



6.0 IMPLEMENTATION PROGRAM

This section presents the implementation for the Plan. The implementation program described consists of administrative efforts, LWP development and implementation, studies and projects, and capital improvements. Each element is described below. An implementation schedule and budget is presented in Table 6-1. It is expected that the first year of plan implementation (i.e., 2007) will continue existing WCA and monitoring programs, focus on starting the new programs, piloting education efforts, and completing the data assessment and modeling work. The second year will continue the new programs, start the Sustainable Lakes planning program, and focus on coordinating and reviewing LWPs. Starting in the third year efforts will shift to special studies, financial incentives and projects. The estimated impacts of the implementation program on residents and local government are presented at the end of the section.

6.1 ADMINISTRATIVE EFFORTS

The VLAWMO retains two full-time employees: an administrator and a water resources technician. The VLAWMO also hires a summer intern. These employees take care of the day-to-day operation of the VLAWMO as well as implementation of the other program elements. Administrative efforts shown in Table 6-1 also include legal, audit, and bookkeeping services as well as office space, office equipment, office rent, information systems, training, and general engineering.

6.2 LWP DEVELOPMENT AND IMPLEMENTATION

As described in Section 5.6, LWPAs are required to complete and implement a LWP. The VLAWMO intends that this program be the primary mechanism for implementing local standards. LWP content must meet the requirements of M.S. 103B.235 and Minnesota Rules 8410. However, the VLAWMO is not that concerned about the watershed inventory portions of the State statutes and rules. The VLAWMO would rather see the LWPAs incorporate the local standards, update official controls, and focus on watershed based solutions. This Plan is the third generation plan for VLAWMO and the LWPAs have each initiated, or have received approval of, at least one LWP such that local water resources inventories are reasonably complete. The LWPAs also have local ordinances covering storm water and erosion control to some degree, and where applicable, LWPAs have MnDNR approved shoreland and floodplain ordinances. Wellhead Protection Plans for community supply wells in the watershed are also either complete or underway.

