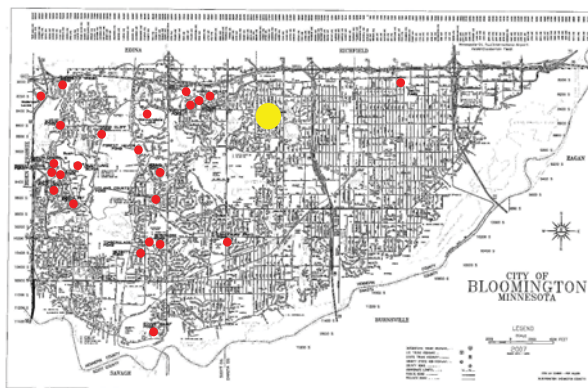


# 1. Adelmann Pond, Bloomington, MN

Area: 6.6 ac  
 Depth (average): 2.6 ft  
 Depth (maximum): 3.7 ft  
 Watershed Area: 127 ac  
     Direct watershed area: 53 ac  
     Indirect watershed area: 74 ac  
 Watershed to Pond Ratio: 19:1



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	257	1.5	550
July	171	2.0+	405
August	137	1.7	110
Average	188	1.7+	355

## Aquatic Plants - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	0%	elodea (50%), stringy pondweed	no treatment
July	3% duckweed	elodea (30%), stringy pondweed	no treatment
August	2% duckweed	elodea, stringy pondweed	no treatment

## Algacide and Herbicide Treatment History

Algacide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)	10						
Cutrine plus (gallons)	1.8			2.4			
Hydrothol/Aquathol (gallons)							
Reward (gallons)				1.0			
Sonar							
Weedtrine D							

# Adelmann Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

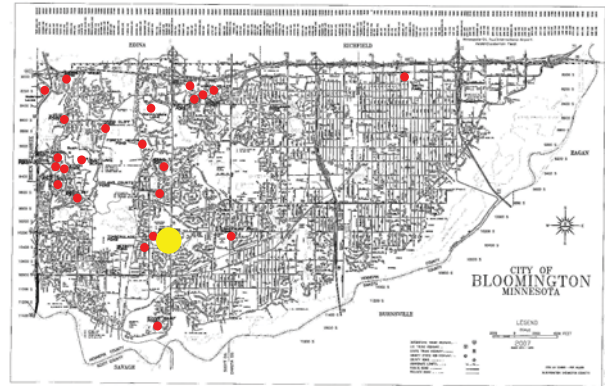
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb)	188	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	172	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	27	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	31	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	23	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	337	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	445	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	8	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.06	calculated
Pond treatment in 2009:	No treatment	
Proposed future management:	Pond is close to TP goal of 150 ppb-TP. No pond treatment is proposed. Conduct fish survey to characterize fish conditions and determine if they are impacting water quality.	



**Pond Conditions for June, July, and August, 2009**

### 3. Berkshire Pond, Bloomington, MN

Area: 0.56 ac  
 Depth (average): 3.0 ft  
 Depth (maximum): 6.5 ft  
 Watershed Area: 18 ac  
     Direct watershed area: 3 ac  
     Indirect watershed area: 15 ac  
 Watershed to Pond Ratio: 33



Pond location (yellow dot).

#### Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	473	2.5	350
July	514	1.0	340
August	353	3-Bottom	195
Average	446.7	2.17+	295

#### Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	0%	no plants	none
July	0%	no plants	none
August	0%	no plants	none

#### Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)	4.0	6.0	6.0	6.0			
Copper sulfate (lbs.)			2.0	5.0		unknown	
Cutrine plus							
Hydrothol/Aquathol (gallons)	1.75						
Reward							
Sonar							
Weedtrine D				unknown			

# Berkshire Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

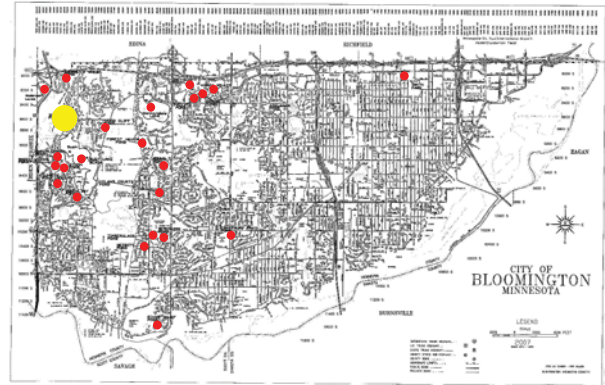
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	447	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	188	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	4	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	12	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	3	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	292	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	445	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	9	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.5	calculated
Pond treatment in 2009:	No Treatment	
Proposed future management:	Pond TP is elevated. Pond is a good candidate for barley straw. There are no submerged plants and fish may be a factor limiting plant growth. Conduct a fish survey to determine if fish are inhibiting aquatic plant growth or maybe contributing to elevated phosphorus concentrations.	



**Pond Conditions for June, July, and August, 2009**

## 4. Bogen Pond, Bloomington, MN

Area:	5.0 ac
Depth (average):	2.5 ft
Depth (maximum):	4.2 ft
Watershed Area:	59 ac
Direct watershed area:	14 ac
Indirect watershed area:	45 ac
Watershed to Pond Ratio:	12



Pond location (yellow dot).

### Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	233	1-Bottom	280
July	277	1-Bottom	295
August	175	0.9	105
Average	228	0.96+	227

### Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	1% FA	stringy pw	none
July	0%	sago pw	none
August	0%	no plants	none

### Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)			30	30	unknown		
Citrine plus							
Hydrothol/Aquathol (gallons)							
Reward							
Sonar							
Weedtrine D							

# Bogen Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

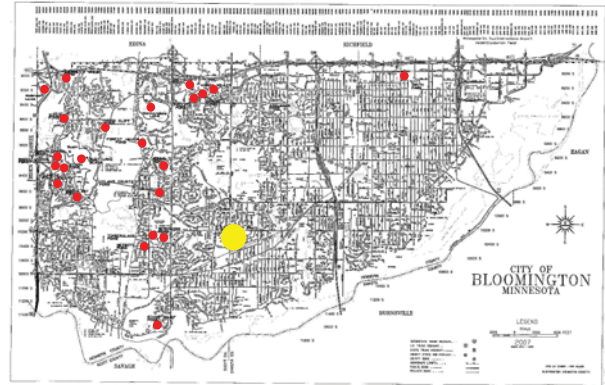
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb)	228	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	148	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	13	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	24	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	13	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	406	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	744	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	11	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.19	calculated
Pond treatment in 2009:	No treatment	
Proposed future management:	No treatment is recommended for 2010. Pond is shallow but has aquatic plants. Fish maybe present but at low densities. A fish survey is recommended to determine the status of a pond fishery with moderately good water quality. It is predicted the fish population would be sparse if present at all.	



