



PRAP - Progress Evaluation Table
Comfort Lake-Forest Lake Watershed District

Progress Ratings:
Completed and See Other Item



Progress Evaluation Table (PRAP)

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Lake Mgmt District	WMP Code	CIP Item	Planned Actions or Activities	Proposed Timeframe	Actual Timeframe	Accomplishments to Date (June 2018)	Progress Rating	Next Steps
Progress Ratings: <input type="checkbox"/> = not started <input type="radio"/> = ongoing progress <input checked="" type="checkbox"/> = completed/target met <input type="image"/> = see other line item								
	3000	General Program Development						
	3001	District Rules and Rulemaking						
	3002	Permitting						
	3003	Monitoring & Data Assessment						
District-Wide	3003B	Develop Monitoring Plan	Conduct review and potential update to long term monitoring plan.	2012	2011	Plan completed in 2011	<input checked="" type="checkbox"/>	Revisit Monitoring Plan and make recommended changes based on recent diagnostic studies.
Little Comfort LMD	3003D	Bone - Birch Tributary and Wetland Monitoring	Part of larger Bone to Birch to School to Little Comfort Lake diagnostic study.	2012-2013	N/A	See line item 5225A	<input type="image"/>	
Little Comfort LMD	3003E	Birch - School - Little Comfort Lake Tributary Monitoring	Part of larger Bone to Birch to School to Little Comfort Lake diagnostic study.	2012-2013	N/A	See line item 5225A	<input type="image"/>	
Forest LMD	3003F	Forest Lake Subwatershed Wetland Outlet Monitoring (FL44 Subwatershed)	TBD	2012-2013	2015-2017	Reviewed subwatershed as part of FL diagnostic study and FL North Shore Subwatershed Analysis.	<input checked="" type="checkbox"/>	
District-Wide	3003G	Stream Biotic Monitoring	Conduct periodic biotic monitoring of District streams to evaluate stream health. Biotic monitoring will be conducted on the Sunrise and on the Bone-Birch-School-Little Comfort Tributary.	2015, 2020	N/A	See project section 5300	<input type="image"/>	
Bone LMD	3003I	Bone Lake Subwatershed Phosphorus Monitoring (NBL 17 subwatershed)	Complete additional monitoring of the phosphorus load from NBL17 (a Bone Lake subwatershed) to evaluate the need for a wetland restoration in that subwatershed. Synoptic monitoring to evaluate changes in concentration along the drainageway is recommended.	2011	2015	Completed as part of Bone Lake Diagnostic Study.	<input checked="" type="checkbox"/>	
Bone LMD	3003J	Bone Lake Subwatershed Phosphorus Monitoring (NBL 38 subwatershed)	Complete a diagnostic study to evaluate the source of the elevated phosphorus load in the wetland along the tributary to Bone Lake through subwatershed SBL38 (a Bone Lake subwatershed) to evaluate the need for a wetland restoration in that subwatershed. Synoptic monitoring to evaluate changes in concentration along the drainageway is recommended.	2012	2015	Completed as part of Bone Lake Diagnostic Study.	<input checked="" type="checkbox"/>	
	3004	Non-Point Source Pollution Abatement Grant (cost-share)						
	3005	Education and Outreach						
	3006	Technical Resource Sharing + Interagency Communication						
	3007	Research						
	3008	Measurement of Progress						
	3009	Grant Research and Preparation						
	3010	Operation & Maintenance - District Wide						
	3011	Aquatic Invasive Species (AIS) Management						