**Table 6-1
Implementation Program - Vadnais Lake Area Water Management Organization**

Item Description	Policy/ Strategies Addressed	Potensial Funding Sources	Year									
			2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EXPENSES												
6.1 Administrative/Managerial*												
Day-to-day operation of VLAWMO* Staff*	All	M, L, SU	\$52,100	\$55,540	\$56,929	\$58,352	\$59,811	\$61,306	\$62,838	\$64,409	\$66,020	\$67,670
Training*	All	M, L, SU	\$128,500	\$137,160	\$140,589	\$144,104	\$147,706	\$151,399	\$155,184	\$159,064	\$163,040	\$167,116
Contingency*	All	M, L, SU	\$1,400	\$1,500	\$1,538	\$1,576	\$1,615	\$1,656	\$1,697	\$1,740	\$1,783	\$1,828
	All	M, L, SU	\$10,000	\$8,500	\$8,713	\$8,930	\$9,154	\$9,382	\$9,617	\$9,857	\$10,104	\$10,356
6.2 Local Plan Development and Implementation**												
Technical Assistance	P1.1/S1.A and 1.B; P1.2/S1.C and 1.D; P 2.1/S2.A; P2.2/S2.G; P4.2/S4.B;	M, L, SU	\$5,000	\$15,000								
6.3 Studies and Programs												
6.3.1 Lower Lambert Creek Flood Reduction Study	P1.4/S1.H	M, L, SU,SA, G					\$15,000					
6.3.2 County Rd E and Hwy 61 Stormwater Study	P1.2/S1.D	M, L, SU,SA, G			\$15,000							
6.3.3 Development of Sustainable Lake Plans	P2.2/S2.C	M, L, SU, G	\$7,500	\$7,500	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	
6.3.4 Financial Incentives and Cost Sharing**	P2.2/S2.D; P4.2; P5.1; P7.4	M, L, SU	\$5,000	\$5,000	\$7,500	\$25,000	\$10,000	\$40,000	\$40,000	\$50,000	\$50,000	\$35,000
6.3.5 Public Education and Information	P6.1; P6.2/S6.B; P6.3/S6.C; P6.4/S6.D	M, L, SU	\$4,000	\$12,000	\$12,300	\$12,608	\$12,923	\$13,246	\$13,577	\$18,916	\$19,389	\$19,874
6.3.6 Facilities Operations	P2.2/S2.E	M, L, SU	\$10,000	\$10,300	\$10,609	\$10,927	\$11,255	\$11,593	\$11,941	\$12,299	\$12,668	\$13,048
6.3.8 Data Analysis and Monitoring*, ***	P7.3; P9.1/S9.A and S9.B; P9.2/S9.C and S9.D	M, L, SU	\$40,500	\$12,500	\$7,813	\$8,008	\$23,208	\$8,413	\$8,624	\$8,839	\$9,060	\$29,287
6.3.9 WCA and	P4.1/S4.A	M, L, SU, R	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OPERATIONS BUDGET TOTAL			\$264,000	\$265,000	\$275,989	\$284,504	\$305,672	\$311,995	\$318,477	\$340,124	\$332,064	\$344,179
6.4 Capital Improvements												
Lambert Lake Restoration *****		G	\$40,305									
Lambert Creek Stream Restoration and Stabilization		G	\$50,000		\$15,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Whitaker Pond dredging *****		G	\$0	\$50,000								
Lambert Creek Monitoring improvemtns & Flume Aluminum/ Ferric Chemical Feed - Grass Lake outlet to Lambert Pond		G	\$76,000		\$5,000							
Goose Lake Restoration - Sediment Evaluation / Rough Fish Management *****		CIP-L, G	\$0			\$0	\$18,000					
Branch 4 - N.E. Quadrant of Vadnais Heights City Center Storm water quality pond / PW site Stormpond		CIP-L, G, M	\$0	\$50,000	\$50,000	\$25,000						
Tamarack Lake Restoration Watershed Renewal fund: SLMP/Pilot Implementation		CIP-L, G	\$0			\$30,000						
Other - det. by Plan amendment		CIP-L, G	\$0	\$15,000	\$50,000	\$50,000	\$51,250	\$52,531	\$53,845	\$55,191	\$56,570	\$57,985
Total CAPITAL IMPROVEMENTS Expenses			\$166,305	\$115,000	\$120,000	\$115,000	\$94,250	\$62,531	\$63,845	\$65,191	\$66,570	\$67,985
Operations and CIP Budgets TOTAL			\$430,305	\$380,000	\$395,989	\$399,504	\$399,922	\$374,526	\$382,322	\$405,315	\$398,634	\$412,163
INCOME												
Review fees and BWSR implementation grant (WCA)*			\$5,500	\$5,500	\$5,638	\$5,778	\$5,923	\$6,071	\$6,223	\$6,378	\$6,538	\$6,701
Interest*			\$500	\$1,000	\$1,025	\$1,051	\$1,077	\$1,104	\$1,131	\$1,160	\$1,189	\$1,218
Miscellaneous *****			\$196,305									
CIP- income				\$0	\$0	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Member Contributions			\$228,000	\$373,500	\$389,327	\$377,675	\$377,922	\$352,351	\$359,968	\$382,777	\$375,908	\$389,244
Total Income			\$430,305	\$380,000	\$395,989	\$399,504	\$399,922	\$374,526	\$382,322	\$405,315	\$398,634	\$412,163
Member contribution increase from previous year, \$			\$42,000	\$145,500	\$15,827	-\$11,651	\$247	-\$25,571	\$7,617	\$22,809	-\$6,869	\$13,336
Member contribution Increase from previous year, %			23%	64%	4%	-3%	0%	-7%	2%	6%	-2%	4%

M = member contributions, L = levy, SU = stormwater utility, CIP-L, SA = special assessment, G = Grants, R = Review Fees; CIP-L MN Statute 103B.251

* Assumed annual increase of 2.5% per year

** Reflects VLAWMO share, cost share to match from others would be additional

*** Includes \$30,000 carryover for data assessment and modeling

**** WCA Administration costs included in staff time under Administrative/Managerial

***** Carryover from Clean Water Partnership Grant \$166,305 for Lambert Lake restoration and other Lambert creek enhancements, and carryover of \$30,000 for modeling.

***** SLMP to start in 2007; one time reductions: Data analysis \$2000, Public Educ \$2000, Staff \$3500

Budgets presented are planning level and subject to annual approval in accordance with protocols specified in the Joint Powers Agreement.



Specific standards that LWPs should include are listed below and in Appendix D. For each strategy, the LWPs need to incorporate the standard(s) or describe the required process. The LWP also needs to describe how and when the official controls (i.e., ordinances and Public Works Design Manual) will be updated.

- Strategy 1.A: Floodplain and Shoreland Ordinances. (LWPs need to include a reference to these ordinances)
- Strategy 1.B: Low Floor Certification
- Strategy 1.C: Rate Control Standards
- Strategy 1.D: Landlocked Basin Standards
- Strategy 1.F: Regular Inspection and Maintenance
- Strategy 2.A: Storm Water Standards
- Strategy 2.G: Control Soil Loss on Small Construction Sites in Shoreland Areas
- Strategy 4.B: Implement Wetland Protection Standards

In addition to incorporation of these standards, it is expected that LWPs will incorporate SWPPPs completed for the MS4 NPDES General Permit, and if applicable, Wellhead Protection Plans. Of particular interest from the SWPPPs will be inspection and maintenance procedures for post construction BMPs. There is a perception that many storm water ponds have been built in the VLAWMO, but the number and their current status and condition are unknown. VLAWMO views this element of the SWPPPs as a means of addressing this perception and insuring maintenance. VLAWMO also expects a description of the inspection frequencies and procedures for construction erosion control. Additional specific content for individual LWPAs includes the following:

