

Des Plaines/Higgins Creek Watershed TMDL Final (Revised) with the Implementation Plan-

<http://www.epa.state.il.us/water/tmdl/>

Public Meeting

Illinois EPA
Bureau of Water
Watershed Management Section
Planning Unit
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August 28, 2012



Presentation Outline

- TMDL Review
- TMDL Stages
- TMDL Revision
- Implementation Plan
- Buffalo Creek Clean Water Partnership



Total Maximum Daily Load (TMDL)

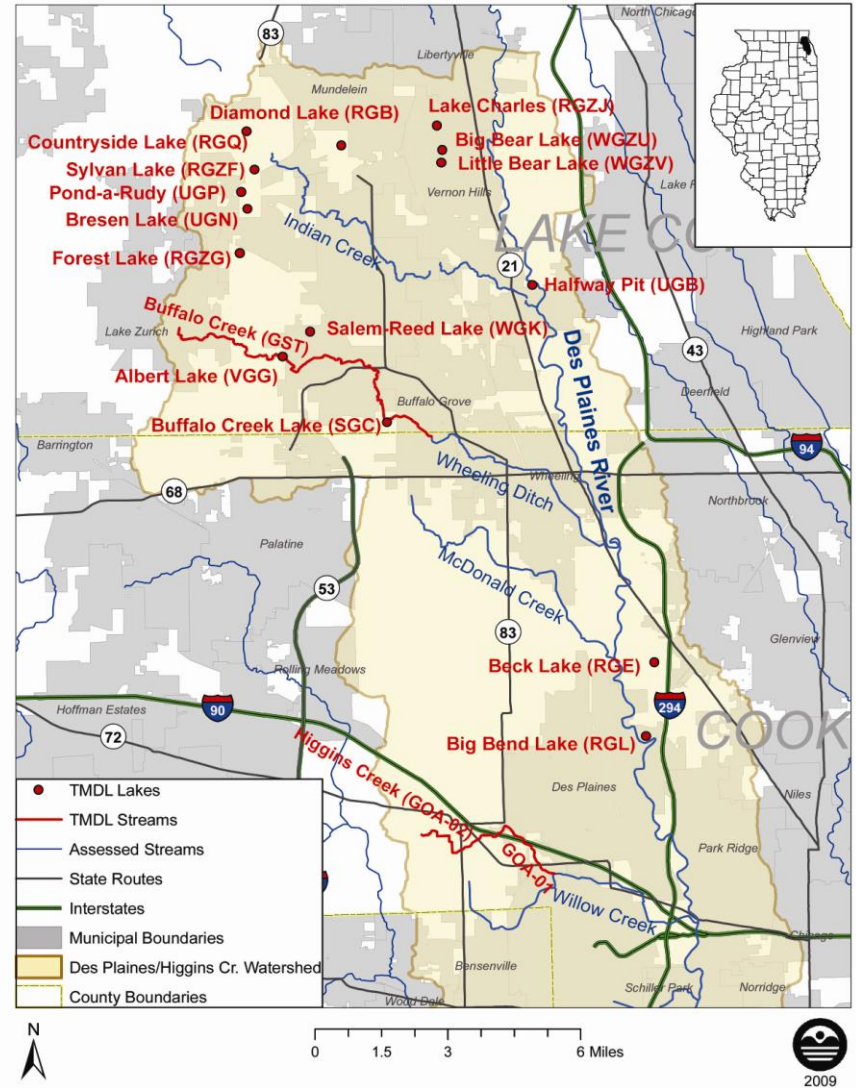
- Waters of the state are assessed- Integrated Report Appendix B (305b)
 - Over 70,000 miles of stream/ 15,000 assessed
 - Over 3,000 inland lakes (318,000 acres)/ 147,000 assessed
 - Plus Lake Michigan and bordering rivers
- Waters may be impaired- Integrated Report Appendix A (303d)
 - 8,537 miles, 142,761 acres impaired
- Impaired waters (303d) require TMDLs
 - $TMDL = Wasteload\ Allocation\ (WLA) + Load\ Allocation\ (LA) + Margin\ of\ Safety\ (MOS)$
 - “TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards and support designated uses.”