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5000 General Project Development								
5100 Floodplain								
Comfort LMD	5140A	Sunrise River Water Quality/Quantity Regional Stormwater Project	No budget was allocated under this line item. This line item refers to projects under 5229.	2012-2016	N/A	Refer to projects under 5229	<input type="image"/>	Refer to projects under 5229
5200 Lakes								
Bone LMD	5221A	(Moody) Moody Lake Inlet Fish Barrier	To address the movement of rough fish into Moody Lake the District will install a fish barrier at the inlet to Moody Lake.	2011-2012	N/A	Winter aeration system installed in 2015 in order to control rough fish populations. Installation of fish barrier is not planned at this time.	<input type="image"/>	During operational season (~Dec-Mar) winter aeration system is regularly inspected and maintained under program 3010 Operations & Maintenance.
Bone LMD	5222A	(Bone) Bone Lake Inlet and Outlet Fish Barriers	To address the movement of rough fish into Bone Lake the District will install a fish barrier at the outlet of Bone Lake and at the inlet to Bone Lake from Moody Lake in order to limit the movement of carp within the Bone Lake system.	2012	2012	Inlet and outlet fish barriers were installed and subsequently retrofitted to improve performance.	<input checked="" type="checkbox"/>	During operational season (open water) barriers are regularly inspected and maintained under program 3010 Operations & Maintenance.
Bone LMD	5222B	(Bone) Bone Lake Infiltration Basin Planning and Design (SBL07)	Plan and design an infiltration basin to provide volume reduction and water quality improvement for drainage through subwatershed SBL07.	2012	N/A	More cost-effective projects were identified out of the Bone Lake Diagnostic Study, Rural Subwatershed Assessment, and Partially Drained Wetland Inventory. Infiltration basin project re-prioritized in favor of ag BMP implementation and wetland restorations.	<input type="image"/>	See 5222F and 5422H.
Bone LMD	5222C	(Bone) Bone Lake Infiltration Basin Implementation (SBL07)	Construct an infiltration basin to provide volume reduction and water quality improvement for drainage through SBL07	2013	N/A	More cost-effective projects were identified out of the Bone Lake Diagnostic Study, Rural Subwatershed Assessment, and Partially Drained Wetland Inventory. Infiltration basin project re-prioritized in favor of ag BMP implementation and wetland restorations.	<input type="image"/>	See 5222F and 5422H.
Bone LMD	5222D	(Bone) Shoreline Survey	Conduct a shoreline survey to identify areas for improvements in shoreline buffers and lakescaping and to provide a means for documentation of changes in shoreline condition.	2014	2014	Completed photo inventory of shoreline.	<input checked="" type="checkbox"/>	Develop overall shoreline inventory schedule for all District lakes and update inventories as necessary.
Little Comfort LMD	5223A	(Birch)	See 5225D.				<input type="image"/>	
Little Comfort LMD	5224A	(School)	See 5225D.				<input type="image"/>	
Forest LMD	5226A	(Shields) Feasibility Study - Biomanipulation	Conduct a feasibility study on the biomanipulation (manipulation of the balance between resident biological species, typically through modifications to the fish community) of Shields Lake to shift the shallow lake from the turbid water state to the clear water state. The feasibility study entails background data collection, analysis of data and some limited monitoring (samples and surveys). A final report will identify the need and approach for biomanipulation activities. The load reduction due to biomanipulation is anticipated to have the potential to reduce approximately 70% of the calibrated internal load, or approximately 600 pounds.	2017	N/A	Diagnostic study is complete and project feasibility/implementation for Stormwater Harvest/Irrigation Reuse system and whole-lake alum treatment is underway. These projects should shift Shields to a clear water state. Ongoing initiatives to control rough fish population include winter aeration system operated by City of Forest Lake and periodic carp electrofishing surveys (2015, 2018).	<input type="image"/>	See 5226D for projects that are planned to shift lake to clear water state.
Forest LMD	5226C	(Shields) Diagnostic Study and Implementation Plan	Conduct diagnostic monitoring and computer modeling for Shields Lake and its watershed to identify cost-effective BMPs for water quality improvement and in-lake restoration.	2015-2016	2015-2016	Diagnostic study is complete.	<input checked="" type="checkbox"/>	Implementation of Stormwater Harvest & Irrigation Reuse project planned for 2018. Whole lake alum treatment in 2018 or 2019.



