

**Dunn County  
Upper Spring  
Creek Watershed  
Project Implementation Plan**

**Dunn County Soil Conservation District**

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**State:** North Dakota

**Watershed:** Upper Spring Creek Watershed (Dunn Co.)

**Hydrological Unit Code:** 1013020108

**High Priority Watershed:** Yes

Assessment Unit ID's: ND-10130201-028-S\_00 and ND-10130201-023-S\_00

TMDL Development and/or Implementation (check any that apply)

<u>Project Types</u>	<u>Waterbody Types</u>	<u>NPS Category</u>
<input type="checkbox"/> Staffing and support	<input type="checkbox"/> Groundwater	<input checked="" type="checkbox"/> Agriculture
<input checked="" type="checkbox"/> Watershed	<input type="checkbox"/> Lakes/Reservoirs	<input type="checkbox"/> Urban Runoff
<input type="checkbox"/> Groundwater	<input type="checkbox"/> Rivers	<input type="checkbox"/> Silviculture
<input type="checkbox"/> I&E	<input checked="" type="checkbox"/> Streams	<input type="checkbox"/> Construction
	<input type="checkbox"/> Wetlands	
	<input type="checkbox"/> Other	

**Major Goal:** The Upper Spring Creek Watershed Project is designed to provide technical, financial and educational assistance to landowners within the watershed. The primary goal of this project is to restore and maintain the recreational uses of the Upper Spring Creek within the project area.

**Project Description:** The project sponsors intend to 1) Reduce monthly geometric concentration for E. Coli, 2) continuing informational meetings for producers and landowners, and 3) Improving water quality and riparian areas.

See Appendix B

**2.0 State of Need**

## 2.1

The portions of Spring Creek that will be addressed by the Upper Spring Creek Watershed project include the Waterbody Assessment Units ND-10130201-028-S\_00 and ND-10130201-023-S\_00. These Assessment Units extend from Lake Ilo downstream to the Spring Creek/Goodman Creek confluence. Both Assessment Units were included in the “E. coli Bacteria TMDL for Spring Creek in Dunn and Mercer Counties, North Dakota.” The Spring Creek TMDL was approved in September 2011.

As indicated in the Spring Creek TMDL, the recreational uses for the portions of Spring Creek in the Upper Spring Creek Watershed are fully supporting, but threatened, due to elevated concentrations of E. coli bacteria. Based on data collected for the TMDL in 2008-2009, the state standard geometric mean criteria of 126 colony forming units/100 milliliters (126 CFU/100ml) was satisfied. However, the recreational uses were assessed as fully supporting, but threatened because over 10% of samples exceeded the state standard criteria of 409 CFU/100ml. The TMDL target for achieving fully supporting status of the Spring Creek recreational uses is a geometric mean of 126 CFU/100 ml during the May 1 – September 30 recreational season.

During TMDL development, potential pollutant sources evaluated in the watershed included both point and nonpoint (NPS) sources. The point sources included the municipal facilities for the cities of Dunn Center and Dodge. The municipal facilities for Dunn Center and Dodge are permitted through the ND Pollutant Discharge Elimination System (NDPDES). Discharge records for Dunn Center indicate the E. coli bacteria concentrations have not exceeded the state standard geometric mean concentration, which is within the waste load allocation described in the TMDL. Dodge has not reported any discharges from their municipal facilities. There are no large concentrated animal feeding operations (Large CAFOs) in the watershed.

Potential sources of NPS pollution in the watershed are generally associated with agricultural production. The dominant land use type identified in the TMDL for the watershed is agricultural production on grasslands and croplands. Of these uses, livestock production is the primary agricultural practice. Priority NPS pollution sources identified in the TMDL are: 1) riparian area grazing; 2) unpermitted small and medium animal feeding operations; and 3) over grazed range or pasture land.

A full copy of the Spring Creek TMDL is available at:  
[deq.nd.gov/WQ/3\\_Watershed\\_Mgmt/2\\_TMDLS/TMDLs\\_Complete.aspx](http://deq.nd.gov/WQ/3_Watershed_Mgmt/2_TMDLS/TMDLs_Complete.aspx).

Subsequent water quality data collected in 2012-2018 supports the recreational use impairments described in the TMDL. Refer to Section 2.5 for a summary of the water quality data collected in 2012-2018.

## 2.2

The Upper Spring Creek Watershed is within the Knife River Basin. More specifically, Upper Spring Creek Watershed is located in the western half of HU 1013020109 and the eastern half of HU 1013020108. The Upper Spring Creek Watershed will address the portion of Spring Creek that flows out of Lake Ilo and across the Dunn County in an easterly direction to the county line. According to the analysis of the Rapid Geomorphic Assessment (where 50 sites were sampled), Spring Creek bed material is mainly sand and silt clay, 90% of the sites where moderately or deeply incised, and 76% of the banks were observed to be moderately to severely unstable.

The Upper Spring Creek Watershed is located in the eastern half of Dunn County and extends from Lake Ilo downstream to the Spring Creek/Goodman Creek confluence. Primary emphasis will be placed on addressing nonpoint E. coli bacteria sources in Dunn County. Total acres in the project area are 179,110. Based on the *Standards of Water Quality for the State of North Dakota* (NDDoH, November 2015), the Spring Creek has a stream classification of IA. As a class IA stream, designated beneficial uses for the Spring Creek are aquatic life, recreation, industrial, and agricultural.

In addition, the quality of Class IA streams shall be such that they can be used for a municipal water supply after treatment. It should be noted that Spring Creek flows into the Knife River south of Beulah, ND.

The AnnAGNPS model has been updated and new maps have been created. This model shows priority cropland and non-cropland areas in the Upper Spring Creek Watershed. These areas will be given priority when planning future producer contracts for BMP implementation. Maps are attached in Appendix C.

## 2.3 Maps

See Appendix C

- \* Nontilled Acres- High Priority Areas
- \* Tilled Acres- High Priority Areas

## 2.4

The Upper Spring Creek Watershed's topography is characterized by rolling hills. Elevation ranges are from 2,454 feet in the northwest portion of the watershed, 2,167 feet where Spring Creek flows out of Lake Ilo to 1,998 feet in Dodge. Soils vary greatly in different areas of the county and range from soft shale plains to extreme sand. Unique to Dunn County is the Knife River Flint used by the early Native Americans and early settlers. Dunn County contains the flint quarries that provided the flint that was traded all over the United States. Annual precipitation for the counties is 17" on average. Important artesian aquifers are in the Fox Hills and Hell Creek Formations of Late Cretaceous age and the Tongue River Formations of Tertiary age. Most of the water used as domestic and livestock water for farms is derived from those areas. Dunn County is also actively being drilled for oil, with many established wells.

The primary natural resource management concern in the project area is the degradation of the riparian areas. Other concerns include range practices for summer grazing, cropland erosion and water erosion on rangelands and confined areas for feeding livestock. Of the 179,110 acres in the Upper Spring Creek Watershed an estimated 28% are cropland and hay land, 67% are pasture, rangeland and CRP and 5% are oil drilling, wildlife, water, farms, etc. When you look at land use next to the creek, 72% is pasture/ rangeland, 13% hay land, 9% cropland, 5% farmstead/feedlot, and 1% other.