**Pond Conditions for June, July, and August, 2009**

## 6. Canterbury Oaks Pond, Bloomington, MN

Area: 0.84 ac  
 Depth (average): 1.8 ft  
 Depth (maximum): 4.5 ft  
 Watershed Area: 15 ac  
     Direct watershed area: 6 ac  
     Indirect watershed area: 8 ac  
 Watershed to Pond Ratio: 18



Pond location (yellow dot).

### Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	274	0.9	450
July	344	1.0	370
August	382	0.5	208
Average	333	0.8	343

### Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	8% DW	no plants	Sonar added on 6/29/09
July	0%	no plants	--
August	0%	no plants (algae bloom)	--

### Algacide and Herbicide Treatment History

Algacide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)				12.8			
Copper sulfate (lbs.)				8.0	unknown		
Cutrine plus							
Galleon (gallons)							unknown
Hydrothol/Aquathol (gallons)							
Reward							
Sonar (gallons)					unknown		0.1
Weedtrine D (gallons)				5.2			

# Canterbury Oaks Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb)	333	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	185	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	3	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	7	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	2	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	300	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	878	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	5	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.33	calculated
Pond treatment in 2009:	Sonar and galleon	
Proposed future management:	No submerged plants are present. Barley could help reduce TP conc. Because there are no submerged plants, a fish survey is recommended to determine if they are impacting plant growth.	

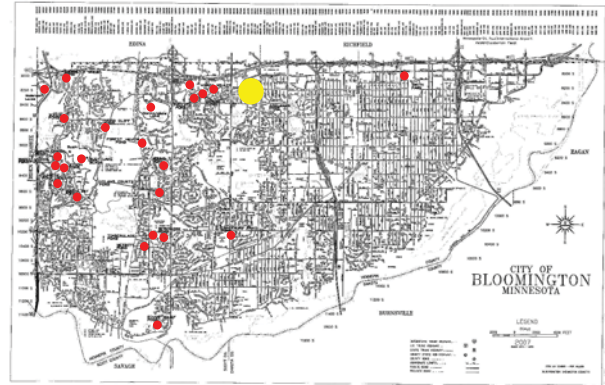


**Pond Conditions for June, July, and August, 2009**



# 7. Forest Crest Pond, Bloomington, MN

Area: 0.45 ac  
 Depth (average): 3.0 ft  
 Depth (maximum): 6.5 ft  
 Watershed Area: 23 ac  
     Direct watershed area: 9 ac  
     Indirect watershed area: 14 ac  
 Watershed to Pond Ratio: 51



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	nd	nd	nd
July	nd	nd	nd
August	236	2.0	150
Average	236	2.0	150

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	nd	nd	nd
July	nd	nd	nd
August	100% DW	no plants	--

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)		8.4	12				
Copper sulfate (lbs.)							
Cutrine plus (oz.)	5.3		25.6				
Hydrothol/Aquathol (gallons)							
Reward (gallons)				0.5			
Sonar							
Weedtrine D (gallons)				0.25			
WhiteCap						unknown	

# Forest Crest Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

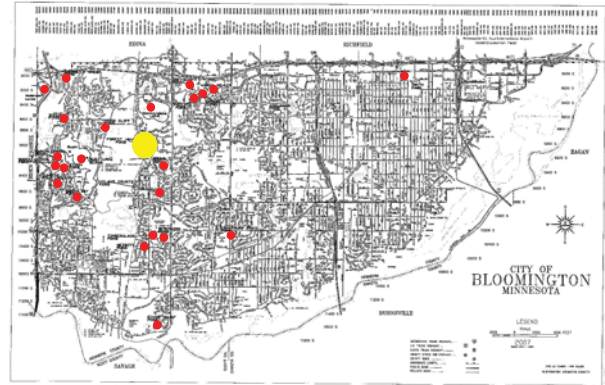
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	236	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	212	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	5	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	5	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	3	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	254	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	447	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	2	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.09	calculated
Pond treatment in 2009:	No treatment	
Proposed future management:	Relatively small pond with duckweed. Skimming should be effective.	



## Pond Conditions for June, July, and August, 2009

## 8. Forest Haven Pond, Bloomington, MN

Area: 7.18 ac  
 Depth (average): 3.5 ft  
 Depth (maximum): 7.5 ft  
 Watershed Area: 56.0 ac  
     Direct watershed area: 27 ac  
     Indirect watershed area: 28 ac  
 Watershed to Pond Ratio: 7.8



Pond location (yellow dot).

### Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	61	2.5	270
July	50	3-Bottom	255
August	38	5	190
Average	50	3.5+	238

### Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	35% WL	coontail, sago curlyleaf, elodea,	--
July	50% WL	coontail, narrow leaf PW	--
August	50% WL	coontail, curlyleaf, elodea, stringy PW	--

### Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)					unknown		
Copper sulfate (lbs.)				10			
Cutrine plus (oz.)	7lbs		8 oz				
Hydrothol/Aquathol (gallons)	1.75				unknown		
Komeen							
Reward (gallons)	1.4		1.4	1.9	unknown	unknown	
Rodeo (oz)		5	8				
Sonar							
Weedtrine D (gallons)				0.33			
WhiteCap							

# Forest Haven Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

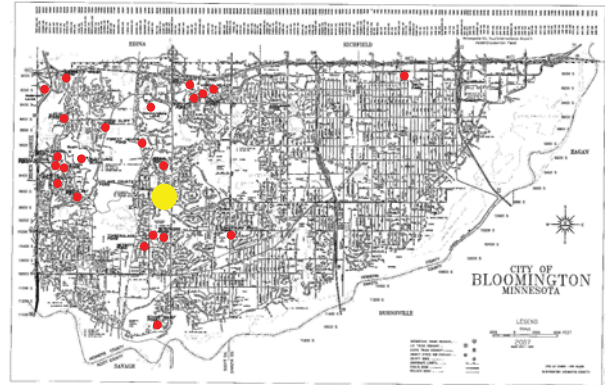
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	50	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	114	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	12	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	4	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	19	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	605	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	100	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	ok	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	--	calculated
Pond treatment in 2009:	No treatment	
Proposed future management:	Pond is within TP goal. No treatments are recommended. Water lilies provide good wildlife habitat.	



