Sediment & Nutrient Reduction and Habitat Restoration

USEPA-Great Lakes Restoration Initiative Project

Grant Number: GLRI 00E01450
Semi-Annual Report #8
October 2018 – March 2019
April 30, 2019

http://www.newwater.us/projects/silver-creek-project/

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Grant Number: # 00E01450
Project Title: Silver Creek Sediment & Nutrient Reduction and Habitat Restoration

Budget & Project Periods: $569,175 (final installment), Year 4
Reporting Period Covered: October 1, 2018 – March 31, 2019
Principal Investigator: Erin Houghton, NEW Water (GBMSD) Watershed Programs Manager
Project Goals:

Reduce agricultural nonpoint runoff by installing permanent conservation measures
Restore biological habitat of Silver Creek
Achieve sediment and nutrient goals consistent with state water quality standards

- ✓ Total Phosphorus (TP): 0.075 mg/L for tributary streams
- ✓ Total Suspended Solids (TSS): TMDL target of 18 mg/L

78%	% Project completion to date
1,269	# acres contracted current reporting period (operational BMPs)

1. Project Summary

The Silver Creek sub-watershed was selected by NEW Water, the brand of the Green Bay Metropolitan Sewerage District (GBMSD), for a five-year demonstration area to evaluate an Adaptive Management (AM) Strategy consistent with Wisconsin Administrative Code NR 217.18, that allows point sources such as NEW Water to pursue alternative permit compliance options for reducing total phosphorus (TP) and total suspended solids (TSS) from its discharge. In addition to its own funding, NEW Water is utilizing a five-year GLRI grant to supplement the many Silver Creek components including sub-awards for research projects, best management practice (BMP) implementation, and contractual/consulting efforts. Water and soil chemistry, conservation and nutrient plan information, and field data are continually being updated and input into models and GIS. Private Agronomists and staffs from the Natural Resource Conservation Service (NRCS) and Brown and Outagamie Counties continue working with landowners and growers throughout this 4,800-acre sub-watershed to improve agricultural practices and construct BMPs. The Oneida Nation is a large landowner in the sub-watershed owning 68% of the cropped fields and is a major partner in the project.

Fifteen-mile Silver Creek is located in the Duck Creek Watershed which flows into lower Green Bay of the Lower Fox River Basin in northeastern Wisconsin. The Lower Fox River and the Basin are Great Lakes Restoration Initiative (GLRI) Priorities and deemed Areas of Concern (AOC) by the International Joint Commission due to the persistence of pollutants and the degradation of habitat. Because of these pollution concerns, the Lower Fox River has an EPA approved Total Maximum Daily Load (TMDL) Plan which requires reduction of TP and TSS in the Fox River to comply with State water quality criteria. To aid in meeting the Fox River TMDL, the goal for Duck Creek (one of 16 watersheds in the Lower Fox River) is a 76% reduction of TP from agricultural sources. NEW Water is piloting AM using conservation measures and BMPs on agricultural properties surrounding Silver Creek to see if this is a feasible compliance option for reducing TP and TSS in a sub-watershed that feeds into Duck Creek.

The results of this AM pilot project are now being utilized to create a framework to address full scale water quality improvements in two adjacent sub-watersheds within the Lower Fox River basin.

2. GLRI Work Plan updates

No-Cost Time Extension (NCTE) Progress

Previously in August 2018, NEW Water requested a NCTE due to unforeseen delays primarily in the Paired Grazing Research of the Silver Creek Project. In response to the latest US EPA comments received on Feb 6, 2019, a Work Plan Revision and Budget Update III were submitted to EPA on March 5, 2019. During the month of April 2019, NEW Water and US EPA have been in active communication about finalizing and completing the NCTE.

A. Reporting Tables

As noted previously, the GLRI grant activities are part of a larger AM Pilot Project that includes other funders and other water quality improvement activities. Data for the Reporting Tables were generated from February/March 2019 queries of the Silver Creek GIS database and are the most accurate numbers available at this time. Some of these current acreages will not match previous reported acreages. Previously reported acreages may have been planned but not implemented, may have been planted but without full seed germination, or were never 100% field verified and had to be replanted in a subsequent season.

When the Pilot project began in 2015 it was estimated there were ~2,050 cropped acres in the Silver Creek Watershed with ~126 existing non-cropped acres. The numbers of acres of cropped fields has decreased steadily since the pilot project began for a variety of reasons. Many acres have undergone what is labeled in the GIS as "field conversion." See the narrative for Table 3 for more information on types of field conversions. Many of the field conversions were implemented by the Oneida Nation as partners in the project and were not cost shared with GLRI funds. By March 2019 the actively cropped acreage in Silver Creek is now at 1,742 acres.

Overall 318 acres have been taken out of agricultural production since 2016 and have been changed to grassed waterways, filter strips, wetland restoration, and field conversions. Acres of BMPs such as Critical Area Plantings (CAP), vegetated treatment areas, and Water and Sediment control Basins (WASCB) are not considered to be taken "out of production" as the crops can still be harvested for agricultural purposes.

Table 1: EAGL Reporting

This table shows yearly structural and operational BMPs implemented in Silver Creek, in acres, counted on a one-time basis. The acreages listed in Table 1 are a result of 2019 GIS queries. When a field is first impacted by an operational practice (e.g., cover crop or residue/tillage management) that field acreage is counted once at that time and not counted again in the EAGL reporting table. Interseeding is a relatively new method of planting cover crops and is identified because it is innovative. However in EAGL reporting, interseeding and cover cropping are not double counted. This table shows both GLRI funded and "other funded" BMPs.

Table 2: Progress-to-Date

This table lists the total number of acres that have been contracted and impacted/treated using a one-time structural BMPs or yearly (operational) BMP to date (March 2019). This table shows both GLRI funded and "other funded" BMPs. The acreages listed in Table 2 are a result of March 2019 GIS queries.

Table 3: Progress-to-Date Combinations on Unique Acres:

This table identifies cropped fields in Silver Creek Pilot Project and their corresponding structural and operational BMPs implemented between 2015 and 2018. This table complements the progress-to-date table by showing combinations of practices implemented on each individual field. This table shows both GLRI and "other funded" BMPs. Descriptions of some of the column headings are described below. This table has become rather large and has been added here as an imbedded PDF. It is advisable to print it on 11x17 ledger-sized paper.

The "field conversion" column includes acres that were taken out of tillage and converted to cereal/harvestable forage, food plots, biomass, and pollinator habitat. These include fields that were previously in agricultural production of which many acres were in marginal lands that often contributed to significant erosion and sediment loading to Silver Creek and its tributaries. A good example of this is field #201000565. This 24-acre formerly cropped field was converted into nearly 18 acres of pollinator and wildlife habitat and 6 acres of restored wetlands. This field is one of seven fields in the so-called Headwater Wetland Complex (also referred to previously as wetland #7) created on Oneida Nation property and partially funded by GLRI. See also *Section J: Wetlands*, for more information.

The "current enhanced NMP" column show acres for which nutrient management plans are updated during spring of each year. This is when Agronomists and county staff meet one-on-one with landowners and growers to discuss strategies for the next field season. This acreage amount can vary from year to year depending on how many acres are in actual production.

Please note that this table has become rather large and has been also added as an imbedded PDF. It is advisable to print it on 11x17 ledger size paper.

Table 4: Acres Contracted during this Reporting Period

This table lists new cost share agreements (CSA) contracted during Semi-Reporting Period #8. These new CSAs incorporate the new "pay-for-performance strategy." This table shows only GLRI funded BMPs. In the latter years of the project the vast majority of funded BMPs are operational practices. All of the operational practices listed in Table 4 have been previously counted and have not been added to the EAGL reporting table for this reporting period.

TABLE 1: EAGL REPORTING

NEW Water (GBMSD) SILVER CREEK GLRI # 00E01450

field acres and practices only counted once (first time implemented)

Best Management Pratices (BMP) IMPLEMENTED			Grant year 1 March 2015 to March 2016	Grant year 2 April 2016 to March 2017	Grant year 3 April 2017 to March 2018	Grant year 4 April 2018 to March 2019	Acres to date March 2019
			field season 2015	field season 2016	field season 2017	field season 2018	
	approved acres 2014 WP budget	BMP (NRCS code)					
NEW Water (GLRI funded) Structural Practices	41	grassed waterway (412)					0
	27	critical area planting (342)		2	2		3
	41	filter strip/buffer (393)			6	2	8
		stream restoration (395)		1	1		2
		diversion (362)				0.3	0
	20	wetland restoration (657) [1]			26	2	27
		new seeding (pollinator habitat)			47	14	60
		VWTS [2]			22		22
		waste storage facility (313)		0.7			0.7
		CRP			19		19
		stream crossing (578)		0.01			0.01
NEW Water (GLRI funded) Operational Practices per ENMPs	300	enhanced nutrient management plans (590) [3]	1891				1891
		cover crops (340) [4]		199	202	2	403
		interseeded cover crops (340) [8]		51	24	18	92
		residue/tillage management (329) [5]		45	293	132	470
	50	rotational grazing (528)		97			97
		GLRI funded acres	1891	395	642	169	3097
Other Funded Practices	41	grassed waterway (412)		4			4
	27	critical area planting (342)		4	4	6	13
	41	filter strip/buffer (393)		13	11	14	37
		cover crops [4]	187	229	30		446
		Interseeded cover crops (340) [8]		195			195
		residue/tillage management (329)	562				562
		heavy use area (561) [6]			0.3		0.3
		vegetated treatment area (635) [6]			0.3		0.3
		waste facility closure (360)		3.4			3
		water & sediment control basin WASCB (638)		73			73
		TNC wetland restoration (657) [7]			21		21
		field conversion (cereal/harvestable forage, food plot, biomass, pollinator habitat)		76	21	56	153
		CRP (land taken out of production)			2	13	15
		other funded acres		597	89	88	773
		TOTAL GLRI and "OTHER FUNDED" ACRES	1891	991	731	257	3870