- For the cities of Vadnais Heights and White Bear Lake, and White Bear Township; a description of the process to be used to incorporate storm water quality practices into redevelopment projects to the extent practical.
- For the cities of Gem Lake, White Bear Lake and White Bear Township: a description of how runoff volume controls and disconnected storm water management will be used to prevent damage around Gem Lake, a landlocked lake. VLAWMO will be available to provide assistance for this effort.
- For the cities of Gem Lake, Lino Lakes and North Oaks: specifics regarding the management and maintenance of Individual Sewage Treatment Systems (ISTS systems).



For other cities, an estimate of the number of remaining ISTS Systems, their condition and approach to long-term management needs to be provided.

LWPs and official controls need to be completed according the schedule given in Section 5.6. After approval LWPAs are expected to implement their plans. The VLAWMO will have oversight responsibility to ensure implementation of LWPs. Oversight will include spot check of municipal projects and program audits. If the LWPAs are found to be non-implementing, the VLAWMO will work with the LWPA to correct, and will if problems persist, decide to develop rules and develop permitting programs to take on the Land Use Authorities granted by M.S. 103B to enforce standards in this Plan. However, the VLAWMO preferred position is to avoid unnecessary duplication of permitting programs.

6.3 STUDIES AND PROGRAMS

Studies and programs include:

- Lambert Creek Studies and Management:

Strategy 1.H; Policy 2.2, Strategies 2.D, 2.E, 2.F, and 2.H; Policy 7.3; Policy 7.5; Policy 9.1, Strategies 9.A, 9.B; Policy 9.2, Strategy 9.C.

- County Road E and Highway 61 Area Storm Water Study:

Strategy 1.J

- Development of SLMPs:

Strategy 2.C

- Financial Incentives and Cost Sharing Program:

Strategy 2.D, Policies 4.3 and 5.1

- Public Education and Information:

Policies: 6.1, 6.2, 6.3, 6.4, and Strategies 6.B, 6.C, and 6.D.

- Data Collection and Monitoring:

Policies 7.3, 9.1, and 9.2; Strategies 9.A, 9.B, and 9.C.

- Data Assessment and Modeling:

Policy 9.2; Strategy 9.D.



- WCA and Small Waters Appropriation Permitting:

Policy 4.1; Strategy 4.A.

Each program is briefly described below. Budgets, with expenses beyond staff time, are shown in Table 6-2. Budgets shown are preliminary and are reviewed and approved each year, according to procedures in the JPA (Appendix F).

6.3.1 LAMBERT CREEK STUDIES AND MANAGEMENT

These studies are designed to investigate issues along Lower Lambert Creek to better understand them and to assess whether or not feasible options exist to address problems. Funding options will also be addressed by the studies. Studies will be scheduled throughout the existence of the plan. If feasible options are found, a minor plan amendment will be completed.

6.3.2 COUNTY ROAD E AND HIGHWAY 61 AREA STORM WATER STUDY

This study is designed to look at areas along County Road E and Highway 61 that drain north through a 21-inch pipe to the Gem Lake Subwatershed. This outfall is believed to be the only major storm water outlet in the subwatershed. The purpose of the study is to investigate opportunities to control runoff volumes to landlocked Gem Lake. Funding options will also be addressed by the study. MnDOT is a potential partner for this study. The study is scheduled for plan year 3 (i.e., 2009). If feasible options are found, a minor plan amendment will be completed.

6.3.3 DEVELOPMENT OF SLMPs

This program area is designed to promote SLMPs (Strategy 2.C). The program requires cost share from locals, municipalities, or other organizations in the form of cash or labor. VLAWMO contributions to plan development include water quality modeling and data assessment and a 50 percent match up to \$7,500. Data assessment and modeling are scheduled as program element 6.3.8. Promotion of SLMPs will target one lake beginning in 2007 and 2008, after the data assessment is complete. In 2009, two lakes per year will be targeted for each of the next six years. This approach provides incentives for all 13 lake plans.

6.3.4 FINANCIAL INCENTIVES AND COST SHARING

This program consists of maintaining a fund to cost share and promote projects that have a water quality, water quantity, wetland restoration, or aquatic habitat benefit. Project sponsors can be residents, cities and townships, counties, and conservation districts within the watershed. Projects can include anything that improves water quality from shoreland stabilization, to the projects identified as part of the 2005 study *Improving the Waters of Lower Lambert Creek – A Feasibility Study*, to projects identified as part of a SLMP. Cost sharing details will be developed during the first year of



implementation, however, it is expected that the improvements will need to have a demonstrated aquatic habitat benefit, a water quality (sediment and phosphorus) benefit, or runoff volume benefit, and there will need to be a means of assuring future protection and maintenance. Projects with a greater local cost share will likely have a higher chance of receiving cost share. Maintenance efforts and efforts necessary to meet the requirements of the NPDES General Construction permit would not be eligible.

