18" RCP End Section	E.A.		$1,000.00	
26	21" RCP End Section	E.A.		$1,350.00	
27	24" RCP End Section	E.A.		$1,500.00	
28	30" RCP End Section	E.A.		$2,000.00	
29	36" RCP End Section	E.A.		$2,500.00	
30	42" RCP End Section	E.A.		$3,000.00	
31	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	
32	Riprap Apron	E.A.		$500.00	
33	Restoration	L.S.	1	$5,000.00	$5,000.00
34	Erosion Control	L.S.	1	$5,000.00	$5,000.00
	Subtotal:				*$115,500.00*

Total Preliminary Estimated Construction Cost:	**$**	**231,000**
30% Contingency, Legal, Engineering:	**$**	**69,300**
Total Preliminary Estimated Project Cost:	**$**	**300,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Problem Area 2 - Curb and Gutter, Storm Sewer
Location: Lakeshore Drive at Belvidere Place

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price	Total Price
	Street Items				
1	Asphaltic Trench (3' wide)	L.F.	1,500.00	$15.00	$22,500.00
2	Asphaltic Road 2" Mill & Overlay (24' wide)	L.F.		$75.00	
3	Asphaltic Road Swale	L.F.		$2.50	
4	Concrete Curb & Gutter	L.F.	1,500.00	$17.50	$26,250.00
5	Traffic Control	L.S.	1.00	$5,000.00	$5,000.00
	Subtotal:				*$53,750.00*
	Storm Sewer				
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.	25	$60.00	$1,500.00
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.	275	$75.00	$20,625.00
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	
15	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	
18	72" Storm Manhole	E.A.		$4,000.00	
19	60" Storm Manhole	E.A.		$3,000.00	
20	48" Storm Manhole	E.A.	4	$2,250.00	$9,000.00
21	WisDOT Field Inlet	E.A.		$2,500.00	
22	Storm Inlet	E.A.	4	$2,000.00	$8,000.00
23	12" RCP End Section	E.A.		$500.00	
24	15" RCP End Section	E.A.		$750.00	
25	18" RCP End Section	E.A.	1	$1,000.00	$1,000.00
26	21" RCP End Section	E.A.		$1,350.00	
27	24" RCP End Section	E.A.		$1,500.00	
28	30" RCP End Section	E.A.		$2,000.00	
29	36" RCP End Section	E.A.		$2,500.00	
30	42" RCP End Section	E.A.		$3,000.00	
31	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	
32	Riprap Apron	E.A.	1	$500.00	$500.00
33	Restoration	L.S.	1	$5,000.00	$5,000.00
34	Erosion Control	L.S.	1	$5,000.00	$5,000.00
	Subtotal:				*$50,625.00*

Total Preliminary Estimated Construction Cost:	**$**	**104,375**
30% Contingency, Legal, Engineering:	**$**	**31,313**
Total Preliminary Estimated Project Cost:	**$**	**136,000**

PRELIMINARY ESTIMATED CONSTRUCTION COST
Village of Fontana
Problem Area 3 - Duck Pond Recreation Area Rain Garden
Location: Triangle Parcel north of Wild Duck Road and east of Dade Ave