NOTES: acres may have changed from previous reporting periods as these acres represent actual IMPLEMENTED BMPs per GIS database

1) Sites #1, #2 and #7: 27 acre water impoundment + ~117 acre surrounding area converted from agriculture to wildlife and pollinator habitat
2) Two impoundment basins: east (2 acres) and (3.5 acres) west with embankment planting + 16.5 acres surrounding vegetative buffer
3) Enhanced Nutrient Management Plan (ENMP), only first year reported here. See Progress-to-Date table for total acreages
4) Acres of cover crops (CC) on unique acres, only counted first time cover crops were planted
5) Acres of residue/tillage mngt on unique acres, only counted first time residue/tillage mngt was used
6) Part of fields converted to rotational grazing
7) The Nature Conservancy - Adam Drive: 3.5 acre water impoundment + 16.5 acre surrounding area converted from agriculture to wildlife and pollinator habitat
8) Interseeded CC acres are noted as they are an emerging practice. CC fields are counted only once regardless of CC or Interseeded CC

Approved Acres	BMP	Total Implemented
41	grassed waterway (412)	4
27	critical area planting (342)	16
41	filter strip/buffer (393)	46
300	enhanced nutrient management plans (590)	1891
50	rotational grazing (528)	97
20	wetland restoration (657)	48
	Field Conversion (Cereal/Harvestable Forage, Food Plot, Biomass, pollinator habitat)	213

Table 1 EAGL Reporting

Table #2: PROGRESS-TO-DATE (ACRES) NEW Water (GBMSD) SILVER CREEK GLRI #00E01450				
	March 2015 to March 2019			
BEST MANAGEMENT PRACTICE (NRCS CODE)	Approved Acres 2014 WP Budget	GLRI FUNDED ACRES	"OTHER" FUNDED ACRES	SILVER CREEK TOTAL ACRES
grassed waterway (412)	41	0	4	4
critical area planting (342)	27	3	13	16
filter strip/buffer (393)	41	8	37	46
outlet stabilization/stream restoration (395)		2		2
wetland restoration (657)	20	27	21	48
diversion (362)		0.3		0.3
stream crossing (578)		0.01		0.01
enhanced nutrient management plans (590)	300	7063		7063
cover crops (340)		550	400	950
interseeded cover crops (340)		178	62	240
residue/tillage management (329)		748	925	1775
managed grazing (528)	50	97		97
heavy use area (561)			0.3	0.3
vegetated treatment area (635)			0.3	0.3
VWTS		22		22
waste storage facility		0.7		1
waste facility closure (360)		3		3
CRP		19.2	15	34
water & sediment control basin (638)			73	73
field conversion/new seeding		60	153	226

Table 2 Progress-to-Date

#3 PROGRESS-TO-DATE MARCH 2019 (GLRI and other funding)
COMBINATIONS ON UNIQUE ACRES
NEW Water (GBMSD) SILVER CREEK GLRI #00E01450

		Structural and Field Conversion BMPs															Cover Crops and Interseeded Cover Crops						Residue/Tillage (No-Till)			
Field ID #	Field Acreage	Grassed Waterway (412)	Critical Area Planting (342)	Filter Strip (393)	stream restoration (395)	wetland restoration (657)	Prescribed Grazing (528)	existing non-cropped	stream crossing (578)	current enhanced NMP (590)	Manure Storage (313)	Weighted treatment area (WTA, 360) & WWTS	waste facility closure (other funding) (360)	Waste Storage Facility (313) GLRI funded	Conservation Reserve Program (CRP) loans	WASCOB (other funding) (638)	Diversion (362)	Cover Crop 2015*	Cover Crop 2016*	Cover Crop 2017*	Interseeded 2017	Cover Crop 2018*	Interseeded 2018	Residue/Tillage 2015*	Residue/Tillage 2016*	Residue/Tillage 2017*	Residue/Tillage 2018*
201000594	4.0			0.8	0.4											2.7			10/15/2016								
201000593	2.4			0.8												3.1											
201000535	12.7																										
201000534	3.1									3.1																	
201000543	19.2																										
201000540	18.2																										
201000542	22.9																										
201000539	25.8																										
201000538	12.0																										
201000541	35.7																										
201000583	5.5																										
201000530	10.1																			10/4/2017						6/7/2017	5/25/2018
201000626	2.5									2.5																6/7/2017	5/25/2018
201000563	8.0									8.0																6/7/2017	
201000563	9.0					2.8	5.8																				
201000565	23.8					4.8	16.7																				
201000564	5.9					1.4	4.4																				
201000626	2.6					0.4	1.4																				
201000530	9.1					3.4	4.2			9.1														6/1/2015			
201000527	5.8						5.1																	6/1/2015			
201000529	19.8					10.2	9.3																				
201000472	18.2									18.2																	
201000478	12.5									12.5																	5/25/2018
201001024	2.0																					6/11/2018					
201001004	18.4									18.4										10/10/2017							5/22/2018
201001005	21.2									21.2										11/8/2017							5/25/2018
201000622	28.2		2.5							28.2									10/26/2016	10/13/2017						6/7/2017	6/6/2018
201000621	2.8																		10/26/2016								
201000575	3.9									3.9																	
201000576	38.0									38.0																	
201000577	37.6									37.6									10/17/2016	10/22/2017							
201000616	11.8									11.8									10/22/2016	10/15/2017							
201000573	26.3			0.9						26.3								10/15/2015		10/15/2017							5/25/2018
201000574	63.2			0.6						63.2								10/15/2015		5/11/2017		no implemented on date				7/25/2017	7/4/2018
201000568	84.6									84.6								10/15/2015				no implemented on date					7/21/2018
201000566	3.8							3.8		3.8																	
201000567	6.1							6.1		6.1																	
201000591	9.6							9.6		9.6																	
201000592	18.3							18.3		18.3																	
201000474	46.6					1.5		43.6		46.6																	
201000620	14.7		0.2	1.4			14.7			14.7																	
201000619	102.5			1.4						102.5									9/11/2016	9/22/2017							
201000481	19.8						19.8			19.8																	
201000492	13.4			0.8												12.8											
201000544	54.3		1.5							54.3									9/11/2016					6/1/2015		6/10/2017	
201000485	9.0							9.0																			
201000495	12.8						11.2																				
201000493	25.8	0.6								25.8									9/11/2016					6/1/2015		6/10/2017	
201000494	21.6		1.7	2.0						21.6														6/1/2015		6/10/2017	
201000533	158.1		2.1	9.9						158.1		22.0	3.4			1.8	73.0		10/25/2016					6/1/2015		6/10/2017	
201000545	4.7									4.7																	
201000532	19.0		0.5							19.0									5/25/2016				6/15/2018	6/1/2015		6/10/2017	
201000531	58.2			10.0		21.0	55.0			58.2																	
201000496	19.3						19.0																				
201000548	4.6							4.6																			
201000528	68.8		3.7							68.8									8/25/2016				6/15/2018	6/1/2015		6/10/2017	
201000526	11.6		0.2				9.9			11.6														6/1/2015		6/10/2017	
201000562	13.4			2.9	0.4					13.4						13.4				5/11/2017							
201000570	88.7																										
201000585	2.9									2.9	1.8																
201000584	4.2									4.2	4.2																
201000587	2.7										1.6																
201000586	3.7									3.7	3.7																
201000580	3.6									3.6	3.6																
201000581	4.3									4.3	2.5																
201000502	5.6									5.6	5.6																
201004153	1.0									1.1	1.0																
201000504	7.7									7.7	7.7																
201000500	7.1									7.1	7.1																
201004148	8.1									8.1	8.1																
201004150	8.7									8.7	8.7																
201004151	6.8									6.8	6.8																
201004149	21.0									21.0	21.0																
201000578	9.6										9.6	0.3			0.7												
201000503	4.8										3.9																
201000501	23.3							23.3																			
201000471	7.9							7.9																			
201000506	24.7									24.7																	
201000505	9.8									9.8																	
201000517	4.2									4.3																	
201000515	30.3									30.3										11/8/2017							6/14/2018
201000512	31.8									31.8								10/29/2015		10/29/2017							
201000511	13.1									13.1								10/29/2015		10/20/2017		10/29/2018				6/6/2017	
201000519	13.7									13.7																	
201000514	2.5									2.5																	
201000569	13.4		0.8							13.4									10/25/2016		6/1/2017			6/15/2015		6/1/2017	5/14/2018
201000509	10.3		0.9							10.3									10/25/2016		6/1/2017			6/15/2015		6/1/2017	
201000546	0.9									0.9											6/22/2017			6/15/2015			
201000507	38.1		0.4							38.1								10/29/2015	11/28/2016								
201000473	30.7			2.0						30.7																	
201000510	14.2					2.8	13.5																				
201000516	20.3			2.4						20.3									10/25/2016					6/15/2015		6/1/2017	
201000518	25.1		0.2	2.2						25.1									10/25/2016					6/15/2015		6/1/2017	
201000571	6.4									6.4																	
201000572	8.5									8.5																	
201000607	9.4									9.4																	
SC1	12.8																				6/14/2017						
SC2	10.3																				6/14/2017						
201000588	14.1									14.1																	
201000589	18.5									18.5																	
201000590	2.2									2.3																	
201000486	29.1																										
201000487	4.5																										
201000488	18.1																										
201000475	6.7																										
201000476	7.4																										
201000477	15.4																										
201000618	3.3			0.6			2.0			3.3										10/18/2017						6/27/2017	
201000551	16.7	2.5								16.7										10/18/2017						6/27/2017	
201000552	15.8	0.8								15.8										10/18/2017						6/27/2017	
201000553	17.8									17.8										10/18/2017			6/23/2018			6/27/2017	
201000554	13.9			1.2						13.9																	
201000556	18.7			1.9						18.7																	
201000557	19.5						6.8			19.5																	
201000555	14.2						14.3																				
201000499	29.7									29.7									9/28/2016	10/12/2017					11/8/2016		5/25/2018
201000497	9.2		1.1	0.9					0.0	9.2									10/26/2016	10/12/2017					11/8/2016		5/25/2018
201000498	7.5			3.0	1.0					7.5									10/26/2016	10/12/2017					11/8/2016		5/25/2018
201000561	9.8									9.8										9/8/2017							
	totals	4	16	46	2	48	213	126	0	1618	97	22	3	1	34	73	0										