**Table I**

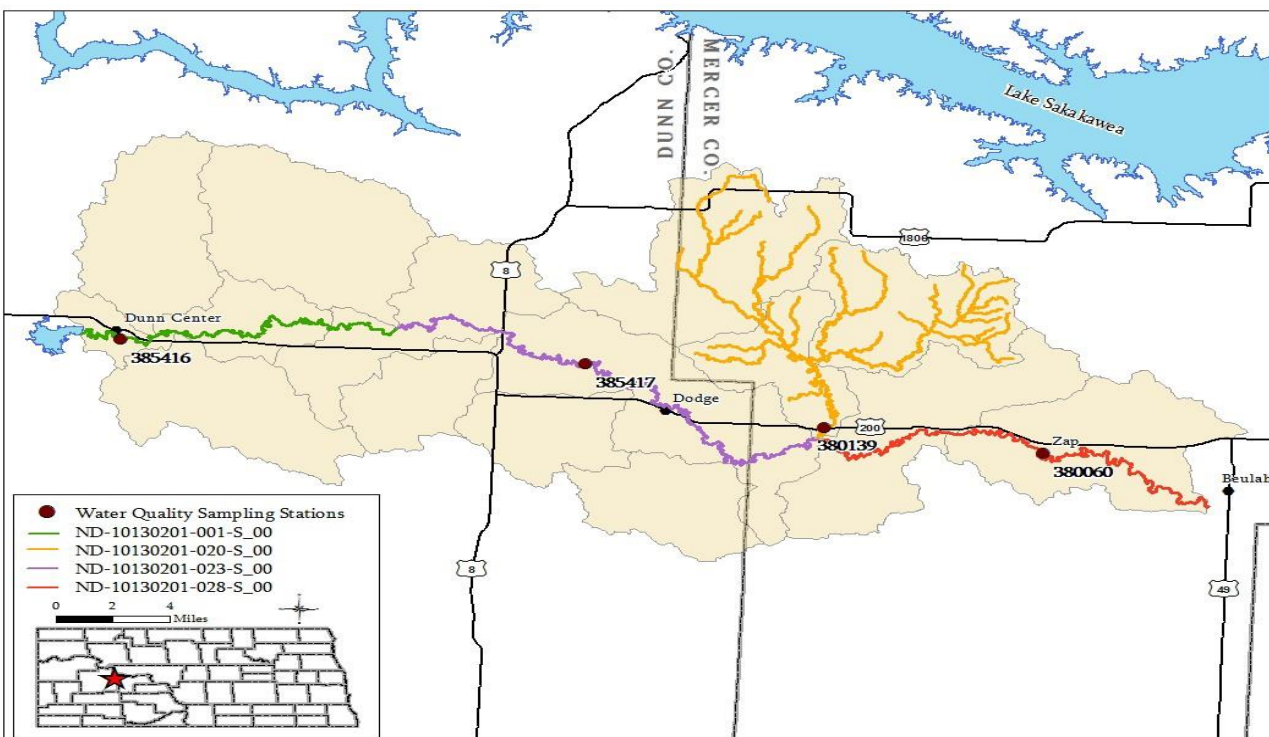
Actual 2017 NASS Land use Data		
CLASS_NAME	Sum of Acres	Percentage of Watershed
Grassland/Pasture	99766.66041	55.70%
Spring Wheat	22476.95979	12.55%
Other Hay/Non-Alfalfa	19326.17904	10.79%
Corn	6505.157391	3.63%
Developed/Open Space	6457.971921	3.61%
Sunflower	4749.055053	2.65%
Alfalfa	4630.445284	2.59%
Winter Wheat	2706.818974	1.51%
Canola	2209.687659	1.23%
Oats	1994.840195	1.11%
Barley	1690.736523	0.94%
Deciduous Forest	1448.999346	0.81%
Peas	1044.638726	0.58%
Soybeans	586.6544579	0.33%
Buckwheat	555.1765089	0.31%
Woody Wetlands	515.0999376	0.29%
Flaxseed	461.9304041	0.26%
Durum Wheat	357.8347759	0.20%
Open Water	317.195706	0.18%
Developed/Low Intensity	296.1020718	0.17%
Millet	228.0294156	0.13%
Fallow/Idle Cropland	219.4710426	0.12%
Herbaceous Wetlands	205.4797031	0.11%
Lentils	183.4640206	0.10%
Shrubland	72.15939221	0.04%
Barren	28.46505353	0.02%
Developed/Med Intensity	25.35139194	0.01%
Sorghum	17.18951227	0.01%
Evergreen Forest	11.78617344	0.01%
Dry Beans	10.64013636	0.01%
Mixed Forest	7.116180193	0.00%
Clover/Wildflowers	1.779045048	0.00%
Developed/High Intensity	0.667141893	0.00%
Other Crops	0.444761262	0.00%
Potatoes	0.222380631	0.00%
Safflower	0.222380631	0.00%
Rye	0.222380631	0.00%
	179,110.85	

**Table 2**

Land use By Category		
CLASS_NAME	Sum of Acres	% of watershed
Native Grassland	99,766.66	55.70%
Cropland or Tilled Acres	45,999.40	25.68%
Tame grasses/Reseeded Grass	19,327.96	10.79%
Bare/Roads/Developed	6,808.56	3.80%
Alfalfa	4,630.45	2.59%
Riparian Woodlands/Tree Rows/Shrubs	1,540.06	0.86%
Water/Wetlands	1,037.78	0.58%
<b>Total Watershed Acres:</b>	<b>179,110.85</b>	

## 2.5

Water quality grab samples were collected for *E. coli* bacteria during the recreational season (May 1 through September 30) on Spring Creek from 2012 through 2018. Station 385416, which is located one-half mile south of Dunn Center, monitors the immediate upstream 12-digit HUC 101302010806. Station 385147 is located three miles west and one mile north of Dodge and monitors the upstream half of the 12-digit HUC 1013020010904. For statistically accurate analysis of yearly bacteria data, *E. coli* bacteria data was examined by pooled month over the entire project period of 2012-2018. To achieve fully supporting status for the recreational uses, *E. coli* bacteria concentration targets have to be at or below a 30-day geometric mean of 126 CFU/100 mL with less than ten percent of the samples exceeding 409 CFU/100 ml. Figure 1 provides the locations for sites 385416 and 385417.

**Figure 1. Spring Creek and the Water Quality Sampling Sites.**

At station 385416, E. coli bacteria samples collected in May, July, August and September indicated that recreational uses were Fully Supporting for those months since the geometric mean (criteria 1) and percent of samples exceeding 409 CFU (criteria 2) did not exceed criteria limits. The month of June classified as Not Supporting the recreational beneficial uses due to high geometric means for E. coli bacteria. At Station 385417, E. coli bacteria samples collected in July, August and September indicated that recreational uses were Fully Supporting for those months with both the geometric mean (criteria 1) and percent of samples exceeding 409 CFU (criteria 2) within criteria limits. The month of May met the geometric mean criteria but had one sample too many over 409 CFU, classifying that month as Fully Supporting but Threatened. The month of June classified as Not Supporting the recreational beneficial uses due to high geometric means for E. coli bacteria. Tables 3 and 5 and Tables 4 and 6 provide a summary of the data collected and monthly recreational use support at sites 385416 and 385417.

In addition to the shortfall in attaining fully supporting status for recreational uses, the data also indicate annual occurrences of elevated E. coli bacteria concentrations during the month of June at both monitoring sites. This consistent annual rise in E. coli bacteria concentrations suggests some type of activity or land management is occurring in June of each year that increases the delivery of E. coli bacteria to the creek. Efforts need to be initiated at the onset of the project to verify the E. coli bacteria sources present in June and determine the best approach for addressing the source(s). Given the current land management along the creek, livestock grazing management will be part of the solution to reduce the E. coli bacteria concentrations. More specifically, project priorities need to include the implementation of practices that minimize or prevent livestock impacts to the riparian corridor through improved livestock grazing management in pastures along the creek. Additional E. coli bacteria sources identified through the watershed inventory at the start of the project also need to be given priority status and addressed accordingly.