9/2/2009

Item No.	Description	Unit	Quantity	Unit Price	Total Price
	Street Items				
1					
2					
3					
4					
5					
	Subtotal:				
	Storm Sewer				
10	12" RCP CL5 Storm w/ Granular Backfill	L.F.	25	$60.00	$1,500.00
11	15" RCP CL5 Storm w/ Granular Backfill	L.F.		$65.00	
12	18" RCP CL3 Storm w/ Granular Backfill	L.F.	275	$75.00	$20,625.00
13	21" RCP CL3 Storm w/ Granular Backfill	L.F.		$85.00	
14	24" RCP CL3 Storm w/ Granular Backfill	L.F.		$90.00	
15	30" RCP CL3 Storm w/ Granular Backfill	L.F.		$100.00	
16	36" RCP CL3 Storm w/ Granular Backfill	L.F.		$120.00	
17	42" RCP CL3 Storm w/ Granular Backfill	L.F.		$140.00	
18	72" Storm Manhole	E.A.		$4,000.00	
19	60" Storm Manhole	E.A.		$3,000.00	
20	48" Storm Manhole	E.A.	4	$2,250.00	$9,000.00
21	WisDOT Field Inlet	E.A.		$2,500.00	
22	Storm Inlet	E.A.	4	$2,000.00	$8,000.00
23	12" RCP End Section	E.A.		$500.00	
24	15" RCP End Section	E.A.		$750.00	
25	18" RCP End Section	E.A.	1	$1,000.00	$1,000.00
26	21" RCP End Section	E.A.		$1,350.00	
27	24" RCP End Section	E.A.		$1,500.00	
28	30" RCP End Section	E.A.		$2,000.00	
29	36" RCP End Section	E.A.		$2,500.00	
30	42" RCP End Section	E.A.		$3,000.00	
31	Road Swale w/ Channel Erosion Mat	L.F.		$10.00	
32	Riprap Apron	E.A.	1	$500.00	$500.00
33	Restoration	L.S.	1	$5,000.00	$5,000.00
34	Erosion Control	L.S.	1	$5,000.00	$5,000.00
	Subtotal:				*$50,625.00*

Total Preliminary Estimated Construction Cost:	**$**	**50,625**
30% Contingency, Legal, Engineering:	**$**	**15,188**
Total Preliminary Estimated Project Cost:	**$**	**100,000**

Appendix B

Sample

Basement Wetness and Flooding Prevention Standards

By: Waukesha County Parks and Land Use, Land Resource Division

Daniel P. Vrakas
County Executive

Dale R. Shaver
Director

Waukesha COUNTY

DEPARTMENT OF
PARKS AND LAND USE

Basement Wetness and Flooding Prevention Standards

Waukesha County Storm Water Management and Erosion Control Ordinance
Land Resources Division (LRD)

Background:
It has become commonplace for residential homes to construct walkout basements and finish lower levels as an extension to their living space. As a result, wetness in or near these areas can cause significant property damage and could lead to other safety or health issues. Lets face it - nobody wants a wet basement. Wetness can occur due to groundwater seepage, surface water runoff, or a combination of both. Most of these problems are preventable, but to be effective, must be addressed during site planning.

To address these concerns, the 2005 update to the Waukesha County Storm Water Management and Erosion Control Ordinance (and many other local ordinances) contains four specific design standards that must be met for any buildings designed for human occupation. These standards apply to all sites that require a Storm Water Permit where a basement is proposed. Since deed restrictions may be involved, these issues *must be addressed at the time of land division.* The standards are briefly summarized below.

Summarized Design Standards *(see ordinance for details)*

Surface Water (see page 2):

1. A minimum 2-foot vertical separation between the lowest exposed building surface and the peak water surface elevation produced by the 100-year, 24-hour design storm; and
2. A minimum 50-foot horizontal setback from the 100-year design storm elevation.

Groundwater (see pages 3-6):

3. A minimum 1-foot vertical separation between seasonal high groundwater table and the basement floor surface; and
4. Avoid hydric (very poorly drained) soils for basement construction as much as possible.

This document provides more information on how the LRD enforces these provisions and what the permit applicant needs to provide to the LRD to demonstrate compliance. Two procedures follow. The first one explains how to comply with the first two standards relating to surface water runoff in internally drained areas. The second explains how to comply with the third and fourth standards relating to basement separation from seasonal high groundwater.

Procedures for Internally Drained Areas *(to meet design standards #1 and #2)*

Storm water planning in areas that are internally drained presents a unique challenge to planners, homebuilders and engineers in Wisconsin, especially during frozen ground periods. Flooding of lower levels can occur after heavy rains and snowmelts during these periods if proper precautions are not taken. The procedures below describe what must be done to comply with the first two standards near internally drained areas (i.e. areas with no/limited outlet for overflow).

