*** D R A F T - 11/14/2016 ***

Summary: Costs for Clean Water Improvements by Sector

Vermont Water Quality Funding 20-Year Projection ($s in millions, unless otherwise indicated), Page 1

Tier 1 and Tier 2 Legend
Blue Shaded lines are "Tier 1" costs, the incremental costs associated with TMDLs, Act 64 (2015) and CSO Policy (2016).
Unshaded lines are "Tier 2" costs, costs that support, enhance and catalyze compliance.
Tan shaded lines represent the total of "Tier 1" and "Tier 2"

Tier 1 Summary: Costs & Financing Sources	Projected 20-Year Costs	Projected 20-Yr Financing	Total 20-Year Gap	Annualized Gap
Tier 1 Municipal Wastewater Pollution Control, including CSO	$337,971,000	$215,181,138	($128,868,178)	($6,443,409)

Tier 1 Summary: Costs & Funding Sources	Projected 20-Year Costs	Projected 20-Year Funds	Total 20-Year Gap	Annualized Gap
Tier 1 Agriculture Pollution Control	$616,748,077	$282,045,000	($334,703,077)	($16,735,154)
Tier 1 Stormwater Pollution Control, Including Roads	$694,678,108	$127,005,000	($567,673,108)	($28,383,655)
Tier 1 Natural Resources Restoration for Pollution Control	$83,885,000	$32,927,000	($50,958,000)	($2,547,900)
Tier 1 Subtotal: Agriculture, Stormwater, Natural Resources	$1,395,311,185	$441,977,000	($953,334,185)	($47,666,709)
Tier 1 Total	**$1,733,282,185**	**$657,158,138**	**($1,082,202,362)**	**($54,110,118)**

Tier 2 Summary: Costs & Financing Sources	Projected 20-Year Costs	Projected 20-Yr Financing	Total 20-Year Gap	Annualized Gap
Tier 2 Municipal Wastewater Control	$530,399,000	$378,603,565	($151,795,435)	($7,589,772)

Tier 2 Summary: Costs & Funding Sources to Support Compliance	Projected 20-Year Costs	Projected 20-Yr Funds	Total 20-Year Gap	Annualized Gap
Tier 2 Agriculture Pollution Control	$46,766,538	$0	($46,766,538)	($2,338,327)
Tier 2 Stormwater Pollution Control, Including Roads	$32,540,000	$6,159,000	($26,381,000)	($1,319,050)
Tier 2 Natural Resources Restoration for Pollution Control	$58,868,000	$6,435,000	($52,433,000)	($2,621,650)
Tier 2 Subtotal: Agriculture, Stormwater, Natural Resources	$138,174,538	$12,594,000	($125,580,538)	($6,279,027)
Tier 2 Total	**$668,573,538**	**$391,197,565**	**($277,375,974)**	**($13,868,799)**

Tier 1 & Tier 2 Total				
Total Summary: Costs & Financing Sources	**Projected 20-Year Costs**	**Projected 20-Yr Financing**	**Total 20-Year Gap**	**Annualized Gap**
Municipal Wastewater Control, including CSO	$868,370,000	$593,784,703	($280,663,613)	($14,033,181)

Total Summary: Costs & Funding Sources	Projected 20-Year Costs	Projected 20-Yr Funds	Total 20-Year Gap	Annualized Gap
Agriculture Pollution Control	$663,514,615	$282,045,000	($381,469,615)	($19,073,481)
Stormwater Pollution Control, Including Roads	$727,218,108	$133,164,000	($594,054,108)	($29,702,705)
Natural Resources Restoration for Pollution Control	$142,753,000	$39,362,000	($103,391,000)	($5,169,550)
Subtotal: Agriculture, Stormwater, Natural Resources	$1,533,485,723	$454,571,000	($1,078,914,723)	($53,945,736)
Tier 1 & Tier 2 Total	**$2,401,855,723**	**$1,048,355,703**	**($1,359,578,336)**	**($67,978,917)**

Please note that these data are rounded for presentation purposes, and therefore, may not always total to the exact number.

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:	Phophorus
REAP Zone:	Rural Economic Area Program Grants
USDA RD:	US Dept of Agriculture Rural Development
VTrans:	Vermont Agency of Transporation
WEP	Water Environment Program
WPC:	Water Pollution Control
WW:	Wastewater

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Summary: Costs for Clean Water Improvements by Sector

3 **Vermont Water Quality Funding 20-Year Projection ($s in millions, unless otherwise indicated), Page 1**

4	**Tier 1 and Tier 2 Legend**
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	Tan shaded lines represent the total of "Tier 1" and "Tier 2"