To address the fecal, e. coli and high-risk level feedlots, BMPs are needed to remove cattle that are wintering on Spring Creek and its tributaries. By providing alternative wintering areas on crop land, producers will be able to better utilize manure as it would be directly placed on the crop. Practices implemented on alternative wintering areas could include: fencing to keep cattle out of riparian areas and create paddocks that will create a winter grazing rotation, watering facility to keep the cattle from drinking out of the riparian area, windbreak shelterbelt establishment to provide protection for cattle, and possibly portable windbreak depending on the situation. Implementing cover crops for additional winter grazing may also be added to the plan. With the implementation of the BMPs listed the riparian areas in poor health will be able to improve.

**Table 3**

<b>385416</b>	May	June	July	August	September
Spring Creek - 0.5 Mi S of Dunn Center	5/8/2012 60	6/4/2012 30	7/10/2012 140	8/8/2012 40	9/12/2012 20
	5/23/2012 150	6/6/2012 5	7/16/2012 90	8/14/2012 40	9/17/2012 10
	5/30/2012 130	6/26/2012 20	7/23/2012 50	8/15/2012 80	9/18/2012 30
	5/13/2013 40	6/27/2012 200	7/24/2012 320	8/21/2012 5	9/24/2012 10
	5/14/2013 120	6/4/2013 140	7/25/2012 290	8/27/2012 5	9/26/2012 10
	5/21/2013 40	6/10/2013 70	7/31/2012 130	8/29/2012 5	9/3/2013 50
	5/12/2014 5	6/12/2013 50	7/15/2013 160	8/5/2013 120	9/18/2013 100
	5/20/2014 40	6/18/2013 90	7/16/2013 220	8/14/2013 140	9/23/2013 70
	5/20/2014 5	6/25/2013 360	7/17/2013 350	8/19/2013 40	9/25/2013 90
	5/21/2014 10	6/3/2014 120	7/30/2013 100	8/21/2013 30	9/30/2013 90
	5/28/2014 220	6/9/2014 20	7/31/2013 50	8/26/2013 130	9/3/2014 110
	5/5/2015 40	6/16/2014 150	7/1/2014 220	8/27/2013 80	9/9/2014 280
	5/12/2015 10	6/18/2014 260	7/8/2014 140	8/6/2014 120	9/15/2014 30
	5/19/2015 40	6/23/2014 180	7/9/2014 90	8/12/2014 80	9/30/2014 430
	5/26/2015 60	6/3/2015 230	7/15/2014 120	8/19/2014 100	9/16/2015 40
	5/3/2016 10	6/10/2015 60	7/22/2014 300	8/25/2014 120	9/21/2015 70
	5/11/2016 140	6/17/2015 300	7/29/2014 100	8/26/2014 100	9/28/2015 140
	5/17/2016 10	6/24/2015 900	7/8/2015 480	8/4/2015 40	9/30/2015 20
	5/25/2016 80	6/30/2015 800	7/15/2015 80	8/5/2015 30	9/6/2016 130
	5/31/2016 240	6/2/2016 220	7/21/2015 60	8/18/2015 20	9/14/2016 30
	5/1/2017 100	6/7/2016 60	7/28/2015 60	8/26/2015 50	9/20/2016 80
	5/8/2017 10	6/14/2016 20	7/5/2016 350	8/17/2016 30	9/21/2016 30
	5/15/2017 50	6/27/2016 320	7/11/2016 310	8/22/2016 20	9/28/2016 70
	5/22/2017 20	6/5/2017 690	7/13/2016 2600	8/24/2016 200	9/5/2017 40
	5/30/2017 60	6/12/2017 60	7/20/2016 140	8/29/2016 110	9/11/2017 50
	5/1/2018 5	6/13/2017 800	7/26/2016 60	8/31/2016 60	9/18/2017 60
	5/8/2018 10	6/19/2017 70	7/6/2017 30	8/2/2017 210	9/20/2017 50
	5/15/2018 5	6/26/2017 100	7/10/2017 80	8/7/2017 50	9/25/2017 20
	5/22/2018 260	6/4/2018 140	7/17/2017 130	8/14/2017 10	9/5/2018 20
	5/30/2018 200	6/11/2018 230	7/24/2017 30	8/21/2017 20	9/10/2018 5
		6/18/2018 650	7/31/2017 80	8/28/2017 40	9/17/2018 30
		6/25/2018 240	7/10/2018 30	8/13/2018 98	9/24/2018 20
		6/27/2018 280	7/16/2018 150	8/21/2018 5	9/25/2018 41
			7/25/2018 20	8/27/2018 20	
			7/30/2018 52	8/29/2018 460	
			8/6/2018 10		
# Samples	30	33	36	35	33
Geo Mean	37	133	112	46	43
# over 409 CFU	0	5	2	1	1
% over 409	0%	15%	6%	3%	3%
Status	FS	NS	FS	FS	Ta