1. Calculate the total runoff *volume* produced by the 100-year, 24-hour design storm using the entire watershed draining to the internally drained area. Use 5.6" rain depth and NRCS runoff curve number of 98 to reflect frozen ground conditions.

Note: Watershed land use and ownership does not matter. No infiltration credits are allowed for existing or proposed upstream storm water BMPs or internally drained areas. Runoff volume credits will only be allowed for verified dead-storage volumes for existing infiltration basins or other internally drained areas, based on detailed site surveys (as-built for BMPs) and deed restrictions ensuring the area will remain in perpetuity.

2. Conduct a detailed topographic survey of the internally drained area.

Note: Make sure to survey a large enough area to demonstrate compliance with the vertical and horizontal setbacks noted above. County 2' topographic maps may NOT be used for the following steps unless the applicant agrees to additional setbacks the LRD determines to be necessary to allow for accuracy limitations in county maps (see #3 note below).

3. Apply the runoff volume calculated in #1 above to the internally drained area under #2 above and determine the peak water surface elevation. Delineate this elevation on the plat or CSM and label it **"Peak water surface elevation for 100-year design storm".**

Note: To account for frozen ground periods, NO assumed outflow rate is allowed for water infiltration into the soil surface when establishing this elevation, even if infiltration trenches or other structures are installed. Outflow rates are only allowed for gravity flows away from the internally drained area, such as a constructed spillway or natural overflow point. If county topographic maps are used to establish the elevation under this step, an additional minimum 2-foot vertical separation and 10-foot horizontal setback shall apply. The LRD may require additional separation or setbacks, or not allow the use of these maps at all, depending on site conditions and the proximity of proposed structures to storm water BMPs.

4. Add 2 feet to the 100-year peak water elevation calculated in #3 above and delineate a drainage easement at or above this elevation on the CSM or plat, based on the site survey under #2 above. Label it as **"Drainage easement for storm water storage and infiltration – see restrictions".**

5. Use the 100-year peak + 2 feet elevation from #4 above to write the following deed restriction for all lands impacted by the elevation: **"No grading or filling in this area. For any building designed for human occupation on a regular basis, the ground surface at the lowest exposed portion of the building shall be above the easement elevation of (*insert elevation from #4 above*)."**

6. Delineate a setback line 50 feet from the elevation under #3 above. If this line extends outside of the easement boundary under #4 above, label the line as **"50-Foot setback for any building designed for human occupation on a regular basis".**

*Note: Any well proposed near the internally drained area may be subject to a 100-foot horizontal setback to reduce the potential for well contamination from the infiltration of storm water. If required, the setback boundary should be delineated on the CSM or plat and the following statement added: "**No Wells Allowed in this Area.**"*

Procedures for Basement/Groundwater Separation *(to meet standards #3 and #4):*

Groundwater seepage is one of the most common sources of wetness in basements and lower levels in structures. Foundation drain tiles and sump pumps can work well until the power goes out, the pump fails, a tile plugs or a downstream landowner complains about the discharge water. Damages from groundwater are often not covered by homeowners insurance. The best solution is to avoid placing basements below groundwater, which is what the above-noted standards intend to do.

Soil and topographic map reviews, followed up by on-site soil profile evaluations, are the primary tools used during site planning to prevent wet basement problems caused by groundwater. Soil maps contain valuable information about depth to groundwater and are widely available over the Internet. While they are a great site screening and general planning tool, their preparation scale (1"=1,320') and limited boring depths (5 feet) prevent them from being used exclusively for site design or to demonstrate compliance with the 1-foot basement/groundwater separation requirement. Only on-site soil profile evaluations at depths proposed for basement construction can confirm actual soil and groundwater conditions.

The sections below describe the minimum requirements for demonstrating compliance with the hydric soil and basement/groundwater separation requirements.