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8	**Municipal Wastewater Sector**																						
9	**Costs & Financing Sources**	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	FY 36	FY 37	20-Year Total	Annualized
10	Tier 1 Muni. Wastewater Control: Costs, Required by TMDL, Act 64, CSO	11.8	16.1	35.0	42.7	54.8	48.0	39.0	26.8	11.3	11.3	11.3	7.5	3.8	3.8	3.8	3.8	3.8	3.8	0.0	0.0	338.0	16.9
11	Tier 1 Muni. Wastewater Control: Funding Sources, Req. by TMDL, Act 64, CSO	9.8	11.5	22.1	25.4	25.6	27.6	26.8	20.3	5.0	6.6	6.7	4.9	2.7	2.8	2.9	2.9	2.5	3.0	3.0	3.0	215.2	10.8
12	Tier 1 Municipal Wastewater Control: Gap, Required by TMDL, Act 64, CSO	(2.0)	(4.6)	(12.8)	(17.3)	(29.2)	(20.4)	(12.2)	(6.5)	(6.2)	(4.7)	(4.6)	(2.6)	(1.1)	(0.9)	(0.9)	(0.8)	(1.3)	(0.7)	3.0	3.0	(128.9)	(6.4)
13	Tier 2 Municipal Wastewater Control: Costs that Support Compliance	27.8	25.0	11.8	7.7	8.8	5.6	6.4	14.9	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	530.4	26.5
14	Tier 2 Municipal Wastewater Control: Funding Sources to Support Compliance	23.1	17.8	7.5	4.6	4.1	3.2	4.4	11.5	15.7	20.5	20.9	23.1	25.1	26.3	26.8	27.3	23.1	28.5	32.1	32.8	378.6	18.9
15	Tier 2 Municipal Wastewater Control: Gap, to Support Compliance	(4.7)	(7.2)	(4.3)	(3.1)	(4.7)	(2.4)	(2.0)	(3.3)	(19.5)	(14.7)	(14.3)	(12.1)	(10.1)	(8.9)	(8.4)	(7.9)	(12.1)	(6.7)	(3.1)	(2.4)	(151.8)	(7.6)
16	Municipal Wastewater Control: Total Costs	39.7	41.1	46.8	50.4	63.6	53.5	45.4	41.6	46.5	46.5	46.5	42.7	39.0	39.0	39.0	39.0	39.0	39.0	35.2	35.2	868.4	43.4
17	Municipal Wastewater Control: Total Funding Sources	32.9	29.3	29.6	30.0	29.8	30.8	31.2	31.8	20.8	27.1	27.6	28.1	27.7	29.1	29.7	30.3	25.6	31.5	35.2	35.9	593.8	29.7
18	Municipal Wastewater Control: Total Gap	(6.8)	(11.8)	(17.1)	(20.4)	(33.8)	(22.8)	(14.3)	(9.8)	(25.7)	(19.4)	(18.9)	(14.6)	(11.2)	(9.8)	(9.3)	(8.7)	(13.4)	(7.5)	(0.0)	0.7	(274.6)	(13.7)

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20	**Agricultural Sector**																						
21	**Costs & Funding Sources**	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	FY 36	FY 37	20-Year Total	Annualized
22	Tier 1 Agriculture Pollution Control: Costs, Required by TMDL, Act 64	28.2	34.5	40.7	37.6	33.7	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	616.7	30.8
23	Tier 1 Agriculture Pollution Control: Funding Sources, Required by TMDL, Act 64	15.0	14.3	14.3	14.3	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	282.0	14.1
24	Tier 1 Agriculture Pollution Control: Gap, Required by TMDL, Act 64	(13.2)	(20.2)	(26.5)	(23.3)	(19.7)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(334.7)	(16.7)
25	Tier 2: Agriculture Pollution Control: Costs that Support Compliance	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	46.8	2.3
26	Tier 2 Agriculture Pollution Control: Funding Sources to Support Compliance	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	0.0
27	Tier 2 Agriculture Pollution Control: Gap, to Support Compliance	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(46.8)	(2.3)
28	Agriculture Pollution Control: Total Costs	30.5	36.8	43.0	39.9	36.0	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	663.5	33.2
29	Agriculture Pollution Control: Total Funding Sources	15.0	14.3	14.3	14.3	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	282.0	14.1
30	Agriculture Pollution Control: Total Gap	(15.5)	(22.5)	(28.8)	(25.6)	(22.0)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(17.8)	(381.5)	(19.1)