The first plan year includes \$5,000 in this fund from the USEPA 319/Clean Water Partnership Grant to be used to complete the Kohler Road Pilot project identified in the 2005 study for Lower Lambert Creek in partnership with Ramsey County, Ramsey SWCD, Vadnais Heights, and BWCSP. The total cost of the Kohler Road pilot is estimated at \$20,000. The 2005 study also identified approximately \$69,000 of additional improvements for Lower Lambert Creek.

The budget for this fund increases slightly in year 2 of the plan, but it is expected that staff will be occupied with LWP reviews. Thus, it is not until year 3 that significant funds are appropriated for this program. However, the fund amount was selected such that it could provide incentive for the additional Lower Lambert Creek improvements with additional monies available to promote implementation of the SLMPs as well as other beneficial projects as they arise.

6.3.5 PUBLIC EDUCATION AND INFORMATION

This program starts with modest efforts in year 1 for program development and pilot efforts. This includes staff time and an additional \$6,000 to hire additional help to pilot some programs in local schools. Subsequent years have slightly higher budgets so that successful pilot efforts can be expanded. Other efforts in this program include the public information and education efforts described in Strategies 6.A, 6.B, 6.C, and 6.D.

6.3.6 FACILITIES OPERATION

This program provides funding for the operation and maintenance of the Lambert Creek facilities (i.e., weirs and flumes), the Whitaker weir and pond, and VLAWMO ditches, which is being funded by VLAWMO and Ramsey County.

6.3.7 DATA COLLECTION AND MONITORING

This program implements strategies 9.A and 9.B. The first year reflects modest changes to the CLMP monitoring program to change laboratories and add a QA/QC effort. Budgets increase slightly in subsequent years to reflect additional data collection efforts from revised monitoring protocol being developed as part of the assessment of existing data that will be completed in 2007.



An inventory of wetlands not assessed with the original Wetland Management Plan is included in the year 2008.

6.3.8 DATA ANALYSIS AND MONITORING

This program implements strategies 9.C and 9.D. The first year of plan implementation (2007) includes \$40,000 for data assessment and modeling. This is money already acquired by the VLAWMO. Detailed data assessments would also be completed in years 5 (2011) and 10 (2016) of the plan. Budgets for these years are lower since the bulk of model development occurs with the work in year 1. The 5-year assessment is intended to provide a midcourse review, while the review in year 10 is intended to provide information for development of the next generation plan.

6.3.9 WCA AND SMALL WATERS APPROPRIATION PERMITTING

VLA WMO will continue its role as LGU for the WCA, including permitting (Strategy 4.A). VLAWMO will also continue permitting efforts for small waters appropriations using a General Permit (Strategy 3.B).

6.4 CAPITAL IMPROVEMENTS PROGRAM

The completion of the Lambert Lake Project, which is part of the Clean Water Partnership Projects, is ongoing. The roughly \$200,000 dollars included for this project come from 2006 carry over funds or from the grant.

The VLAWMO will create a Matching Grant Fund in the amount of \$15,000 that will be used to match grants for resource management projects or capital improvements, construct capital improvements that are of high watershed priority, are demonstration projects, or have otherwise been designated by VLAWMO for construction by VLAWMO and as match or “seed money” to encourage local improvements. Additional capital improvement may be identified as part of studies described above.

- Lambert Creek Stream Restoration and Stabilization
- Lambert Creek Flume Replacement
- Goose Lake Sediment Treatment and Rough Fish Removal
- Aluminum/Ferric Chemical Feed to Grass Weir
- Lambert Creek TMDL Project
- Tamarack Lake Restoration



- Branch 4 – North Storm Water Quality Pond
- Branch 4 – Northeast Quadrant Storm Water Quality Pond

The VLAWMO will review its capital improvement budget every two years with changes completed as minor plan amendments. VLAWMO has several options for capital projects financing. Under the authority provided by M.S. 103B 251, VLAWMO has the authority to certify for payment by the county all or part of the cost of an approved capital improvement. The JPA provides that if cities are unable to come to a cost sharing agreement, then VLAWMO may order the project by funding 97 percent of the project cost from Ramsey County and 3 percent Anoka County ad valorem tax levy.

6.5 IMPACT OF IMPLEMENTATION PROGRAM

This Plan will be funded through member contributions, grants, special assessments, and, if legislative action is successful, a Special Taxing District under M.S. 275.066 by levy. Funds obtained through member contributions would apply toward local government levy limits. Funds obtained from special assessments and levy by the VLAWMO would not apply to municipal levy limits. However, there would be a financial impact to the residents of the cities and townships that reside in the VLAWMO Watershed. One of VLAWMO's goals is to optimize public resources, while still accomplishing VLAWMO's goals and implementing the Plan.