* date of implementation

Table 3 Progress-to-date Combinations on Unique Acres

#3.pdf

Table #4: GLRI CONTRACTED ACRES - Semi-Reporting Period #8

NEW Water (GBMSD) Silver Creek GLRI # 00E01450
October 2018 to March 2019

Field UID #	CC Acres Implement Fall 2019	RT Acres Implement Spring 2020	CSA
201000573	26.9	26.9	SCNS1028
201000574	63.19	63.19	SCNS1028
201000568	84.6	84.6	SCNS1028
201000618	3.32	3.32	SCNS1029
201000551	16.74	16.74	SCNS1029
201000552	15.78	15.78	SCNS1029
201000553	17.77	17.77	SCNS1029
201000569	13.42	13.42	SCNS 1030
201000509	10.34	10.34	SCNS 1030
201000546	0.92	0.92	SCNS 1030
201000516	20.28	20.28	SCNS 1030
201000518	25.12	25.12	SCNS 1030
201000512	31.83	31.83	SCNS 1030
201000511	13.42	13.42	SCNS 1030
201000473	30.66	30.66	SCNS 1030
201000515	30.33	30.33	SCNS 1030
201001004	18.43	18.43	SCNS1031
201001005	21.23	21.23	SCNS1031
201000622	28.24	28.24	SCNS1031
201000576	38.69	38.69	SCNS1031
201000577	36.83	36.83	SCNS1031
201000616	11.79	11.79	SCNS1031
201000534	3.08	3.08	SCNS1032
201000535	12.74	12.74	SCNS1032
201000499	29.66	29.66	SCNS1033
201000497	9.50	9.50	SCNS1033
201000498	9.09	9.09	SCNS1033
201000561	10.51	10.51	SCNS1033
Total	634.41	634.41	6 CSAs

CC: cover crops
R/T: residue/tillage management
CSA: cost share agreement
UID: unique identification

Table 4 Contracted Acres this Reporting Period

B. Partner and Committee Involvement

Most partners are very active members on all committees described in the work plan. While some committee meetings are highly planned and orchestrated such as the Landowner/Grower and Stakeholder annual meetings, oftentimes committee meetings are impromptu conference calls or “in-the-field” gatherings in response to time critical events or needed decisions. Most committee members are now meeting to discuss the anticipated transition from the Silver Creek pilot project to a full scale AM program in two adjacent watersheds.

The Wisconsin Department of Natural Resources (WDNR) has been a partner in the project primarily as a regulatory agency. Based on the actions and preliminary findings of the Silver Creek Pilot Project, in January 2018, NEW Water and WDNR signed a Memorandum of Understanding (MoU) to clarify the process for implementing an Adaptive Management (AM) program as part of their Wisconsin Pollution Elimination Discharge System (WPDES) permit. Pursuant to the MoU, in December 2018 NEW Water submitted the Final Compliance Alternatives Plan Report and an Adaptive Management Plan with the intent of using AM as a permit compliance option. NEW Water's current WPDES permit expires in June 2019 and is anticipated to be renewed in conjunction with approval of the Alternative Compliance and Adaptive Management Plans.

The ***Modeling Committee*** (JACOBS [previously CH2M], University of Wisconsin Green Bay [UWGB], and NEW Water) did not formally meet during this reporting period. NEW Water has worked casually with both JACOBS and Outagamie staff, during this reporting period, to better evaluate implementation strategies in Silver Creek to form an implementation plan for full scale AM.

The ***Monitoring Committee*** (UWGB, U.S. Geological Survey [USGS], NEW Water, and JACOBS) met informally once during the reporting period to discuss the successes from Silver Creek monitoring and how to build off the Silver Creek monitoring framework for full scale monitoring in the adjoining watersheds.

The ***Outreach Committee*** met numerous times during this reporting period to discuss the final signs to be placed at Silver Creek. Please refer to Section K or more details on the new signage. This Committee also met several times to begin the early stages of outreach efforts for full scale AM. Landowner and grower communications at Silver Creek were instrumental in guiding the timeline and format of the Public Involvement Plan (PIP) for full scale AM.

Members of the ***Wetlands Committee*** (NEW Water, US Fish Wildlife Service, Ducks Unlimited, Natural Conservancy, and NRCS) reported on progress of various wetland progress during the annual stakeholder meeting in December 2018.

The ***Implementation Planning Committee*** developed the overall "full-extent" and direction of the project during the early years of the project. This committee is now known as the Stakeholder Group and meets annually in December of every year. The fourth annual Stakeholder Meeting was held on December 18, 2018, and was attended by 35 partners. As can be seen by the topics shown below more than half a dozen partner agencies were represented and participated in the meeting. Discussions included the following:

- Welcome and Overview by Tom Sigmund, Executive Director NEW Water, and Jeff Smudde Director of Environmental Programs
- Review of 2018 accomplishments (NEW Water, Outagamie County, Jacobs)
- Special projects update (GLRI and non-GLRI projects)
    1. Biological monitoring (Oneida Nation)
    2. Vegetated Water Treatment Systems (University of Wisconsin – Green Bay, Oneida Nation)
    3. Wetlands Team (Oneida Nation, US Fish and Wildlife, Nature Conservancy)
    4. Grazing – Paired field monitoring (University of Wisconsin – Green Bay)
    5. Grazing Specialist update
    6. Demonstration Farm Update (Outagamie County)
    7. Fox Wolf Watershed Alliance Update
- Silver Creek – to Adaptive Management transition
- Open discussion and adjournment

C. Landowner Contacts and Communication

One-on-one grower and landowner contacts continue routinely with Agronomists and County Staff. On March 27, 2019, Tilth Agronomy, Jacobs, Outagamie County and NEW Water staff met to discuss the 2019 field plans and to update conservation and enhanced nutrient management plans (ENMPs).The updated ENMPs form the foundation for the next crop growing season and help lead the one-on-one "Kitchen table" discussions between agronomists and growers that occur early spring every year.

"Soft" Successes

A very promising cultural shift is occurring in the Silver Creek Pilot that isn't necessarily being captured in the numbers and dollars world of GLRI. For example, during the early planning years, a few structural BMPs were listed in a conservation plan, deemed high priority, and added to a CSA contract, but then weren't implemented and eventually the CSA was closed out. Meanwhile, good ol' fashioned networking and sharing of ideas between local agricultural agencies, agronomists, landowners, and growers as well as other initiative such as the Demonstration Farm Network are bringing new ideas to the farming community. Conventional farming practices that cause erosion and soil degradation and create the need for costly structural practices are giving way to innovative farming methods that improve the land, stop soil erosion, and increase profits. Practices such as cover crops, low disturbance manure injection, and no-till are being successfully implemented. Structural BMPS that might have been needed in the past are no longer needed. Soil heath and soil structure are improving and erosion is being minimized or eliminated. For example, in one landowner's field rather than new seeding, a planned CAP in a channelized flow area was left in alfalfa and thus didn't require cost share funds. In addition, this landowner/grower used his "pay for performance" incentive payments to help finance the purchase of a no-till drill. No-till agriculture practices avoid disturbing the soil with tools like chisel plows, field cultivators, disks, and plows. Use of a no-till drill in addition to better residue management has shown dramatic improvements in his fields in just a few short years. These "soft" successes may not show up in spreadsheets but they are making huge differences to both the land and the landowner.

The fourth annual *Grower and Landowner Appreciation Luncheon* was held on December 4, 2018. Invitations were sent to 45 landowners and growers in the Silver Creek project area and 21 attended. Throughout the meeting there was excellent dialogue and exchange of information between the project team and the owners and growers. The Agenda included the following topics: welcome and introductions, agenda review and meeting goals, history of project and work over the last 4.5 years, water quality monitoring results, update on the "Live Map" showing conservation practices, next steps and open discussion.

