

as of 2/21/2018



Funding Provided by the Minnesota Clean Water Land and Legacy Fund

Name: Marine on St. Croix Stormwater Phase 1
Project I.D #:
LGU: Scandia

Address: Various in Marine
Subwatershed:
Board Liaison: Joel Stedman

Background

Problem	Excess nutrients (phosphorus) and sediment to Mill Stream and St. Croix River which is impaired for nutrients (phosphorus)
Origin	Road run-off
Plan Reference	CMSCWD 2010 Management Plan Section II, B. Surface Water Management- Objectives: 1. Maintain or improve the quality and ecological integrity of all water resources in the District 8. Minimize the impacts of storm water runoff. Section IV. H, 1. b. Neighborhood Wide Small Lot Stormwater Management Incentive Program Current Plan Section IV, I, 6
Cost Estimates	\$10,000 (2011), \$10,000 (2014) Plan Estimate (2010 Plan), \$20,000 (2015), \$20,000 (2017) Plan Estimate (Current Plan) Grant Application and Workplan Estimate \$122,750 2016 Low Bid \$136,000 2017 County Bid \$141,300
CMSCWD Funding	2015 Budget: \$30,000 2016 Budget: \$30,000 <u>2017 Budget: \$100,000</u> Total: \$160,000
Total Funding Committed	Expenses TD: \$77,032 Available: \$82,969 CMSCWD \$12,275, MOSC \$12,275, BWSR Grant \$98,200 Revised 2017 : CMSCWD \$87,275 , MOSC \$37,275
Partners	BWSR, Marine on St. Croix
Stakeholders	Neighbors, City of Marine, NPS

Actions and Authorizations to date

2014	Included in unsuccessful CWF Grant
2012-2014	Comprehensive Storm Water Management Plan with Marine Approval of Marine Local Water Management Plan (LWP) and MOA
2015	Resolution to Participate in CWF Grant
4/10/15	Grant awarded
4/14/15	City-wide raingarden workshop
4/15/15	Grant Partners meeting
6/17/2015	2 nd Grant Partners meeting
7/15/2015	Public Grant Kickoff meeting
8/5-9/16/2015	Individual Property Owners meetings
<u>9/16/2015</u>	3 rd Grant Partner meeting a) 24 landowners expressed interest originally b) <u>23 of 24 visited (Mary Lusher TBD)</u> c) 1 additional land owner added (Gray Property across Wilke per Megan Lapas d) 2 landowners withdrew e) 2 properties unsuitable f) 29 raingarden locations identified on 20 properties thus far
9/30/2015	balance of utilities located and surveyed Outreach to property owners at 200 and 210 6th St. (city representatives) Watershed Prioritization i) Sketch Plans of individual practices on lots ii) Determine catchment areas iii) Preliminary phosphorus and sediment reduction loading by individual practice
<u>11/2/2015</u>	IESF survey at Pine and Robert Sts.
<u>11/18/2015</u>	Grant Partners Meeting- City Prioritization and Final Prioritization and Cost Estimates
<u>11/19/2015</u>	Meet with City Maintenance for additional prioritization issues

Contact BWSR
i) Deer Issues
ii) Assurances issues

12/1/2015

Prioritization Presentation to Property Owners and City
City to confirm interest with those not in attendance on Dec. 1
Schedule and hold individual design meetings with property owners at Marine City Hall

End of January 2016 to
March
February-April 2016

Confirm Designs and assurances, final design and bid documents

2017 Activities:

Project bids requested in 2016 came in high and CMSCWD Board directed the Administrator to explore other options. Partnering with Washington County as part of the work on their local road project seemed to be the best alternative to lower project cost as a small part of a much larger project. A cost share and maintenance agreement (see attachments) were prepared with the County and bids were received. Bids were still high but both CMSCWD Board and the City of Marine agreed to cost increases as the best option to maintain project acceptance and momentum with the local residents. Construction began in June with work on the bio-filtration basin progressing with the County road work. However, the work on the IESF did not begin until the end of September with the final landscaping and planting delayed to the spring of 2018 with the raingarden portion of the project.
The delays required extensive communication with residents who in the end were understanding of the decision to delay raingarden construction until 2018.