Table 4

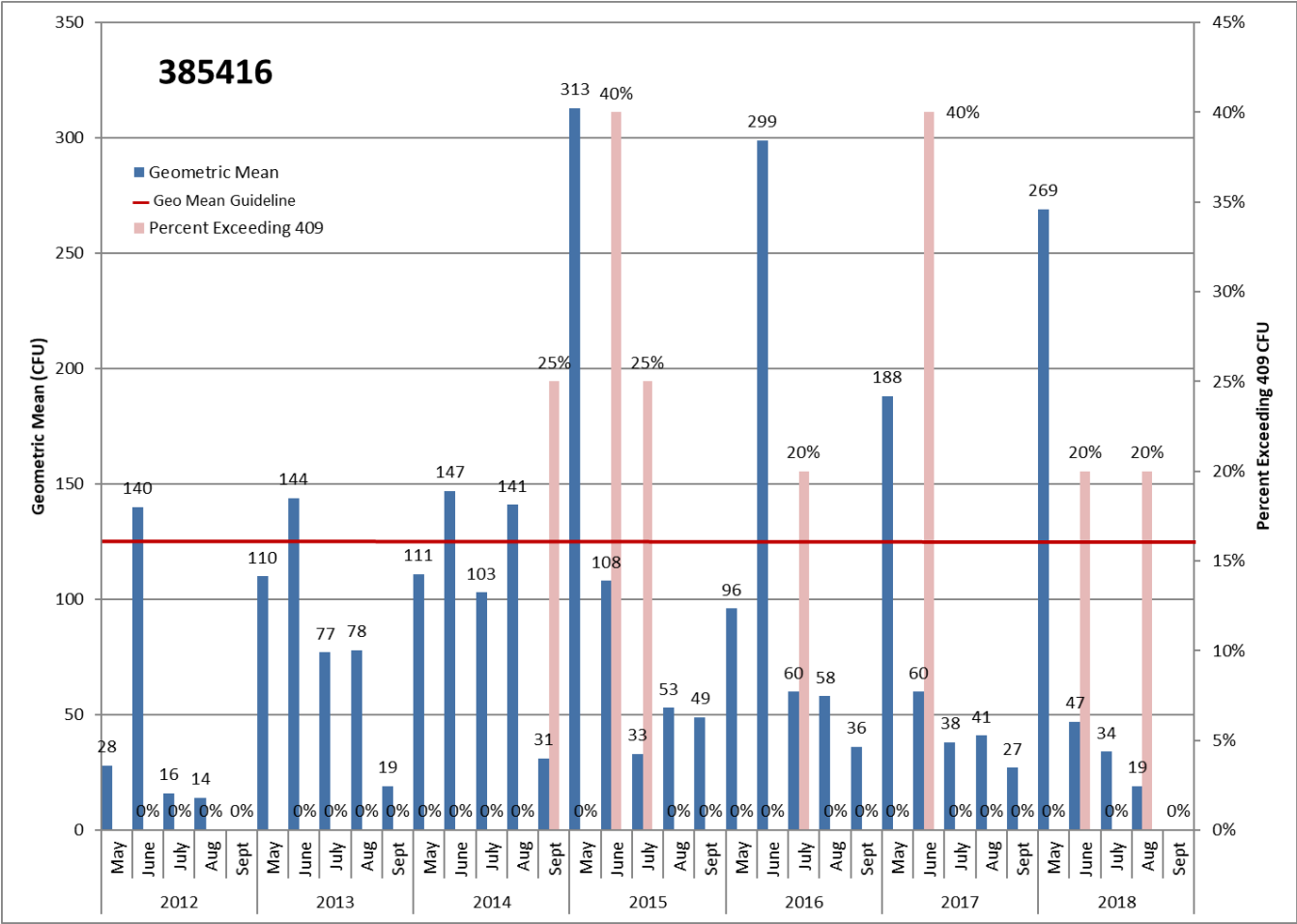
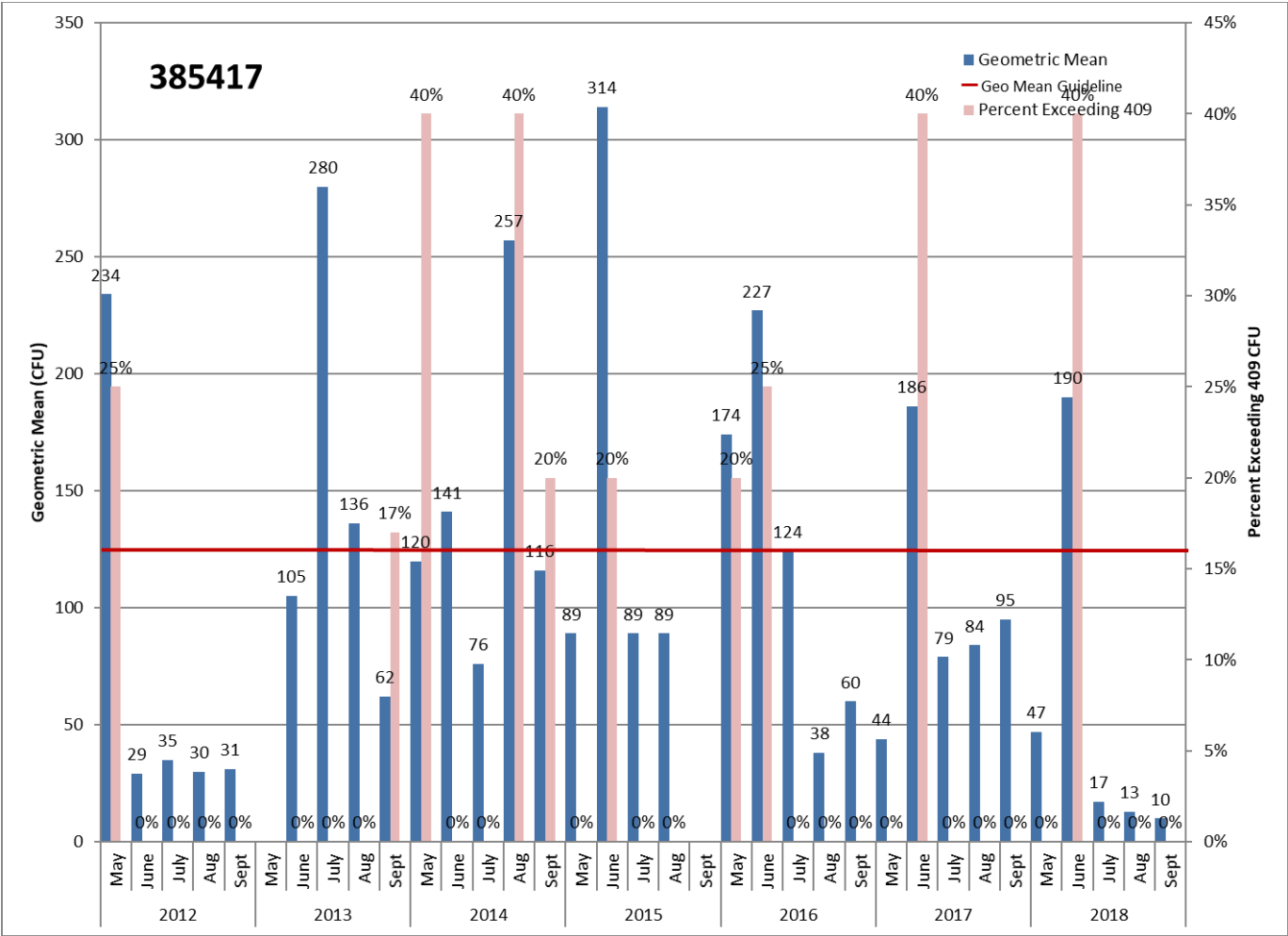




Table 5

385417	May		June		July		August		September	
	5/8/2012	310	6/4/2012	120	7/10/2012	30	8/8/2012	10	9/12/2012	40
Spring Creek - 3 Mi W of Dodge, 1.5 Mi N of Hwy 200	5/16/2012	100	6/6/2012	30	7/16/2012	30	8/14/2012	120	9/17/2012	30
	5/23/2012	600	6/26/2012	10	7/23/2012	50	8/15/2012	40	9/18/2012	80
	5/30/2012	160	6/27/2012	20	7/24/2012	50	8/21/2012	40	9/24/2012	10
	5/13/2013	20	6/4/2013	370	7/25/2012	40	8/27/2012	40	9/25/2012	30
	5/14/2013	90	6/10/2013	340	7/31/2012	20	8/29/2012	10	9/26/2012	30
	5/21/2013	2900	6/12/2013	180	7/10/2013	270	8/5/2013	130	9/3/2013	20
	5/12/2014	60	6/18/2013	120	7/15/2013	270	8/14/2013	270	9/18/2013	80
	5/20/2014	20	6/24/2013	5	7/16/2013	170	8/19/2013	90	9/23/2013	760
	5/21/2014	5	6/25/2013	100	7/17/2013	320	8/21/2013	90	9/24/2013	30
	5/27/2014	1000	6/3/2014	210	7/30/2013	330	8/26/2013	170	9/25/2013	40
	5/28/2014	4200	6/9/2014	170	7/31/2013	370	8/27/2013	130	9/30/2013	40
	5/5/2015	90	6/16/2014	160	7/1/2014	200	8/4/2015	60	9/16/2015	90
	5/12/2015	60	6/18/2014	60	7/8/2014	110	8/5/2015	210	9/21/2015	100
	5/19/2015	190	6/23/2014	160	7/9/2014	150	8/18/2015	40	9/30/2015	50
	5/26/2015	60	6/3/2015	1400	7/15/2014	40	8/26/2015	70	9/6/2016	40
	5/3/2016	50	6/10/2015	400	7/22/2014	50	8/31/2015	160	9/14/2016	310
	5/11/2016	80	6/17/2015	320	7/29/2014	30	8/17/2016	20	9/20/2016	20
	5/17/2016	380	6/24/2015	170	7/8/2015	100	8/22/2016	310	9/21/2016	30
	5/25/2016	150	6/30/2015	100	7/15/2015	40	8/24/2016	30	9/28/2016	100
	5/31/2016	700	6/2/2016	800	7/21/2015	80	8/29/2016	20	9/5/2017	50
	5/1/2017	10	6/7/2016	130	7/28/2015	200	8/31/2016	20	9/11/2017	40
	5/8/2017	30	6/14/2016	170	7/5/2016	50	8/2/2017	290	9/18/2017	240
	5/15/2017	60	6/27/2016	150	7/11/2016	100	8/7/2017	60	9/20/2017	180
	5/22/2017	160	6/5/2017	1100	7/13/2016	230	8/14/2017	150	9/25/2017	90
	5/30/2017	60	6/12/2017	80	7/20/2016	100	8/21/2017	40	9/5/2018	5
	5/1/2018	10	6/13/2017	510	7/26/2016	250	8/28/2017	40	9/10/2018	10
	5/8/2018	31	6/19/2017	50	7/6/2017	70	8/6/2018	5	9/17/2018	20
	5/15/2018	41	6/26/2017	100	7/10/2017	50	8/13/2018	10	9/24/2018	10
	5/22/2018	52	6/4/2018	140	7/17/2017	80	8/21/2018	20	9/25/2018	10
	5/30/2018	360	6/11/2018	500	7/24/2017	80	8/27/2018	20		
			6/18/2018	85	7/31/2017	140	8/29/2018	20		
			6/25/2018	200	7/10/2018	160				
			6/27/2018	210	7/16/2018	10				
					7/25/2018	10				
					7/30/2018	5				
# Samples	31		34		36		32		30	
Geo Mean	101		144		77		51		43	
# over	5		5		0		0		1	
% over	16%		15%		0%		0%		3%	
Status	FST		NS		FS		FS		FS	