Avoiding Hydric Soils As Much as Possible (standard #4)

In their natural state, "hydric" soils are generally considered capable of supporting wetland vegetation because the water table is often at or near the ground surface. Because these conditions also present significant limitations for buildings with basements, the county storm water ordinance requires these types of soils to be avoided as much as possible. Exhibit X contains a listing of "hydric" soils in Waukesha County. Maps of these soils are also available on the Internet at http://maps.waukeshacounty.gov/imf/sites/waukesha/jsp/launch.jsp. On-site soil profile evaluations should be used to verify the existence of hydric soils and to document the seasonal high water table elevation, as described below.

1-Foot Basement/Groundwater Separation (standard #3)

On-site soil profile evaluations near proposed basement locations and depths (8 feet min.) are required to demonstrate that proposed basements floor surface elevations are at least 1 foot above seasonal high water table. The evaluation results must be submitted to the LRD during the preliminary plat or CSM stage, following the standards described below. Developers are strongly encouraged to conduct at least one soil profile evaluation for every lot where a basement is proposed. However, the LRD may allow larger spacing between soil test pits for proposed subdivisions located on homogenous sites with few soil limitations and elevation changes.

Site Screening and Planning On-Site Soil Evaluations

Soil and topographic maps, along with the preliminary site plan, should be used to plan the locations of on-site soil profile evaluations. To minimize costs and delays, it is highly recommended to plan soil evaluation sites at locations and depths that can be used for determining basement restrictions while also collecting data needed to plan and design storm water facilities, utilities and on-site waste treatment systems. Since the same soil evaluation standards apply to all these uses, coordinating them may only require extending the boring depth or slightly changing its location. **At a minimum, one 8-foot deep on-site soil profile evaluation is required within 50 feet of each basement proposed in an area that meets any one of the following conditions:**

1. Within a soil series listed in Exhibit X. These soils are classified by the Natural Resource Conservation Service as having seasonal high groundwater table within 3 feet of the surface, or have historically demonstrated poor drainage features locally.

Note: NRCS data on depth to seasonal high water table for each soil map unit can be found on the Waukesha County GIS web site, as noted above, or by contacting the LRD office. For mapping purposes,

the LRD has grouped all soils into three general categories of depth to seasonal high water table: <1 foot (hydric), <3 feet, or >5 feet.

2. Where nearby on-site soil evaluations show indicators of seasonal high water table less than 8 feet from the ground surface.
3. Within 8 vertical feet of wetlands, other surface water features (lake, stream, pond, etc.), or soils classified as <1 foot to seasonal high water table (hydric soils).
4. Within other areas that the LRD determines to be at risk of shallow water table based on site topography, historical records, drainage patterns, observed hillside seeps or other indicators.

If several options exist for locating the basement, a boring must demonstrate that a site exists that meets the 1-foot separation requirement. Other borings may identify where basement restrictions exist, or where further testing may be required. The LRD may require additional soil evaluations if significant changes in elevation or soil conditions occur between sampling sites, or may allow fewer soil evaluations if very homogeneous subsurface conditions exist. Ultimately, the person certifying basement elevation restrictions (see below) must also be comfortable with the number and location of soil profile evaluations used to make the determination.

Regulatory Standards for Soil Profile Evaluations

All soil profile evaluations and forms submitted for review by the LRD must be completed in accordance with the USDA classification system, following standards described in Chapter COMM 85 Wis. Admin. Code, and using form SBD-10793 (R 1/05). All soil profile evaluations and forms must be completed and signed by a Certified Soil Tester (CST) or Professional Soil Scientist (PSS) registered in the State of Wisconsin, including their CST/PSS number. Soil pits are strongly encouraged. Soil borings by split spoon are acceptable, but power augers are not allowed. For purposes of enforcing these requirements, the LRD will serve the same role as the WI Department of Commerce in COMM 85.

Soil Profile Interpretations

Any soil profile evaluation that includes seasonal high water table indicators (see below) must be accompanied by a written determination of "seasonal high water table" elevation on LRD "Form A" ("Seasonal High Groundwater Determination Report") and signed by a certified soil tester, professional soil scientist, hydrogeologist, or professional engineer, including their Wisconsin license number and stamp. For sites located on hydric soils, a professional soil scientist must sign and stamp any report and verify proposed basement elevation restrictions and seasonal high water table determinations. (See section below for more details on "Seasonal High Water Table" Determinations.)