31	**Stormwater/Developed Lands Sector**																						
32	**Costs & Funding Sources**	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	FY 36	FY 37	20-Year Total	Annualized
33	Tier 1 Stormwater Pollution Control: Costs, Required by TMDL, Act 64	13.3	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	43.3	43.3	43.3	43.3	43.3	43.3	17.8	17.8	17.8	17.8	694.7	34.7
34	Tier 1 Stormwater Pollution Control: Funding Sources Required by TMDL, Act 64	8.8	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	9.0	9.0	127.0	6.4
35	Tier 1 Stormwater Pollution Control: Gap, Required by TMDL, Act 64	(4.5)	(33.1)	(33.0)	(33.0)	(33.0)	(33.0)	(33.0)	(33.0)	(33.0)	(33.0)	(37.4)	(37.4)	(37.4)	(37.4)	(37.4)	(37.4)	(11.9)	(11.9)	(8.8)	(8.8)	(567.7)	(28.4)
36	Tier 2 Stormwater Pollution Control: Costs that Support Compliance	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	1.6	1.6	1.6	1.6	1.6	1.6	1.6	32.5	1.6
37	Tier 2 Stormwater Pollution Control: Funding Sources to Support Compliance	0.1	0.1	0.1	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	6.2	0.3
38	Tier 2 Stormwater Pollution Control: Gap, to Support Compliance	(1.5)	(1.5)	(1.5)	(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)	(1.3)	(1.3)	(1.3)	(26.4)	(1.3)
39	Stormwater Pollution Control: Total Costs	14.9	40.5	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	45.0	45.0	45.0	45.0	45.0	45.0	19.4	19.4	19.4	19.4	727.2	36.4
40	Stormwater Pollution Control: Total Funding Sources	8.9	5.9	6.0	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	9.3	9.3	133.2	6.7
41	Stormwater Pollution Control: Total Gap	(6.0)	(34.6)	(34.5)	(34.3)	(34.3)	(34.3)	(34.3)	(34.3)	(34.3)	(34.3)	(38.7)	(38.7)	(38.7)	(38.7)	(38.7)	(38.7)	(13.1)	(13.1)	(10.0)	(10.0)	(594.1)	(29.7)

42	**Natural Resources Sector**																						
43	**Costs & Funding Sources**	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	FY 36	FY 37	20-Year Total	Annualized
44	Tier 1 Natural Resources Restoration: Costs, Required by TMDL, Act 64	1.9	3.3	4.1	4.1	4.2	4.4	4.4	4.7	4.8	4.9	4.7	4.8	4.4	4.4	4.1	4.1	4.1	4.1	4.1	4.1	83.9	4.2
45	Tier 1 Nat Resources Restoration: Funding Sources, Required by TMDL, Act 64	1.9	1.9	1.8	1.8	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	1.6	1.6	1.6	32.9	1.6
46	Tier 1 Natural Resources Restoration: Gap, Required by TMDL, Act 64	(0.0)	(1.4)	(2.3)	(2.3)	(2.6)	(2.8)	(2.8)	(3.2)	(3.2)	(3.3)	(3.2)	(3.2)	(2.8)	(2.8)	(2.6)	(2.6)	(2.6)	(2.6)	(2.6)	(2.6)	(51.0)	(2.5)
47	Tier 2 Natural Resources: Costs that Support Compliance	1.0	2.8	2.9	3.1	3.1	3.1	3.0	3.2	3.2	3.2	3.2	3.2	3.0	3.1	3.0	3.0	3.0	3.0	3.0	3.0	58.9	2.9
48	Tier 2 Natural Resources: Funding Sources that Support Compliance	0.9	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	6.4	0.3
49	Tier 2 Natural Resources: Gap, to Support Compliance	(0.0)	(2.5)	(2.6)	(2.8)	(2.8)	(2.9)	(2.8)	(2.9)	(2.9)	(2.9)	(2.9)	(2.9)	(2.8)	(2.9)	(2.7)	(2.7)	(2.7)	(2.7)	(2.7)	(2.7)	(52.4)	(2.6)
50	Natural Resources Restoration: Total Costs	2.9	6.1	7.1	7.3	7.2	7.5	7.4	7.9	7.9	8.1	7.9	7.9	7.4	7.5	7.1	7.1	7.1	7.1	7.1	7.1	142.8	7.1
51	Natural Resources Restoration: Total Funding Sources	2.8	2.2	2.1	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	1.9	1.9	39.4	2.0
52	Natural Resources Restoration: Total Gap	(0.0)	(3.9)	(4.9)	(5.1)	(5.4)	(5.6)	(5.5)	(6.0)	(6.0)	(6.2)	(6.0)	(6.0)	(5.5)	(5.6)	(5.2)	(5.2)	(5.2)	(5.2)	(5.2)	(5.2)	(103.4)	(5.2)

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54	Summary of Broad Categories - TMDL, Act 64, CSO	Need	Projected Funding	Total 20-Year Gap	Annualized Gap
55	Municipal Water Pollution Control Infrastructure (WWTF)	$337,971,000	$215,181,138	($128,868,178)	($6,443,409)
56	Non-Wastewater Pollution Control (Precipitation-Based)	$1,395,311,185	$441,977,000	($953,334,185)	($47,666,709)
57	Total	$1,733,282,185	$657,158,138	($1,082,202,362)	($54,110,118)

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99	Abbreviations	
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101	CSO:	Combined Sewer Overflows
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110	REAP Zone:	Rural Economic Area Program Grants
111	USDA RD:	US Dept of Agriculture Rural Development
112	VTrans:	Vermont Agency of Transporation
113	WEP	Water Environment Program
114	WPC:	Water Pollution Control
115	WW:	Wastewater

*** D R A F T - 11/14/2016 ***

Sector #1: Clean Water Infrastructure - Municipal Wastewater, Combined Sewer and Other Categories