**Pond Conditions for June, July, and August, 2009**

# 9. Hyland Court Pond, Bloomington, MN

Area: 1.65 ac  
 Depth (average): 3.0 ft  
 Depth (maximum): 5.0 ft  
 Watershed Area: 25 ac  
     Direct watershed area: 5 ac  
     Indirect watershed area: 19 ac  
 Watershed to Pond Ratio: 15



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	91	1.2	260
July	74	3-Bottom	255
August	72	2.7	109
Average	79	2.3+	208

## Aquatic Plants and Treatment - 2009

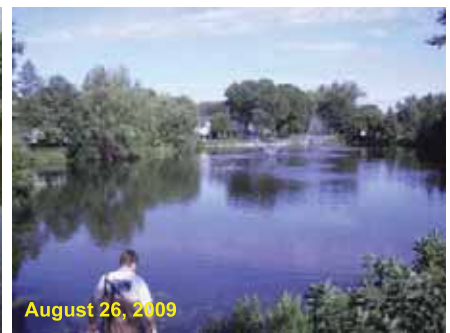
	% Surface Coverage	Dominant Plants	Treatment Notes
June	0%	curlyleaf (80%), stringy pw (5%)	--
July	10% FA	curlyleaf stringy pw (40%)	--
August	0%	curlyleaf, stringy pw	--

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Aqua-Kleen						unknown	
Avast (oz.)							
Copper sulfate (lbs.)	7			18	unknown		
Cutrine plus (oz.)	56	58	115				
Hydrothol/Aquathol (gallons)							
Reward (gallons)	0.56		1.8	1.8			
Rodeo (oz)							
Sonar					unknown		
Weedtrine D (gallons)							
WhiteCap							

# Hyland Court Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

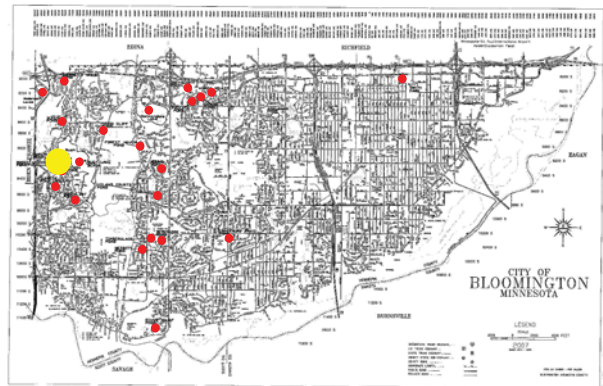
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	79	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	151	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	5	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	2	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	2	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	150	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	150	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	0	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	--	calculated
Pond treatment in 2009:	No treatment	
Proposed future management:	Pond meets TP goal. No treatments are recommended.	



**Pond Conditions for June, July, and August, 2009**

# 10. Marce Woods N. Pond, Bloomington, MN

Area: 0.85 ac  
 Depth (average): 1.5 ft  
 Depth (maximum): 3.5 ft  
 Watershed Area: 26 ac  
     Direct watershed area: 4 ac  
     Indirect watershed area: 22 ac  
 Watershed to Pond Ratio: 31



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	913	0.2	310
July	1710	0.2	290
August	155	1.5-Bottom	90
Average	926	0.63+	230

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	100% DW	no plants	Sonar/ Galleon on 5/13 and 6/29
July	100% DW	no plants	
August	90% DW	no plants	

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)				8.0			
Copper sulfate (lbs.)					unknown		
Cutrine plus (oz.)							
Galleon (gallons)							unknown
Hydrothol/Aquathol (gallons)							
Reward (gallons)					unknown	unknown	
Rodeo (oz)							
Sonar (gallons)					unknown		unknown
Weedtrine D (gallons)				4.75			
WhiteCap							

# Marce Woods N. Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	926	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	222	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	5	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	36	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	3	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	242	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	2645	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	33	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	1.27	calculated
Pond treatment in 2009:	Sonar and Galleon	
Proposed future management:	Exceptionally high phosphorus was recorded in 2009. Recommend use of barley straw and skimming to control duckweed and watermeal. Also a fish survey would give insight to potential source of pond TP.	

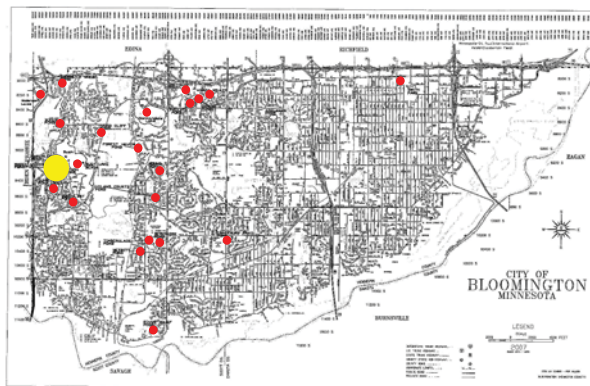


**Pond Conditions for June, July, and August, 2009**



# 11. Marce Woods S. Pond, Bloomington, MN

Area: 1.12 ac  
 Depth (average): 2 ft  
 Depth (maximum): 6 ft  
 Watershed Area: 33 ac  
     Direct watershed area: 7 ac  
     Indirect watershed area: 26 ac  
 Watershed to Pond Ratio: 30



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	528	2-Bottom	490
July	691	0.5	420
August	267	2.5-Bottom	130
Average	495	1.8+	346

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	100% WM	no plants	Sonar on 5/13/09 Galleon on 6/29
July	100% WM	no plants	
August	90% WM	no plants	

## Algacide and Herbicide Treatment History

Algacide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)				6.4			
Copper sulfate (lbs.)				6.4	unknown		
Cutrine plus (oz.)							
Galleon (gallons)							0.12
Hydrothol/Aquathol (gallons)							
Reward (gallons)					unknown	unknown	
Rodeo (oz)							
Sonar (gallons)					unknown		0.2
Weedtrine D (gallons)				7.9			
WhiteCap							

# Marce Woods S. Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

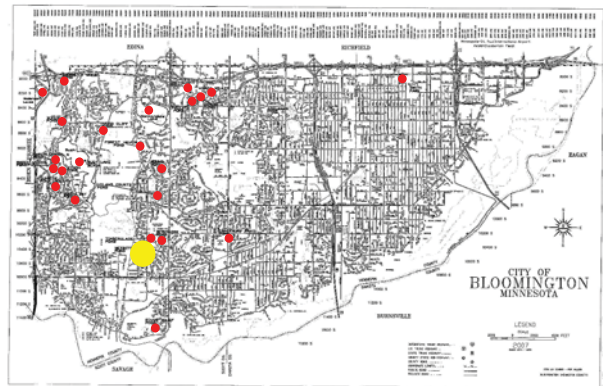
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	445	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	205	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	7	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	22	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	5	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	265	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	1274	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	17	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.52	calculated
Pond treatment in 2009:	Sonar and Galleon	
Proposed future management:	High TP was observed in 2009. Recommend trying Sonar and Galleon again in 2010. Marce Woods - S is similar to Marce Woods - N. Conduct a fish survey here to compare to Marce Woods - N to determine if fish population is similar or different.	