Documentation of Basement Restrictions

The limiting basement elevation must be recorded with the plat or CSM through the Register of Deeds, including one of the following statements (or their equivalent) on the face of the document:

1. **"Basement floor surface elevations shall not be lower than (xxx.xx) due to the potential for seasonal high groundwater."**
2. **"Basement floor surface elevation restrictions apply to this site due to the potential for seasonal high groundwater. Details are contained in (referenced deed restrictions)."** *Note: Combined with a map legend, this option may also be used to identify soil limitations that exist only within certain portions of a large lot.*

Optional Language (both options): "An amendment to these elevations may be made upon additional on-site soils evaluation and written acceptance by Waukesha County and the Town.")

"Seasonal High Water Table" Determinations

For purposes of enforcing the 1-foot basement/groundwater separation requirement, **"seasonal high water table" means the upper limit of the zone of soil saturation caused by underlying groundwater at its highest level.** Since the groundwater table often fluctuates with the seasons due to variable precipitation, evapotranspiration and other site conditions, the seasonal high water table must usually be estimated based on soil and site evaluations by technical experts. The presence of low chroma or gleyed soil colors, redoximorphic features, observed soil saturation, water level in wells, landscape

features, site topography, hydrology, and other factors are all used as indicators of the seasonal high water table. Soil related features must be documented following the technical standards of the USDA-Natural Resources Conservation Service. Chapter COMM 85 Wisconsin Administrative Code has used NRCS standards and other procedures to establish minimum requirements for evaluating and reporting soil and site characteristics. The Waukesha County Storm Water Management and Erosion Control Ordinance requires compliance with COMM 85 for all soil profile evaluations, including determining the elevation of seasonal high groundwater. All seasonal high water table interpretations must be properly documented on LRD "Form A" and supported by the individual soil evaluation forms (SBD-10793 – 1/05).

It is possible for soils to have redoximorphic and other features indicating periodic saturation without the presence of underlying groundwater table conditions. For example, a seasonally saturated soil layer can occur above an unsaturated zone due to soil texture, structure, capillary forces, etc. (ex: Hochheim and Theresa soils). By code, these soil conditions are not subject to the 1-foot basement separation requirement, but may still require some specific drainage practices to prevent periodic basement wetness. Since some soils are subject to this seasonal saturation zone and seasonal high groundwater conditions, it is important to collect enough information to make the distinction – and correctly apply the 1-foot basement separation requirement. Assumptions are not acceptable.

Therefore, the 1-foot basement separation requirement will be enforced on any site that shows seasonal high water table indicators, unless otherwise documented on "Form A" as meeting exemption criteria consistent with COMM 85.30(3), and accepted by the LRD. For any other site proposing to locate a basement less than 1-foot above seasonal high groundwater indicators, the following additional requirements will apply.

1. In accordance with COMM 85.60, a written "soil saturation determination" report must be provided based on soil profile and site evaluations. The report must conclusively demonstrate that existing redoximorphic features, low chroma soil colors, saturated soils or other water table indicators are not indicative of seasonal high groundwater conditions, as defined above.
    a. This soil saturation determination can be based on completing at least one of the following:
        i. An *"Interpretative determination"* in accordance with COMM 85.60(2), including an interpretive review of soil evaluations (extending well below redox features), local hydrology, geomorphologic history, soil survey reports, landscape position, local topography, any applicable soil disturbance or hydrologic modification, and other LRD recommendations; or
        ii. *"Groundwater elevation observation pipes"* in accordance with COMM 85.60(3), including but not limited to all the requirements for installing the observation pipes, properly observing and recording the results, and complying with the minimum precipitation record keeping and results contained in the code.
    b. Under either option noted above, the final report must be based on adequate data to support the conclusions. The report must identify the specific soil profile features, monitoring results or site evaluation data that support the conclusions.
    c. All reports must include a summary of data collected and its source; clear references to scaled maps, cross-sections and other supporting information; definitive conclusion statements, and the signature and applicable license number of the author. All elevations must be consistent with county mapping standards and tied to an on-site benchmark.

