

Sector #1: Water Infrastructure - Municipal Wastewater, Combined Sewer and Other Categories
Funding Need, 20-Year Projection (\$s in millions, unless otherwise indicated)

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Major Category - Needs & Funding Sources	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	FY 35	20-Year Total	Notes	
Funding Needs																							
LC TMDL Phosphorus (13 WWTFs)		0.9	2.3	10.6	16.8	27.7	14.1	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	78.4	Based on FED's Cost Estimate - Does not include longer term cost beyond FY36.	
LC TMDL Phosphorus (Other)	3.1	0.2	0.5	3.2	3.2																10.2	Current Plist w/Airport Parkway & Hinesburg WWTF	
CSO (67 CSOs at 16 municipalities)	1.3	1.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	117.9	Based on Winslow's Memo	
Wastewater Treatment Asset Management	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	Asset management training	
Refurbishment - WWTFs and Collection Systems	38.5	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	688.3	Figures beyond FY16 based on Needs Survey (2008) and adjusted to 2015 dollars	
WWTF Capacity Upgrade Other Than PO4	0.1		1.8																		1.9	Based on Current Plist	
Sewer Extension	2.7	15.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	126.0	3yr trend \$5-\$7 M/yr.	
Funding Need Subtotal	45.7	52.5	51.3	60.4	66.6	74.3	60.7	52.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	1,023.3		
Funding Sources																							
CWSRF Current Balance (6/30/2015)	59.0																				59.0	CWSRF Starting Balance ~ 7/1/15	
CWSRF Annual Federal Grant	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	128.0	Assumes Level Funding	
CWSRF Annual State Match	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	27.2	Assumes Level Funding	
CWSRF Annual Loan Repayments	8.3	8.6	9.0	9.4	9.7	9.9	10.3	10.7	11.2	11.7	12.2	12.7	13.2	13.7	14.3	14.9	15.5	16.1	16.8	17.5	245.7	Based on Current Projections	
WPC Annual State Grants Appropriation	1.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	41.2	Projection based on prior 10-yr avg.	
USDA RD WEP Annual Loan Appropriation	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	93.0	Assumes Level Funding & 50/50 Split w/DW	
USDA RD WEP Annual Grant Appropriation	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	45.0	Assumes Level Funding	
USDA RD REAP Zone Grant	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	17.0	Assumes Level Funding	
Clean Water Fund Asset Management	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4		
Lake Champlain Basin Program		0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	Asset Management support; Assume level funding from federal partners (EPA), 75% federal, 25% state match	
Funding Sources Subtotal	84.1	26.7	26.7	27.0	27.3	27.5	27.9	28.3	28.8	29.3	29.8	30.3	30.8	31.3	31.9	32.5	33.1	33.7	34.4	35.1	656.7		
Funding Gap	38.4	(25.8)	(24.6)	(33.4)	(39.3)	(46.8)	(32.8)	(24.3)	(17.8)	(17.3)	(16.8)	(16.3)	(15.8)	(15.3)	(14.7)	(14.1)	(13.5)	(12.9)	(12.2)	(11.5)	(366.6)		

Note1: Blue Shaded lines are costs associated with either compliance with Act 64 or with the LC TMDL
 Note2: That the "Cross-Sectors" funding can be applied to most NPS and stormwater control costs; a surplus in that line item is available for categories of need that show a deficit.

Abbreviations	
BMP:	Best Management Practice
CSO:	Combined Sewer Overflows
CWF:	Clean Water Fund
CWIP:	Clean Water Initiative Program
CWSRF:	Clean Water State Revolving Fund
ER:	Ecosystem Restoration Grants (of CWIP)
FWD:	Fish & Wildlife Department
LC TMDL:	Lake Champlain Total Max Daily Load
NPS:	NonPoint Source (not wastewater & reg. stormwater)
PO4:	Phosphorus
REAP Zone:	Rural Economic Area Program Grants
USDA RD:	US Dept of Agriculture Rural Development
VTrans:	Vermont Agency of Transportation
WEP:	Water Environment Program
WPC:	Water Pollution Control
WW:	Wastewater

Wastewater Treatment Facility (WWTF) Assumptions on Parties (State, Municipal, Private) to Cover Need and Funds