**Pond Conditions for June, July, and August, 2009**

# 13. Nesbitt Pond, Bloomington, MN

Area: 1.13 ac  
 Depth (average): 3.5 ft  
 Depth (maximum): 5.5 ft  
 Watershed Area: 42 ac  
     Direct watershed area: 6 ac  
     Indirect watershed area: 36 ac  
 Watershed to Pond Ratio: 37



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	306	3.9	190
July	235	3-Bottom	210
August	116	3.5-Bottom	85
Average	219	3.47+	162

## Aquatic Plants and Treatment - 2009

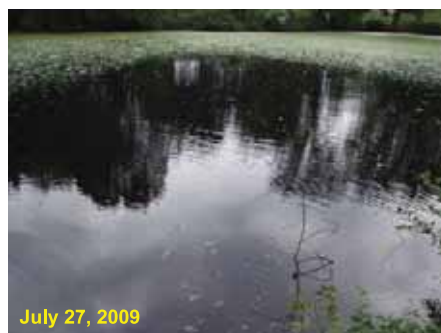
	% Surface Coverage	Dominant Plants	Treatment Notes
June	100% DW	no plants	Barley Straw
July	70% DW	no plants	skim
August	100% DW	no plants	skim

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)			24	24			
Copper sulfate (lbs.)				10	unknown		
Cutrine plus (oz.)			78	78			
Hydrothol/Aquathol (gallons)	6		3				
Reward (gallons)				1			
Rodeo (oz)							
Sonar					unknown		
Weedtrine D (gallons)				0.5			
Barley							June
Skim							2 skims

# Nesbitt Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

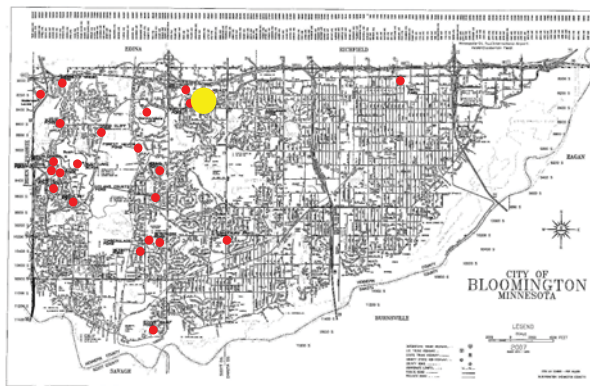
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	219	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	187	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	9	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	11	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	7	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	290	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	480	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	4	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.1	calculated
Pond treatment in 2009:	Barley straw and duckweed skims	
Proposed future management:	TP concentration decreased over the summer and maybe barley straw was a factor in reducing TP concentrations. Conduct barley straw installation and skimming to attempt to reduce TP to 150 ppb. Conduct a fish survey to characterize the fish community.	



**Pond Conditions for June, July, and August, 2009**

# 14. Oxmore Pond, Bloomington, MN

Area: 2.29 ac  
 Depth (average): 3.0 ft  
 Depth (maximum): 6.2 ft  
 Watershed Area: 10 ac  
     Direct watershed area: 10 ac  
     Indirect watershed area: 0 ac  
 Watershed to Pond Ratio: 4.4



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	26	--	600
July	47	3-Bottom	800
August	78	2.7	650
Average	50	2.85+	683

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	5% FA	--	Copper sulfate 5/29/09
July	0%	chara, stringy, sago, benthic FA	
August	0%	stringy pw, crayfish kill	

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)	10	40		40	unknown	unknown	7
Cutrine plus (oz.)		150					
Hydrothol/Aquathol (gallons)			4		unknown	unknown	
Komeen							
Reward (gallons)	1.2	1.5		1			
Rodeo (oz)							
Sonar							
Weedtrine D (gallons)							
WhiteCap							

# Oxmore Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

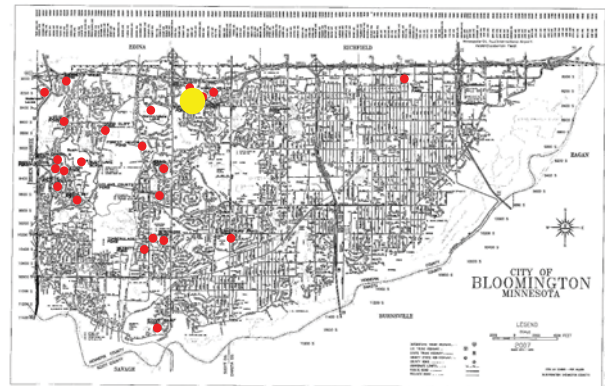
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	50	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	99	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	2	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	1	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	4	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	800	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	110	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	ok	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	--	calculated
Pond treatment in 2009:	copper sulfate	
Proposed future management:	No treatment is proposed. Pond TP concentrations are low and submersed plants are present. However, because Oxmore Pond is not linked into the Citie's stormwater pond network, a fish survey is recommended to determine if fish can overwinter in a pond without connections to other ponds.	



**Pond Conditions for June, July, and August, 2009**

# 15. Pauly's Pond, Bloomington, MN

Area: 7.66 ac  
 Depth (average): 4.24 ft  
 Depth (maximum): 6.75 ft  
 Watershed Area: 96 ac  
     Direct watershed area: 13 ac  
     Indirect watershed area: 83 ac  
 Watershed to Pond Ratio: 13



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	96	--	650
July	dry	0.5-Bottom est.	dry
August	54	4.3	210
Average	75	2.4+	430

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	40% WL	--	Copper Sulfate on 5/21/09
July	40% WL	coontail, stringy pw	
August	25% WL	terrestrial plants	Habitat on 8/11

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)				35			unknown
Cutrine plus (oz.)							
Habitat							unknown
Hydrothol/Aquathol (gallons)					unknown		
Reward (gallons)	2	3	2.4	3.5			
Rodeo (oz)		4	2	1			
Sonar							
Weedtrine D (gallons)			1	0.5			
WhiteCap							

# Paulys Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	75	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	125	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	21	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	10	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	27	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	515	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	180	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	ok	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	--	calculated
Pond treatment in 2009:	Copper Sulfate and Habitat	
Proposed future management:	Pond meets TP goals. Copper sulfate was applied in 2009 and is proposed to be used again in 2010 for filamentous algae control.	

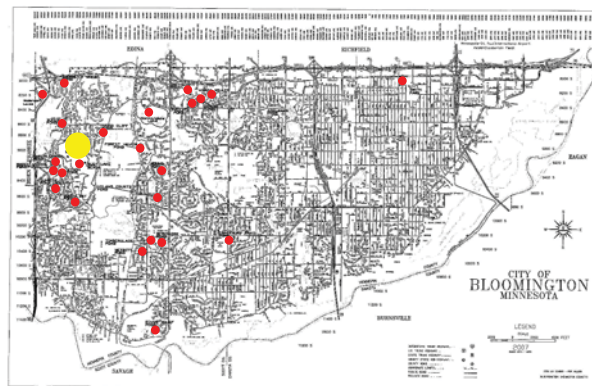


**Pond Conditions for June, July, and August, 2009**



# 16. Pickfair Pond, Bloomington, MN

Area: 0.69 ac  
 Depth (average): 2.5 ft  
 Depth (maximum): 5.5 ft  
 Watershed Area: 85 ac  
     Direct watershed area: 6 ac  
     Indirect watershed area: 79 ac  
 Watershed to Pond Ratio: 123



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	451	1.8-Bottom	710
July	184	0.5	550
August	254	4.5	200
Average	296	2.25+	487

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	20% WM 80% DW	no plants	5/29- sonar and galleon
July	100% DW	no plants	7/15 and 7/30 Sonar
August	100% DW	no plants	