Stages 1, 2 and 3

- Stage 1 – Watershed characterization
 - Land Use and Soil
 - Water quality data analysis
 - NPDES facilities and MS4 communities
 - TMDL methodology selection
 - First public meeting- May 19, 2009
- Stage 2 – Data collection- 8 lakes- TP, DP, TSS, DO, pH
- Stage 3- Modeling, allocations and an implementation plan
 - Wasteload allocations for point sources and load allocations for nonpoint sources/ reductions needed to meet standards
 - Second public meeting August 11, 2010

Targeted Segments for TMDL Development

Waterbody Name	Segment ID	Impairment
Albert Lake (outlet)	IL_VGG	Dissolved oxygen
Beck Lake	IL_RGE	Phosphorus (total)
Big Bear Lake	IL_WGZ U	Phosphorus (total)
Big Bend Lake	IL_RGL	Phosphorus (total)
Bresen Lake	IL_UGN	Phosphorus (total)
Buffalo Creek	IL_GST	Chloride, dissolved oxygen, fecal coliform
Buffalo Creek Lake	IL_SGC	Dissolved oxygen, phosphorus
Countryside Lake	IL_RGQ	Phosphorus (total)
Diamond Lake	IL_RGB	Phosphorus (total)
Forest Lake	IL_RGZG	Phosphorus (total)
Halfday Pit Lake	IL_UGB	Dissolved oxygen
Higgins Creek	IL_GOA-01	Chloride, fecal coliform
Higgins Creek	IL_GOA-02	Chloride, dissolved oxygen, fecal coliform
Lake Charles	IL_RGZJ	Phosphorus (total)
Little Bear Lake	IL_WGZV	Phosphorus (total)
Pond-A-Rudy	IL_UGP	Dissolved oxygen
Salem-Reed Lake	IL_WGK	Phosphorus (total)
TMDL Stage 3 Sylvan Lake	IL_RGZF	Fecal coliform, phosphorus (total)