Sector	Category		State	Federal	Municipal	Private
Wastewater	LC TMDL Phosphorus (13 WWTFs)		12%	53%	35%	0%
Wastewater	LC TMDL Phosphorus (Other)		12%	53%	35%	0%
Wastewater	Lake Memphremagog Nutrient Removal		12%	53%	35%	0%
Wastewater	CSO (67 CSOs at 16 municipalities)		12%	53%	35%	0%
Wastewater	Wastewater Treatment Asset Management		12%	53%	35%	0%
Wastewater	Refurbishment - WWTFs and Collection Systems		12%	53%	35%	0%
Wastewater	WWTF Upgrades other than PO4		12%	53%	35%	0%
Wastewater	New WWTFs & Collection Systems		12%	53%	35%	0%
Wastewater	Sewer Extension (Pollution Abatement Only)		12%	53%	35%	0%

source

Sector	Category		State		Municipal	Private
Wastewater	CWSRF Current Balance (6/30/2016)		12%		35%	0%
Wastewater	CWSRF Annual Federal Grant (Low Interest Loans)		12%		35%	0%
Wastewater	CWSRF Annual State Match		12%		35%	0%
Wastewater	CWSRF Annual Loan Repayments		12%		35%	0%
Wastewater	WPC Annual State Grants Appropriation		12%		35%	0%
Wastewater	USDA RD WEP Annual Loan Appropriation		12%		35%	0%
Wastewater	USDA RD WEP Annual Grant Appropriation		12%		35%	0%
Wastewater	USDA RD REAP Zone Grant		12%		35%	0%
Wastewater	Clean Water Fund Asset Management		12%		35%	0%

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Sector #2: Stormwater, Road Infrastructure Runoff and Erosion Control

Funding Need, 20-Year Projection (\$s in millions)

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Note1:

Blue Shaded lines are costs associated with either compliance with Act 64 or with the LC TMDL

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WEP:	Water Environment Program
WPC:	Water Pollution Control
WW:	Wastewater

Major Category - Needs & Funding Sources	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	FY 35	20-Year Total	Notes
Funding Needs																						
Assessments to identify priority projects	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	9.9	Municipal inventories; WSMD estimate
Non-Road Impervious Implementation	0.0	0.0	0.0	24.3	24.3	24.3	24.3	24.3	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	3.7	3.7	408.7	WSMD Estimate; used \$30K/acre estimate
Municipal Roads Implementation	0.0	0.0	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	304.9	Municipal Roads Implementation using WSMD estimates
State (VTrans): (a) Roads & (b) Non-Road Developed Land-Implementa	0.0	0.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	91.1	VTrans implementation using WSMD estimates
Non-Regulatory, Non-Road Implementation	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	6.0	Non-Regulatory stormwater controls
Stormwater Technical Assistance	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.3	WSMD estimate to support VLCT, SeaGrant techn assistance
LIDAR Mapping		0.4	0.5																		0.9	Match for fed grant; base information for all sectors
Funding Need Subtotal	0.7	1.2	23.4	47.2	47.3	47.3	47.3	47.3	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	26.7	26.7	824.7	
Funding Sources																						
VTrans Municipal Mitigation (Vermont Better Roads grants)	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	9.0	Former Better Back Roads Grants; Assumes Level Funding
VTrans Transportation Funds	0.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	T Bill Contribution; Assumes does not continue after FY19
Federal Highway Administration Transportation Alternatives	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	22.0	assume Fed Highway/Transpo Alternatives will continue
Federal Highway Administration - Project Dev., Construction	0.0	0.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	45.5	assume Fed Highway to cover 50% of VTrans need; includes Fed Aviation for airport projects
Lake Champlain Basin Program	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	5.0	Assume level funding from Federal partners (EPA, Great Lakes Fishery Commission)
CWIP Ecosystem Restoration	2.9	2.9	2.9	2.9	2.9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	60.9	WSMD Estimate; assumes 83% for life of RCPP match, then 90% of available funds
Clean Water Fund	1.2	4.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3	Allocations to DEC and VTrans, includes LiDAR, LaRosa; 70% of partner funds
US Forest Service, Urban and Community Forestry, Green Infrastructu	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	Federal grant for urban forestry/Green Stormwater
Funding Sources Subtotal	6.3	9.9	11.4	8.2	7.2	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	154.2	
Funding Gap	5.6	8.6	(12.0)	(39.1)	(40.1)	(39.9)	(39.9)	(39.9)	(43.5)	(43.5)	(43.5)	(43.5)	(43.5)	(43.5)	(43.5)	(43.5)	(43.5)	(43.5)	(19.2)	(19.2)	(670.5)	