## Algacide and Herbicide Treatment History

Algacide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)	8	8	8	10			
Copper sulfate (lbs.)				10	unknown	unknown	
Cutrine plus (oz.)	45						
Galleon (gallons)							0.0313
Hydrothol/Aquathol (gallons)							
Reward (gallons)						unknown	
Rodeo (oz)							
Sonar					unknown		0.1479
Weedtrine D (gallons)				3.5			
WhiteCap							

# Pickfair Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

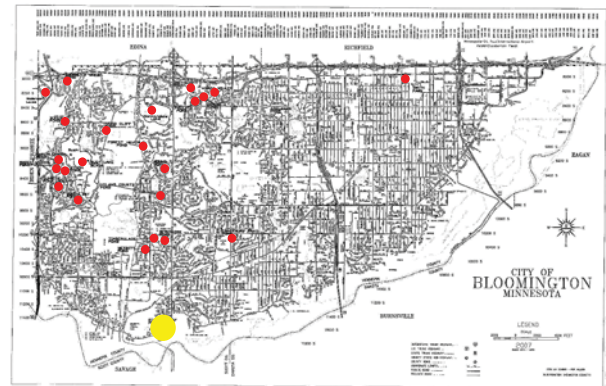
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	296	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	265	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	18	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	20	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	9	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	202	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	446	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	11	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.13	calculated
Pond treatment in 2009:	Sonar and Galleon	
Proposed future management:	Barley straw and skimming is proposed for 2010. Sonar was used in 2009, but duckweed was common. Also submerged plants were absent. Without herbicides in 2010, maybe aquatic plants will come back.	



**Pond Conditions for June, July, and August, 2009**

# 17. River Bluff Pond, Bloomington, MN

Area: 0.69 ac  
 Depth (average): 3.0 ft  
 Depth (maximum): 5.5 ft  
 Watershed Area: 12 ac  
     Direct watershed area: 5.0 ac  
     Indirect watershed area: 7.0 ac  
 Watershed to Pond Ratio: 17



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	315	0.8	300
July	259	1.0	320
August	294	0.4	250
Average	289	0.73	290

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	0%	sago pw 5-10%	--
July	0%	water stargrass	--
August	0%	stringy PW	--

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)		7.5		7.5		unknown	
Cutrine plus (oz.)		60					
Hydrothol/Aquathol (gallons)							
Komeen							
Reward (gallons)			0.75				
Rodeo (oz)							
Sonar							
Weedtrine D (gallons)							
WhiteCap							

# River Bluff Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

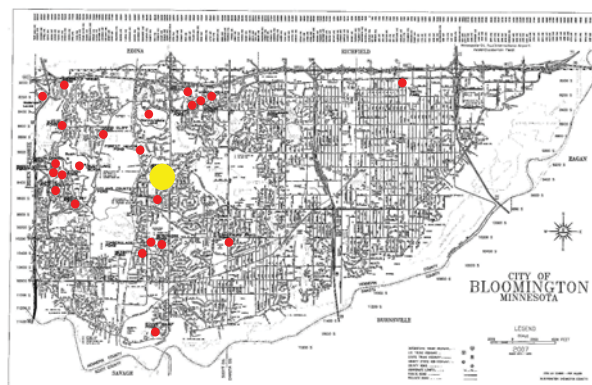
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	289	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	157	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	3	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	6	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	2	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	595	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	945	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	5	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.33	calculated
Pond treatment in 2009:	No treatment	
Proposed future management:	No treatment is proposed for 2010. Aquatic plants are present although TP was elevated in 2009. Estimated runoff TP of 945 ppb is high. If conditions do not improve in 2010, future pond treatments may be considered.	



**Pond Conditions for June, July, and August, 2009**

# 18. Round Pond, Bloomington, MN

Area: 2.49 ac  
 Depth (average): 4.49 ft  
 Depth (maximum): 5.83 ft  
 Watershed Area: 26 ac  
     Direct watershed area: 9 ac  
     Indirect watershed area: 17 ac  
 Watershed to Pond Ratio: 10



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	211	4	310
July	162	3-Bottom	280
August	223	4.5	230
Average	199	3.83+	273

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	60% WM	no plants	Barley Straw
July	15% WM	no plants	skim with nets
August	25% total (95% WM 5% DW)	no plants	skim with nets

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)	30	20					
Citrine plus (gallons)	1.2	1.2		2.2			
Hydrothol/Aquathol (gallons)	2						
Reward (gallons)	0.1	2.8	2.0	4	unknown	unknown	
Rodeo (oz)							
Sonar					unknown		
Weedtrine D (gallons)				10.5			
WhiteCap						unknown	
Barley							June
Skim							Two

# Round Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

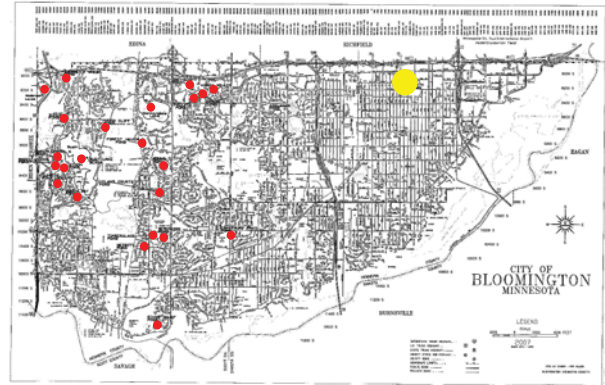
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	199	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	115	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	6	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	16	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	8	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	595	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	940	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	5	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.19	calculated
Pond treatment in 2009:	Barley straw and pond surface skim	
Proposed future management:	Barley straw skimming is proposed for 2010. Pond TP was slightly elevated in 2009, but barley and skimming may be lowering pond TP. The estimated runoff pond TP of 940 ppb was higher than what was monitored by the City in 2009 of 390 ppb. There may be internal phosphorus loading and a fish survey is recommended to assess the fish population.	



**Pond Conditions for June, July, and August, 2009**

# 19. Smith Park Pond, Bloomington, MN

Area: 7.06 ac  
 Depth (average): 4.0 ft  
 Depth (maximum): 8.0 ft  
 Watershed Area: 444 ac  
     Direct watershed area: 31 ac  
     Indirect watershed area: 413 ac  
 Watershed to Pond Ratio: 63



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	34	5.7	430
July	50	5.1	385
August	51	3.4	120
Average	45	4.1	312

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	20% FA	coontail, elodea, stringy PW	
July	20% FA	elodea, coontail out to 6 ft	
August	5% FA	coontail, elodea	copper sulfate on 8/11/09

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)				35			15
Cutrine plus (oz.)							
Hydrothol/Aquathol (gallons)					unknown		
Komeen							
Reward (gallons)	3	3	2.4	3.5			
Rodeo (oz)		4	2	1			
Sonar							
Weedtrine D (gallons)			0.1	0.05			
WhiteCap							

# Smith Park Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb)	45	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	208	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	92	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	15	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	61	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	59	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	258	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	ok	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	--	calculated
Pond treatment in 2009:	copper sulfate	
Proposed future management:	Use of copper sulfate helps control filamentous algae and is recommended for 2010. MnDNR fish records should be checked to characterize the type of fish community in Smith Park Pond.	

