

**Missisquoi Bay Basin Project:  
Identifying Critical Source Areas of Pollution**

***DRAFT Database Summary***  
**25 January 2010**

**The Database**

The following summary of “GIS Datasets held by the LCBP for use in Identification of Critical Source Areas of Phosphorus Pollution in the Missisquoi Bay Basin of Vermont” contains all datasets currently held by the LCBP for the purpose of a phosphorus critical source area analysis for the Missisquoi Bay Basin. Datasets are classed by functional type with brief descriptions of their content or specifications. The data source and time period of relevancy are also included. A list of acronyms used can be found after the summary.

Data listed in this workbook will be subject to quality assurance standards before becoming available for distribution by the Lake Champlain Basin Program. If you are interested in obtaining the data listed, please contact the source directly. Specific questions about data may be directed to Nicole Grohoski at [ngrohoski@lcbp.org](mailto:ngrohoski@lcbp.org).

**Data to be Acquired**

Other known data yet to be acquired are listed below. Reasons for absence in database include upcoming release dates, cost and licensing, and undetermined frequency and aggregation of data needed for analysis. Other data to be acquired, but not listed below, are detailed in the [Summary](#) of the *Workshop on Data Availability and Data Needs* (this summary includes lists of potentially available agricultural data that would be provided in aggregate).

- Canadian National Hydrographic Network will incorporate 1:20,000 provincial data for Quebec
  - current data is derived from 1:50,000 photography
  - to be completed in 2010, integration by the USGS with the US NHD may occur after this release
- Canadian data available for purchase from [geoboutique.mrnf.gouv.qc.ca](http://geoboutique.mrnf.gouv.qc.ca)
  - Includes: orthophotos (21, 30, 56, or 100 cm – not sure what is available for this region)
  - satellite imagery (1:100,000)
  - digital elevation models (1:20,000)
- 1:20,000 Canadian soil data is available for purchase from IRDA.
- The Canadian Insured Crop Database is available for purchase and may include agricultural parcel locations and current crops (<http://www.fadq.qc.ca/index.php?id=2173&L=1>)
- Measured data will not be obtained until specifications for their use are determined.
  - Monitoring data (monitoring locations are detailed in the GIS datasets)
  - Meteorological data (National Weather Service or Environment Canada Weather Office)
  - Stream flow data (USGS or MDDEP)

**GIS Datasets held by the LCBP for use in Identification of Critical Source Areas of Phosphorus Pollution in the Missisquoi Bay Basin of Vermont**

\*file names shown in bold represent folders containing many similar files

<b>Data Classification</b>	<b>File name</b>	<b>Description</b>	<b>Data Source</b>	<b>Relevancy of Data</b>
<b>Agricultural</b>				
	crop&hay_allMisq.shp	corn, hay, and other ag fields in MBB digitized from 2003 orthophotography	NRCS	2003
	MQ_farmsteads.shp	point locations of farmsteads in US MBB digitized from 2003 orthophotography	NRCS	2003
	NoTillGood_MQ	fields in MBB that are amenable to no-till agriculture	NRCS	based on SSURGO, various dates
<b>Boundaries</b>				
	Misq_basin.shp	MBB polygon	LCBP	1999
	Misq_basin_line.shp	MBB outline	LCBP	1999
	Misq_HUC12.shp	MBB HUC12 polygons	LCBP	1999
	Misq_HUC12_lines.shp	MBB HUC12 outlines	LCBP	1999
	Provinces_line.shp	Canadian province lines	Geobase	2003
	LCB_boundary.shp	Lake Champlain Basin extent	LCBP	
	LCB_sub_basin.shp	Extent of 7 subbasins in LCB	LCBP	
	LCB_counties.shp	US counties clipped to LCB extent	LCBP	
	Census_divisions.shp	Statistics Canada county equivalents (Quebec has municipalit�e r�gionale de comt�e)	StatisticsCanada	2006
	LCB_towns.shp	US LCB town names		
	QC_LCB_towns.shp	Quebec towns in the LCB (1996 pop)		
<b>Conservation</b>				
	VT_conslands.shp	VT Conserved Lands Database (w/o proprietary parcels)	SAL	2004
	LCB_QC_pad.shp	CBI/WWF provincially owned protected areas in QC LCB	CBI	1970-2001
	LCB_US_pad.shp	CBI/WWF federal/state/local owned protected areas in US LCB	CBI	1970-2002
<b>Elevation</b>				
	vt_dem	VT USGS 26.6m 1:24,000 National Elevation Dataset (height in ft)	VCGI	2002
	vt_hillshade	VT hillshade derived from 26.6m NED DEM	VCGI	2002
	vthydrodem	VT 10m DEM compliant with VHD (height in cm)	VCGI	2000
	dem_ewing	0.5-m elevation grid for Ewing Brook subbasin of Pike River (QC)	IRDA	2006
	dem_pike	30-m elevation grid for the Pike River Basin (QC)	IRDA	2006
	LIDAR_LIGNE_DE_VOL.shp	Lines of flight for Ruisseaus Mopions/Wallbridge LiDAR (QC)	IRDA	2006