Table 6



### 3.0 Project Description

#### Goal 1:

The primary goal of this watershed project is to restore and maintain the recreational uses of Upper Spring Creek within the project area

#### Objective 1:

Reduce monthly geometric mean concentrations for E. coli to levels below 126 CFU/100ml with less than 10% of the samples exceeding 409cfu/100 ml. at all established monitoring sites.

#### Task 1:

Employ two part time watershed conservationist in Dunn County to provide one on one conservation planning assistance to producers in the project area.

**Product:** The equivalent of a part time watershed conservationists to administer contracts in the Upper Spring Creek Watershed and provide technical assistance.

**Cost:** \$ 31,860 (319 Funds)

#### Task 2:

Minimize livestock impacts to the riparian corridor by improving grazing management on 9,500 acres in the watershed. Priority will be given to the AnnAGNPS priority areas and grazing lands immediately adjacent to the creek.

#### Product

9,500 acres of prescribed grazing systems. See Supplemental BMP Table in Appendix B for details on specific BMPs related to grazing management.

AnnAGNPS acres will be targeted to apply BMPs, both cropland and non-cropland acres

**Cost:** \$145,188 (319 Funds)

#### Task 3:

Improve manure management in livestock winter feeding areas through the implementation and the development of partial manure management systems for two small winter feeding areas within ½ mile of the creek and/or its tributaries.

**Product,** Two small Feeding Areas with Manure Management plans. See Supplemental BMP Table in Appendix B.

**Cost:** \$33,600 (319 Funds)

#### Task 4:

Conduct follow-up contacts to assist with conservation plan updates and monitor O&M of 319 cost shared practices.

**Product:** Database of applied BMP's.

**Cost:** Included in Task 1

The Upper Spring Creek Watershed consists of mostly stock cow operations with the majority of the feeding being done on open range. These operations have a more direct need of being moved away from water and drainage sources. This can be accomplished by establishing alternative water sources other than streams and establishing a winter grazing/feeding management plan.

**Objective 2:**

Use newsletter, successful meeting and tours that inform producers and landowners about the Upper Spring Creek Watershed Projects. And continuing education throughout the years to come.

**Task 5:** Continue to inform the producers and land managers of the Upper Spring Creek Watershed Project and the benefits of implementing BMPs through meetings and tours. Also present at other agency meetings in the area.

**Product:** A yearly informational meeting and at least 1 tour per year that inform producers and landowners about the Upper Spring Creek Watershed Project. Show producers examples of implemented practices. Discuss which BMPS are available and the benefits of implementing them. Inform producers and landowners of the Upper Spring Creek Watershed through every other month newsletters.

**Task 6:** Educate youth on improving the benefits of water quality

**Product:** Youth educational programs such as the Water Festival and our yearly coloring contest through the school.

**Cost:** \$3,750 (319 Funds) for meetings, tours, and newsletters/publications

**Objective 3:**

Secure additional cost share opportunities for Upper Spring Creek producers to improve water quality and riparian areas.

**Task 7:** Work with other agencies to seek out additional cost share dollars for producers. Look for other grant opportunities to provide additional cost share.

**Product:** Additional funding will be asked from the Dunn County Water Board to help leverage 319 funding

**Cost:** Included in Task 1

### **3.1**

See attached Milestone Table, Appendix A

### **3.2 Permits**

All necessary permits will be acquired. These may include USCOE Section 404 permits and 401 certifications from the NDDH for proposed work that may impact the stream or wetlands. The project will also work with the NDDH to determine if National Pollution Elimination System permits are needed for proposed livestock manure management systems. Cultural Resource concerns and issues will be addressed by following the procedures of the NDDH in consulting with the North Dakota State Historical Preservation Officer.

### **3.3 Appropriateness of the lead sponsors**

The Dunn County Soil Conservation District will act as the lead sponsors on the project. The sponsors will work with the North Dakota State Health Department (NDDH) and Natural Resource Conservation Service (NRCS) to determine the need for any environmental permits, such as livestock waste management systems. Project staff will consult with the NDDH to determine applicability of current ND livestock waste regulations.

The Dunn County Soil Conservation Districts will be responsible for auditing Operation & Maintenance agreements on BMP's. After completion of projects, yearly status reviews will be conducted on all 319 contracts. The life span of each BMP will be listed with each individual contract to ensure longevity of the practice. The producer will be required to sign the "EPA 319 Funding Agreements Provision" form, which explains in detail the consequences of destroying a BMP before its life span is up. The SCDs are locally elected volunteer conservation organizations that serve all people of their county.

## **4.0 Coordination Plan**

### **4.1**

- 1) The Dunn County SCD will be the lead agency liable for project administration. Conservation planning, technical assistance, educational campaign, clerical assistance, access to equipment and supplies, and annual financial support will be provided by the Dunn County SCD. The Dunn County SCD will prioritize scheduling, coordinate activities and ideas and request letters of support. District personnel will serve as a liaison between watershed residents and USDA program participation.
- 2) USDA Natural Resources Conservation Service (NRCS). The NRCS will provide technical assistance by coordinating project activities, facilitating local involvement, providing technical support and participating in educational outreach programs during the project. Staff will incorporate existing USDA programs (financial and technical ex. EQIP) and target resources to enhance efforts within the watershed. Existing office space and office equipment use will be made available to the project. An annual review will be conducted with the Field Office, DC and the SCD to reconfirm and acknowledge NRCS's commitment to the project. Annual review is currently in progress.
- 3) North Dakota Department of Health. The NDDH will oversee Section 319 funding management and develop the quality assurance project plan (QAPP). Training will be provided by the NDDH for proper water quality sample collection, preservation and transportation to ensure that reliable data is obtained. NDDH will also complete and cover the expense of analysis of water samples.

- 4) USDA Farm Service Agency (FSA). The FSA will provide cost-share assistance through the Conservation Reserve Program.
- 5) North Dakota Cooperative Extension Service (NDSU). The NDSU Extension Service will assist in project information and education activities.
- 6) The Dunn County Water Resource Board will provide technical assistance and have committed to providing financial assistance. We have requested \$25,000 for the life span of the contract.
- 7) ND State Forest Service (NDFS). The NDFS will be solicited for technical assistance with riparian areas.