D. Water Quality Monitoring

During this reporting period 41 grab samples and 53 event samples were collected by NEW Water staff. 49 grab samples were collected by USGS and UWGB. A total of 146 samples were analyzed at NEW Water's certified laboratory according to analytical procedures outlined in the approved QAPP.

Table 5 shows the number of samples that have been collected at Silver Creek for the last five years. Figure 1 shows the permanent creek locations where water quality samples are collected. The increase in event samples (SL-EVT) is a good indication of the high rate of precipitation in 2018.

Table 5 Number of Yearly Samples Collected at Silver Creek Locations

	2013-2014	2015	2016	2017	2018
SL-FCR	12	19	29	26	24
SL-CKR	19	25	29	26	24
SL-COU	21	25	29	26	26
SL-EVT	**109**	**56**	**84**	**75**	**107**
SL-FLD*	44	47	47	48	46
SL-172	20	25	29	26	26

* Indicates site where USGS is taking supplementary grab samples

SL-EVT samples are collected at the USGS gauging station

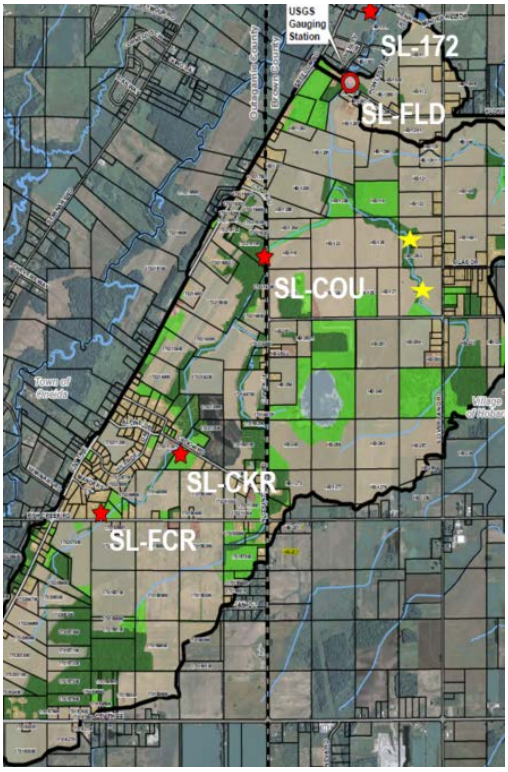


Figure 1 Water Quality Sample Locations

The May – October median total phosphorus and total suspended solids analytical results for the years 2014 to 2018 are shown on Figure 2 on Page 10. The data for 2018 is somewhat skewed due to two factors:

- much higher precipitation in 2018, and the
- Robertson Farm manure spill which occurred in September 2018 just upstream from location SL-COU.

The manure spill was described in Semi-Annual Report #7. Fortunately the impact of the spill was short-lived due to the higher than normal rainfall in the preceding days which resulted in better flow conditions in the stream.

In 2018, implemented BMP's became fully vegetated and started operating as expected. Fall rains brought an increase in precipitation driven runoff events. In comparison to 2017, also a wet year, 2018 TP and TSS were not as elevated. Particularly at Crook road (SL-CKR) as this site has historically been a high TP site. As BMP's, wetland complexes, and nutrient management change upstream, a reduction in TP was observed. This continues a trend of TP reduction at this site since BMP implementation started in 2015. Another positive observation from 2018, was reduced TSS in event samples collected at Florist Drive (SL-FLD), even with increased precipitation events in the fall. This again suggests that BMP's upstream are becoming fully functional and with time, water quality in Silver Creek should respond favorably. An increase in TSS was observed at Fish Creek Road (SL-FCR) these results are likely skewed due to organic detritus in the samples from improved land management and habitat, not suspended sediment from runoff.

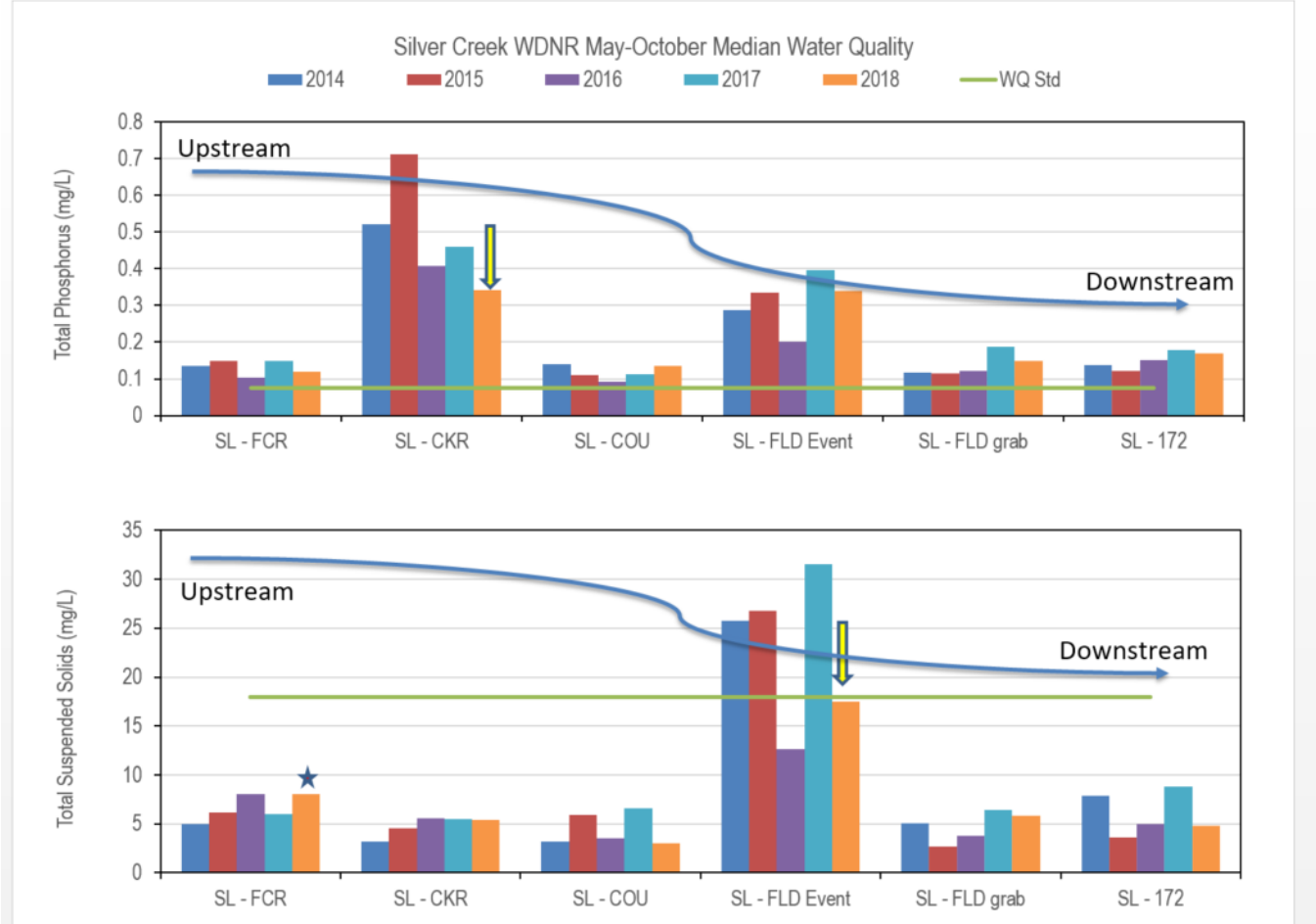


Figure 2 May-October Median Water Quality Data 2014 to 2018

Projected work during the next reporting period: In 2019 water quality sampling will continue at all of the five main sample locations as well as the USGS gauge station and event sampler. Additional data analyses are planned to further NEW Water's understanding of the watershed response to BMP implementation. Rainfall and flow gage data will be used to determine if there was an impact of rainfall amount, intensity, and duration related to runoff events and nutrient loads. Farm field operational data from the GIS will also be used to understand the water quality influence due to land cover type, crop planting dates, manure application dates, or tillage practices on fields directly upstream of the sampling sites.

E. GIS

During this reporting period, the GIS database was repeatedly checked for quality control and refinements were made in the data entry tables and formats. Therefore, there are some changes relative to the acres reported in previous semi-annual reports. The reasons some previously reported BMP acres differ from the actual GIS-verified acres include:

- Some acres were counted as "planned" but were never implemented
- Field management techniques changed (see Section C for an example) and planned BMPs were no longer needed
- Some acres were counted as "implemented" based on data entry date, but were not "100% field verified" until a later reporting period
- The initial BMP acreages were based on historic maps used during the planning phase but were later measured in-field using GPS and accurate acreages were input in the GIS
- Some erosion prone lands were planned for conventional BMPs but then more effective practices were chosen and implemented instead
- Some acres were taken out of production and repurposed

The Silver Creek Project was always considered to be a pilot project studied in anticipation of implementing a full-scale Adaptive Management (AM) program for a watershed program located in two adjacent watersheds. The AM program will take place in an area 10-times the size of Silver Creek. Figure 3 below shows the Silver Creek watershed (light blue outline northwest area) in relation to the adjacent watersheds (black outlines) to be addressed in the anticipated full-scale AM.