Assumptions on Parties (State, Municipal, Private) to Cover Need and Funds

reference

Sector	Category	State	Private	Municipal	Federal	Comment
Stormwater	Assessments to identify priority projects	100%	0%	0%	0%	assumes st pays 100%; Estimate
Stormwater	Non-Road Impervious Implementation	8%	85%	8%	0%	See Eshelly memo; assume state and muni share costs (15%) of non-private stormwater needs at 50:50
Stormwater	Municipal Roads Implementation	50%	0%	50%	0%	assume municipal share is 50% and state share is 50%
Stormwater	State Roads & State Non-Road Developed Land-Implementation	50%	0%	0%	50%	assumes fed funds to support VTrans needs at 50:50
Stormwater	Non-Regulatory, Non-Road Implementation	100%	0%	0%	0%	assumes st covers 100% of cost; adds to grant program
Stormwater	Stormwater Technical Assistance	100%	0%	0%	0%	assumes st pays 100%; covers VLCT, SeaGrant; increases SeaGrant by 1 by 2020
Stormwater	Lake Champlain Basin Program Funds	25%	0%	0%	75%	Lake Champlain Basin Program support represents 75% federal funds, 25% state match

Sector #3: Agriculture Pollution Control

Funding Need, 20-Year Projection (\$\$ in millions)

Major Category - Needs & Funding Sources	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	FY 35	20-Year Total	Notes	
Funding Needs																							
Production Area BMP Implementation	1.20	3.00	7.00	8.00	9.00	8.00	7.00	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	112.7	e.g. silage leachate, manure pits, manure stacking sites, barnyards	
Capital Equipment Assistance Program	0.00	0.60	1.00	1.00	1.00	1.00	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	19.0	enhanced equipment to implement practices	
Manure and soil tests	0.50	0.50	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	10.1	Base information for nutrient management plans	
Cropland BMP Implementation (Farm Agronomic Practices)	0.30	4.00	5.00	6.00	7.00	7.00	6.00	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	106.5	e.g riparian buffers, cover cropping, grassed waterways	
Livestock exclusion (includes CREP)	0.00	1.20	2.00	3.00	4.00	3.00	2.00	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	33.0	total cost is based off of livestock exclusion report	
NMP & CNMP Development	2.00	2.00	2.00	3.00	4.00	3.00	3.00	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	45.7	assumes NMP standard changes every 5 years	
NMP Plan Implementation (NRCS Practice Code 590)	2.00	3.20	6.00	7.00	8.00	8.50	8.50	8.91	8.91	8.91	8.91	8.91	8.91	8.91	8.91	8.91	8.91	8.91	8.91	8.91	159.0	assumes NMP standard changes every 5 years	
Tile Drainage Study & Implementation	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	DEC to cover FY17 study costs; anticipate additional costs, pending future RAP update to address tile drain management	
NMP Classes for Farmers	0.05	0.15	0.30	0.30	0.30	0.30	0.30	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	5.8	Supports training courses for farmers	
Manure Applicator Training Program	0.01	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	2.9	Support administration of training courses and provide regulatory oversight	
NMP Classes for Technical Service Providers	0.25	0.25	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	2.2	1 FTE manage, train & regulate Tech Service Providers to assist for NMPs (incl support for non-certified SFOs interested in NMP)	
Incentive Payments	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	6.0	goal is to have additional \$200,000 per year in private match	
Farm relocation	0.30	0.30	0.50	0.50	0.50	0.50	0.50	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	9.8	assume, took middle value, based on range VAAFM provide	
Research	0.00	0.00	0.50	0.50	0.50	0.50	0.50	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	9.5	Includes options such as cropland BMP challenge development and implementation	
Tech. Assist.-BMPs (production area, cropland, livestock exclusion)	0.38	2.01	3.50	4.25	5.00	4.50	3.75	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	63.1	100% of total costs to provide assistance, e.g., engineering, project mgmt	
Tech. Assist.-NMPs (development and implementation)	1.00	1.60	2.00	2.50	3.00	2.88	2.88	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	51.2	100% of total costs to provide assistance	
Tech. Assist.-manure and soil testing	0.00	0.15	0.15	0.15	0.15	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.8	Soil testing support	
Funding Need Subtotal	8.3	19.4	31.0	37.3	43.5	40.4	36.5	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	637.1		
Funding Sources																							
USDA 5-year grant, BMP Implementation (VT RCPP)	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	RCPP-State of VT	
Agriculture Technical Assistance (VACD RCPP)	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	VACD for NMP	
USDA BMP Implementation (NRCS Base Funding)	11.0	8.0	8.0	8.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	99.0	USDA	
Lake Champlain Basin Program	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	10.0	Assume level funding from Federal partners (EPA, Great Lakes Fishery Commission)	
AAFM Capital Funds - Agriculture Implementation	1.4	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	39.2	assumes level funding each year (FY19-FY35)	
AAFM General Fund	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	10.0	assumes level funding each year (FY17-FY35)	
Clean Water Fund	0.3	1.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		Does not include CWF operating for FY16, FY17; includes approx 10% partner funds	
Farmer portion of BMP costs @ 15% (production area, cropland, livestock)	0.2	1.2	2.1	2.6	3.0	2.7	2.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	37.8	calculated at 15% cost paid for by farmer	
Farmer portion of NMP costs @ 15% (development and implementation)	0.6	0.8	1.2	1.5	1.8	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	30.7	calculated at 15% cost paid for by farmer	
Farmer portion of CEAP costs @ 50%	0.0	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	9.5	calculated at 50% state and 50% farmer to match cost of equipment	
Farmer portion of NMP Plan Implementation (NRCS Practice Code 590) @50%	1.00	1.60	3.00	3.50	4.00	4.25	4.25	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45	79.5	Farmers to cover costs at 100% from FY23-FY35	
Farmer portion of manure and soil test costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	6.6		
Funding Sources Subtotal	16.9	17.6	20.1	20.4	17.7	16.2	15.7	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	329.1		
Funding Gap	8.6	(1.8)	(10.9)	(16.9)	(25.9)	(24.2)	(20.8)	(16.4)	(16.4)	(16.4)	(16.4)	(16.4)	(16.4)	(16.4)	(16.4)	(16.4)	(16.4)	(16.4)	(16.4)	(16.4)	(308.1)		