## **4.2**

Local support for the project is displayed through the response during the assessment phase and informational meetings. Producers are pushing hard for water lines and technical assistance for better ways to provide fresh water to their cattle. Producers are becoming aware of the importance of water quality and riparian areas and looking for ways to improve them. Currently 70% of NRCS and 319 contracts are for water and grazing BMPs. The other 30% have contracts for tree plantings, cover crops and grass seedings. They have shown great interest in using 319 dollars. A huge amount of support from local producers and sponsors is behind this project.

See attached letters of support.

Appendix D

## **4.3**

For the 319 projects, we will work with the NPS BMP Team and NRCS if engineering assistance is needed for BMPs and also coordinate with the Stockmen's Association and ND Dept of Agriculture, if assistance is needed for planning and implementing manure management systems. Other organizations that we would work with is NDSU Extension and NRCS

## **4.4**

No similar watershed-based projects or activities are being implemented in the watershed project area.

## **5.0 Evaluation and Monitoring Plan**

The Quality Assurance Project Plan will be developed by the ND Department of Health after the project proposal has been revised and the final project implementation plan has been approved. The Quality Assurance Project Plan will be included in the final PIP and submitted to the EPA

## **6.0 Budget**

Part I, Part II and Supplemental Budgets attached, Appendix B

## **7.0 Public Involvement**

Public will be kept informed of, tours and meetings through newsletters and personnel contacts. Dunn County SCD will continue door to door stops throughout the watershed. To get producers involved, phone calls will be made to personally invite producers to meetings and tours.

## Appendix A

**MILESTONE TABLE FOR UPPER SPRING CREEK WATERSHED PROJECT**

Task/Responsible Organization	Output	Qty	SFY 20				SFY 21				SFY 22				SFY 23				SFY 24								
			Quarter*				Quarter*				Quarter*				Quarter*				Quarter*								
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
OBJECTIVE 1: Improve Water Quality																											
Task 1 - Employ two watershed conservationists	Conservation Planning	2 employees			x	x		x	x	x	x		x	x	x	x		x	x	x	x		x	x			
Group 1,2,3,4																											
Task 2 - Implement BMP's	Landowner Assistance	15 contracts			x	x		x	x	x	x		x	x	x	x		x	x	x	x		x	x			
Group 1,2,3,4,5	and implement BMPs																										
Task 3 - Manure Management Systems	Install 2 winter feeding areas	2 systems						x								x											
Group 1,2,3,4,5																											
OBJECTIVE 2: Education																											
Task 4 - Follow- up, monitoring	Contacts & assistance	20 contracts			x	x		x	x	x	x		x	x	x	x		x	x	x	x		x	x			
Group 1,2,3,4,5																											
Task 5- Informational Meetings and Tours	informational meetings, tours	5 meetings						x	x				x	x				x	x								
Group 1,2,3,4,5	Newsletters	30 newsletter		x	x	x	x		x	x	x	x		x	x	x	x		x	x	x	x		x	x		
OBJECTIVE 3: Additional Funding																											
Task 6 - Secure additional cost share dollars	Additional cost share	4 sources			x	x		x	x	x			x	x	x			x	x								
Group 1,2,3,4																											
Group 1: Dunn County Soil Conservation District - Provides administration, supplies and financial support for the project																											
Group 2: Dunn County Water Resource Board - Provides technical																											
Group 3: Natural Resources Conservation Service - Provides technical assistance in the planning, design and installation of BMP's																											
Group 4: North Dakota Department of Health - Oversees Section 319 funding, monitoring and overall evaluation of the project																											
Group 5: Upper Spring Creek Watershed Landowners - Make land management decisions and provide both cash and in-kind match for installed BMP's																											
* Quarter 1 - July/September							Quarter 2 - October/December							Quarter 3 - January/March							Quarter 4- April/June						



## Appendix B

## Budget Table for Upper Spring Creek Watershed Project

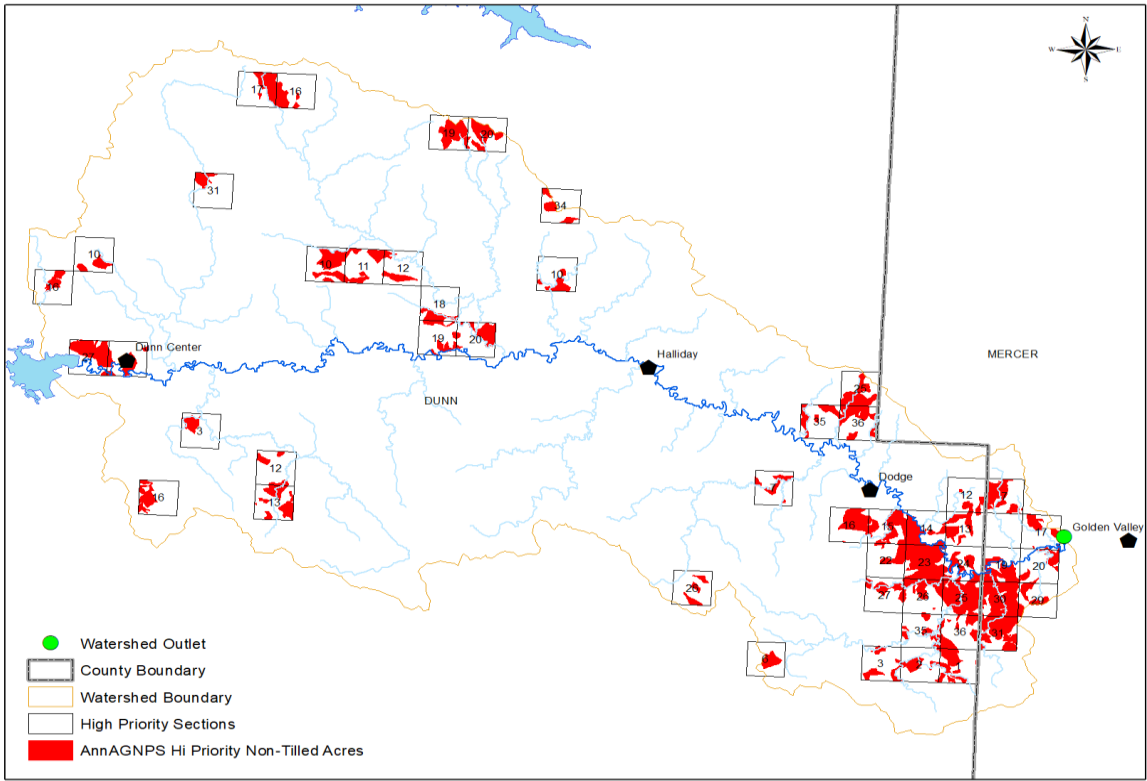
<b>Part I: Funding Sources</b>	SFY20	SFY21	SFY22	SFY23	SFY24	Totals
Total FY19 EPA Section 319	\$50,083.80	\$50,083.80	\$50,083.80	\$50,083.80	\$50,083.80	\$250,419.00
Subtotals	\$50,083.80	\$50,083.80	\$50,083.80	\$50,083.80	\$50,083.80	
<b>Other Federal Funds</b>	SFY20	SFY21	SFY22	SFY23	SFY24	Totals
1) Natural Resources Conservation Service (TA) <sup>1</sup> and EQIP <sup>2</sup>	\$60,000.00	\$60,000.00	\$60,000.00	\$60,000.00	\$60,000.00	\$300,000.00
3) Farm Services Agency (FA) <sup>3</sup> and CRP <sup>4</sup>	\$5,500.00	\$7,500.00	\$7,500.00	\$7,500.00	\$0.00	\$28,000.00
4) ND Department of Health (TA)	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$5,000.00
Subtotals	\$66,500.00	\$68,500.00	\$68,500.00	\$68,500.00	\$61,000.00	\$333,000.00
<b>State and Local Match</b>	SFY20	SFY21	SFY22	SFY23	SFY24	Totals
1) Dunn County Soil Conservation District (TA and FA)	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$20,000.00
2) Dunn County Water Resource Board (TA and FA)	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$25,000.00
3) Landowners (FA)	\$28,641.20	\$28,641.20	\$28,641.20	\$28,641.20	\$28,641.20	\$143,206.00
4) NDSU Extension Service (TA)	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$1,000.00
Subtotals	\$37,841.0200	\$37,841.0200	\$37,841.0200	\$37,841.0200	\$37,841.0200	\$189,206.00
<b>Total Project Budget:</b>						\$772,625.00
<sup>1</sup> TA - Technical Assistance				*SFY- State Fiscal Year		
<sup>2</sup> EQIP - Environmental Quality Incentive Program						
<sup>3</sup> FA - Financial Assistance						
<sup>4</sup> CRP - Conservation Reserve Program						
				18		