2. The LRD has 20 working days to review the report to determine compliance with COMM 85, the above noted procedures, and the 1-foot basement floor separation from seasonal high water table, in accordance with the County Storm Water Ordinance.
    a. If the LRD accepts the report as demonstrating compliance with all of the above, the applicant may proceed with the permit process. Any drainage system design to address seasonal soil saturation absent of groundwater is subject to the recommendations of the soils/engineering consultants and the Town Engineer.

b. If the LRD determines the report does not conclusively demonstrate compliance with the above, a rejection letter will be provided stating the specific reasons.

Note: The applicant may resubmit another report to address the stated reasons for rejection or appeal the LRD's decision to the Waukesha County Board of Adjustment. Basements proposed within 1-foot of the seasonal high water table are not eligible for a technical exemption and LRD staff is not authorized to grant a variance from the ordinance. Only the Board of Adjustment can grant variances.

Appeals and Variance Requests

Any applicant that wishes to appeal a determination of the LRD, or request a variance from the 1-foot groundwater separation requirement for basements, must apply to the Waukesha County Board of Adjustment in accordance with county procedures. If requesting a variance, the applicant must demonstrate that requiring compliance with the 1-foot basement separation requirement would create an unnecessary hardship. The LRD will make a recommendation to the Board of Adjustment based on county ordinance requirements and available data.

In general, it should be noted that locating basements below seasonal high water table, or artificially lowering the water table for purposes of basement construction, is considered to be in conflict with several of the stated purposes/guiding principles of the Storm Water Management and Erosion Control Ordinance, including:

- Maintaining safe and healthful conditions [14-328(a)1.]
- Preventing conditions that endanger property [14-328(a)3.]
- Preserving natural drainage patterns [14-341(b)A.]
- Maintaining predevelopment groundwater recharge areas [14-341(b)D.]

In addition, the LRD will provide advice and recommendations to the Board of Adjustment relating to potential damages and liabilities involved in the installation of any proposed artificial drainage system designed to lower the seasonal high water table elevation, including:

- Engineering and regulatory oversight to ensure proper system installation;
- Downstream impacts due to chronic discharges from the system; and
- Long-term maintenance of the system, including: "as-built" record keeping, inspections, replacements, backup power sources, disclosure/notification to future property owners, maintenance enforcement authority (for multiple landowners), etc.