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	LIMITE.shp	Extent of Ruisseaus Morpions/Wallbridge LiDAR (QC)	IRDA	2006
	QC_CEHQ_lidar.shp	Extents of LiDAR data available to MDDEP (QC)	CEHQ	2009
	RockRiver_Lidar_extent.shp	Extent of LiDAR acquisition for Rock River Project	USGS	2008/9
	LAS2000_Ground_TileLayout.shp	Tile layout for Rock River project deliverables	USGS	2008/10
	TIFs for each tile	1.4 m DEM based on Rock River LiDAR acquisition, split into tiles	USGS	2008/11
	DEM_LiDAR_RockRiver_2009.img	DEM of Rock River area, 1m	SAL	2009
	DSM_LiDAR_RockRiver_2009.img	Digital Surface Model of Rock River area, 1m	SAL	2009
	Intensity_LiDAR_RockRiver_2009.img	Intensity image of Rock River area, 1m	SAL	2009
	nDSM_LiDAR_RockRiver_2009.img	Normalized DSM of Rock River area, 1m	SAL	2009
		LiDAR point cloud and contours are also available for this area	USGS	2009
<b>Hydrography</b>				
	champlain_depths.shp	NOAA chart depths and points	VCGI	chart dates
	champlain_poly.shp	LC polygon with islands shown	LCBP	
	LCB_huc14.shp	LCB hydrologic unit code 14 designations	LCBP	
	VT_basins_HUC12_line.shp	VT hydrological unit boundaries (12 digit) -line	VCGI	2003
	VT_basins_HUC12_poly.shp	VT hydrological unit boundaries (12 digit) -poly	VCGI	2003
	VT_basins_HUC8_line.shp	VT hydrological unit boundaries (8 digit) -line	VCGI	2003
	VT_basins_HUC8_poly.shp	VT hydrological unit boundaries (8 digit) -poly	VCGI	2003
	SGA_MQ	Stream geomorphic assessment for stream reaches within the US MBB	ANR	2007
	<b>WaterHydro_VHD</b>	VHD package of edited NHD files (includes polygon rivers and waterbodies, streams, HUC bounds, code tables)	VCGI	2000
	<b>nhn_02og000</b>	1:50,000 National Hydro Network files covering most of QC MBB	Geobase	1995
	<b>nhn_02oh001</b>	1:50,000 National Hydro Network files covering area north of QC MBB	Geobase	1996
<b>Infrastructure</b>				
	muni_sewers shapefiles	polygon extents for municipal sewage service in NWRPC area: alburgh, enosburg, fairfax, richford, st albans, swanton	NWRPC	2009
	muni_water shapefiles	polygon extents for municipal water service in NWRPC area: alburgh, enosburg, fairfax, richford, st albans, swanton	NWRPC	2009