Administration Results:

1. Coordinated and revised bid documents for inclusion into Washington County project bid package
2. Assist in evaluating options to include all or some practices into Washington County project when prices came in high.

Bio-filtration Results:

Some redesign of the bio-filtration basin resulted in an infiltration area receiving direct road runoff from several curb inlets. Construction was substantially completed by mid-October as part of the Washington County CSAH 4 reconstruction project .

Iron-Enhanced-Sand-Filter
Results:

1. Start and substantial completion of practice with planting and landscaping scheduled for spring of 2018
2. Emmons and Olivier provided construction supervisions and inspection

Rain Garden Results:

Construction delayed until spring of 2018

Date	Transaction Type	Name	Memo/Description	Amount	Balance
06/30/2015	Bill	Washington Conservation Dist/Soil & Water	MOSC Grant Phase 1- Kick off Meeting	227.50	
05/31/2015	Bill	Emmons & Olivier Resources	MOSC Stormwater Implementation Phase 1	626.25	853.75
06/30/2015	Bill	Emmons & Olivier Resources	MOSC Stormwater Implementation Phase 1	79.25	626.25
07/31/2015	Bill	Emmons & Olivier Resources	MOSC Stormwater Implementation Phase 1	1,117.58	705.50
08/31/2015	Bill	Emmons & Olivier Resources	MOSC Stormwater Implementation Phase 1	934.55	1,823.08
09/30/2015	Bill	Emmons & Olivier Resources	MOSC Stormwater Implementation Phase 1	3,125.32	2,757.63
10/31/2015	Bill	Emmons & Olivier Resources	MOSC Stormwater Implementation Phase 1	2,188.48	5,882.95
11/30/2015	Bill	Emmons & Olivier Resources	MOSC Stormwater Implementation Phase 1	573.85	8,071.43
12/31/2015	Bill	Emmons & Olivier Resources	MOSC Stormwater Implementation Phase 1	3,605.46	8,645.28
12/31/2015	Bill	Emmons & Olivier Resources	MOSC Stormwater Implementation Phase 1	3,605.46	12,250.74
12/31/2015	Bill	Emmons & Olivier Resources	MOSC Stormwater Implementation Phase 1	905.45	15,856.20
03/31/2016	Bill	Lawson, Marshall, McDonald & Galowitz	Raingarden contracts and assurances	240.00	16,761.65
03/31/2016	Bill	Emmons & Olivier Resources	MOSC Stormwater	3,157.00	17,001.65
04/30/2016	Bill	Emmons & Olivier Resources	MOSC Stormwater	8,213.79	20,158.65
05/31/2016	Bill	Emmons & Olivier Resources	MOSC Stormwater	10,776.93	28,372.44
06/30/2016	Bill	Emmons & Olivier Resources	MOSC Stormwater	2,118.75	39,149.37
07/31/2016	Bill	Emmons & Olivier Resources	MOSC Stormwater	3,135.00	41,268.12
08/31/2016	Bill	Emmons & Olivier Resources	MOSC Stormwater	2,893.50	44,403.12
10/31/2016	Bill	Emmons & Olivier Resources	Marine Stormwater	417.00	47,296.62
11/30/2016	Bill	Emmons & Olivier Resources	Marine Stormwater	432.00	47,713.62
12/31/2016	Bill	Emmons & Olivier Resources	Marine Stormwater	625.75	48,145.62
12/31/2016	Bill	Emmons & Olivier Resources	Marine Stormwater	243.25	48,771.37
02/28/2017	Bill	Emmons & Olivier Resources	Marine Stormwater	909.25	49,014.62
04/30/2017	Bill	Emmons & Olivier Resources	Marine Stormwater	1,826.50	49,923.87
05/31/2017	Bill	Emmons & Olivier Resources	Marine Stormwater	2,170.70	51,750.37
05/31/2017	Bill	Washington County Public Works	10 % project payment due	14,146.90	53,921.07
06/30/2017	Bill	Emmons & Olivier Resources	Marine Stormwater	1,278.75	68,067.97
07/31/2017	Bill	Emmons & Olivier Resources	Marine Stormwater	1,823.08	69,346.72
08/31/2017	Bill	Emmons & Olivier Resources	Marine Stormwater	442.75	71,169.80
10/31/2017	Bill	Emmons & Olivier Resources	Marine Raingarden Project	1,580.56	71,612.55
11/30/2017	Bill	Emmons & Olivier Resources	Marine Raingarden Project	3,189.46	73,193.11
12/31/2017	Bill	Emmons & Olivier Resources	Marine Raingarden Project	649.49	76,382.57
12/31/2017	Bill	Washington County Public Works	costs thru estimate 6 less 5% retainage	38,253.49	77,032.06