Modifications/ Additions- GOA-01

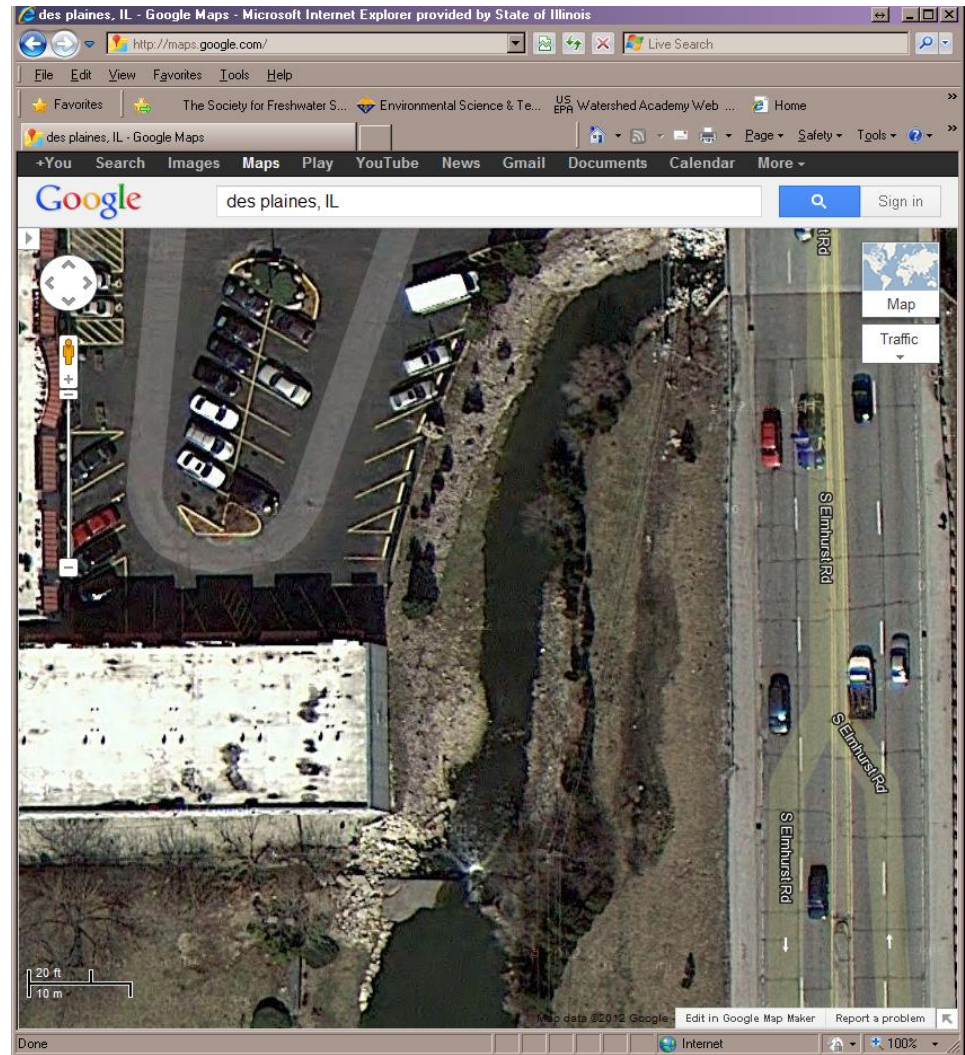
- Added percentage of total load
- Added Current Wasteload based on DMR data
- Reserve capacity only can be used for any unsewered areas
- Streamflow mostly point source derived/ point sources have limits
 - DMR analysis for 5 years- 4 exceedences for MWRDGC Kirie and 18 for Des Plaines Mobile Home Park

units = cfu/day	High Flows (0-10)	% Total Load
TMDL	4.50E+11	N/A
Current Load	1.98E+12	N/A
MS4	2.85E+11	63%
LA	9.74E+10	22%
WLA	3.58E+08	0.1%
Reserve Capacity	2.25E+10	5%
MOS	4.50E+10	10%
% Reduction	77%	N/A

units = cfu/day	High Flows (0-10)	% Total Load
TMDL	4.50E+11	N/A
Current Load	1.98E+12	N/A
MS4	2.85E+11	63%
LA	9.75E+10	22%
Current Wasteload	1.61E+08	0.04%
Reserve Capacity	2.25E+10	5%
MOS	4.50E+10	10%
% Reduction	77%	N/A

Modifications/ Additions- GOA-02

- MWRDGC Kirie WWTP mistakenly identified as point source for this segment that is impaired for DO
- TMDL model looked at CBOD and ammonia/ even when CBOD and nutrients reduced, DO still not meeting standard
- SOD and hydraulic alterations causing impairment



Modifications- Lakes

- Big Bend Lake and Half-day Pit
- Allocations were given to Des Plaines River since the river backflows into the lake at high flows

Point Source Dischargers	Total Phosphorus Load (lbs/day)
Glenview MS4	0.009
Des Plaines MS4	0.015
Des Plaines River	1.376

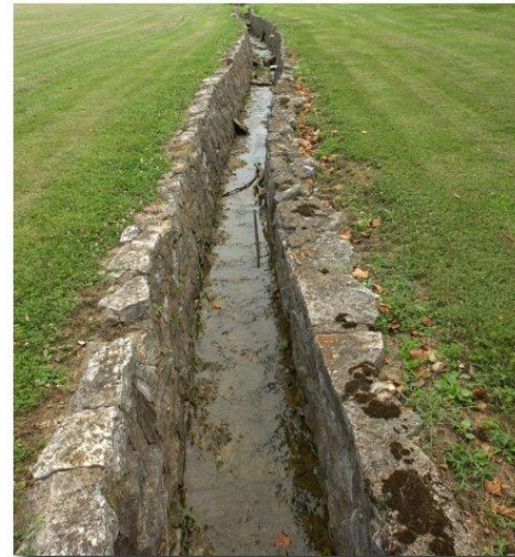
Point Source Dischargers	Total Phosphorus Load (lbs/day)
Des Plaines River	0.340
Lincolnshire MS4	0.205