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	VT_dams	Vermont Dam Inventory dam point locations (type and use status)	VCGI	2009
	LCB_PCS_locations.shp	NY/VT locations of EPA permitted water discharges extracted from IMS, discharge data can be added (for other EPA data, connect to <a href="http://geodata.epa.gov">geodata.epa.gov</a> )	EPA	2009
<b>Land use/land cover</b>				
	LULC_LCB_1992	improved 2001 LULC data for LCB created by UVM SAL (7 classes)	SAL	1992
	LULC_LCB_2001	improved 1992 LULC data for LCB created by UVM SAL (7 classes)	SAL	2001
	LULC_MQ_corridor.shp	US Missisquoi, North Branch, and Trout River LULC for 800' buffer corridors (14 classes)	SAL	2003
	Crop_DomSoil	Agricultural cover types and dominant soil types: Addison, Chittenden, Franklin, and Grand Isle counties	SAL	2003
	Suburban_Pasture	Suburban and pasture fields in above study area	SAL	200309
	CropRotation_SoilType	likely crop rotations based on soils for study area (part of project mdb)	SAL	200604
	CropRotationCodes_Domain	crop rotation codes (part of project mdb)	SAL	NA
	LULC_Domain	Land use/land cover codes (part of project mdb)	SAL	NA
	CCAP_vt_01_06.img	CCAP Land Cover change analysis (based on 2001-era and 2000-era classifications)	NOAA	1999-2006
	CCAP_vt_06.img	CCAP Land Cover classification for VT (22 classes)	NOAA	2005-2006
	CCAP_vt_96_01.img	CCAP Land Cover change analysis (based on 1995-era and 2000-era classifications)	NOAA	1994-2003
	IMPERV2001.img	Percent imperviousness based on 2001 National Land Cover Database (30 m res)	VCGI	2003
<b>Modeling</b>				
Total P for Missisquoi River Basin from 1992 SPARROW model	catchments	Catchment areas of reaches with primary P source noted	USGS	early 1990s
	reaches	NHD reaches at 1:100k with predicted P load (kg/yr	USGS	early 1990s
	sources&loads.mxd	Shows NHD reaches with line width increasing with total phosphorus load (kg/yr)	USGS	early 1990s

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	states_ne	outline of New England states for reference in .mxd	USGS	early 1990s
<b>Monitoring</b>				
	LC_USGS_ECsites.shp	USGS emerging contaminant monitoring sites in VT	USGS	2006-8
	LC_USGS_HgSites.shp	USGS mercury monitoring sites in VT	USGS	2008
	LC_VTUSGS_gages.shp	USGS continuous flow gages in VT	USGS	2008
	LongTermLakeSites.shp	LCBP Long term monitoring sites on Lake Champlain	LCBP	2008
	LongTermTribSites.shp	LCBP Long term monitoring sites on LCB tributaries	LCBP	2008
	STM_locations.shp	LCBP Short-term monitoring locations in MBB	LCBP	2009
	WWTF_P_Loads_VT-NY-QC.xls	Annually averaged WWTF phosphorus loads, 1991-2008	ANR	1991-2008
	CC_RockRiverSites.shp	Rock River grab-sample sites (DEC 08)	ANR	2008
	MQ_FlowGageSites.shp	Continuous flow gage locations in MBB (USGS, MDDEP)	DEC/MDDEP	2007
	MQ_PhosSamplingSites.shp	Phosphorus sampling sites in MBB (DEC, MDDEP 2002-5)	DEC/MDDEP	2002-5
	MRBA_05-07.shp	MRBA grab-sample sites in MBB (05-07)	MRBA	2005-7
	MRBA_08_sites.shp	MRBA grab-sample sites in MBB (08)	MRBA	2008
	UVM_Hungerford_Sites	Hungerford Brook gaged stream sampling sites (UVM May-Nov 06)	UVM	2006
	2008_303dPartA_line.shp	VT CWA 303d Part A impaired surface streams	VCGI	2008
	2008_303dPartA_poly.shp	VT CWA 303d Part A impaired surface lakes	VCGI	2008
	Misq_303d_streams_partA.shp	US MBB streams designated under Part A of CWA 303(d) 2008	VCGI	2008
	Misq_303d_streams_partsAC.shp	US MBB streams designated under CWA 303(d) (part A) 2008 or Vermont List of Priority List of Surface Waters (part C) 2008	LCBP	2008
	Misq_303d_lakes_partA.shp	US MBB waterbodies designated under Part A of CWA 303(d) 2008	VCGI	2008
	2008_priority_waterBtoG_line.shp	VT Priority Surface streams outside of CWA	VCGI	2008
	2008_priority_waterBtoG_poly.shp	VT Priority Surface lakes outside of CWA	VCGI	2008
	stormwater_outfalls.shp	Stormwater outfalls associated with 2004 VT Impaired waters list	VCGI	2005
<b>Precipitation</b>				
	precip01_02albers.img	LCB 2001-2 mean annual precipitation in inches	SAL	2001-2