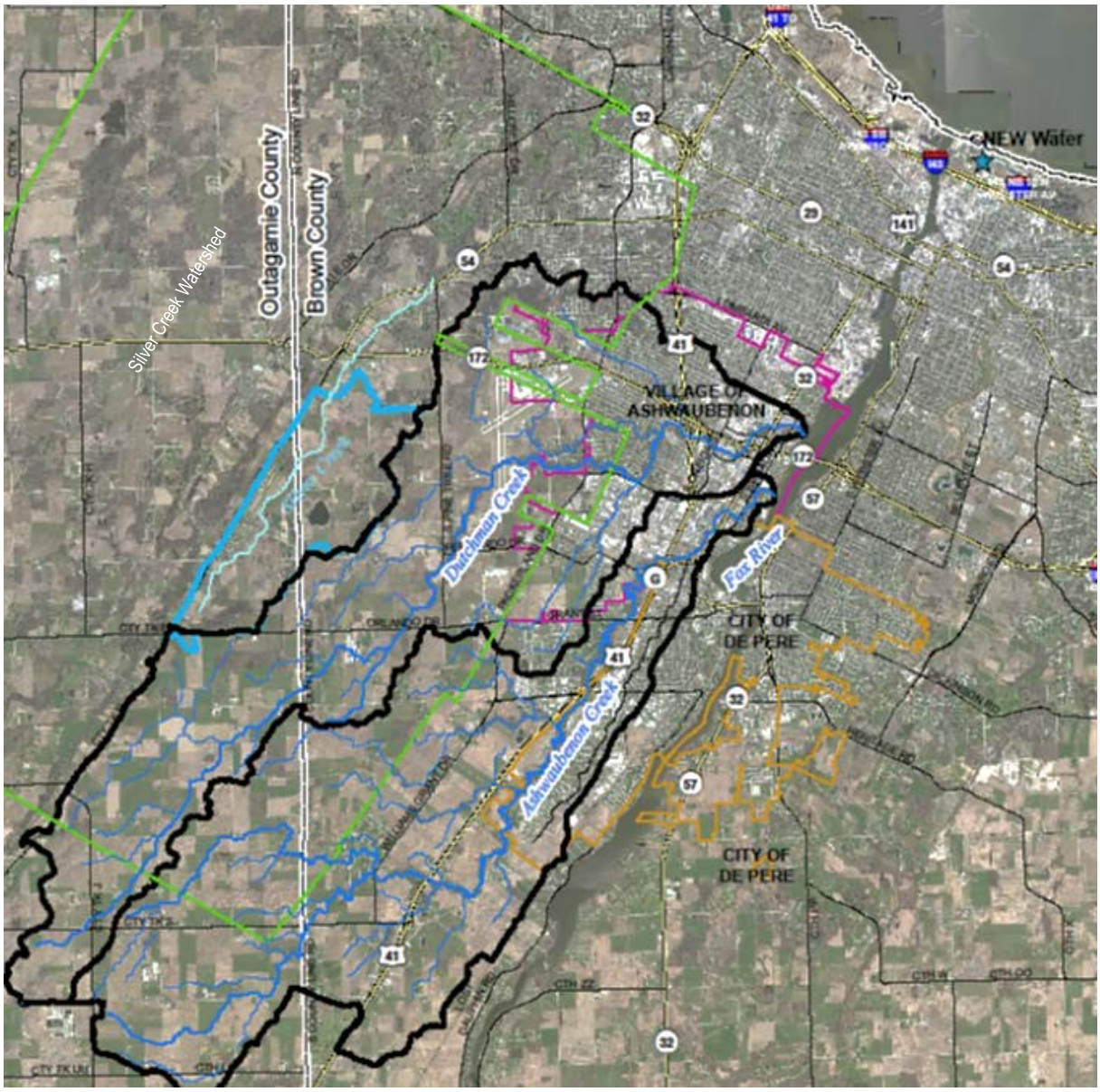


Figure 3 Silver Creek Watershed in relation to Ashwaubenon/Dutchman Watersheds

As is customary in Pilot Projects, a variety of data entry and data verification methods are practiced, verified, and streamlined. The intent of the Silver Creek GIS is to evolve its current platform for more efficient use in the Full-Scale AM program.

Following is a list of *lessons learned* during the GIS development:

1. Use of IPads for "in-field" data entry eliminates the need for subsequent desktop entries
2. In-field personnel training to assure consistent GIS data entry is paramount
3. The date of BMP Implementation versus the 100% complete (verification) date can be weeks to several months apart

4. The number of tables per BMP field data entry should be minimized
5. Data entry consistency is extremely important; limiting the number of GIS data entry personnel is highly recommend
6. The work flow of data entry and verification, knowing who's entering what, when
7. Nomenclature should be similar between GIS and CSA documents, and Reporting
8. BMP financial information should be in a database format other than GIS
9. Automated reporting from GIS to County staff announcing required verification eliminates multiple emails/phone calls, this was a workflow process created for more efficient operation among team members

F. Installation of Conservation Measures

As stated in previous semi-annual reports, the most appropriate and effective BMPs were planned for and implemented to ensure TP and TSS reduction results are achieved to the greatest extent possible. No structural BMPs were implemented during this reporting period. Several operational cost share agreements (CSA) were signed (see Table 4) and operational practices will continue to be the dominant cost sharing effort in the upcoming last years of the grant period, including the NCTE. One or two remaining structural practices have been in the planning stage for some time and may be implemented in the summer of 2019. Any existing BMPs needing repair work will also be considered for funding.

The implemented structural BMPs are inspected on a yearly basis as well as after signification rain events. Local precipitation data from the Green Bay Airport is automatically uploaded to the GIS. Rainfall events greater than 1 inch trigger the generation of an automatic email report that alerts NEW Water and county staff to conduct a required maintenance inspection.

Another innovative approach that has come out of the Silver Creek Pilot project is the notification of "No-Spray" areas to local Cooperatives. Cooperatives offer many Agronomy products and services including for-hire herbicide sprayers. County staff add GPS locations of implemented BMPs to a "no spray" map layer and this GPS data map is routinely shared with the Co-ops so that sprayers know exactly which areas of fields they must avoid.

The project ended its fourth year of the GLRI grant cycle in March 2019. The accomplishments-to-date from a numbers and dollars perspective include the following:

Table 6 Accomplishments to Date in #s and $$

$11,383	Cost shared structural BMPs on Oneida Nation lands
$95,546	Cost shared structural BMPs on private lands
$58,980	Cost shared operational BMPs (Oneida and private lands)
2015 30% 2016 70% 2017 85% 2018 82%	Percent winter cover in fields per year (alfalfa, cover crops, winter wheat, forage, pasture, or grass)
89%	Percent cropland not tilled in 2018
13	# of structural CSAs on private lands (8 recorded on Deed)
33	# of operational CSAs on private lands and Oneida Nation lands
13	# of critical area plantings (total 15.7 acres)
3	# of grassed waterways (total 4 acres)
19	# of filter strips/buffers (total 46 acres)
79 fields	Addressed in 2018 Enhanced Nutrient Management Plans (1618 acres)
9 fields	Converted to wetland impoundment (48 acres)
17 fields	Taken out of tillage and converted to cereal/harvestable forage, food plots, biomass, pollinator, and specialized vegetated buffers
1269	Acres contracted for operational CSAs in fall 2019/spring 2020

G. Biological Assessment

In January 2019 Jim Snitgen of the Oneida Nation identified benthic organisms he previously collected at Florist drive in June and September of last year. As in the previous five years, samples were collected from multiple habitat types using a kick-net or dip-net to collect dislodged macroinvertebrates. Typically 100 individuals are collected during each sampling attempt. Habitat selected for sampling included any apparent riffles, vegetation (twigs, leaves, grass, roots, etc.), and substrate/sediment. A similar level of effort is conducted during each of the sampling events to maintain consistency. In February 2019, Jacobs prepared a technical memorandum of the 2018 findings relative to the previous year. It addressed the following objectives: 1) Understanding biological trends in the watershed; 2) Supporting the Oneida Nation biological sampling goals; 3) Comparing to Wisconsin Department of Natural Resources (WDNR) biological assessment methods; and 4) Developing recommendations to support Silver Creek adaptive management pilot project.

Raw score results for the 2014 - 2018 samples are generally similar to previous years with a few exceptions. Overall, the number of species present (SR) was dependent upon the specific sampling year; however, the variety of species present is a positive indicator that the benthic macroinvertebrate community is somewhat diverse. Other metrics that showed similar results between years include proportions of Depositional Taxa, Diptera, and Chironomidae. The next sampling is scheduled for June 2019.

H. Managed Grazing – Paired Field Monitoring (UWGB research)

The two paired edge-of-field (EOF) monitoring stations in the Silver Creek watershed have been fully operational since June 2016. The catchments are contained within a single field where corn was planted and then harvested as silage slightly before September 21, 2016, September 30, 2017, and prior to November 5, 2018. UWGB researchers had intended to transition one of the fields to grazing in the fall of 2018. Unfortunately, unusually high rainfall in September and October 2018 delayed the transition to grazing as the soil has been too wet to till and plant. Furthermore, Robertson, the grazing farm operator, had to deal with the failure of his manure storage system (the Robertson Farm manure spill was described in Semi-Annual Report #7). Despite the wet conditions, the corn crop was harvested as silage prior to a November 5, 2019 runoff event, but it was too late to plant the pasture mixture. As of the end of this reporting period, the project is still in the pre-treatment phase. Planting the pasture seed mixture is planned for spring 2019.