Table 6-1B shows the additional cost to the member cities for implementing the Plan if legislative action to become a Special Taxing District is unsuccessful. Table 6-2 shows the approximate financial burden on the VLAWMO residents for the various VLAWMO budget amounts and home values, shown as a tax per residence.

In addition to member contributions and taxes to operate the VLAWMO, member communities may have additional costs associated with implementation of their LWPs. The LWPAs already have ordinances in place that address many of the VLAWMO requirements, however, there are additional requirements for standards affecting storm water management and wetland protection, which will require additional staff time and resources. Most of these requirements are part of MS4 requirements already affecting the LWPAs (with the exception of the City of Gem Lake), anticipated MCES requirements for LWPs, and NPDES General Permit requirements for construction that already apply for land disturbing activities and projects that create impervious surfaces. Also, the Plan considers existing land use and future land use for year 2020, as compiled by the MCES from local Comprehensive Land Use Management Plans. This plan does not conflict with these local plans.

Table 6-1B
JPA Member Community Contribution Worksheet*

	Percentage	2007	Contribution	2008	Contribution	2009	Contribution	2010	Contribution	2011	Contribution
Gem Lake	2.86	\$228,000	\$6,519	\$255,262	\$7,300	\$271,133	\$7,754	\$279,257	\$7,987	\$300,570	\$8,596
Lino Lakes	3.58	\$228,000	\$8,164	\$255,262	\$9,138	\$271,133	\$9,707	\$279,257	\$9,997	\$300,570	\$10,760
North Oaks	28.9	\$228,000	\$65,892	\$255,262	\$73,771	\$271,133	\$78,357	\$279,257	\$80,705	\$300,570	\$86,865
Vadnais Heights	27.63	\$228,000	\$62,988	\$255,262	\$70,529	\$271,133	\$74,914	\$279,257	\$77,159	\$300,570	\$83,047
White Bear Lake	24.12	\$228,000	\$55,003	\$255,262	\$61,569	\$271,133	\$65,397	\$279,257	\$67,357	\$300,570	\$72,497
White Bear Towns	12.91	\$228,000	\$29,431	\$255,262	\$32,954	\$271,133	\$35,003	\$279,257	\$36,052	\$300,570	\$38,804
Total	100		\$227,997		\$255,262		\$271,133		\$279,257		\$300,570
Increase in budget from previous year		23%		12%		6%		3%		8%	

Estimated income from other sources: \$6000

		2012	Contribution	2013	Contribution	2014	Contribution	2015	Contribution	2016	Contribution
Gem Lake	2.86	\$374,526	\$10,711	\$382,322	\$10,934	\$405,315	\$11,592	\$398,634	\$11,401	\$412,163	\$11,788
Lino Lakes	3.58	\$374,526	\$13,408	\$382,322	\$13,687	\$405,315	\$14,510	\$398,634	\$14,271	\$412,163	\$14,755
North Oaks	28.9	\$374,526	\$108,238	\$382,322	\$110,491	\$405,315	\$117,136	\$398,634	\$115,205	\$412,163	\$119,115
Vadnais Heights	27.63	\$374,526	\$103,482	\$382,322	\$105,636	\$405,315	\$111,989	\$398,634	\$110,143	\$412,163	\$113,881
White Bear Lake	24.12	\$374,526	\$90,336	\$382,322	\$92,216	\$405,315	\$97,762	\$398,634	\$96,151	\$412,163	\$99,414
White Bear Towns	12.91	\$374,526	\$48,351	\$382,322	\$49,358	\$405,315	\$52,326	\$398,634	\$51,464	\$412,163	\$53,210
Total	100		\$374,526		\$382,322		\$405,315		\$398,634		\$412,163
Increase in budget from previous year			\$0		2%		6%		-2%		4%

	2004 tax value
Gem Lake	\$72,223,600
Lino Lakes	\$43,278,300
North Oaks	\$898,966,100
Vadnais Heights	\$828,693,400
White Bear Lake	\$828,082,200
White Bear Township	\$415,279,400
Total	\$3,086,523,000

* This is based on implementing the projects proposed in the plan in case alternative funding source are unsuccessful.