										Appendix- page 2
Part II: Section 319 Non-Federal Budget							Funding			
	SFY20	SFY21	SFY22	SFY23	SFY24	Total	Cash	In-Kind	319 Match	Total
Personnel/Support										
1a) Salary 1FTE	\$7,560.00	\$7,920.00	\$8,280.00	\$8,640.00	\$9,000.00	\$41,400.00	\$16,560.00		\$24,840.00	\$41,400.00
2) Administration	\$1,296.00	\$1,368.00	\$1,440.00	\$1,512.00	\$1,584.00	\$7,200.00	\$2,880.00		\$4,320.00	\$7,200.00
3) Travel/training	\$400.00	\$400.00	\$400.00	\$400.00	\$400.00	\$2,000.00	\$800.00		\$1,200.00	\$2,000.00
4) Equipment/Supplies	\$500.00	\$500.00	\$500.00	\$500.00	\$500.00	\$2,500.00	\$1,000.00		\$1,500.00	\$2,500.00
Subtotals	\$9,756.00	\$10,188.00	\$10,620.00	\$11,052.00	\$11,484.00	\$53,100.00	\$21,240.00		\$31,860.00	\$53,100.00
Objective 1: Improve Land Management (BMPs)										
Cropland Mgt Systems	\$6,000.00	\$6,000.00	\$6,000.00	\$6,000.00	\$6,000.00	\$30,000.00	\$18,000.00		\$12,000.00	\$30,000.00
Rangeland Mgt. Systems	\$32,779.40	\$32,779.40	\$32,779.40	\$32,779.40	\$32,779.40	\$163,897.00	\$65,558.80		\$98,338.20	\$163,897.00
Pasture & Hay land Mgt.	\$7,800.00	\$7,800.00	\$7,800.00	\$7,800.00	\$7,800.00	\$39,000.00	\$15,600.00		\$23,400.00	\$39,000.00
Manure Management	\$15,523.60	\$15,523.60	\$15,523.60	\$15,523.60	\$15,523.60	\$77,618.00	\$31,047.20		\$46,570.80	\$77,618.00
Prescribed Grazing	\$9,500.00	\$9,500.00	\$9,500.00	\$9,500.00	\$9,500.00	\$47,500.00	\$19,000.00		\$28,500.00	\$47,500.00
Subtotals	\$71,603.00	\$71,603.00	\$71,603.00	\$71,603.00	\$71,603.00	\$358,015.00	\$143,206.00		214,809.00	\$358,015.00
Objective 2: Educational Events										
Tours	\$750.00	\$750.00	\$750.00	\$750.00	\$750.00	\$3,750.00	\$1,500.00		\$2,250.00	\$3,750.00
Newsletters/Publications	\$500.00	\$500.00	\$500.00	\$500.00	\$500.00	\$2,500.00	\$1,000.00		\$1,500.00	\$2,500.00
Subtotals	\$1,250.00	\$1,250.00	\$1,250.00	\$1,250.00	\$1,250.00	\$6,250.00	\$2,500.00		\$3,750.00	\$6,250.00
Total 319 Non-Federal Budget	\$82,609.00	\$83,041.00	\$83,473.00	\$83,905.00	\$84,337.00	\$417,365.00	\$166,946.00		\$250,419.00	\$417,365.00
1BMPs: Cropland Management Systems: Conservation Cropping Sequence, Conservation Tillage, Critical Area Plantings, Diversions, Field Windbreaks, Grassed Waterways, Waste Management Systems. Rangeland Management Systems: Planned Grazing Systems, Proper Grazing Use, Fences, Pipelines, Range Seeding, Tanks, Wells. Pasture and Hay land Management Systems: Pasture and Hay land Management, Pasture and Hay land Plantings. Manure Management: Fencing, Water Facility, Well, Pipeline, Windbreak Establishment, Portable Windbreak, Cover Crop, Refer to Supplemental BMP Table for more detailed information on costs and amounts of BMP's.										

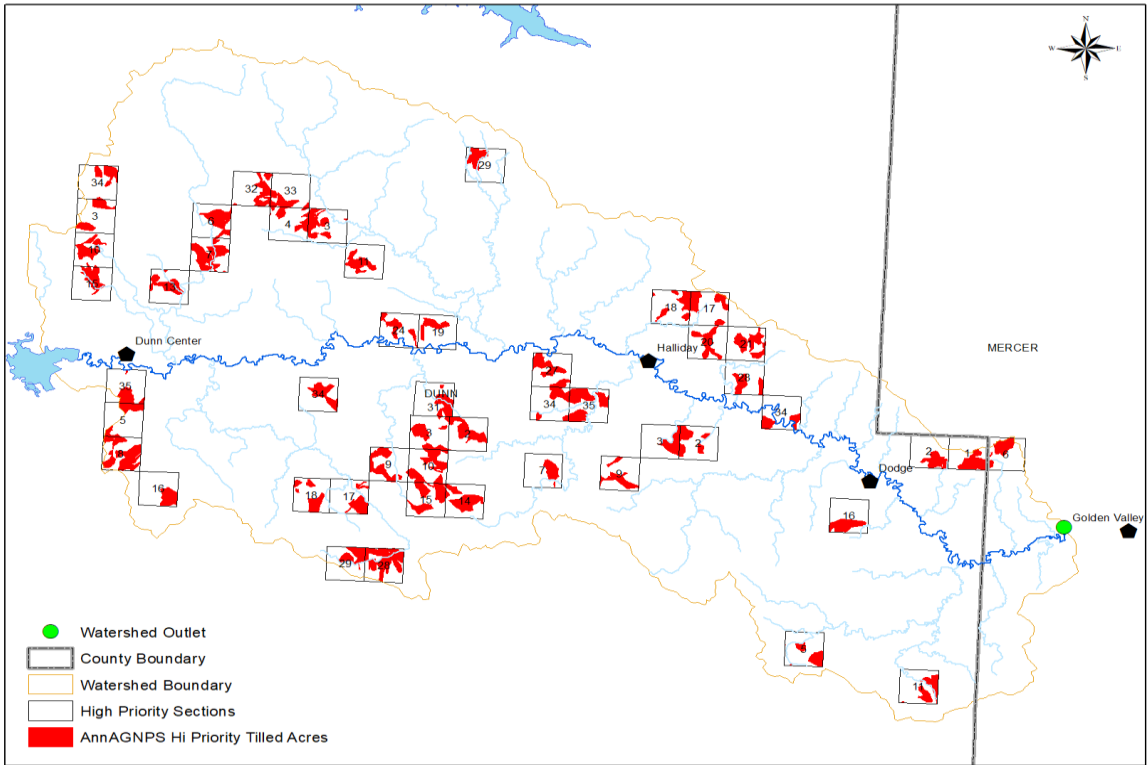
SUPPLEMENTAL BMP BUDGET TABLE			Part III			
					Producer Cash	
BMP Practice	Cost per unit	Estimated # of units	319 cost	In kind	Total Cost	
				Match		
340- Cover Crop	\$20/ac	1,500 ac	\$18,000.	\$12,000.00	\$30,000	
380- Windbreak/Shelterbelt Est.	\$30/100ft	15,000ft	\$2,700.00	\$1,800.00	\$4,500	
060- Weed Barrier	\$58/100ft	15,000/ft	\$5,220.00	\$3,480.00	\$8,700.00	
516- Pipelines	\$3.15/ft.	25,000	\$47,250.00	\$31,500.00	\$78,750.00	
614- Trough/Tank	\$1500/unit	15	\$13,500.00	\$9,000.00	\$22,500.00	
642- Well	\$9000/unit	3	\$16,200.00	\$10,800.00	\$27,000	
382- Fencing	\$1.80ft.	22000	\$15,138.00	\$10,092.0	\$25,230	
001- Cultural Resources	\$1295/unit	13	\$10,101.00	\$6,734.00	\$16,835.00	
550- Range Planting	\$40/acre	50ac	\$1,200.00	\$800.0	\$2,000	
512- Pasture & Hayland Planting	\$52/acre	750ac	\$23,400.00	\$15,600.00	\$39,000	
Winter Feeding areas	\$28,000	2	\$33,600.00	\$22,400.00	\$56,000.00	
528APrescribed Grazing	\$5.00/acre	9,500	28,500.00	\$19,000.00	\$47,500.00	
		Total BMP Costs:	\$214,809.0	\$143,206.0	\$358,015	