A No Cost Time Extension (NCTE) was requested of US EPA in August 2018 when researchers realized that more time was needed to fully study part two of the project – the runoff comparison of the paired fields – conventionally corn cropped fields versus rotational grazing. A number of issues contributed to the need for an extension request. Delays early in the project, in 2016, resulted in less sampling of the critical spring runoff events. In addition, the number of measureable runoff events from the monitored catchments is more limited than from some soils in the Lower Fox River sub-basin because they are inherently a bit more permeable than the dominant soil (Hortonville vs Kewaunee, respectively). Furthermore, recently a large number of worm holes have been noted which likely improves the infiltration in the study area catchments, relative to what is normally observed.

Work projected next reporting period: Based on the reasonably good relationships between the two catchments, and the time frame of extended GLRI funding, a transition to the treatment Grazing phase of the study can begin as soon as possible. The pasture seed mixture will be planted in spring 2019. The pre-treatment phase will continue with analyses of samples collected during runoff events as they occur, until the grass mixture is planted. Work on establishment of the pre-treatment relationships between the two catchments for each constituent will be completed prior to the end of the next reporting period in October 2019, and some runoff events may be captured during the transitional study period (while grass mixture is getting started, but before grazing begins).

Percent completion of scheduled Grazing Project work: 100% of station setup scheduled to this point in the project is completed and about 100% of what was expected for the pretreatment phase of the study has been completed in the paired fields. Approximately 82% of the 3 year budget was expended through March 2019.

Robertson Farm Manure Spill Update

As was reported in Semi Annual Report #7, a substantial manure spill occurred on the Robertson Farm in September 2018. The managed grazing project was referred to as the "Robertson Farm" but the land is actually owned by the Oneida Nation which had a long-term lease with Robertson to operate the farm. After the spill had been cleaned up and everything was satisfactorily restored, the Oneida Nation ended their lease with Robertson. The Oneidas also ended the leases of all the Oneida-owned agricultural fields that Robertson was leasing. The 97-acre grazing fields will now be operated by the Tsyunhenkwa Farm, one of the agricultural businesses of the Oneida Nation of Wisconsin. They intend to pasture heifers on the land. The Tsyunhenkwa Grazing operation will continue using the heavy use area and vegetated treatment areas during inclement weather.

The Grazing Specialist who was hired by NEW Water in 2017 to assist Robertson with the Silver Creek Grazing Project will help the new Tsyunhenkwa managers in transitioning to updated methods and practices of grazing. The Grazing Specialist has 30 years of managed grazing experience and is already considered a welcome asset to the new operators.

I. Vegetated Water Treatment Systems (VWTS) Oneida Nation/UWGB (Sub-Awards)

The VWTS project is a joint venture between the Oneida Nation and the University of Wisconsin Green Bay. The Oneidas are the land owner, construction manager, and harvesters of the "biomass" and UWGB is conducting research activities described below.

Oneida Nation: Oneida Nation is currently in discussions with Outagamie County Land Conservation Department and the US Fish & Wildlife Service about adding stone reinforcement of the control structures as described in a 2019 Field Plan. The stone will help to limit erosion at the inlet and outlet ends of the structure and berm. It will also protect the pipe inlet that may be at risk of ice heaving. There will be some excavation of the control structures to assist with stone positioning, however the integrity of the berm will not be compromised. This work effort will be completed in the next reporting period.

UWGB Researchers continue sampling and data analyses on plant (grasses and legumes) uptake of soil phosphorus from various plots.

Goal #1, Approach #1: The purpose of this research is to document potential for plant luxury consumption of soil P. Harvestable biomass P samples will be taken from an 8 acre warm season grass planting established in 2012 and located within the Silver Creek Watershed on Oneida Nation properties.

Progress this reporting period: All 2015, 2016, and 2018 biomass samples have been processed. Tissue Phosphorus analysis of 2015 and 2016 samples has been completed. Phosphorous analysis of 2018 samples are ongoing. Data analysis and final quality assurance checks for all field seasons are ongoing. Preliminary statistical analyses have been run for 2015 and 2016. In late fall 2018 (October) 96 soil samples (0-30 cm depth) were collected to determine soil bulk density, soil organic matter (%), and Bray soil P. Samples were divided into 0-5 cm, 5-10 cm, 10-20 cm, and 20-30 cm depths, are in the process of being sieved through a 2 mm sieve. To date all block 1 samples have been processed, and block 2 is nearing completion. Completion of all soil processing is expected to be completed by the next progress report.

Goal #1, Approach #2: The purpose of this research is to more expansively identify the P content of existing grass-based BMPs and to evaluate the potential for P removal by grass harvesting at the watershed scale. Existing riparian grass buffer strips of varying ages within the Oneida Reservation were sampled. All sample analyses (plant and soil) are completed. Data analysis and final quality assurance checks are ongoing.

Goal #2: This research monitors the long-term functioning and effectiveness of a newly established Vegetated Water Treatment Systems (VWTS) within the Silver Creek Watershed. Researchers are evaluating soil properties, harvestable biomass, and biomass P concentrations.

Progress this reporting period: Sampling of biomass was conducted in early September 2018, although minimal biomass remained on the site due to one to two mowings conducted throughout the season to promote establishment of the early season plantings, producing another complication to the original design. The only exception to this trend was transect 3, which remained unmowed. Soil properties and aboveground biomass will be resampled in mid-summer 2019.

UWGB-VWTS Sub-award policy requirements	
Has UWGB submitted their invoices in a timely manner?	Yes, invoices are submitted 1/4ly
Is UWGB payment history consistent with progress to date?	Yes, as per work plan
Date of most recent UWGB invoice?	January 9, 2019
Is UWGB providing VWTS reports/updates? *Is there sufficient progress?*	Yes, every six months Yes
Is UWGB experiencing any issues completing activities identified in the VWTS work plan?	Not at this time
Summarize any management actions taken by the grantee to correct any UWGB-VWTS issues	N/A
At the time of this report, were any sub-awards made that were not included in the work plan?	No

Oneida Nation-VWTS Sub-award policy requirements	
Has Oneida Nation submitted their invoices in a timely manner?	Yes, an invoice is submitted after the work is performed
Is Oneida Nation payment history consistent with progress to date?	Yes, as per work plan
Date of most recent Oneida Nation invoice?	January 5, 2018
Is the Oneida Nation providing VWTS reports/updates? *Is there sufficient progress?*	Yes, as per work plan Yes
Is Oneida experiencing any issues completing activities identified in the VWTS work plan?	Somewhat, due to lack of staff
Summarize any management actions taken by the grantee to correct any Oneida VWTS issues	N/A
At the time of this report, were any sub-awards made that were not included in the work plan?	No

Brown County Subaward

Brown County Land and Water Conservation staff continues to provide assistance to the Project such as partner project signage, InterSeeder scheduling, outreach to Silver Creek farmers and the media regarding the InterSeeder and other equipment usage to enhance BMP efforts.

Brown County Sub-award policy requirements	
Has Brown County submitted their invoices in a timely manner?	Yes, on a yearly basis
Is Brown County payment history consistent with progress to date?	Yes, as per work plan
Date of most recent Brown County invoice?	January 8, 2019
Is Brown County providing reports/updates? *Is there sufficient progress?*	Yes Yes
Is Brown County experiencing any issues completing activities identified in the work plan?	No
Summarize any management actions taken by the grantee to correct any Brown County issues	None
At the time of this report, were any sub-awards made that were not included in the work plan?	No

J. Wetlands

In late October 2018, Gary Van Vreede of the US Fish and Wildlife Service surveyed the Silver Creek Wetland sites and provided the following update: *I checked most of the sites we were involved with last week, after the big rain events, and everything looked good. The basins are vegetated, but many of the species are annuals. I would recommend raising the water levels only about a foot to start with and then reevaluate next spring. If vegetation is reduced and there are significant areas of open water, it would probably be a good idea to lower the water levels again for a few months to promote vegetation growth. Gradually raising the water levels over time should provide the vegetated conditions that are required.*