Funding Need, 20-Year Projection ($s in millions, unless otherwise indicated)

Municipal Wastewater Sector Costs & Funding Sources	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	FY 36	FY 37	20-Year Total	Notes
Tier 1 Costs: Required by TMDL, Act 64, CSO																						
LC TMDL Phosphorus (13 WWTFs)	0.90	2.30	10.60	16.80	27.70	14.10	6.00	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	78.40	Based on FED's Cost Estimate - Does not include longer term cost beyond FY36.
WWTF Water Quality Refurbishment, TMDL-Related	6.32	8.08	17.41	20.31	18.08	22.59	21.74	15.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	129.99	
Lake Memphremagog Nutirent Removal (4 WWTFs)	0.00	0.22	0.44	2.24	1.50	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	4.40	
LC TMDL Phosphorus (Capital Bill Priorities)	3.60	3.20	3.20	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	10.00	Current State Revolving Fund Priority List that includes the Airport Parkway & Hinesburg wastewater treatment facility
CSO (66 CSOs at 15 municipalities)	1.00	2.30	3.30	3.30	7.52	11.28	11.28	11.28	11.28	11.28	11.28	7.52	3.76	3.76	3.76	3.76	3.76	3.76	0.00	0.00	115.18	Began implementing CSO controls in 2016 ($1.34M) and 2017 ($1.4M)
Subtotal	**11.82**	**16.10**	**34.95**	**42.65**	**54.80**	**47.97**	**39.02**	**26.75**	**11.28**	**11.28**	**11.28**	**7.52**	**3.76**	**3.76**	**3.76**	**3.76**	**3.76**	**3.76**	**0.00**	**0.00**	**337.97**	
Tier 1 Funding Sources: To support TMDL, Act 64, CSO																						
CWSRF Current Balance (6/30/2015 - Provided as Loans)	1.82	2.10	4.02	4.55	4.54	4.82	4.62	3.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.92	CWSRF Starting Balance ~ 7/1/15; set at 61.1; spread over 10 years
CWSRF Annual Federal Grant (Provided as Loans)	1.83	2.11	4.03	4.56	4.55	4.83	4.63	3.46	1.02	1.31	1.31	0.95	0.50	0.52	0.52	0.52	0.43	0.52	0.52	0.52	38.65	Assumes Level Funding
CWSRF Annual State Match (Provided as Loans)	0.39	0.45	0.86	0.97	0.97	1.03	0.99	0.74	0.22	0.28	0.28	0.20	0.11	0.11	0.11	0.11	0.09	0.11	0.11	0.11	8.23	Assumes Level Funding
CWSRF Annual Loan Repayments (Provided as Loans)	2.83	3.40	6.76	7.96	8.26	9.12	9.09	7.07	2.17	2.89	3.00	2.27	1.25	1.34	1.40	1.45	1.25	1.57	1.57	1.57	76.23	Based on Current Projections
WPC Annual State Grants Appropriation	0.63	0.72	1.38	1.56	1.56	1.66	1.59	1.19	0.35	0.45	0.45	0.33	0.17	0.18	0.18	0.18	0.15	0.18	0.18	0.18	13.25	Projection based on prior 10-yr avg.
USDA RD WEP Annual Loan Appropriation	1.39	1.60	3.06	3.46	3.46	3.67	3.51	2.63	0.77	0.99	0.99	0.72	0.38	0.39	0.39	0.39	0.33	0.39	0.39	0.39	29.34	Assumes Level Funding & 50/50 Split w/DW
USDA RD WEP Annual Grant Appropriation	0.67	0.78	1.48	1.68	1.67	1.77	1.70	1.27	0.37	0.48	0.48	0.35	0.19	0.19	0.19	0.19	0.16	0.19	0.19	0.19	14.20	Assumes Level Funding
USDA RD REAP Zone Grant	0.25	0.29	0.56	0.63	0.63	0.67	0.64	0.48	0.14	0.18	0.18	0.13	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.07	5.36	Assumes Level Funding
Tier 1 Subtotal	**9.80**	**11.46**	**22.14**	**25.39**	**25.65**	**27.56**	**26.77**	**20.30**	**5.05**	**6.58**	**6.69**	**4.94**	**2.68**	**2.81**	**2.86**	**2.92**	**2.47**	**3.04**	**3.04**	**3.04**	**215.18**	