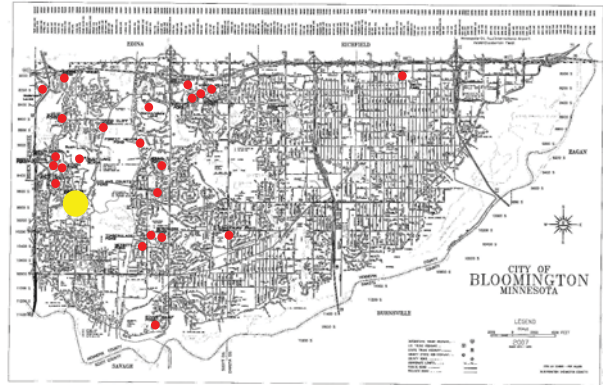


**Pond Conditions for June, July, and August, 2009**



## 20. South Bay Pond, Bloomington, MN

Area: 2.33 ac  
 Depth (average): 2.5 ft  
 Depth (maximum): 9.0 ft  
 Watershed Area: 16 ac  
     Direct watershed area: 16 ac  
     Indirect watershed area: 0 ac  
 Watershed to Pond Ratio: 6.7



Pond location (yellow dot).

### Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	56	2-Bottom	430
July	145	1	385
August	183	1.1	319
Average	128	1.35+	378

### Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	2% DW	sago (95%), curlyleaf (5%)	
July	5% DW	curlyleaf, sago, stringy	7/15/19- Sonar 0.25 gallons
August	0%	chara, coontail, stringy PW, arrowhead	

### Algacide and Herbicide Treatment History

Algacide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Aqua-Kleen						unknown	
Avast (oz.)			24				
Copper sulfate (lbs.)	15	30		25	unknown		
Cutrine plus (gallons)	0.9						
Hydrothol/Aquathol (gallons)							
Reward (gallons)	1.12	1.12		2.5			
Rodeo (oz)							
Sonar (gallons)					unknown		0.25
Weedtrine D (gallons)							
WhiteCap							

# South Bay Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

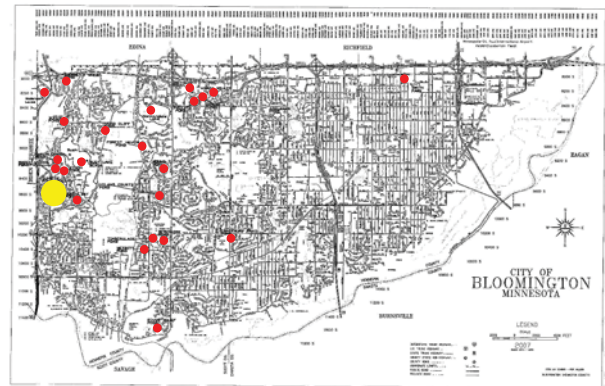
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	128	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	124	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	4	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	4	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	5	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	531	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	410	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	ok	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	--	calculated
Pond treatment in 2009:	Sonar	
Proposed future management:	Pond is meeting TP goals. No treatment is recommended.	



**Pond Conditions for June, July, and August, 2009**

# 21. Sunrise, S Pond, Bloomington, MN

Area: 2.0 ac  
 Depth (average): 1.0 ft  
 Depth (maximum): 2.0 ft  
 Watershed Area: 13 ac  
     Direct watershed area: 9 ac  
     Indirect watershed area: 4 ac  
 Watershed to Pond Ratio: 6.5



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	292	1.5-Bottom	370
July	312	1.5-Bottom	280
August	241	1.2	110
Average	282	1.4+	253

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	5% DW	nitella	5/13 and 6/29 Sonar used
July	50% WM	coontail -trace	
August	10% WM	watermeal and chara	

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)	16		9.6	36			
Copper sulfate (lbs.)				30	unknown	unknown	
Cutrine plus (oz.)							
Hydrothol/Aquathol (gallons)							
Komeen							
Reward (gallons)			1.5				
Rodeo (oz)							
Sonar					unknown		0.25
Weedtrine D (gallons)			0.75				
WhiteCap							

# Sunrise Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

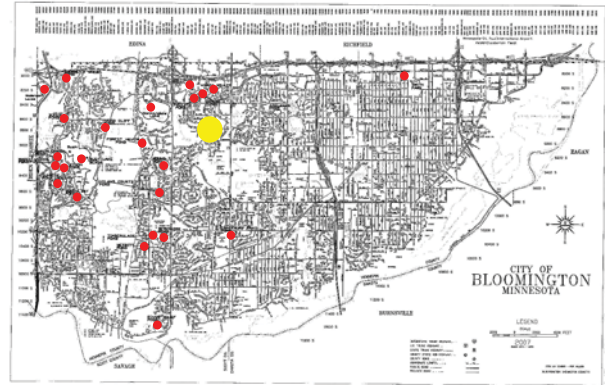
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	282	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	168	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	3	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	6	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	2	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	330	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	846	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	4	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.31	calculated
Pond treatment in 2009:	Sonar	
Proposed future management:	Proposed treatments in 2010 are barley straw and skimming. This is a shallow pond and is a good candidate for barley straw amendments.	



**Pond Conditions for June, July, and August, 2009**

## 22. Skriebakkan Pond, Bloomington, MN

Area: 20.08 ac  
 Depth (average): 3.5 ft  
 Depth (maximum): 8.0 ft  
 Watershed Area: 319 ac  
     Direct watershed area: 49 ac  
     Indirect watershed area: 270 ac  
 Watershed to Pond Ratio: 16



Pond location (yellow dot).

### Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	97	3.0-Bottom	350
July	79	2.5-Bottom	320
August	108	4.5	250
Average	95	3.33+	307

### Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	65% WL 2% DW	coontail, elodea, narrowleaf, stringy	--
July	65% WL DW Trace	coontail (70%), flatstem	--
August	50% WL	coontail, elodea, stringy PW	--

### Algacide and Herbicide Treatment History

Algacide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)							
Cutrine plus (oz.)							
Hydrothol/Aquathol (gallons)							
Komeen							
Reward (gallons)							
Rodeo (oz)							
Sonar							
Weedtrine D (gallons)							
WhiteCap							

# Skriebakkan Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

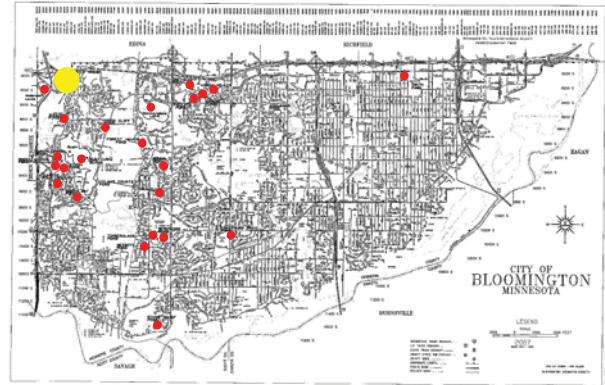
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	95	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	145	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	68	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	38	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	71	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	410	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	210	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	ok	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	--	calculated
Pond treatment in 2009:	No treatment	
Proposed future management:	No treatments are proposed. Pond has low phosphorus and submerged and floatingleaf plants and is meeting pond TP goals.	