Note1: Blue Shaded lines are costs associated with either compliance with Act 64 or with the LC TMDL

Abbreviations	
BMP:	Best Management Practice
CSO:	Combined Sewer Overflows
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CWSRF:	Clean Water State Revolving Fund
ER:	Ecosystem Restoration Grants (of CWIP)
FWD:	Fish & Wildlife Department
LC TMDL:	Lake Champlain Total Max Daily Load
NPS:	NonPoint Source (not wastewater & reg. stormwater)
PO4:	Phosphorus
REAP Zone:	Rural Economic Area Program Grants
USDA RD:	US Dept of Agriculture Rural Development
VTrans:	Vermont Agency of Transportation
WEP:	Water Environment Program
WPC:	Water Pollution Control
WW:	Wastewater

Assumptions on Parties (State, Municipal, Private) to Cover Need and Funds

reference

Sector	Category	State	Private	Municipal	Federal	Comment
Agriculture	Production Area BMP Implementation	10%	15%	0%	75%	
Agriculture	Capital Equipment Assistance Program	50%	50%	0%	0%	
Agriculture	Manure and soil tests (FY17-FY22)	100%	0%	0%	0%	
Agriculture	Manure and soil tests (FY23-FY35)	0%	100%	0%	0%	
Agriculture	Cropland BMP Implementation (Farm Agronomic Practices)	10%	15%	0%	75%	
Agriculture	Livestock exclusion (includes CREP)	10%	15%	0%	75%	
Agriculture	NMP & CNMP Development	10%	15%	0%	75%	
Agriculture	NMP Plan Implementation (NRCS Practice Code 590)	10%	50%	0%	40%	
Agriculture	Tile Drainage Study & Implementation					uncertain
Agriculture	NMP Classes for Farmers	100%	0%	0%	0%	
Agriculture	Manure Applicator Training Program	100%	0%	0%	0%	
Agriculture	NMP Classes for Technical Service Providers	100%	0%	0%	0%	
Agriculture	Incentive Payments	100%	0%	0%	0%	
Agriculture	Farm relocation	75%	25%	0%	0%	
Agriculture	Research	100%	0%	0%	0%	
Agriculture	Tech. Assist. - BMPs (production area, cropland, livestock exclusion)	100%	0%	0%	0%	
Agriculture	Tech. Assist. - NMPs (development and implementation)	100%	0%	0%	0%	
Agriculture	Technical Assistance needed for manure and soil testing	100%	0%	0%	0%	
Agriculture	Lake Champlain Basin Program Funds	25%	0%	0%	75%	