Tier 1 Gap: To support TMDL, Act 64, CSO	**(2.02)**	**(4.63)**	**(12.81)**	**(17.27)**	**(29.15)**	**(20.40)**	**(12.25)**	**(6.46)**	**(6.23)**	**(4.70)**	**(4.59)**	**(2.58)**	**(1.08)**	**(0.95)**	**(0.90)**	**(0.84)**	**(1.29)**	**(0.72)**	**3.04**	**3.04**	**(128.87)**	
Tier 2 Costs: Costs that Support, Enhance & Catalyze Compliance																						
Water Quality-Related Refurbishment, Other WWTFs & Collection Systems	26.84	24.02	10.81	6.73	7.78	4.56	5.41	13.88	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	510.40	Figures beyond FY16 based on Needs Survey (2008) and adjusted to 2015 dollars
Sewer Extension (Pollution Abatement Only)	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	Based on Castleton, W Windsor & Colchester. Assume $1M FY18 and beyond.
Tier 2 Subtotal	**27.84**	**25.02**	**11.81**	**7.73**	**8.78**	**5.56**	**6.41**	**14.88**	**35.20**	**35.20**	**35.20**	**35.20**	**35.20**	**35.20**	**35.20**	**35.20**	**35.20**	**35.20**	**35.20**	**35.20**	**530.40**	
Tier 2 Funding Sources: Funding Sources to Support Compliance																						
CWSRF Current Balance (6/30/2015 - Provided as Loans)	4.29	3.27	1.36	0.82	0.73	0.56	0.76	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.97	CWSRF Starting Balance ~ 7/1/15; set at 61.1; spread over 10 years
CWSRF Annual Federal Grant (Provided as Loans)	4.30	3.28	1.36	0.83	0.74	0.56	0.76	1.93	3.18	4.08	4.08	4.44	4.73	4.87	4.87	4.87	4.04	4.87	5.39	5.39	68.57	Assumes Level Funding
CWSRF Annual State Match (Provided as Loans)	0.92	0.70	0.29	0.18	0.16	0.12	0.16	0.41	0.68	0.87	0.87	0.95	1.01	1.04	1.04	1.04	0.86	1.04	1.15	1.15	14.61	Assumes Level Funding
CWSRF Annual Loan Repayments (Provided as Loans)	6.67	5.29	2.28	1.44	1.32	1.06	1.49	3.93	6.76	9.01	9.37	10.60	11.74	12.58	13.08	13.60	11.73	14.71	16.94	17.61	171.22	Based on Current Projections
WPC Annual State Grants Appropriation	1.47	1.12	0.47	0.28	0.25	0.19	0.26	0.66	1.09	1.40	1.40	1.52	1.62	1.67	1.67	1.67	1.38	1.67	1.85	1.85	23.50	Projection based on prior 10-yr avg.
USDA RD WEP Annual Loan Appropriation	3.26	2.49	1.03	0.63	0.55	0.42	0.58	1.46	2.42	3.10	3.10	3.37	3.59	3.70	3.70	3.70	3.06	3.70	4.09	4.09	52.04	Assumes Level Funding & 50/50 Split w/DW
USDA RD WEP Annual Grant Appropriation	1.58	1.20	0.50	0.30	0.27	0.21	0.28	0.71	1.17	1.50	1.50	1.63	1.74	1.79	1.79	1.79	1.48	1.79	1.98	1.98	25.18	Assumes Level Funding
USDA RD REAP Zone Grant	0.60	0.46	0.19	0.11	0.10	0.08	0.11	0.27	0.44	0.57	0.57	0.62	0.66	0.68	0.68	0.68	0.56	0.68	0.75	0.75	9.51	Assumes Level Funding
Subtotal	**23.09**	**17.81**	**7.48**	**4.60**	**4.12**	**3.19**	**4.39**	**11.55**	**15.75**	**20.53**	**20.89**	**23.13**	**25.07**	**26.32**	**26.82**	**27.34**	**23.11**	**28.45**	**32.14**	**32.82**	**378.60**	
Tier 2 Gap: to Support, Enhance & Catalyze Compliance	**(4.75)**	**(7.20)**	**(4.33)**	**(3.13)**	**(4.65)**	**(2.36)**	**(2.01)**	**(3.33)**	**(19.45)**	**(14.67)**	**(14.31)**	**(12.07)**	**(10.13)**	**(8.88)**	**(8.38)**	**(7.86)**	**(12.09)**	**(6.75)**	**(3.06)**	**(2.38)**	**(151.80)**	