Minimum Site Drainage Standards

Waukesha County Storm Water Ordinance

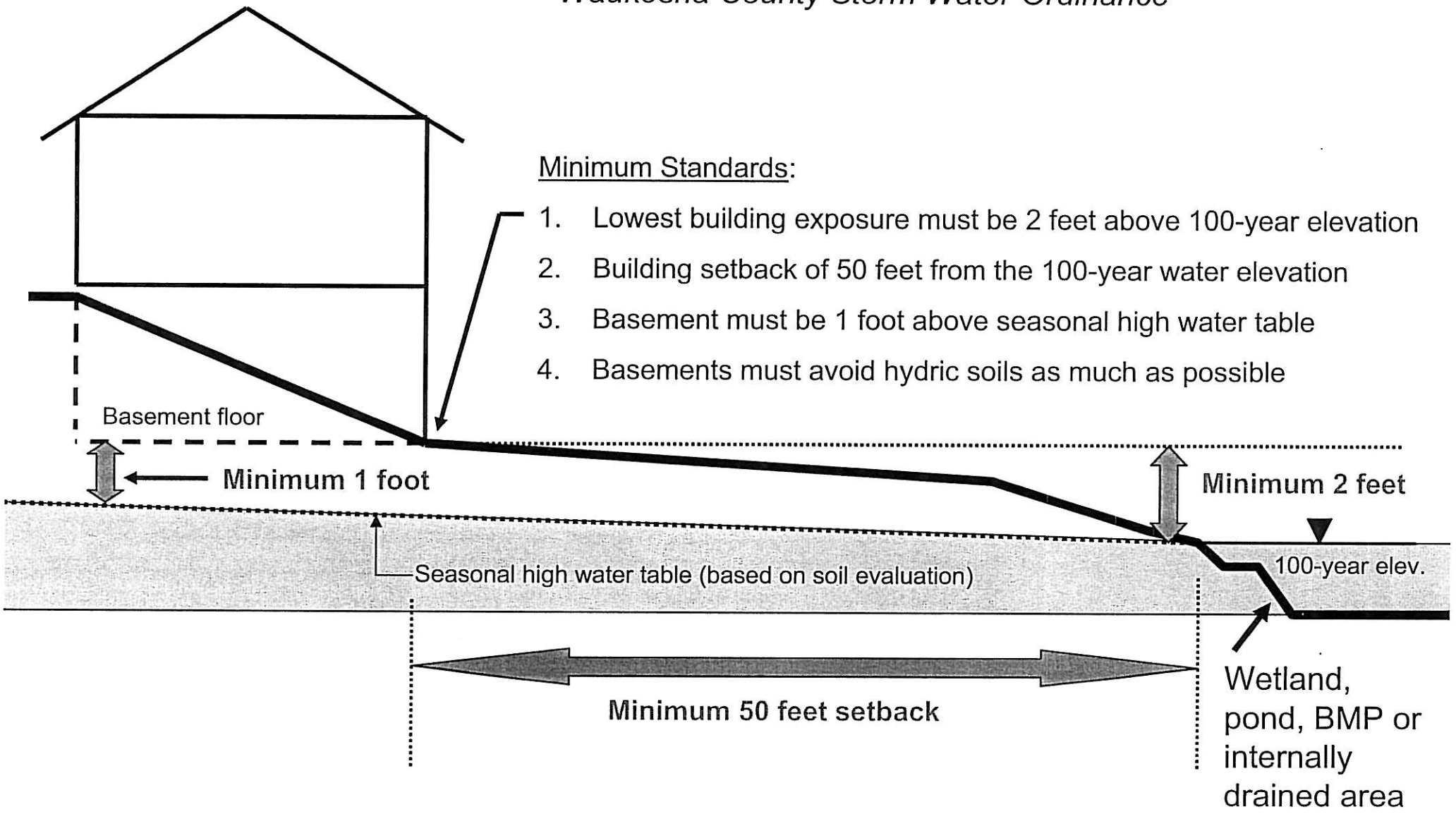

Exhibit X

Waukesha County Soil Series Designated as Hydric or Having Seasonal High Water Table Within 3 feet of the Surface*

Soil Map Symbol**	NRCS Soil Series Name	Depth to Water Table (inches)	Hydric Soil (X)
Ac	Adrian muck	0	X
Am	Alluvial land	12-24	
As	Ashkum silty clay	0	X
Az	Aztalan loam	12-36	
Bl	Blount silt loam	12-36	
Bs	Brookston silt loam	0	X
Cv	Clayey land	12-72	
Cw	Colwood silt loam	0	X
Dt	Drummer silt loam, gravelly substratum	0	X
Es	Elliot silt loam	12-36	
Fa	Fabius loam	12-24	
Gd	Gilford loam	0	X
Gf	Granby fine sandy loam	0	X
Gw	Griswold silt loam, mottled subsoil variant	12-36	
Hm/Ho	Hochheim loam, Hochheim	***	
Ht	Houghton muck	0	X
Ke	Kane silt loam	12-36	
Kl	Kendall silt loam	12-36	
Lm	Lamartine silt loam	12-36	
Lo	Lawson silt loam	12-36	
Lu	Loamy land	12-72	
Me	Markham silt loam	24-42	
Mf	Marsh	0	X
Mg	Martinton silt loam	12-36	
Mh	Matherton sandy loam	12-24	
Mm	Matherton silt loam	12-24	
Mo	Mayville silt loam	24-72	
Mt	Mequon silt loam	12-36	
Mzb	Montgomery silty clay loam	0	X
Mzf	Mundelein silt loam	12-36	
Mzg	Muskego muck	0	X
Mzk	Mussey loam	0	X
Na	Navan silt loam	0	X
Oc	Ogden muck	0	X
Pa	Palms muck	0	X
Ph	Pella silt loam	0	X
Pm	Pella silt loam, moderately shallow variant	0	X
Pr	Pistakee silt loam	12-36	
Rl	Ritchey silt loam, mottled subsoil variant	12-36	
Ru	Rollin muck, deep	0	X
Rv	Rollin muck, shallow	0	X
Sf	Sandy and gravelly land	24-72	
Sg	Sawmill silt loam, calcareous variant	0-12	X
Sm	Sebewa silt loam	0	X
Th	Theresa silt loam	***	
Vs	Virgil silt loam, gravelly substratum	12-36	
Wa	Wallkill silt loam	0	X
Wm	Wasepi sandy loam	12-24	