## Appendix C

Non-Tilled Acres- High Priority Areas



Tilled Acres- High Priority Areas



**Appendix D**

***DUNN COUNTY WATER  
RESOURCES BOARD 205  
OWENS STREET  
MANNING, ND 58642***

September 21, 2018

Dunn County Soil Conservation  
105 Rodeo Drive, Box 359  
Killdeer, ND 58640

Upper Spring Creek Watershed:

The Dunn County Water Resource Board is pleased to provide a letter of support for the Upper Spring Creek Watershed Project. We are available to provide technical and financial assistance for this project for the proposed 2020-2024 years.

Sincerely,

Dunn County Water board

Tim Wasem

Scott Lazorenko

Russ Stein





United States **Department of Agriculture**

Farm and Foreign Agricultural Services

Farm Service Agency

Dunn County  
Farm Service Agency 105 Rodeo Dr  
PO Box 689  
Killdeer, ND 58640

Ph: (701) 764-5991  
Fax: (855) 813-6657

September 14, 2018

Dunn County Soil Conservation District  
% Shasta  
Patterson 105  
Rodeo Dr.  
Killdeer, ND 58640

Dear Shasta,

Thank you for inviting us to comment on your Watershed Project. The Dunn County Farm Service Agency is interested in supporting natural resource projects like yours that address water quality needs and concerns for Dunn County. We can provide financial assistance to landowners through a variety of practices under the Continuous CRP Program. Our staff will work collaboratively with you to assess watershed needs and assist landowners in this area. Landowners can apply for this assistance at their local county FSA office.

The Dunn County contact for the CRP Program is Colleen Murphy. Colleen can assist you in explaining the different practices available under the Continuous CRP Provisions. Please let us know if we can be of further assistance in advancing your project.

Sincerely,

A handwritten signature in black ink, appearing to read "Jodi Kvien".

Jodi Kvien  
County Executive Director

*USDA is an equal opportunity provider, employer and lender.*



EXTENSION  
DUNN COUNTY

Dunn County SCD,

I'm writing in Support of the Dunn County SCD and the Dunn County Spring Creek Water Shed. Having that resource available and in local control is vital for the community and our Ag producers now and into the future. With the up tick of energy activity, we need the Dunn County Spring Creek Water Shed to ensure we have adequate resources available for our growing needs. If needed I would advocate in person on its behalf.

Thanks

Greg Benz  
Extension Agent,  
Dunn County  
Agriculture and  
Natural Resources

205 Owens St.  
Manning, ND 58642  
P: 701.573.5593 F: 701.573.6693  
E: [gregory.benz@ndsu.edu](mailto:gregory.benz@ndsu.edu)

[www.ag.ndsu.edu/dunncountyextension](http://www.ag.ndsu.edu/dunncountyextension)



## NORTH DAKOTA FOREST SERVICE

*"To care for, protect and improve forest and natural resources to enhance the quality of life for present and future generations."*

September 13, 2018

Andrew Sampsel, District Technician  
Dunn County Soil Conservation District  
105 Rodeo Drive, Box 359  
Killdeer, ND 58640-0359

Re: Spring Creek Watershed

Dear Andrew,

We are pleased to provide a letter of support for the Spring Creek Watershed Project. This proposed 319 project will be instrumental in addressing water quality needs and concerns in Dunn County. North Dakota's Forest Action Plan identifies rural landscapes with riparian forests and planted windbreaks as priority areas. The restoration of riparian areas to ensure the health and sustainability of plant communities have important implications for water quality, flood control, wildlife habitat, and recreation opportunities. Likewise, the establishment and renovation of windbreaks provide significant benefits for soil conservation and wildlife habitat.

Staff from the North Dakota Forest Service are available to provide technical assistance through our Forest Stewardship Program to landowners interested in renovating windbreaks and applying conservation measures. Our staff may work collaboratively with you to assess watershed needs and implement forestry best management practices. Please feel free to contact Derek Lowstuter, Forest Stewardship Manager, North Dakota Forest Service, 916 East Interstate Avenue, Bismarck, ND 58503, telephone 701-328-9990.

Please feel free to contact my office if we can be of further assistance in advancing the Spring Creek Watershed Project.

Sincerely,

Larry A. Kotchman, State Forester

cc: Derek Lowstuter, Forest Stewardship Manager  
Thomas Claeys, Forestry and Fire Management Team Leader



Keith Trego  
*Executive Director*  
1605 East Capitol Avenue, Ste. 101  
Bismarck, ND 58501-2102  
(701) 223-8501  
FAX: (701) 223-6937

September 26, 2018

Andrew Sampsel, District Technician  
Dunn County Soil Conservation District  
105 Rodeo Drive, Box 359  
Killdeer, ND 58640-0359

Mr. Sampsel:

The North Dakota Natural Resources Trust mission is to preserve, enhance, restore, and manage wetlands and associated wildlife habitat, grasslands, and riparian areas in the state of North Dakota. Please accept this letter of support for the Dunn County Soil Conservation District' Spring Creek Watershed Project.

From its inception, the Trust has played a role as facilitator between agricultural and conservation interests. In addition to facilitating and funding sound, on-the-ground conservation of natural resources, our goal is to identify common issues and create dialogue. Along with its agricultural and conservation partners, the Trusts advocates for recognition, appropriate development, and protection of North Dakota's unique natural resource values.

Consistent with the Trust's mission, this grant proposal will be the critical component of providing technical and financial assistance to a growing population of landowners interested in enhancing riparian areas. Our staff is available to provide opportunities on associated grasslands and grazing systems to compliment the Upper Spring Creek 319 Watershed Project.

Sincerely,

Keith Trego  
Executive Director

*"Dedicated to the preservation, enhancement, restoration and management of wetlands and associated wildlife habitat, grasslands, and riparian areas in the state of North Dakota."*

