History of the Lake Champlain Phosphorus TMDL

1990 Adoption of numeric total phosphorus concentration criteria for segments of Lake Champlain and Lake Memphremagog in the Vermont Water Quality Standards.

1993 Endorsement of the Lake Champlain phosphorus criteria by New York and Quebec as mutual lake management goals in a signed Water Quality Agreement.

1996 Completion of a joint Vermont and New York phosphorus budget and modeling study for Lake Champlain.

1996 Negotiation of a phosphorus reduction agreement for Lake Champlain between Vermont and New York, including preliminary point and nonpoint source load allocations by watershed, adopted as part of the first Lake Champlain Basin Program plan, *Opportunities for Action*.

2002 Establishment of a division of responsibility for phosphorus reduction in Missisquoi Bay in a Water Quality Agreement signed by Vermont and Quebec, including load allocations for each jurisdiction.

2002 EPA approval of a joint Vermont and New York Lake Champlain Phosphorus TMDL. The TMDL incorporated all the preceding analyses and agreements, specified individual wasteload allocations for all wastewater treatment facilities in the basin, and included an implementation plan for nonpoint source load reductions.

2004 Initiation of the Vermont Clean and Clear Action Plan to fund the implementation of the Lake Champlain TMDL and address similar water quality needs statewide.

2010 Completion by Vermont ANR of a Revised Implementation Plan for the Lake Champlain Phosphorus TMDL, as required by Act 130 (2008).

2011 Reconsideration by EPA and disapproval of the Vermont portion of the Lake Champlain TMDL.

2013 Completion of modeling and development of proposed allocations by EPA. Public review and comment on key TMDL components.

2014 Final approval of TMDL by EPA.

Eric Smeltzer, Vermont DEC, January 25, 2013

TMDL = WLA + LA + MOS

Total Maximum Daily Load (Total Loading Capacity)	Wasteload Allocation ("Point Sources")	Load Allocation ("Nonpoint Sources")	Margin of Safety
Determined primarily by data, modeling, and other technical analyses. Will be expressed at the major watershed level (e.g., the Winooski River).	Achieved by federally required permits or other regulations. Examples • Wastewater discharges • Construction stormwater • Operational stormwater • MS4s • CSOs • CAFOs	Achieved by regulatory or non-regulatory methods. Requires "reasonable assurances." Examples • Agricultural runoff • Unregulated stormwater • River channel instability • Road drainage networks • Forest runoff and natural background	Could be a percentage (e.g., 10%) of the TMDL.

Acronyms:
MS4 = Municipal Separate Storm Sewer System
CSO = Combined Sewer Overflow
CAFO = Concentrated Animal Feeding Operation

Eric Smeltzer, Vermont DEC, January 25, 2013