* All information derived from the Soil Survey for Waukesha County, published by the USDA-Natural Resources Conservation Service (NRCS), 2007 (Soil DataMart download date).

** Slope categories (A, B, C, D, E) may follow the map symbol, but are not included in this list.

*** While NRCS ranks these two soil series as well drained, in Waukesha County they are commonly associated with seasonal high water table conditions.

Form A - Seasonal High Groundwater Determination Report *(with sample language)*

Project/Plat Name: _____ Date: _____

Project Location (PLS/CSM#): _____

The following table summarizes my interpretation of the soil profile evaluations conducted on the above noted site. The purpose of this report is to demonstrate compliance with a Waukesha County ordinance requirement to maintain basement floor elevations at least 1 foot above the seasonal high water table. I understand that the definition for seasonal high water table means the upper limit of the zone of soil saturation caused by underlying groundwater at its highest level. I certify that the information presented in this report represents my best professional judgment in estimating seasonal high water table based on soil and site evaluations in accordance with the procedures contained in Chapter COMM 85 Wisconsin Administrative Code.

(Stamp/sign here)

Interpreters Signature: _____

Interpreters Printed Name/Credentials/Lic. #: _____

Interpreters Company Name/Address: _____

Site Benchmark/Elevation (Co. Stds.): _____

References: (sample) The following references apply to the data presented herein: 1) Map 1 for soil test pit locations; 2) Dept. of Commerce Soil Evaluation forms (5 sheets); and 3) "Soil Profile Interpretation Report" (in accordance with COMM 85.60) for additional interpretative explanation for lots 23 and 24.

Lot #	Soil Observ. (#)	Surface Elev.	Bottom Elev. of Soil Profile	Soil Map Unit Symbol (NRCS)	Elevation of Seasonal High Water Table	Proposed Basement Floor Elevation	Notes: List information used to determine seasonal high water table, including any soil color pattern exemptions under COMM 85.30(3) for a basement floor proposed less than 1-foot above redoximorphic features shown in the referenced soil evaluation reports.
(sample)	103	100.0	89.2	HmB	93.4	94.4	Soil saturation at elev. 89.8 and redox features up to 93.4. Less prominent redox features at elev. 97.4 determined to be caused by texture of B2t horizon [tension zone under COMM 85.30(3)2.], not seasonal high groundwater conditions, as defined above.

Form A - Seasonal High Groundwater Interpretative Report (continued)

Lot #	Soil Observ. (#)	Surface Elev.	Bottom Elev. of Soil Profile	Soil Map Unit Symbol (NRCS)	Elevation of Seasonal High Water Table	Proposed Basement Floor Elevation	Notes: List information used to determine seasonal high water table, including any soil color pattern exemptions under COMM 85.30(3) for a basement floor proposed less than 1-foot above redoximorphic features shown in the referenced soil evaluation reports.