Summary	Projected Costs	Projected Funding	Total 20-Year Gap	Annualized Gap
Tier 1 Wastewater: Required for TMDL, Act 64, CSO	$337,971,000	$215,181,138	($128,868,178)	($6,443,409)
Tier 2 Wastewater: to Support, Enhance & Catalyze Compliance	$530,399,000	$378,603,565	($151,795,435)	($7,589,772)
Wastewater: Total	$868,370,000	$593,784,703	($280,663,613)	($14,033,181)

Tier 1 and Tier 2 Legend

Blue Shaded lines are "Tier 1" costs, the incremental costs associated with TMDLs, Act 64 (2015) and CSO Policy (2016).

Unshaded lines are "Tier 2" costs, costs that support, enhance and catalyze compliance.

If no other source of state or federal funds are available to meet the funding gap, it is expected that Municipal Bonds would fill the gap

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:	Phophorus
REAP Zone:	Rural Economic Area Program Grants
USDA RD:	US Dept of Agriculture Rural Development
VTrans:	Vermont Agency of Transporation
WEP	Water Environment Program
WPC:	Water Pollution Control
WW:	Wastewater

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Sector #2: Agriculture Pollution Control

Funding Need, 20-Year Projection ($s in millions, unless otherwise indicated)

Agricultural Sector Costs & Funding Sources	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	FY 36	FY 37	20-Year Total	Notes
Tier 1 Costs: Required by TMDL, Act 64																						
Production Area BMP Implementation	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	5.35	5.35	119.2	e.g. silage leachate, manure pits, manure stacking sites, barnyards
Cropland BMP Implementation (Farm Agronomic Practices)	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	5.48	5.48	113.1	e.g riparian buffers, cover cropping, grassed waterways
Livestock exclusion (includes CREP)	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	1.37	1.37	34.6	total cost is based off of livestock exclusion report
NMP & CNMP Development	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	2.05	2.05	45.8	assumes NMP standard changes every 5 years
NMP Plan Implementation (NRCS Practice Code 590)	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	8.91	8.91	171.6	assumes NMP standard changes every 5 years
NMP Classes for Farmers	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	0.31	0.31	6.2	Supports training courses for farmers
Manure Applicator Training Program	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	0.15	3.0	Support administration of training courses and provide regulatory oversight
NMP Classes for Technical Service Providers	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	0.09	0.09	1.8	1 FTE manage,train&regulate Tech Service Providers to assist for NMPs (incl support for non-certified SFOs interested in NMP)
Tech. Assist.-BMPs (production area, cropland, livestock exclusion)	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	3.05	3.05	66.8	100% of total costs to provide assistance, e.g., engineering, project mgmt
Tech. Assist.-NMPs (development and implementation)	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	2.72	2.72	54.0	100% of total costs to provide assistance
Tech. Assist.-manure and soil testing	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	0.00	0.00	0.6	Soil testing support
Subtotal	**28.2**	**34.5**	**40.7**	**37.6**	**33.7**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**29.5**	**616.7**	
Tier 1 Funding Sources: To support TMDL, Act 64																						
USDA 5-year grant, BMP Implementation (VT RCPP)	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	22.4	RCPP-State of VT
Agriculture Technical Assistance (VACD RCPP)	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	0.0	0.9	VACD for NMP
USDA BMP Implementation (NRCS Base Funding)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	220.0	USDA
AAFM Capital Funds - Agriculture Implementation	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	28.0	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	0.7	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	0.7	Does not include CWF operating for FY16,FY17; includes approx 10% partner funds
Subtotal	**15.0**	**14.3**	**14.3**	**14.3**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**282.0**	
Tier 1 Gap: To support TMDL, Act 64	**(13.2)**	**(20.2)**	**(26.5)**	**(23.3)**	**(19.7)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(15.5)**	**(334.7)**	
Tier 2 Costs: Costs that Support, Enhance & Catalyze Compliance																						
Capital Equipment Assistance Program	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	1.03	1.03	20.5	enhanced equipment to implement practices
Manure and soil tests	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	0.51	0.51	10.1	Base information for nutrient management plans
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	0.50	0.50	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	10.2	assume, took middle value, based on range VAAFM provide
Subtotal	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	46.8	
Tier 2 Funding Sources: Funding Sources to Support Compliance																						
Subtotal	**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	
Tier 2 Gap: to Support, Enhance & Catalyze Compliance	**(2.3)**	**(2.3)**	**(2.3)**	**(2.3)**	**(2.3)**	**(2.3)**	**(2.3)**	**(2.4)**	**(2.4)**	**(2.4)**	**(2.4)**	**(2.4)**	**(2.4)**	**(2.4)**	**(2.4)**	**(2.4)**	**(2.4)**	**(2.4)**	**(2.4)**	**(2.4)**	**(46.8)**	

Summary	Projected Costs	Projected Funding	Total 20-Year Gap	Annualized Gap
Tier 1 Agriculture: Required for TMDL, Act 64	$616,748,077	$282,045,000	($334,703,077)	($16,735,154)
Tier 2 Agriculture: to Support, Enhance & Catalyze Compliance	$46,766,538	$0	($46,766,538)	($2,338,327)
Agriculture: Total	$663,514,615	$282,045,000	($381,469,615)	($19,073,481)

Tier 1 and Tier 2 Legend

Blue Shaded lines are "Tier 1" costs, the incremental costs associated with TMDLs, Act 64 (2015) and CSO Policy (2016).

Unshaded lines are "Tier 2" costs, costs that support, enhance and catalyze compliance.