Sector #4: Restoration of Natural Resources (River Corridors, Floodplains, Wetlands, Forest Management)

Funding Need, 20-Year Projection (\$s in millions)

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Major Category - Needs & Funding Sources	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	FY 35	20-Year Total	Notes	
Funding Needs																							
Assessments to identify priority Rivers and Wetlands projects	0.00	0.00	0.41	0.41	0.41	0.41	0.36	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	5.23	WSMD Estimate-river corridor & wetland restoration assessments	
Passive restoration projects (easements) Rivers	0.00	0.00	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	10.80	water quality & flood resilience	
Passive restoration projects (easements) Rivers (LC TMDL)	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	16.20	water quality & flood resilience	
Passive restoration projects (easements) Wetlands	0.00	0.00	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	3.42	water quality & flood resilience	
Passive restoration projects (easements) Wetlands (LCTMDL)	0.00	0.00	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	10.08	water quality & flood resilience	
Floodplain restoration projects	0.00	0.18	0.70	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	14.48	water quality & flood resilience	
Floodplain restoration projects (LC TMDL)	0.00	0.28	1.05	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	21.73	water quality & flood resilience	
Wetland restoration projects	0.00	0.12	0.43	0.43	0.43	0.43	0.50	0.50	0.63	0.63	0.68	0.63	0.63	0.50	0.50	0.43	0.43	0.43	0.43	0.43	9.12	water quality & flood resilience	
Wetland restoration projects (LC TMDL)	0.00	0.35	1.28	1.28	1.28	1.28	1.50	1.50	1.88	1.88	2.03	1.88	1.88	1.50	1.50	1.28	1.28	1.28	1.28	1.28	27.35	water quality & flood resilience	
Forestry Technical Assistance & Implementation	0.00	0.23	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	4.01	DFPR estimate to support TMDL (AMP training, publication), forest buffer restoration, BMP incentivizes	
Loggers Capital Equipment Assistance Program	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	17.00	DFPR estimate for new logger capital equipment assistance program	
Funding Need Subtotal	0.0	1.1	6.3	7.6	7.6	7.6	7.8	7.7	8.2	8.2	8.4	8.2	8.2	7.7	7.7	7.4	7.4	7.4	7.4	7.4	139.4		
Funding Sources																							
CWIP - Ecosystem Restoration	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	6.9	WSMD Estimate; assumes 10% of available funds	
CWIP-Ecosystem Restoration RCPP Match-Wetland Restoration	0.0	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	State Match for Federal USDA Grant	
Clean Water Fund-Implementation, Tech Assistance	0.0	1.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	includes 20% of partner funds for FY17	
Lake Champlain Basin Program	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	4.0	EPA, Great Lakes Fishery Commission Funds	
US EPA Section 319 Funds - Implementation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Currently unavailable	
FWD License Plate Grants-Implementation, Tech Assistance	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.1	Assume 80% of available funds	
USDA 5-year grant, Forest BMP Implementation	0.30	0.30	0.30	0.30	0.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	Short-term federal grant	
USDA WRE Program	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	20.00	Assume level funding of Farm Bill program	
US Fish and Wildlife Service - Partners for Fish & Wildlife	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	6.00	Assume level funding	
US Forest Service Grant to Forest, Parks, & Recreation	0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	USFS Grant to support AMP publication	
Funding Sources Subtotal	2.2	3.8	2.8	2.4	2.4	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	42.45		
Funding Gap	2.2	2.6	(3.5)	(5.1)	(5.1)	(5.4)	(5.9)	(5.8)	(6.3)	(6.3)	(6.5)	(6.3)	(6.3)	(5.8)	(5.8)	(5.5)	(5.5)	(5.5)	(5.5)	(5.5)	(97.0)		

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reference

Sector	Category	State	Private	Municipal	Federal	Comment
Natural Resources	Restoration - Floodplain, Rivers, Wetlands, Forest	100%	0%	0%	0%	assumes 100% of costs borne by public; goal to secure greater federal assistance
Natural Resources	Lake Champlain Basin Program Funds	25%	0%	0%	75%	Lake Champlain Basin Program support represents 75% federal funds, 25% state match