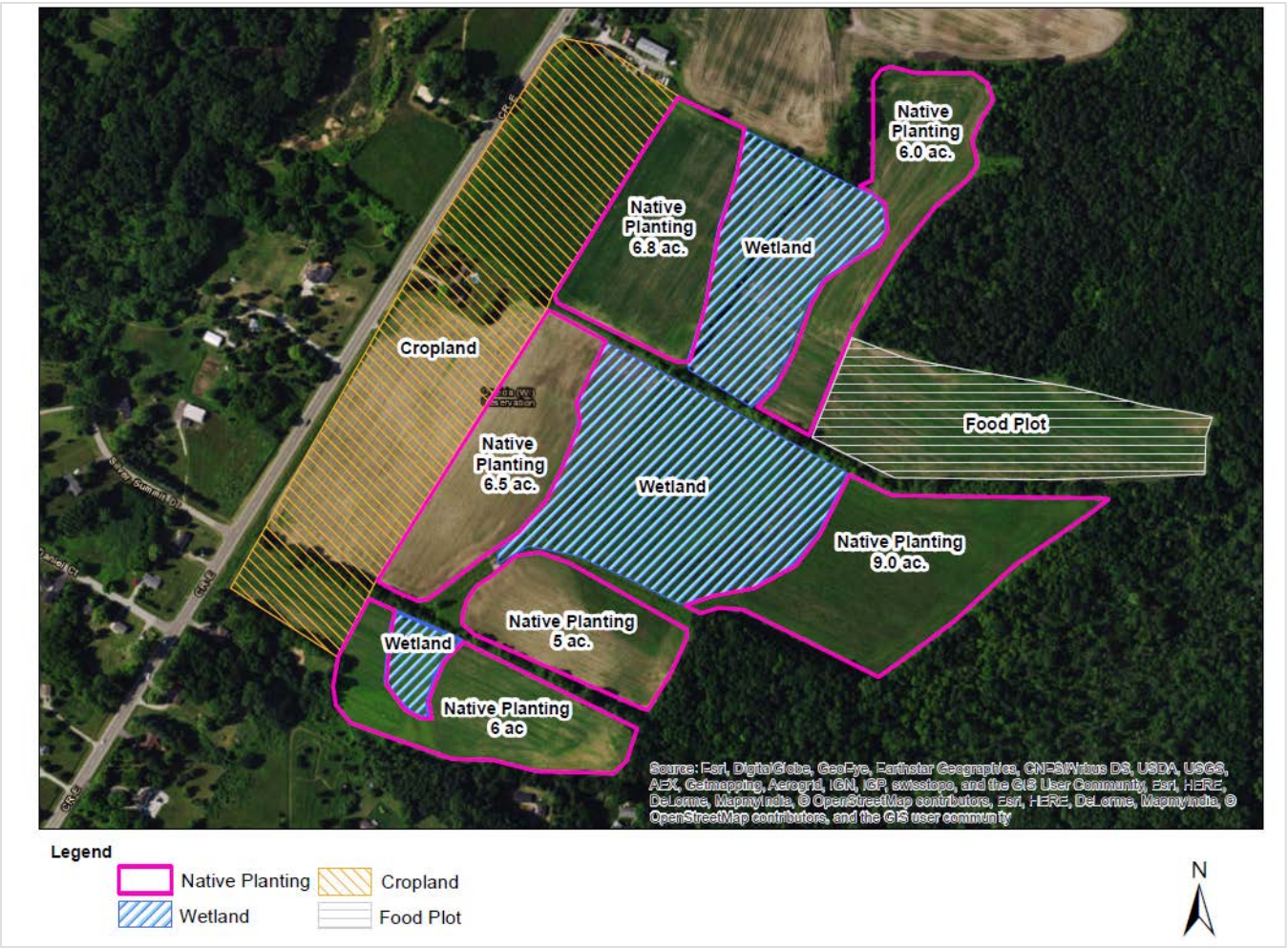


Figure 4 Headwater Wetlands Complex

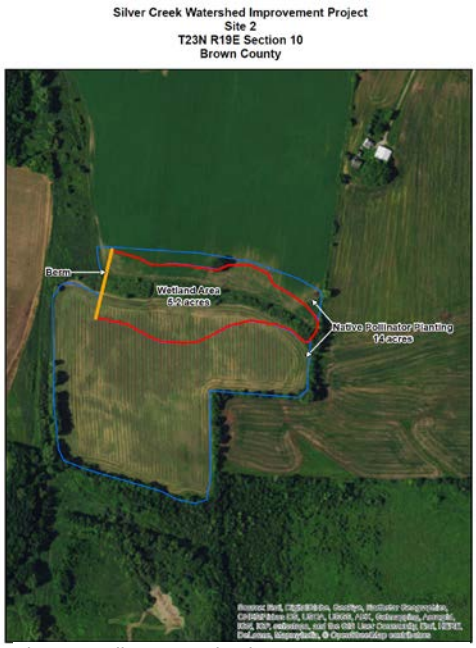


Figure 5 Tributary Wetland

The Silver Creek Headwater Wetlands complex (also previously reported as Wetland #7) and a tributary wetland (previously reported as Wetland #2) were featured as case studies by Erin Houghton, Watershed Programs Manager, at the Wisconsin Wetlands Association Conference in February 2019. Wetlands are clearly one of the best tools in the "Toolbox" for improving agricultural lands. They improve water quality through sedimentation and nutrient uptake, improve infiltration and retention of storm and meltwater, reduce flashiness of the stream by increasing base flow in headwaters, and improve habitat and ecosystems in general. Figure 4 shows details of the completed headwater complex and Figure 5 shows the tributary wetland.

Ducks Unlimited (DU) "Sub-recipient" policy requirements	
Has DU submitted their invoices in a timely manner?	DU does not submit invoices to NEW Water
Is DU payment history consistent with progress to date?	Yes
Date of most recent DU invoice?	N/A
Is DU providing reports/updates? *Is there sufficient progress?*	Yes Yes
Is DU experiencing any issues completing activities identified in the work plan?	No
Summarize any management actions taken by the grantee to correct any DU issues	None
At the time of this report, were any sub-awards made that were not included in the work plan?	No

K. Education/Outreach

http://newwater.us/projects/silver-creek-project/

NEW Water continues to use a wide variety of outreach tools including PowerPoint presentations, a website, factsheets, Twitter feeds, Facebook posts and newspaper and magazine articles to talk about the Silver Creek Adaptive Management Pilot. Table 7 below contains a list of venues where project updates were presented during this reporting period. Select other outreach and educational efforts are described on the following pages.

Table 7 Silver Creek Presentations October 2018 – March 2019

2018 Dates	Organization/venue
Oct 29	NWTC Agronomy Class Field Trip to Silver Creek
Dec 3	NWTC Wastewater Treatment Class Lecture
Dec 4	Landowner/Grower Annual Meeting
Dec 10	Quarterly Utility Meeting, Madison, WI
Dec 18	Annual Stakeholder Meeting
2019 Dates	
Feb 6	Brown County Conservation Alliance Meeting – Barkhausen Waterfowl Preserve
Feb 18	UWGB Environmental Monitoring Lecture
Feb 21	Wisconsin Wetlands Association Conference
Feb 22	State Representative Staush Gruszynski – NEW Water
Mar 1	American Water Resources Association Conference, Delavan WI
Mar 4	WDNR Secretary Preston Cole (newly appointed by new Governor Tony Evers)
Mar 22	Quarterly NEW Water Customer meeting, Green Bay WI
Mar 27	NEW Water Commission 2018 Water Quality Update
Oct-2018 to Mar 2019	620 persons attended tours and presentations at NEW Water The Silver Creek project is part of the overall outreach efforts at NEW Water/GBMSD when facility tours are hosted to members of the public (schools, municipalities, organizations, utilities, elected officials)

NEW Water Customer Meeting

On March 22, 2019, Jeff Smudde, Director of Environmental Programs, provided a Silver Creek update at the NEW Water Customer Quarterly Meeting.

Figure 6 Silver Creek Update Presented at NEW Water Customer Meeting

Videography in Silver Creek

As noted in Semi-Annual Report #7, a Video titled, "A Day in the Watershed" was filmed in August 2018 and was edited and completed during this reporting period. It shows scenes from Silver Creek and NEW Water's certified laboratory. Erin Houghton, NEW Water Watershed Programs Manager, explains how and why various water samples are collected and analyzed. The production was funded by NEW Water. The video was published on October 18, 2018 and can be viewed on youtube at: https://www.youtube.com/watch?v=V6_aoDNgxKE&feature=youtu.be

Visits by Government Officials

March 4, 2019, Wisconsin Department of Natural Resources (WDNR) Secretary Preston Cole

WDNR Secretary Preston Cole, newly appointed by newly elected Governor Tony Evers (D), visited NEW Water to talk about environmental initiatives in the Governor's proposed budget. With special regard to Silver Creek he wanted to hear more about the successful participation of 90% of farmers in the watershed. He and Jeff Smudde, NEW Water Director of Environmental Programs, discussed the economics of no-till and cover crops and the long term benefits gained from these practices in relation to soil health. Jeff shared with him that a farmer in Silver Creek who participates in the Demonstration Farm Network has data showing these cost savings. From seed, to fuel, to time, to tractor maintenance and upkeep – there are significant savings throughout the course of a growing season. It is a shift in mentality from maximizing production to optimizing output vs production.

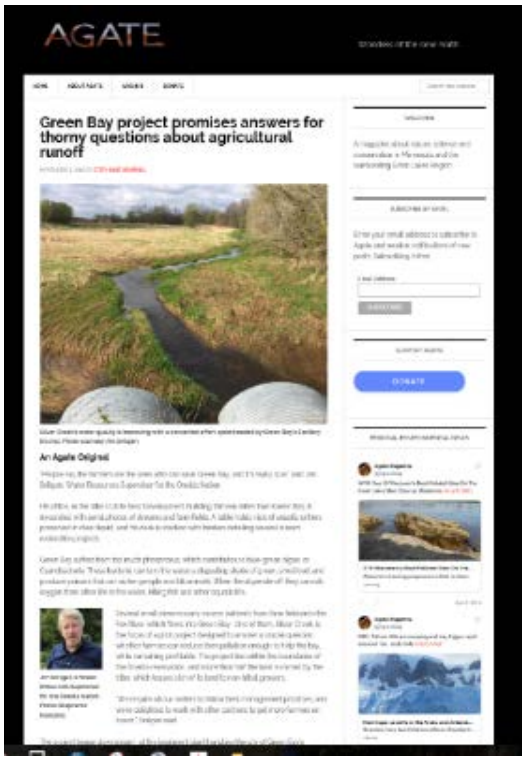
https://www.wearegreenbay.com/news/local-news/governor-evers-plan-for-improving-water-quality-in-wisconsin/1827024825

https://wtaq.com/news/articles/2019/mar/04/putting-the-focus-on-clean-water/?fbclid=IwAR3DMegp2JWEOIgbFB6kIFhn4oOWcYin-CbQNiMh53eZTzgfiv9gq1ex53k