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Forest LMD	5227B	(Sylvan/Keewahtin) Stormwater and Shoreline BMP Implementation	Keewahtin Lake is a high quality resource identified for protection of water quality. To protect water quality in Keewahtin Lake, the CLFLWD plans installation of distributed stormwater best management practices in the Keewahtin Lake watershed. The project would include the installation of raingardens, biofiltration, shoreline restoration and other practices in the Keewahtin Lake watershed to provide stormwater treatment and encourage groundwater recharge to protect the high quality lake.	2015	TBD	Likely implement projects through cost-share and/or education program	⇒	To follow 5227A - Keewahtin Stormwater and Shoreline BMP Planning
Forest LMD	5227C	(Sylvan/Keewahtin) Shoreline Survey	Document and address unpermitted changes to shoreline.	2016	2016	Shoreline survey/documentation included in scope of work for 5227A - Keewahtin Stormwater and Shoreline BMP Planning. Completed in 2016.	☑	Develop overall shoreline inventory schedule for all District lakes and update inventories as necessary.
Forest LMD	5228B	(Forest) Diagnostic Implementation - Hilo Lane Stormwater Retrofit Project	Stormwater retrofit to treat runoff from residential area south of Forest Lake's middle basin. Estimated phosphorus reduction is 12 pounds per year.	2013	2013-2017	Construction is complete. Site cleanup to finish up in spring. Identified issues with stabilized swale drainageway.	☑	Ongoing inspections and maintenance through program 3010 Operations & Maintenance.
Forest LMD	5228B	(Forest) Diagnostic Implementation - Enhanced Street Sweeping Plan	Develop an enhanced street sweeping plan for the City of Forest Lake that optimizes phosphorus removal from increasing sweeping frequency with the cost of additional sweeps.	2016-2017	2016-2017	Sweeping plan is complete.	☑	See Enhanced Street Sweeping Implementation.
Forest LMD	5228C	(Forest) Urban Stormwater Retrofit Planning & Design (FL01, FL81)	Prepare a plan identifying locations for installation of a retrofit project that address untreated runoff entering Forest Lake from the urban portions of the City of Forest Lake. Retrofit projects will be evaluated in the subwatersheds FL01 and FL81, which include the most urbanized areas draining to Forest Lake.	2012		District completed two subwatershed assessments (SWA) - Forest Lake South Direct SWA and Forest Lake North Direct SWA. Studies resulted in prioritized lists of BMPs.	⇒	Focus on implementing cost-effective projects as a result of Forest Lake Diagnostic Study and subsequent subwatershed assessments (Castlewood, Hayward, JD6). See 5228B and 5228L.
Forest LMD	5228D	(Forest) Urban Stormwater Retrofit Implementation (FL01, FL81)	Projects designed under the Urban Stormwater Retrofits Planning and Design Project (5228C) will be constructed. Retrofits may include a wide range of BMPs to improve water quality prior to entering Forest Lake, including raingardens, bioretention facilities, infiltration trenches, iron-enhanced filtration, biofiltration, tree boxes, stormwater capture and reuse, proprietary devices and a variety of other practices.	2018		District completed two subwatershed assessments (SWA) - Forest Lake South Direct SWA and Forest Lake North Direct SWA. Studies resulted in prioritized lists of BMPs.	⇒	Focus on implementing cost-effective projects as a result of Forest Lake Diagnostic Study and subsequent subwatershed assessments (Castlewood, Hayward, JD6). See 5228B and 5228L.
Forest LMD	5228E	(Forest) Shoreline Survey	Conduct a shoreline survey to identify areas for improvements in shoreline buffers and lakescaping and to provide a means for documentation of future changes in shoreline condition. The shoreline survey is intended to include photographs of the entire shoreline of the lake. The shoreline survey could also include more detailed analysis of shoreline properties including parcel specific soils, groundwater seep locations, and/or erosion evaluation or identification of key areas for protection or restoration.	2015	2015	GPS-enabled camera was utilized to perform a cursory shoreline inventory of the entire lake. Photos were taken in fall 2015.	☑	Develop overall shoreline inventory schedule for all District lakes and update inventories as necessary.
Forest LMD	5228F	(Forest) Imperial Ave Area BMP Design (FL44) (2017)	Design buffers, biofiltration, and other practices within the Imperial Avenue area of the Forest Lake FL44 subwatershed in areas where the shoreline has been disturbed or is maintained as lawn and where drainage is not currently treated prior to entering the wetland. This project will focus on untreated roadways, untreated residential areas, and low quality buffers and provide treatment for this high quality wetland in subwatershed FL44 and for the un-impaired Forest Lake.	2017		See 5228A.	⇒	See 5228A.