Priority	Street Address	Rain Garden ID	Maximum Footprint (SF)	Idealized Footprint (SF)	Idealized Volume (CF)	Individual RG Direct Drainage Area (Acres)	Individual RG TP Load (lbs/year)**	Individual RG TSS Load (Ton/year)**	Upstream BMPs	Upstream Drainage Area (Acres)	1 Inch Runoff Volume From Direct Drainage Area (CF)	Estimated Cost
1	280 6TH	280A	600	600	300	0.35	0.38	0.07	None	0.00	311	\$6,000
2	281 6TH	281A	600	600	300	0.58	0.64	0.12	None	0.00	521	\$6,000
2	281 6TH	281B	540	540	270	0.34	0.38	0.07	281A	0.58	306	\$5,400
1	281 6TH	281C	480	330	165	0.18	0.20	0.04	281A, 281B	0.93	165	\$3,300
1	231 6TH	231_6A	720	720	360	0.85	0.94	0.18	281A, 281B, 281C	1.11	758	\$7,200
3	200 ROSE	200A	360	150	75	0.08	0.08	0.02	None	0.00	75	\$1,500
2	190 ROSE	190A	250	100	50	0.05	0.06	0.01	200A	0.08	52	\$1,000
2	170 ROSE	170A	480	300	150	0.16	0.17	0.03	200A, 190A	0.13	149	\$3,000
1	170 ROSE	170B	430	430	215	0.30	0.33	0.06	200A, 190A, 170A	0.29	291	\$4,300
2	191 ROSE	191A	660	540	270	0.28	0.31	0.06	None	0.00	269	\$5,400
3	230 ROSE	230A	105	105	53	0.10	0.11	0.02	None	0.00	93	\$1,050
2	231 ROSE	231A	270	270	135	0.42	0.46	0.09	230A	0.10	404	\$2,700
1	600 WILKE	600A	995	995	498	1.66	1.82	0.35	230A, 231A	0.52	1590	\$9,950
3	201 ROSE (ROW)	201A	395	250	125	0.13	0.14	0.03	None	0.00	124	\$2,500
3	201 ROSE (ROW)	201B	230	180	90	0.09	0.10	0.02	201A	0.13	89	\$1,800
3	201 2ND	201_2A	30	30	15	0.04	0.04	0.01	None	0.00	40	\$300
1	260 2ND	260A	1080	1080	540	1.56	1.72	0.33	None	0.00	1718	\$10,800
2	260 2ND	260B	720	720	360	0.31	0.34	0.06	None	0.00	338	\$7,200
2	300 2ND	300A	425	425	213	1.36	1.50	0.29	None	0.00	1495	\$4,250
1	301 ROBERT	301A	390	390	195	1.35	1.48	0.28	None	0.00	946	\$3,900
3	340 ROBERT	340A	100	100	50	0.21	0.23	0.04	None	0.00	148	\$1,000
3	340 ROBERT	340B	70	70	35	0.02	0.02	0.00	None	0.00	14	\$700
3	671 PINE	671A	360	120	60	0.06	0.07	0.01	None	0.00	56	\$1,200
2	671 PINE	671B	900	120	60	0.06	0.06	0.01	671A	0.06	51	\$1,200

\$91,650
 TOTAL
 Priority 1 0
 Subtotal \$45,450

* Average 1/4 Ac lots in D soils

** TP = 1.1 lb/ac-yr; TSS = 0.21 T/ac-yr (October 27, 2011 BWSR Academy Pollutant Reduction Estimators)

*** Reduction of 65% TP, TSS & Volume if size for 1-inch Runoff Volume; otherwise prorated to that portion of 1-inch event



District Engineer inspects bio-filtration practice