Implementation Plan

- Point sources are regulated by IEPA permit program
 - NPDES facilities must meet their permit limits
 - MS4 stormwater requirements- public education/ outreach, public involvement, illicit discharge detection and elimination, construction site runoff control, post construction runoff control and pollution prevention
- Nonpoint source controls voluntary
 - IEPA 319 Program awards grants for managing nonpoint source pollution



<http://love-theearth.blogspot.com/2010/10/effects-of-pollution.html> 9/25/2012



http://www.lookfordiagnosis.com/mesh_info.php?term=drainage&lang=1

Chloride- Buffalo Creek and Higgins Creek

- Potential to accumulate over time
- Toxic to aquatic organisms and even low levels can impact biological communities
- Largest source- road salt used for de-icing
 - Responsible parties- Municipalities private party contractors, IDOT, and Illinois Tollway Authority
 - Actions-
 - Public education and staff training
 - Proper storage and handling
 - Proper application
 - Alternative products
 - DRSCW Materials- <http://www.drscw.org/winter.html>



<http://www.drscw.org/chlorides/DRSCWcommercialoperators.pdf>

Dissolved Oxygen- Buffalo Creek and Higgins Creek

- Buffalo Creek requires 39% reduction in CBOD and 30% reduction in ammonia
- Higgins Creek impaired due to SOD and hydraulic alterations
- Sources
 - MS4 and nonpoint sources of oxygen demanding materials
 - Fertilizers for lawns and other landscaping contribute nutrients and organic material
 - Runoff from impervious surfaces contribute organics
 - Stream alteration/erosion- concrete lined ditch, lack of floodplain, loss of riparian areas/habitat
 - Reduction in shade, increase in water temperature/decrease in DO
 - Impoundments
 - Possible modifications can reduce pollutant settling and increase aeration

Implementation Actions

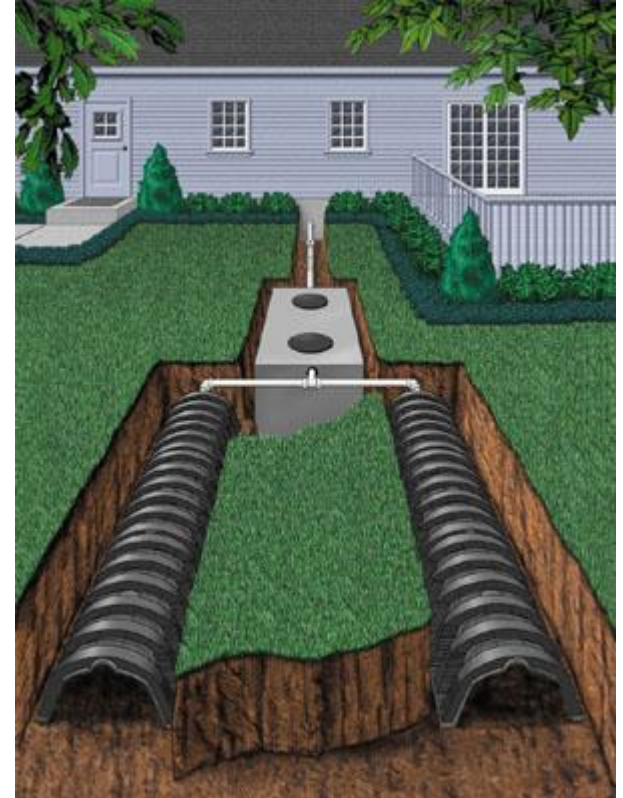
- Bio-Retention Cells
- Filter Strips and Riparian Buffers
- Nutrient Management
- Septic System Maintenance
- Street Sweeping
- Vegetated Swales
- Wildlife Exclusion
- Wetlands