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:	Phophorus
REAP Zone:	Rural Economic Area Program Grants
USDA RD:	US Dept of Agriculture Rural Development
VTrans:	Vermont Agency of Transporation
WEP	Water Environment Program
WPC:	Water Pollution Control
WW:	Wastewater

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Sector #3: Stormwater, Road Infrastructure Runoff and Erosion Control

Funding Need, 20-Year Projection ($s in millions, unless otherwise indicated)

Stormwater/Developed Lands Sector Costs & Funding Sources	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	FY 36	FY 37	20-Year Total	Notes
Tier 1 Costs: Required by TMDL, Act 64, CSO																						
Inventory to Identify Stormwater "Critical Source Areas" for Treatment	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	Municipal inventories; WSMD estimate
Non-Road Stormwater/Developed Land Implementation	4.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	30.0	30.0	30.0	30.0	30.0	30.0	4.4	4.4	4.4	4.4	432.1	DEC estimate; used $30K/acre estimate
Municipal Roads Implementation	3.6	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	161.4	Municipal Roads Implementation using DEC estimates
State (VTrans): (a) Roads & (b) Non-Road Developed Land-Implementa	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	4.6	91.1	VTrans implementation using DEC estimates
Funding Need Subtotal	**13.25**	**38.93**	**38.9**	**38.9**	**38.9**	**38.9**	**38.9**	**38.9**	**38.9**	**38.9**	**43.3**	**43.3**	**43.3**	**43.3**	**43.3**	**43.3**	**17.8**	**17.8**	**17.8**	**17.8**	**694.7**	
Tier 1 Funding Sources: To support TMDL, Act 64, CSO																						
State Municipal Mitigation-VT Better Roads-Municipal Support	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	0.4	8.8	Former Better Back Roads Grants; Assumes Level Funding
State Transportation Funds-Municipal Support	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	1.0	20.0	Assumes continuation of funds after FY19
Fed Highway Admin Transportation Alternatives-Municipal Support	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
Lake Champlain Basin Program	0.0	0.2	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	4.8	Assume level funding from Federal partners (EPA, Great Lakes Fishery Commission)
CWIP Ecosystem Restoration	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	3.1	3.1	3.1	3.1	3.1	62.1	
Clean Water Fund	3.2	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	3.1	3.1	9.4	DEC estimate; 90% of available funds after FY18
Subtotal	**8.79**	**5.85**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**	**9.0**	**9.0**	**127.0**	
Tier 1 Gap: To support TMDL, Act 64, CSO	**(4.46)**	**(33.1)**	**(33.0)**	**(33.0)**	**(33.0)**	**(33.0)**	**(33.0)**	**(33.0)**	**(33.0)**	**(33.0)**	**(37.4)**	**(37.4)**	**(37.4)**	**(37.4)**	**(37.4)**	**(37.4)**	**(11.9)**	**(11.9)**	**(8.8)**	**(8.8)**	**(567.7)**	
Tier 2 Costs: Costs that Support, Enhance & Catalyze Compliance																						
Non-Road Stormwater Implementation (below regulatory thresholds)	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	Stormwater controls for properties below 3 acres
Municipal Capital Equipment Assistance 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	20.0	enhanced equipment for municipalities to implement practices
Stormwater Technical 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	2.5	WSMD estimate to support VLCT, SeaGrant techn assistance
Subtotal	**1.60**	**1.60**	**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**	**1.6**	**1.6**	**1.6**	**1.6**	**1.6**	**32.5**	
Tier 2 Funding Sources: Funding Sources to Support Compliance																						
CWIP Ecosystem Restoration	0.1	0.1	0.1	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	6.2	WSMD Estimate; assumes 83% for life of RCPP match, then 10% of available funds
Subtotal	**0.10**	**0.10**	**0.1**	**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**	**6.2**	
Tier 2 Gap: to Support, Enhance & Catalyze Compliance	**(1.50)**	**(1.5)**	**(1.5)**	**(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)**	**(1.3)**	**(1.3)**	**(1.3)**	**(26.4)**	

Summary	Projected Costs	Projected Funding	Total 20-Year Gap	Annualized Gap
Tier 1 Stormwater: Required by TMDL, Act 64	$694,678,108	$127,005,000	($567,673,108)	($28,383,655)
Tier 2 Stormwater: to Support, Enhance & Catalyze Compliance	$32,540,000	$6,159,000	($26,381,000)	($1,319,050)
Stormwater: Total	$727,218,108	$133,164,000	($594,054,108)	($29,702,705)

Tier 1 and Tier 2 Legend

Blue Shaded lines are "Tier 1" costs, the incremental costs associated with TMDLs, Act 64 (2015) and CSO Policy (2016).

Unshaded lines are "Tier 2" costs, costs that support, enhance and catalyze compliance.