February 22, 2019

State Representative Stauch Gruszynski

Representative Gruszynski visited NEW Water to learn about the wastewater treatment facility, the new Resource Recovery and Electrical Energy generation system (R2E2), and work in the watershed. He was recently appointed to a State of Wisconsin Water Quality Task Force



Published Articles about the Silver Creek Project

On November 2, 2018, Stephanie Hemphill published an article titled *Green Bay project promises answers for thorny questions are agricultural runoff*, in Agate magazine. This On-line magazine focuses on the environment and people of Minnesota and the surrounding Great Lakes Region. The article can be accessed via this link: http://www.agatemag.com/2018/11/green-bay-project-promises-answers-for-thorny-questions-about-agricultural-runoff/

The article was also published in Ensia : https://ensia.com/features/what-a-project-in-wisconsin-can-teach-others-about-working-with-farmers-to-reduce-phosphorus-runoff/

Stephanie Hemphill's article was also featured in WisContext, A service of Wisconsin Public Radio and Wisconsin Public Television: *A Tribal-Farmer Collaboration Tests Strategies to Curb Phosphorus Runoff in Green Bay. Silver Creek Pilot Project Applies Conservation Incentives to Improve Water Quality*
https://www.wiscontext.org/tribal-farmer-collaboration-tests-strategies-curb-phosphorus-runoff-green-bay

Central States Water Environmental Association

New Water was featured in the PLANT PROFILE section of the Fall 2018 edition of this magazine. Part of the article discussed the Project by stating that a $1.6 Million GLRI grant was awarded to launch a pilot project with a "*plethora of partners from federal, state, local governments, Oneida Nation, non-profit organizations, an academia*." It also mentioned US congressman Reid Ribble who "praised the project in his Save the Bay initiative as an example of a sensible approach toward environmental protection."

http://inet.metro.org/Lists/Announcements/Attachments/251/Central%20States%20Cover%20Story%2011-2018.pdf

Project Signage

Three types of signs have been developed and will be erected in the Silver Creek project area during the next reporting period.

Figure 7 Conservation Sign

1. CONSERVATION AREA

Thirty four conservation signs (see Figure 7) will be posted at fields where BMPs (e.g., filter strip, grassed waterway, WASCB, etc.) have been implemented that require certain operation and maintenance actions by operators and landowners. The live interactive "Field Map" link displays the practice location of relative to the user's location.

2. SILVER CREEK PROJECT

Up to 34 Silver Creek Project signs (see Figure 8) will be placed on roadways near fields that have been significantly improved by the project. The signs will be located either at the field access or other most visible location. The intent of this sign is to give some credit and recognition to the grower/owner that cooperated with the project team and installed management practices to improve the field. The hope is that these signs will be a bit of a status symbol and growers and owners will be proud to have this sign in front of their property.

Figure 8 Project Sign

3. "SILVER CREEK STORY"

This is a large 3 ft. x 5 ft. landscape sign (see Figure 9) telling the story about how the Silver Creek Pilot Project came into existence. It has many colorful images and a map showing Silver Creek and its tributaries in relation in Duck Creek and Green Bay. Its permanent position on the highly used walking trail along Florist Drive was chosen in coordination with the Oneida Nation. The location is very visible to people either walking or driving past

Figure 9 "Silver Creek Story" Sign

3. GLRI Work Projected for Next Reporting Period April to October 2019

Activities in the 2014 Work Plan will continue as planned

4. Object Class Category Changes

A revised work plan and budget update was submitted to US EPA on March 5, 2019 as part of a NCTE request

5. Problems Encountered

NEW Water had signed operational Cost Share Agreements with Robertson, who leased over a hundred acres of land from the Oneida Nation. Robertson also leased the land on which the September 2018 manure spill occurred. After the spill cleanup, the Oneida Nation ended all their leases with Robertson and thus NEW Water will have to cancel the existing CSAs and work with any new lessees the Oneidas select to operate their lands.

6. Spending

October 2018 – March 2019			
Object Class Category	Activity	Semi Rpt #8 spending	Accumulative Spent to date
Personnel	Grant Specialist	$8,391	$78,761
Fringe Benefits	Grant Specialist	$839	
Contractual	JACOBS	$63,331	$670,295
	AEG	-	$7,000
	Grazing Specialist	$0	$7,349
Supplies	Drone		$2,341
Other	CostSharing/BMPs	$4,251	$155,443
	CSAs Oneida	$	$11,383
	Grazing infrastructure	$	$91,114
	Grazing UWGB	$18,618	$127,304
	UWGB (Sub) VWTS	$226	$55,649
	Oneida VWTS	-	$57,855
	Brown County (sub)	$2,100	$14,700
	Wetlands	-	$31,166
	Misc	-	$238
	TOTAL	$97,756	$1,310,598

A. Percent of budgeted amount spent to date (~March 2019) for the 5-year project

78~% (1,310,598 / $1,686,669)

B. NEW Water & Other In-kind Hours/Dollars this Reporting Period

NEW Water	10/01/2018–3/31/2019 Hours	10/01/2018 – 3/31/2019 Match $
Watershed Programs Manager	208	$ 7,904
Director of Environmental Programs	170	$ 8,160
Water Resources Specialist	149	$ 4,172
Lab Analyst	182.5	$ 3,833
Communication & Education	165	$ 9,800
Fringe (60%)		$17,213
Total New Water Hours	784.5	
Total NEW Water Match $		$45,902
Outagamie County Technician (no federal funds)		$30,622
Oneida Nation In-kind $		$ 1,116

C. Recipient and Other In-Kind Match to date (February 2015 – March 2019):

	Work Plan Total In-Kind match	$ In-Kind to-date	% In-Kind to-date
Recipient: NEW Water	$616,881	$568,383	91.3%
Other: Oneida Nation $96,884 Ducks Unlimited $93,535 Outagamie County $61,178	$300,000	$251,597	83.9%

D. Funding Rate

Percentage of Grant Spent	% Federal	% Non Federal	Footnotes: Draw Down# $/* * = $1,686,669 total award	Footnotes: NEW Water (Match+Fringe)+Oneida/DU/Outagamie in-kind/** ** = $916,881 (non-federal total)
1. Mar 2015 – Se. 2015	12.36 1)	11.87 2)	1) DD1 $208,467/*	2) $87,619+$21,181=$108,800/** Correction after 7/2016 Assistance Amendment
2. Oct 2015 – Mar 2016	1.6 3)	10.93 4)	3) DD2&3 $27,217/*	4) $78,269+$21,904=$100,173/** Correction after 7/2016 Assistance Amendment
3. Apr 2016 – Sept 2016	12.18 5)	11.22 6)	5) DD4&5 $205,450/*	6)$78,534+$24,370/**
4. Oct 2016 – Mar 2017	5.9 7)	8.2 8)	7) DD6&7 $100,198/*	8)$65,534 +$10,039/**
5. Apr 2017 – Sep 2017	8.9 9)	19.5 10)	9)DD8 $150,247/*	10) $77,472+$8,446+$93,535(DU)/**
6. Oct 2017 – Mar 2018	17.6 11)	8.3% 12)	11) DD9&10: $297,239/*	12) $68,655+$7,588/**
7. Apr 2018 – Sep 2018	13.5 13)	10.8% 14)	13)DD11+DD12: $227,603/*	14) $66,398+$30,556 + $2,240/**
8. Oct 2018 – Mar 2019	5.6% 15)	8.5% 16)	15) DD13: $94,540/*	16) $45,902+$30,622+$1,116/**
Total to Date	77.6%	89.3 %		

7. Changes

Is there a change in principal investigator? Yes, Erin Houghton, NEW Water Watershed Programs Manager. The previous principal, Jeff Smudde, is now the Director of Environmental Programs at NEW Water.

8. Length of Project

Will the project take longer than the approved project period? Yes, the paired grazing project will likely take longer than planned therefore NEW Water requested a one-year NCTE on August 23, 2018. While the project is extended into 2020, NEW Water has submitted a budget update that would include extending GLRI funding for BMPs during the 2020 field season. NEW Water/GBMSD is working with the US EPA project officer on executing the NCTE.

9. Drawdowns

Semi # Interval	Drawdown Request #	Date	Amount
1 Mar 2015-Sep 2015	1	10/13/2015	$ 208,467
2 Oct 2015-Mar 2016	2	05/17/2016	$ 21,250
2 Oct 2015-Mar 2016	3	06/27/2016	$ 5,967
3 Apr 2016-Sep 2016	4	07/01/2016	$ 56,484
3 Apr 2016-Sep 2016	5	10/07/2016	$ 148,966
4 Oct 2016-Mar 2017	6	12/9/2016	$ 11,694
4 Oct 2016-Mar 2017	7	3/30/2017	$ 88,504
5 Apr 2017-Sep 2017	8	6/28/2017	$ 150,247
6 Oct 2017-Mar 2018	9	10/12/2017	$ 148,585
6 Oct 2017-Mar 2018	10	1/18/2018	$ 148,654
7 Apr 2018- Sep 2018	11	5/9/2018	$ 71,591
7 Apr 2018- Sep 2018	12	10/31 2018	$ 156,012
8 Oct 2018 – Mar 2019	13 May	4/22/2019	$ 94,540
	Total to Date (~April 2019)		$1,310,961