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Forest LMD	5228G	(Forest) Imperial Ave Area BMP Implementation (FL44)	Implement buffers, biofiltration, and other practices within the Imperial Avenue area of the Forest Lake FL44 subwatershed as identified in the project design.	2018		See 5228B.	➡	See 5228B.
Forest LMD	5228H	(Forest) North Shore Trail BMP Design (FL44)	Design a biofiltration feature or other suitable feature to capture runoff from North Shore Trail and treat it prior to discharge to the Forest Lake subwatershed FL44 wetland. The project would provide treatment to an untreated area entering this high quality wetland in subwatershed FL44 and for the un-impaired Forest Lake.	2015	2016	See 5228A.	➡	See 5228A.
Forest LMD	5228I	(Forest) North Shore Trail BMP Implementation (FL44)	Implement biofiltration basin or other designed feature to capture runoff from North Shore Trail & treat it prior to discharge to the Forest Lake subwatershed FL44 wetland. The project would provide treatment from an untreated area entering this high quality wetland in subwatershed FL44 & for the un-impaired Forest Lake.	2016	2017	See 5228B.	➡	See 5228B.
Comfort LMD	5229A	(Comfort) Sunrise Regional Stormwater Project Feasibility & Design	Evaluate feasible project options and design a project in the Sunrise River drainage area to reduce phosphorus loads to Comfort Lake. This project was initiated by petition of Chisago County (Appendix B). The project may include urban retrofits, wetland restoration, ponding, filtration, biofiltration, or other methods to reduce phosphorus loads.	2011	2012	Sunrise River Water Quality & Flowage Report was finalized in 2012.	☑	Find other project partners of other projects in the Sunrise watershed. Next projects will be evaluated in the context of 5220A Volume Control Facility Planning & Design which is ongoing.
Comfort LMD	5229B	(Comfort) Sunrise Regional Stormwater Project Implementation	Implement the project designed under the Sunrise River Water Quality/Quantity Regional Stormwater Project Feasibility and Design project (5229A) to reduce phosphorus loads to Comfort Lake from the Sunrise River subwatershed.	2012-2016	2014	Target Iron Enhanced Sand Filter, Raingardens & Tree trenches was installed in 2014. This was partially funded through a CWF grant.	☑	Find other project partners of other projects in the Sunrise watershed. Next projects will be evaluated in the context of 5220A Volume Control Facility Planning & Design which is ongoing.
Comfort LMD	5229C	(Comfort) Shoreline Survey	Conduct an updated shoreline survey of Comfort Lake and compare it to the 1998 shoreline survey to evaluate the amount of change that has occurred and to identify areas for improvements in shoreline buffers and lakescaping. The shoreline survey could also include more detailed analysis of shoreline properties including parcel specific soils and erosion evaluation or identification of key areas for protection or restoration.	2013	2013	Survey completed.	☑	Develop overall shoreline inventory schedule for all District lakes and update inventories as necessary.
Comfort LMD	5229F	(Comfort) Bixby Park Stormwater Ponds Design	Design SW mgmt features in Bixby Park to manage drainage to Comfort Lake from the more urban portions of the City of Forest Lake that developed prior to the incorporation of comprehensive stormwater management facilities.	2012	2015	Design complete.	☑	Implementation phase.
Comfort LMD	5229G	(Comfort) Bixby Park Stormwater Treatment Implementation	Construct stormwater management features in Bixby Park or area identified in 5229F.	2013-2017	2013-2017	Construction and re-vegetation is complete. 2017 effectiveness monitoring showed project is functioning properly.	☑	Ongoing operations and maintenance of weir structures under program 3010 Operations & Maintenance.
Comfort LMD	5299A	(Heims) Lake Water Quality Study	Conduct lake water quality study including a watershed assessment, which entails watershed modeling and evaluation of livestock operations, septic systems and other potential point sources of pollutants.	2012	2015	Heims Lake Water Quality Study was completed in December 2015, public meeting to share the results with lake residents was held on May 12th, 2016 and was attended by eight lake residents.	☑	
5300		Streams						