Table 6-2
Approximate Financial Impacts on VLAWMO Residents
For Various Budget Amounts

Tax Capacity Rate	\$ 34,910,908.00	Budget Amounts							
		\$ 200,000.00	\$ 225,000.00	\$ 250,000.00	\$ 275,000.00	\$ 300,000.00	\$ 325,000.00	\$ 350,000.00	
Various Property Values		0.0057	0.0064	0.0072	0.0079	0.0086	0.0093	0.0100	
	Residential Tax Capacity 1%								
	\$ 150,000.00	\$ 1,500.00	\$ 8.59	\$ 9.67	\$ 10.74	\$ 11.82	\$ 12.89	\$ 13.96	\$ 15.04
	\$ 200,000.00	\$ 2,000.00	\$ 11.46	\$ 12.89	\$ 14.32	\$ 15.75	\$ 17.19	\$ 18.62	\$ 20.05
	\$ 250,000.00	\$ 2,500.00	\$ 14.32	\$ 16.11	\$ 17.90	\$ 19.69	\$ 21.48	\$ 23.27	\$ 25.06
	\$ 300,000.00	\$ 3,000.00	\$ 17.19	\$ 19.33	\$ 21.48	\$ 23.63	\$ 25.78	\$ 27.93	\$ 30.08
	\$ 350,000.00	\$ 3,500.00	\$ 20.05	\$ 22.56	\$ 25.06	\$ 27.57	\$ 30.08	\$ 32.58	\$ 35.09
	\$ 400,000.00	\$ 4,000.00	\$ 22.92	\$ 25.78	\$ 28.64	\$ 31.51	\$ 34.37	\$ 37.24	\$ 40.10
	\$ 450,000.00	\$ 4,500.00	\$ 25.78	\$ 29.00	\$ 32.22	\$ 35.45	\$ 38.67	\$ 41.89	\$ 45.11
	\$ 500,000.00	\$ 5,000.00	\$ 28.64	\$ 32.22	\$ 35.81	\$ 39.39	\$ 42.97	\$ 46.55	\$ 50.13

Actual tax values will differ due to tax increment financing, non collectables, fiscal disparities and changes in market.

Tax capacity for 2006 from Ramsey County portions of VLAWMO, after TIF and fiscal disparities

Storm Water Utility Fee *Proposed*

Unit Rate = \$3.19

SF Rate = \$2.20 per mo.

	Exempted	# Parcels	Surface area ac.	Res. Equiv Fac	Pot. Rev./mo	credit estimate	Rate/ acre	Curve Number C	Retention inches (Runoff Depth inc	Runoff Vol (ac-ft) QA
Res - Single Family		7361	5338.7	1	\$16,194	\$0	\$3	72	3.89	0.29	130
Res - Multi family		1414	365.2	2.72	\$3,168	\$0	\$9	85	1.76	0.8	24
Commercial		273	481.3	4.23	\$6,495	\$0	\$13	92	0.87	1.24	50
Industrial		67	329.9	3.3	\$3,474	\$0	\$11	88	1.36	0.97	27
Institutional: school, hosp. govern. Church		62	255.8	3.3	\$2,694	\$0	\$11	88	1.36	0.97	21
Golf course		9	221.4	0.74	\$524	\$0	\$2	69	4.49	0.22	4
Agricultural		42	491.5	0.25	\$392	\$0	\$1	61	6.39	0.07	3
Vacant, parks, cemeteries	x	437	1266.8	0.74	\$2,997	\$2,997	\$2	69	4.49	0.22	23
Road ROW, RR	x	28	120.1	3.52	\$1,347	\$1,347	\$11	89	1.24	1.03	10
Wetlands and public waters	x	31	3647.9	2.72	\$31,642	\$31,642	\$9	85	1.76	0.8	242
Total		9724	12518.6		\$68,927	\$35,986					259
Exempted parcel fees						\$35,986					
Billable parcel fees						\$32,941					

Revenue estimate:

	Exempted fees	Billable gross	Est. credits	Net Revenue
Full year	\$431,836	\$395,284	0	\$395,284



6.6 MEASURABLE OUTCOMES

Table 6-3 provides a list of the products or measurable outcomes of this Plan on an annual basis. These listed items will be used to develop annual workplans and will be reported in annual reports as a means of tracking implementation of the Plan.

The other primary outcome measurements for judging effectiveness of the Plan are the numerical standards established for the lakes in Strategy 2.B, and the non-degradation from 2005/2006 standards established by Strategy 2.A. Comparisons with these standards will be established and completed with detailed data analyses scheduled for 2007, 2011, and 2016.

6.7 FUTURE PLAN AMENDMENTS

1. Update Management Matrix
2. Seeking levy and storm water utility fee
3. Priority Schedule

Project: Wetland Management Plan.

- Modified WRAM was used as close to comparable methodology for when the wetland assessment was done in the 1990's. The only modification was to add soils information from the County Soil Surveys.
- As new development, redevelopment or other projects are proposed, MNRAM 3.0 or the current methodology will be used to assess any wetlands involved. Redevelopment that triggers a municipal permit will also trigger wetland management buffer and hydro period requirements.
- NWI basins not already inventoried will be assessed with current assessment methodology.
- The TEP and the USACOE will be asked to comment (and approve) on how scores from the current methodology are used in the management matrix.