<http://www.crd.bc.ca/watersheds/lid/garden.htm>

Fecal Coliform Bacteria- Buffalo Creek, Higgins Creek and Sylvan Lake

- Sources-
 - Point sources have bacteria limit
 - Wildlife- buffer strips and riparian areas planted along stream corridors and lake shorelines- not only deter geese from congregating along waters and prevent erosion, but can decrease phosphorus, suspended solids and fecal coliform from runoff
 - Septic systems failures- maintenance needed in aging systems
 - Urban stormwater runoff- wetlands or runoff detention
 - Agriculture- livestock exclusion (Sylvan Lake watershed)



http://structural-design-solutions.com/Septic_Inspections.html

Phosphorus- Beck, Big Bear, Bresen, Buffalo Creek, Big Bend, Countryside, Diamond, Forest, Charles, Little Bear, Salem-Reed, Sylvan Lakes

- Point sources- phosphorus limit may be put in permit at some point in the future
- Urban stormwater runoff- Low impact development techniques reduce intensity of stormwater runoff
 - Lawn fertilizer without high phosphorus, permeable/porous pavement, rain gardens and vegetated rooftops, wetlands, filter strips, riparian buffers, sediment control basins, wetlands, street sweeping
- Agriculture- conservation tillage, nutrient management, livestock exclusion



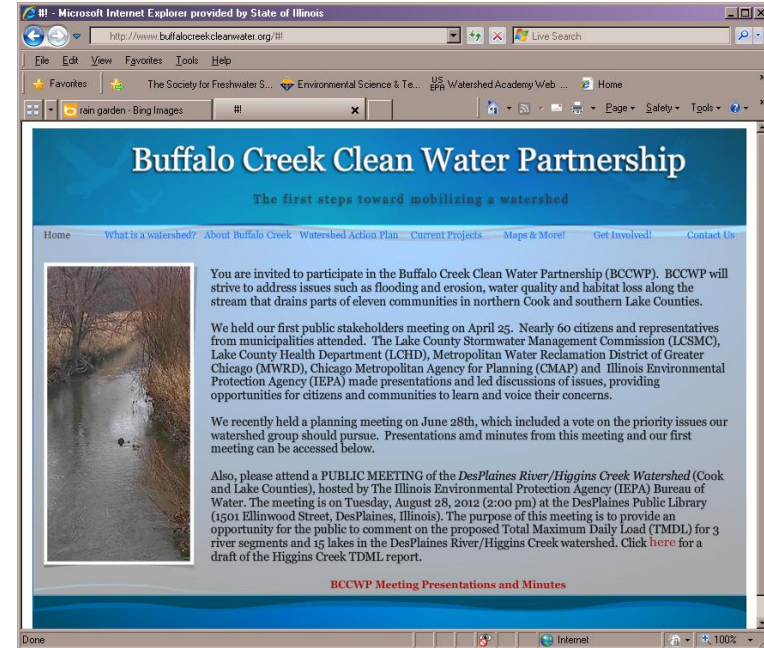
<http://www.chisagoswcd.org/Rain%20Gardens.htm>

LCHD Lake Reports

- Albert, Big Bear/Little Bear, Bresen, Buffalo, Countryside, Diamond, Forest, Half-day Pit, Charles, Pond-a-Rudy, Salem Reed, Sylvan Lake
- <http://www.lakecountyil.gov/Health/want/Pages/LakeReports.aspx>
- Detailed lake reports that include data analysis and specific best management practices (BMPs) for each lake and watershed

Next Steps

- Make any necessary changes to the TMDL based on public comments/ Responsiveness Summary
- Send to USEPA for approval
- 319 Nonpoint Source Grants
- Buffalo Creek watershed group-
<http://www.buffalocreekcleanwater.org/#>



Thank You

Contact Information

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