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	precip_91_albers.img	LCB 1991 mean annual precipitation in inches	SAL	1991
	precip_mean_albers.img	LCB long-term mean annual precipitation in inches, 57 stations, 1951-1996	SAL	1951-96
	region_precip_stations	stations used to create the precipitation images		
	stations_precip_1995.shp	stations with 1995 min, max, and mean precipitation values		
	updated_precip	cooperative and automatic weather stations in and near the MBB	NWS/MDDEP/ECWO	2009
<b>Orthophotography</b>				
	2003 NAIP	contain .sid orthophotos for VT: 1 m, 3-band, 2003 NAIP (with index)	VCGI	2003
	<b>Essex</b>	contains .jp2 orthomosaic for Essex County: 1 m, color IR, 2008 NAIP	USGS	2008
	<b>Franklin</b>	contains .jp2 orthomosaic for Franklin County: 1 m, color IR, 2008 NAIP	USGS	2008
	<b>Grand Isle</b>	contains .jp2 orthomosaic for Grand Isle County: 1 m, color IR, 2008 NAIP	USGS	2008
	<b>Orleans</b>	contains .jp2 orthomosaic for Orleans County: 1 m, color IR, 2008 NAIP	USGS	2008
	HBSAWS_n_30_2008_1.sid	Hungerford Brook watershed orthophoto mosaic, 2008 NAIP 1' color	USDA	2008
	RRWS_n_30_2008_1.sid	Rock River watershed orthophoto mosaic, 2008 NAIP 1' color	USDA	2008
	<b>us_border_aoi_55_2008_30cm</b>	.tif orthophoto tiles extending 10 miles N and 30 mi S of the international border: 1', full color	USGS	2008
	<b>VMP</b>	Vermont Mapping Program bw 0.5m orthos (Mr. sid)	VMP	various 2006-8
<b>Soils</b>				
	<b>VT_SSURGO data</b>	SSURGO spatial and tabular datasets for relevant MBB counties	NRCS	various dates
	soil_vt011_streambankerosion.shp	streambank erosion rankings by soil type, Franklin County, VT	NRCS	based on SSURGO, various dates
	soil_vt015_streambankerosion.shp	streambank erosion rankings by soil type, Lamoille County, VT	NRCS	based on SSURGO, various dates
	soil_vt019_streambankerosion.shp	streambank erosion rankings by soil type, Orleans County, VT	NRCS	based on SSURGO, various dates
<b>Topographic maps</b>				

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	<b>QC topos_250k</b>	1 topo tile at 1:250,000 covering QC LCB	GeoGratis	1988
	<b>QC topos_50k</b>	6 topo tiles at 1:50,000 covering QC LCB	GeoGratis	1985-96 (various)
	<b>VT_100k</b>	13 VT topo tiles at 1:100 000 scale	USGS/VCGI	various
	<b>VT_24k</b>	234 VT topo tiles at 1:24,000 scale	USGS/VCGI	various
<b>Transportation</b>				
	NRN_QC_rds.shp	National Roads Network QC roads (paved/unpaved surfaces noted)	Geobase	2002
	<b>bridge_culvert</b>	VT bridge and culvert database of transportation structures (Vtrans)	VCGI	2008
	VT_e911_rds.shp	E911 road centerlines from 1:5000 photos and GPS	VCGI	2006
	vt_pavemt_type98.shp	1998 pavement types for select VT roads	VCGI	1998
	VT_roadbases_2000.shp	2000 roadway base materials for select VT highways	VCGI	2000
	Vtrans_majrds1.shp	VTrans road centerlines -major and minor roads (less reliable naming than e911)	VCGI	2008
	Vtrans_majrds2.shp	VTrans road centerlines -major and minor roads (less reliable naming than e911)	VCGI	2008
	Vtrans_rds.shp	VTrans road centerlines -all roads including surface info (less reliable naming than e911)	VCGI	2008
<b>Wetlands</b>				
	Cours_eau_BDTQ	stream paths modified from QC topographic data as part of "Milieux humides Monteregie" assessment	Geomont	2005/2006
	Eau_libre_BDTQ	waterbodies modified from QC topographic data as part of "Milieux humides Monteregie" assessment	Geomont	2005/2006
	Milieux_humides	polygon extends of wetlands (7 classes) in Monteregie region	Geomont	2008
	VT_NWI_line.shp	VT NWI quads with codes (line)	VCGI	1983
	VT_NWI_poly.shp	VT NWI quads with codes (poly)	VCGI	1983
	VT_sig_wetlands.shp	VT Significant Wetland Inventory (generalized type)	VCGI	1975-1978
	restorable_wetlands.shp	Prioritization of restorable wetlands in LCB	ANR	2008
	RiparianGaps_MQ.shp	Gaps in 25' riparian buffers for SGA stream reaches, US MBB	NRCS	2003