Project: Capital Improvements.

- Detailed capital improvements as they are planned and subsequently ordered by the Board.



Project: Plan Amendment.

- Amendments based for example on new legislative requirements or policy initiatives, or technological advances.

Project: TMDL Studies.

- Amendments based on waterbodies within the watershed being listed on the 305b or 303d impaired waters list.

**Table 6-3
Annual Outcomes/Activities
Vadnais Lakes Water Management Organization**

Item Description	Year										
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
6.1 Administrative/Managerial	*On-going day-to-day operations *Audit *TAC and PC meetings *Seek legislative authorization as special taxing district and/or utilize a stormwater utility. Pursue grants, consider other funding mechanisms depending on legislative action. *Complete annual workplan and assess previous year implementation as part of Annual Report										
6.2 Local Plan Development and Implementation	* Assist cities and township with LWPs *Assist with and review LWPs. *Complete MOUs *On-going oversight and communication *On-going oversight and communication *Program review of two LWPAs *On-going oversight and communication *On-going oversight and communication *Program review of two LWPAs *On-going oversight and communication *On-going oversight and communication *Program review of two LWPAs *On-going oversight and communication *On-going oversight and communication *Program review of two LWPAs *On-going oversight and communication *On-going oversight and communication *Program review of two LWPAs										
6.3 Studies and Programs											
6.3.1 Lower Lambert Creek Flood Reduction Study	*Complete Engineers Report. Consider plan amendment.										
6.3.2 County Rd E and Hwy 61 Stormwater Study	*Complete Engineers Report. Consider plan amendment.										
6.3.3 Development of Sustainable Lake Plans	Target completion of 1 plan	Target completion of 1 plan	*Target completion of 2 plans	*Target completion of 2 plans	*Target completion of 2 plans	*Target completion of 2 plans	*Target completion of 2 plans	*Target completion of 2 plans	*Target completion of 2 plans	*Target completion of 2 plans	
	*Assist with implementation of plans through element 6.3.4										
6.3.4 Financial Incentives and Cost Sharing	*Participate Kohler Rd Pilot Project *Complete program criteria	*Solicit projects *Begin advertising	*Solicit projects *Select and implement projects	*Solicit projects *Select and implement projects	*Solicit projects *Select and implement projects	*Solicit projects *Select and implement projects	*Solicit projects *Select and implement projects	*Solicit projects *Select and implement projects	*Solicit projects *Select and implement projects	*Solicit projects *Select and implement projects	
6.3.5 Public Education and Information	*Education program development and pilot efforts *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.	*Implement education and marketing program *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.	*Implement education and marketing program *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.	*Implement education and marketing program *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.	*Implement education and marketing program *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.	*Implement education and marketing program *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.	*Implement education and marketing program *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.	*Implement education and marketing program *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.	*Implement education and marketing program *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.	*Implement education and marketing program *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.	*Implement education and marketing program *Route articles and information to MS4s for distribution *CAC meeting(s) *Annual report and meeting. Notices and hearings as needed.
6.3.6 Facilities Operations	*Maintenance of Lambert Creek and Whitaker Pond facilities *Inspection of parshall flumes and repairs if needed	*Maintenance of Lambert Creek and Whitaker Pond facilities *On-going inspection with monitoring efforts	*Maintenance of Lambert Creek and Whitaker Pond facilities *On-going inspection with monitoring efforts	*Maintenance of Lambert Creek and Whitaker Pond facilities *On-going inspection with monitoring efforts	*Maintenance of Lambert Creek and Whitaker Pond facilities *On-going inspection with monitoring efforts	*Maintenance of Lambert Creek and Whitaker Pond facilities *On-going inspection with monitoring efforts	*Maintenance of Lambert Creek and Whitaker Pond facilities *On-going inspection with monitoring efforts	*Maintenance of Lambert Creek and Whitaker Pond facilities *On-going inspection with monitoring efforts	*Maintenance of Lambert Creek and Whitaker Pond facilities *On-going inspection with monitoring efforts	*Maintenance of Lambert Creek and Whitaker Pond facilities *On-going inspection with monitoring efforts	
6.3.7 Data Collection and Monitoring	*VLAWMO CLMP monitoring *Complete aquatic plant survey of 1 lake as part of 6.3.3	*Implement revised monitoring program *VLAWMO CLMP monitoring *Solicit additional for lake level volunteer monitors *Complete aquatic plant survey of 1 lake as part of 6.3.4 *Complete inventory or remaining NWI wetlands and update wetland classification	*Implement revised monitoring program *VLAWMO CLMP monitoring *Complete aquatic plant survey of 2 lakes as part of 6.3.3	*Implement revised monitoring program *VLAWMO CLMP monitoring *Complete aquatic plant survey of 2 lakes as part of 6.3.3	*Revise monitoring plan *VLAWMO CLMP monitoring *Complete aquatic plant survey of 2 lakes as part of 6.3.3	*Implement revised monitoring program *VLAWMO CLMP monitoring *Complete aquatic plant survey of 2 lakes as part of 6.3.3	*Implement revised monitoring program *VLAWMO CLMP monitoring *Complete aquatic plant survey of 2 lakes as part of 6.3.3	*Implement revised monitoring program *VLAWMO CLMP monitoring *Complete aquatic plant survey of 2 lakes as part of 6.3.3	*Implement revised monitoring program *VLAWMO CLMP monitoring *Complete aquatic plant survey of 2 lakes as part of 6.3.4	*Implement revised monitoring program *VLAWMO CLMP monitoring *Complete aquatic plant survey of 2 lakes as part of 6.3.4	
6.3.8 Data Analysis and Modeling	*Data assessment and modeling study *Revise monitoring plan *Data assessment and model update *Revise monitoring plan *Data assessment and model update *Revise monitoring plan										
6.3.9 WCA and Appropriations Permitting	*On-going permit program operations *On-going permit program operations *On-going permit program operations *On-going permit program operations *On-going permit program operations *On-going permit program operations *On-going permit program operations *On-going permit program operations *On-going permit program operations *On-going permit program operations *On-going permit program operations										
6.4 Capital Improvements											
Lambert Lake Outlet	*Complete construction										
Lambert Lake Restoration		Target Completion									
Lambert Creek Stream Restoration and Stabilization	Target Completion	Target segment completion	Target segment completion	Target segment completion	Target segment completion	Target segment completion	Target segment completion	Target segment completion	Target segment completion	Target segment completion	
Whitaker Pond Dredging		Target Completion									
Lambert Creek Monitoring Improvements & Flume	Target start	Target Completion									
Aluminum/ Ferric Chemical Feed - Grass Lake outlet to Lambert Pond					Target Completion						
Goose Lake Restoration - Sediment Evaluation / Rough Fish Management ****		Target Start			Target Completion						
Branch 4 - N.E. Quadrant of Vadnais Heights City Center Storm water quality pond / PW Site Stormpond			Target Completion								
Tamarack Lake Restoration					Target Completion						
Watershed renewal: SLMP/Pilot Implementation		Target Implementation of Renewal /SLMP Activities	Target Implementation of Renewal /SLMP Activities	Target Implementation of Renewal /SLMP Activities	Target Implementation of Renewal /SLMP Activities	Target Implementation of Renewal /SLMP Activities	Target Implementation of Renewal /SLMP Activities	Target Implementation of Renewal /SLMP Activities	Target Implementation of Renewal /SLMP Activities	Target Implementation of Renewal /SLMP Activities	
Other			*Consider plan amendment to update CIP		*Consider plan amendment to update CIP		*Consider plan amendment to update CIP		*Consider plan amendment to update CIP		