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:	Phophorus
REAP Zone:	Rural Economic Area Program Grants
USDA RD:	US Dept of Agriculture Rural Development
VTrans:	Vermont Agency of Transporation
WEP	Water Environment Program
WPC:	Water Pollution Control
WW:	Wastewater

*** D R A F T - 11/14/2016 ***

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

Funding Need, 20-Year Projection ($s in millions, unless otherwise indicated)

Natural Resources Sector: Pollution Reduction Costs & Funding Sources	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	FY 36	FY 37	20-Year Total	Notes
Tier 1 Costs: Required by TMDL, Act 64																						
Passive restoration projects (easements) Rivers (LC TMDL)	0.60	0.72	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	17.52	water quality & flood resilience
Passive restoration projects (easements) Wetlands (LCTMDL)	0.00	0.30	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	10.38	water quality & flood resilience
Floodplain restoration projects (LC TMDL)	0.60	0.80	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	1.20	23.00	water quality & flood resilience
Wetland restoration projects (LC TMDL)	0.49	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	1.28	28.79	water quality & flood resilience
Forestry Technical Assistance & Implementation	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	0.21	0.21	4.20	DFPR for TMDL (AMP training, publication), forest buffer restoration, BMP incentivizes
Funding Need Subtotal	**1.9**	**3.3**	**4.1**	**4.1**	**4.2**	**4.4**	**4.4**	**4.7**	**4.8**	**4.9**	**4.7**	**4.8**	**4.4**	**4.4**	**4.1**	**4.1**	**4.1**	**4.1**	**4.1**	**4.1**	**83.9**	
Tier 1 Funding Sources: To support TMDL, Act 64																						
CWIP - Ecosystem Restoration	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	0.2	0.2	0.2	3.4	DEC estimate; Assume half of available funds
CWIP-Ecosystem Restoration RCPP Match-Wetland Restoration	0.3	0.3	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	0.0	1.1	
Clean Water Fund-Implementation, Tech Assistance	0.7	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	0.7	Assume half of available funds
Lake Champlain Basin Program	0.0	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	3.8	Assume alignment of funds to help meet need
FWD License Plate Grants-Implementation, Tech Assistance	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.35	Assume half of available funds
USDA WRE Program	0.50	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	0.90	17.60	Assume 90% of available funds
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	
Subtotal	**1.9**	**1.9**	**1.8**	**1.8**	**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**	**1.6**	**1.6**	**1.6**	**32.93**	
Tier 1 Gap: To support TMDL, Act 64	**(0.00)**	**(1.4)**	**(2.31)**	**(2.3)**	**(2.6)**	**(2.8)**	**(2.8)**	**(3.2)**	**(3.2)**	**(3.3)**	**(3.2)**	**(3.2)**	**(2.8)**	**(2.8)**	**(2.6)**	**(2.6)**	**(2.6)**	**(2.6)**	**(2.6)**	**(2.6)**	**(51.0)**	
Tier 2 Costs: Costs that Support, Enhance & Catalyze Compliance																						
Assessments to identify priority Rivers and Wetlands projects	0.25	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	0.25	0.25	5.58	DEC estimate-river corridor & wetland restoration assessments
Clean Water restoration projects (easements) - Rivers	0.30	0.38	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	9.68	water quality & flood resilience
Clean Water Restoration projects (easements) - Wetlands	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	0.19	3.61	water quality & flood resilience
Clean Water Restoration projects - Floodplains	0.28	0.50	0.50	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	13.18	water quality & flood resilience
Wetland restoration projects	0.12	0.33	0.33	0.33	0.33	0.50	0.40	0.53	0.53	0.53	0.53	0.53	0.40	0.50	0.33	0.33	0.33	0.33	0.33	0.33	7.82	water quality & flood resilience; added 0.3 fro first 2
Loggers Capital Equipment Assistance Program	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	1.00	1.00	19.00	DFPR estimate for new logger capital equipment assistance program
Subtotal	**1.0**	**2.8**	**2.9**	**3.1**	**3.1**	**3.1**	**3.0**	**3.2**	**3.2**	**3.2**	**3.2**	**3.2**	**3.0**	**3.1**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**58.9**	
Tier 2 Funding Sources: Funding Sources to Support Compliance																						
CWIP - Ecosystem Restoration	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	3.4	DEC estimate; assume 10% of avail. funds
Clean Water Fund-Implementation, Tech Assistance	0.7	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	0.7	includes 20% of partner funds for FY17
FWD License Plate Grants-Implementation, Tech Assistance	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.35	Assume 50% of available funds
USDA WRE Program	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	2.00	Assume 10% of funding of Farm Bill program
Subtotal	**0.9**	**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**	**6.44**	
Tier 2 Gap: to Support, Enhance & Catalyze Compliance	**(0.00)**	**(2.5)**	**(2.6)**	**(2.8)**	**(2.8)**	**(2.9)**	**(2.8)**	**(2.9)**	**(2.9)**	**(2.9)**	**(2.9)**	**(2.9)**	**(2.8)**	**(2.9)**	**(2.7)**	**(2.7)**	**(2.7)**	**(2.7)**	**(2.7)**	**(2.7)**	**(52.4)**	

Summary	Projected Costs	Projected Funding	Total 20-Year Gap	Annualized Gap
Tier 1 Natural Resources: Required for TMDL, Act 64	$83,885,000	$32,927,000	($50,958,000)	($2,547,900)
Tier 2 Natural Resources: to Support, Enhance & Catalyze Compliance	$58,868,000	$6,435,000	($52,433,000)	($2,621,650)
Natural Resources: Total	$142,753,000	$39,362,000	($103,391,000)	($5,169,550)

Tier 1 and Tier 2 Legend

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