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Little Comfort LMD	5341A	(BBSLC Tributary) Stream Assessment	Conduct a stream conveyance and geomorphology assessment on the Bone-Birch-School-Little Comfort Tributary. Any resource restoration and/or stormwater/flood management project directly related to the Bone-Birch-School-Little Comfort Tributary will require knowledge of the system. This information is necessary to make more informed decisions regarding the resource and to develop associated watershed improvement projects.	2014	2015-2016	District engineer performed stream biotic monitoring in fall 2015. Additional monitoring is ongoing as part of 5225A Little Comfort Phos. Source Assessment & Implementation Plan.	<input checked="" type="checkbox"/>	Complete 5225A and begin 5225D Phos Source Assess Impl.
Little Comfort LMD	5341B	(BBSLC Tributary) School-Little Comfort Tributary Stream Restoration Design (LCL04)	Based on results of phosphorus monitoring along the School- Little Comfort Tributary, design, as needed, a stream restoration for the channel downstream of School Lake in the LCL04 subwatershed.	2015	N/A	Included as part of 5225A Little Comfort Lake Phosphorus Source Assessment and Implementation Plan	<input type="checkbox"/>	Complete 5225A and begin 5225D Phos Source Assess Impl.
Little Comfort LMD	5341D	(BBSLC Tributary) E. coli & DO Source Assessment & Imp. Plan	Evaluate the source of high E. coli concentrations and the cause of low dissolved oxygen concentrations found in the stream and recommend methods for control. Support the established or in-process TMDL projects by providing data, analysis, source evaluation, and implementation recommendations needed to address elevated E. coli levels in the river. Provide this data in support of the overall Sunrise River Watershed Assessment and TMDL or as a separate initiative of the District. This project likely will be conducted concurrently with project 5340B.	2015	2015	Preliminary assessment of near stream E. coli sources were completed fall of 2015	<input checked="" type="checkbox"/>	Complete 5225A and begin 5225D Phos Source Assess Impl.
Little Comfort LMD	5341E	(BBSLC Tributary) Buffer Survey	Complete a photographic buffer survey along the Bone-Birch- School-Little Comfort Tributary to evaluate the condition of existing buffers and to target buffer improvement projects. This project could be conducted in conjunction with the stream assessment (5341A).	2014	2015	Baord approved District engineer to conduct partial fall 2015 assessment.	<input checked="" type="checkbox"/>	Complete 5225A and begin 5225D Phos Source Assess Impl.
5400 Wetlands								
District-Wide	5420A	Wetland Inventory	Complete a functional inventory of District wetlands.	2012-2014	2012-2014	Chisago SWCD conducted MLCCS and wetland inventory. Identified top sites for restoration within District. Used info to apply for CWF grant and implement Bone Lake Partially Drained Wetland Restorations	<input checked="" type="checkbox"/>	Inventory is complete
Bone LMD	5422A	(Bone) Phosphorus Source Assessment (NBL17)	Identify P load sources in wetland between Moody and Bone Lake.	2012	2015	A diagnostic study was completed in 2015 for all Bone Lake watersheds. This study identified P loading hot spots and potential BMPs.	<input type="checkbox"/>	Diagnostic study implementation is under 5222F.
Bone LMD	5422B	(Bone) Wetland Restoration Feasibility & Design (NBL17)	Evaluate the feasibility of identified optioins and design a wetland restoration P load reduction project in the wetland.	2013	N/A	See 5422G&H	<input type="checkbox"/>	
Bone LMD	5422C	(Bone) Wetland Restoration (NBL17)	Restore the wetland as designed in 5422B.	2012	N/A	See 5422G&H	<input type="checkbox"/>	
Bone LMD	5422D	(Bone) Phosphorus Source Assessment (SBL38)	Conduct a P source assessment of this subwatershed.	2013	N/A	See 5422G&H	<input type="checkbox"/>	
Bone LMD	5422E	(Bone) Wetland Restoration Planning & Design (SBL38)	Evaluate the feasibility of identified optioins and design a wetland restoration P load reduction project in the wetland.	2014	N/A	See 5422G&H	<input type="checkbox"/>	



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Bone LMD	5422F	(Bone) Wetland Restoration (SBL38)	Restore the wetland as designed in 5422E.	2015	N/A	See 5422G&H	➡	
Little Comfort LMD	5423A	(Birch) Wetland Phosphorus Source Assessment (LCL20)	Conduct a P source assessment of this subwatershed.	2014	N/A	Included in 5225A Little Comfort Phos Source Assess Plan	➡	
Forest LMD	5428A	(Forest) Wetland Restoration & Cattle Exclusion (FL44)	Install fencing to exclude cattle from wetland.	2011	2012	Completed.	☑	
	5500	Upland Resources						
	5600	Groundwater						
	5700	Public Education						
	5800	Interagency Communication						
District-Wide		No specific Interagency Communication projects at this time.						
	5900	Land Acquisition and Management						