7.0 BIBLIOGRAPHY

Anoka County Community Health and Environmental Services Department. Anoka County Groundwater Protection Assessment (Draft), March 1995

Burch, Mark. City of White Bear Lake, 2006

Engstrom, Daniel R. Sediment Stratigraphy in Storage Basins of the Lambert Creek/Vadnais Lake Watershed, November 1991

Forshay, Steve. City of North Oaks Water Management Plan, 1988

James, W.F., J.W. Barko and H.L. Eaken. 2001. Direct and indirect impacts of submerged aquatic vegetation on the nutrient budget of an urban oxbow lake. APCRT Technical Notes Collection (ERDC TN-APCRP-EA-02) U.S. Army Engineer Research and Development Center. Vicksburg, MS.

Lino Lakes, City of. Local Water Management Plan, October 24, 1994.

Metropolitan Council. 2030 Regional Development Framework, January 2004

Metropolitan Council. Twin Cities Metropolitan Area Water Supply: A Plan for Action, February 1993

Metropolitan Council. 2030 Water Resources Management Policy Plan, May 2005

Minnesota Pollution Control Agency. Protecting Water Quality in Urban Areas, 1990

Ramsey Soil and Water Conservation District, City of North Oaks Wetland Inventory, April 1980

Ramsey Soil and Water Conservation District, Hydraulic Structure Inventory: Vadnais Lake Watershed, October 3, 1986

Ramsey Soil and Water Conservation District. Ramsey County Erosion and Sediment Control Handbook, 1989

Ruhl, James F. "Quality of Groundwater Around Vadnais Lake and in Lambert Creek Watershed, and interaction of Ground Water with Vadnais Lake," USGS Report 94-4062

St. Paul Water Utility. Experimental Application of Spent Lime to Sucker Lake Sediments, No date.

Schilling Environmental, Watershed Management Plan, Vadnais Lake Area Water Management Organization, 1987