**Pond Conditions for June, July, and August, 2009**

## 23. Tierney's Woods NW, Bloomington, MN

Area: 0.28 ac  
 Depth (average): 3.0 ft  
 Depth (maximum): 4.2 ft  
 Watershed Area: 6.0 ac  
     Direct watershed area: 3 ac  
     Indirect watershed area: 3 ac  
 Watershed to Pond Ratio: 21



Pond location (yellow dot).

### Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	253	1.5-Bottom	600
July	396	0.5	510
August	208	0.9	180
Average	287	0.96+	430

### Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	0%	--	5/29- Sonar and Galleon
July	0%	no plants	
August	0%	--	

### Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)	5.0	10	10		unknown		
Cutrine plus (gallons)		0.6	0.35	0.030			
Galleon (gallons)							0.0313
Hydrothol/Aquathol (gallons)							
Reward (gallons)	0.25						
Rodeo (oz)							
Sonar (gallons)							0.0156
Weedtrine D (gallons)							
WhiteCap							

# Tierney's Woods NW Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	286	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	167	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	1	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	3	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	1	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	335	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	835	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	2	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.33	calculated
Pond treatment in 2009:	Sonar and Galleon	
Proposed future management:	Barley straw is recommended to reduce pond TP. Pond TP is not meeting the 150 ppb TP goal. Also a fish survey is recommended to assess the fish community.	

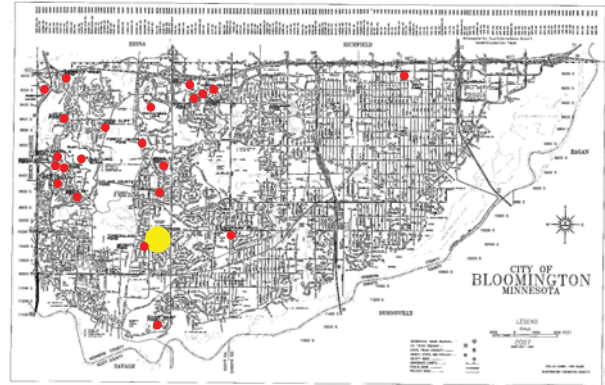


**Pond Conditions for June, July, and August, 2009**



# 24. Timberglade Pond, Bloomington, MN

Area: 3.04 ac  
 Depth (average): 1.5 ft  
 Depth (maximum): 3.5ft  
 Watershed Area: 93 ac  
     Direct watershed area: 49 ac  
     Indirect watershed area: 44 ac  
 Watershed to Pond Ratio: 30



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	317	3.5-Bottom	220
July	381	1.5	190
August	399	2.5	130
Average	367	2.5+	180

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	10% DW	elodea, flatstem, niad	6.29-Sonar
July	50% DW	coontail (dying), elodea, flatstem	
August	95% DW	no plants	

## Algacide and Herbicide Treatment History

Algacide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)						unknown	
Cutrine plus (oz.)							
Hydrothol/Aquathol (gallons)							
Komeen							
Reward (gallons)					unknown	unknown	
Rodeo (oz)					unknown		
Sonar							0.2
Weedtrine D (gallons)							
WhiteCap							

# Timberglade Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

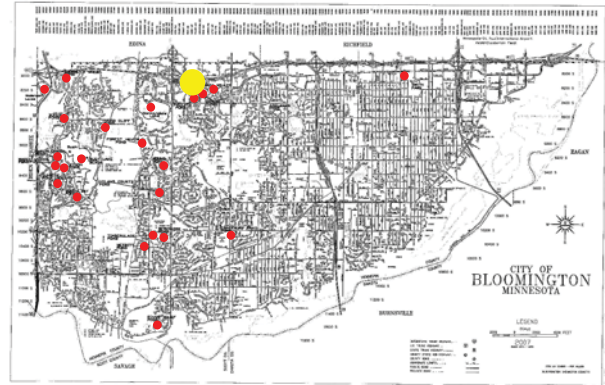
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	366	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	222	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	19	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	37	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	12	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	238	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	750	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	25	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.27	calculated
Pond treatment in 2009:	Sonar	
Proposed future management:	A barley straw amendment is proposed. This is a fairly large pond and skimming for duckweed control would be expensive. Instead, a high dose of barley straw is recommended to reduce pond TP. Aquatic plants may help keep phosphorus levels down in the future as well. Plants were present at the beginning of the summer and were absent at the end. Phosphorus also increased over the summer.	



**Pond Conditions for June, July, and August, 2009**

# 25. Victoria Pond, Bloomington, MN

Area: 2.32ac  
 Depth (average): 3.0 ft  
 Depth (maximum): 4.5 ft  
 Watershed Area: 68 ac  
     Direct watershed area: 16 ac  
     Indirect watershed area: 52 ac  
 Watershed to Pond Ratio: 29



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	42	3.0	450
July	57	2.0-Bottom	315
August	70	2.0-Bottom	100
Average	56	2.3+	288

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	2% FA 5% WL	none- trace of benthic algae	--
July	2% WL 4% FA	cabbage, coontail, elodea	--
August	5% WL 4% FA	cabbage, coontail, floating leaf, naids, elodea	--

## Algacide and Herbicide Treatment History

Algacide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)							
Copper sulfate (lbs.)				20		unknown	
Cutrine plus (oz.)				1.6			
Hydrothol/Aquathol (gallons)							
Komeen							
Reward (gallons)							
Rodeo (oz)				12			
Sonar							
Weedtrine D (oz.)				6.0			
WhiteCap							

# Victoria Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

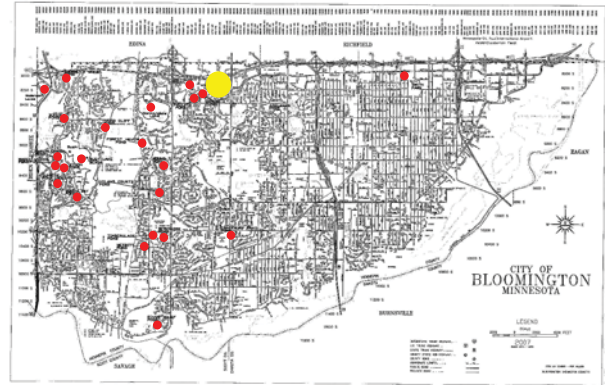
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb)	56	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	183	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	14	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	3	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	11	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	297	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	82	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	ok	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0	calculated
Pond treatment in 2009:	no treatment	
Proposed future management:	No treatment proposed for 2010. Pond TP is meeting goals and submerged aquatic plants should help to maintain a low pond TP.	



**Pond Conditions for June, July, and August, 2009**

## 26. Wanda Miller, Bloomington, MN

Area: 14 ac  
 Depth (average): 3.0 ft  
 Depth (maximum): 5.0 ft  
 Watershed Area: 166 ac  
     Direct watershed area: 50 ac  
     Indirect watershed area: 116 ac  
 Watershed to Pond Ratio: 14



Pond location (yellow dot).

### Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	75	3.0-Bottom	450
July	64	2.0-Bottom	315
August	81	4.5	100
Average	73	3.17+	288

### Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	25% WL	bladderwort, cabbage, coontail	
July	60% WL	coontail, floating leaf PW	
August	60% WL	cabbage, coontail, elodea	8/11- treated with habitat

### Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Aqua-Kleen					unknown	unknown	
Avast (oz.)							
Copper sulfate (lbs.)	5.0	50	50	10			
Citrine plus (gallons)	2.5						
Habitat (gallons)							0.3125
Hydrothol/Aquathol (gallons)							
Reward (gallons)	5.25	5.6	3.75	5.0	unknown	unknown	
Rodeo (oz)		7.7	12	32			
Sonar							
Weedtrine D (oz.)			6.0	16			

# Wanda Miller Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

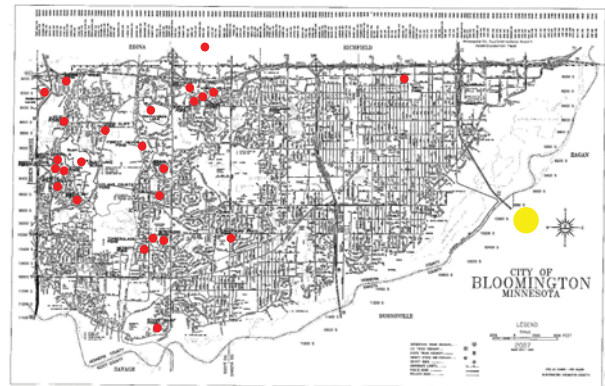
Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb)	73	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	139	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	36	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	15	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	40	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	438	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	150	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	ok	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	--	calculated
Pond treatment in 2009:	Habitat	
Proposed future management:	No treatment is proposed. Pond TP is low and abundant plants are present. A fish survey is proposed to assess the fish population. It is predicted the fish population will be low.	



**Pond Conditions for June, July, and August, 2009**

## 27. Wood Cliff Pond, Bloomington, MN

Area: 0.89 ac  
 Depth (average): 1.0 ft  
 Depth (maximum): 1.8 ft  
 Watershed Area: 21 ac  
     Direct watershed area: 21 ac  
     Indirect watershed area: 0 ac  
 Watershed to Pond Ratio: 24



Pond location (yellow dot).

### Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	357	1.5-Bottom	330
July	no sample	--	--
August	288	1.0-Bottom	120
Average	322	1.25+	225

### Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	0%	narrow leaf PW (50%)	--
July	100% FA	-- nearly dry	--
August	20% FA	narrow leaf (50%)	--

### Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)			8				
Copper sulfate (lbs.)				8	unknown	unknown	
Cutrine plus (oz.)							
Hydrothol/Aquathol (gallons)							
Komeen							
Reward (gallons)							
Rodeo (oz)			12	16			
Sonar					unknown		
Weedtrine D (oz.)			6	3.5			
WhiteCap							

# Wood Cliff Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb:)	322	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	231	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	4	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	7	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	3	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	228	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	598	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	4	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.15	calculated
Pond treatment in 2009:	No treatment	
Proposed future management:	No treatment is proposed for 2010. Wood Cliff pond was nearly dry for part of the summer. Plants were present when there was water in this shallow pond.	

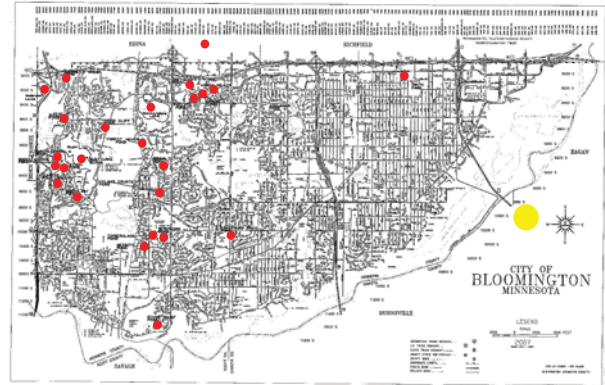


**Pond Conditions for June, July, and August, 2009**



# 28. Xylon Pond, Bloomington, MN

Area: 0.43 ac  
 Depth (average): 1.2 ft  
 Depth (maximum): 3.0 ft  
 Watershed Area: 2 ac  
     Direct watershed area: 2 ac  
     Indirect watershed area: 0 ac  
 Watershed to Pond Ratio: 4.7



Pond location (yellow dot).

## Water Quality - 2009

	Total Phosphorus (ppb)	Secchi Disc (ft)	Conductivity (umhos)
June	nd	--	nd
July	541	0.5-Bottom	330
August	281	--	120
Average	412	0.5+	225

## Aquatic Plants and Treatment - 2009

	% Surface Coverage	Dominant Plants	Treatment Notes
June	nd		5/29- Sonar and Galleon added
July	30% FA and DW	no plants blue dye	
August	0%		8/11- sonar added

## Algicide and Herbicide Treatment History

Algicide/Herbicide	2003	2004	2005	2006	2007	2008	2009
Avast (oz.)				8.0			
Copper sulfate (lbs.)				10		unknown	
Cutrine plus (oz.)					unknown		
Hydrothol/Aquathol (gallons)							
Komeen (gallons)			4.5				
Reward (gallons)					unknown		
Rodeo (oz)					unknown		
Sonar					unknown		
Weedtrine D (gallons)				3.5			
WhiteCap						unknown	

# Xylon Pond Phosphorus Conditions, Nutrient Loading, and Management Ideas

Parameter	Value	Technique Used to Get the Value
Actual pond TP (June, July, August)(ppb)	412	monitored
Goal for Pond TP conc (ppb):	150	ecoregion value
Predicted pond TP based on typical urban runoff of 390 ppb TP: (ppb)	143	modeled
Estimated TP load based on typical urban runoff TP of a concentration of 390 ppb: (kg/yr)	0	modeled
Estimated TP load based on actual pond TP for 2009: (kg/yr)(back calculated from pond TP to determine TP load)	2	modeled
Estimated TP load needed to meet Pond TP goal of 150 ppb: (kg/yr)	0.4	modeled
Estimated runoff TP conc needed to meet Pond TP goal of 150 ppb: (ppb)	420	modeled
Estimated runoff TP conc into pond for 2009: (ppb)	2090	modeled
Reduction of TP in kg/yr needed to meet pond TP goal: (kg/yr)	0.8	calculated
Reduction of TP in kg per watershed ac needed to meet pond TP goal:	0.8	calculated
Pond treatment in 2009:	Sonar, galleon	
Proposed future management:	No treatment is proposed for 2010. No stormwater sewer connection, so there is direct runoff. Herbicide treatments may contribute to a high pond TP by killing plants and algae resulting in TP release.	



**Pond Conditions for July, and August, 2009**