

# **Spring Creek Watershed Management and Project Implementation Plan Segment I**

**319 Watershed Project  
October 2009**

Sponsored By:

Pennington County

Submitted to:

South Dakota Department of  
Environment and Natural Resources  
Pierre, South Dakota 57501

**PROJECT SUMMARY SHEET**

**PROJECT TITLE:** Spring Creek Watershed Management and Project Implementation Plan Segment I

**NAME AND ADDRESS OF LEAD PROJECT SPONSOR**

Pennington County  
315 Saint Joseph Street  
Suite 118  
Rapid City, SD 57701

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**TITLE:** Natural Resources Engineer

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**STATE:** South Dakota

**WATERSHED:** Cheyenne River

**HYDROLOGIC UNIT CODE:** 10120109

**HIGH PRIORITY WATERSHED** (yes/no) Yes

**PROJECT TYPES:** [ ] BASE [ X ] WATERSHED [ ] GROUNDWATER [ ] I&E

**WATERBODY TYPES**

- [ ] GROUNDWATER
- [ X ] LAKES/RESERVOIRS
- [ ] RIVERS
- [ X ] STREAMS
- [ ] WETLANDS
- [ ] OTHER

**NPS CATEGORY**

- [ X ] AGRICULTURE
- [ X ] URBAN RUNOFF
- [ X ] SILVICULTURE
- [ X ] CONSTRUCTION
- [ ] RESOURCE EXTRACTION
- [ ] HYDRAULIC MODIFICATION
- [ ] OTHER

**Project Location: Latitude:** 43.9751974 **Longitude:** -103.4705745

**SUMMARIZATION OF GOALS:** The project goal is to bring Spring Creek into compliance for fecal coliform/*E. coli* by implementing the recommended best management practices (BMPs) by 2021. The goal of this project segment, as set forth in the Spring Creek/Sheridan Lake TMDL study, is to:

- Implement several BMP pilot projects that will be used to demonstrate and promote the effectiveness of BMP implementation on water quality.
- Develop a 10-year Spring Creek Watershed Project Plan, Stormwater Management Plan, and Septic System Management Plan that will help prioritize BMP implementation and public outreach efforts.
- Conduct significant public education and outreach to stakeholders within the Spring Creek Watershed.
- Perform water-quality monitoring to aid in developing a baseline condition that will ensure that the BMPs are effective and the proper BMPs are being implemented.

**PROJECT DESCRIPTION:** Pennington County is the project sponsor for this 2-year project. This is the first of six planned segments. This project will begin implementation of the BMPs identified in the TMDL report for the Spring Creek Watershed. These BMPs include management of riparian zones, stormwater, and septic systems along with sediment removal in Mitchell and Major Lakes.

<b>FISCAL YEAR</b>	2010–2012		
<b>319 FUNDS:</b>	\$430,500		
<b>TOTAL PROJECT COST:</b>	\$725,161	<b>MATCH:</b>	\$294,661
<b>319 FUNDED FULL-TIME PERSONNEL:</b>	1		

## **2.0 STATEMENT OF NEED**

- 2.1** The South Dakota School of Mines & Technology (SDSM&T), along with the South Dakota Department of Environment and Natural Resources (SD DENR), developed and implemented an assessment project to determine the fecal coliform Total Maximum Daily Load (TMDL) for Spring Creek and the Sheridan Lake TMDL for Trophic State Index (TSI). The project started during 2002. The purpose of the assessment was to address rural and urban nutrient, sediment, and fecal coliform problems in the watershed. The overall goal was to produce a TMDL for fecal coliform in Spring Creek and a TSI TMDL in Sheridan Lake to improve water quality by reducing fecal coliform, nutrient, and sediment loading in Spring Creek. The TMDL for fecal coliform and TSI was completed and approved by the Environmental Protection Agency (EPA) in 2008.

Spring Creek was assigned the following beneficial uses: coldwater permanent fish life propagation (above Sheridan Lake), coldwater marginal fish life propagation (below Sheridan Lake), immersion recreation, limited contact recreation, fish and wildlife propagation, recreation and stock watering, and irrigation. Sheridan Lake was assigned the following beneficial uses: coldwater permanent fish life propagation, immersion recreation, limited contact recreation, fish and wildlife propagation, and recreation and stock watering. When multiple criteria exist for a particular parameter, the most stringent criterion is used.

Individual parameters determine the support of these beneficial uses. South Dakota has narrative standards that may be applied to the undesired eutrophication of lakes and streams. Administrative Rules of South Dakota (ARSD) Article 74:51 contains language that prohibits the presence of materials causing pollutants to form, visible pollutants, taste- and odor-producing materials, and nuisance aquatic life. Reduction of nutrients in Spring Creek, specifically phosphorus, was addressed in the TSI TMDL developed for Sheridan Lake, although TSI is no longer a beneficial use criterion.

The numeric TMDL target established for the beneficial uses for Spring Creek is based on the current daily maximum criteria for fecal coliform bacteria. Water-quality criteria for the immersion recreation beneficial use requires that (1) no sample exceeds 400 colony-forming units (cfu)/100 milliliters (mL) and (2) during a 30-day period, the geometric mean of a minimum of five samples collected during separate 24-hour periods must not exceed 200 cfu/100 mL. This criteria is applicable from May 1 through September 30.

Of all the assessed parameters for which surface water-quality criteria are established, fecal coliform and water temperature exceed criteria for the coldwater permanent fish life propagation beneficial use on Spring Creek. During the TMDL study, ten samples collected from several sites within the assessed stream segment exceeded the TSS criterion. However, TSS was not included as a cause of impairment for this reach in the 2008 Impaired Waterbodies List because less than 10 percent of the TSS samples collected during the period of record considered for the 2008 report (October 1, 2002, to September 30, 2007) exceeded the numeric criterion.

The impaired (303(d) listed) segment, because of fecal coliform, of Spring Creek has a length of 31 miles and flows through Mitchell Lake, which has a surface area of 10 acres. This segment ends where Spring Creek empties into Sheridan Lake, approximately 4 miles downstream of Mitchell Lake. The impaired (303(d) listed) segment, because of temperature, also begins at the headwaters and ends where Spring Creek crosses Highway 79, south of Rapid City. The drainage area of the 303(d) listed segment is approximately 425 square miles.

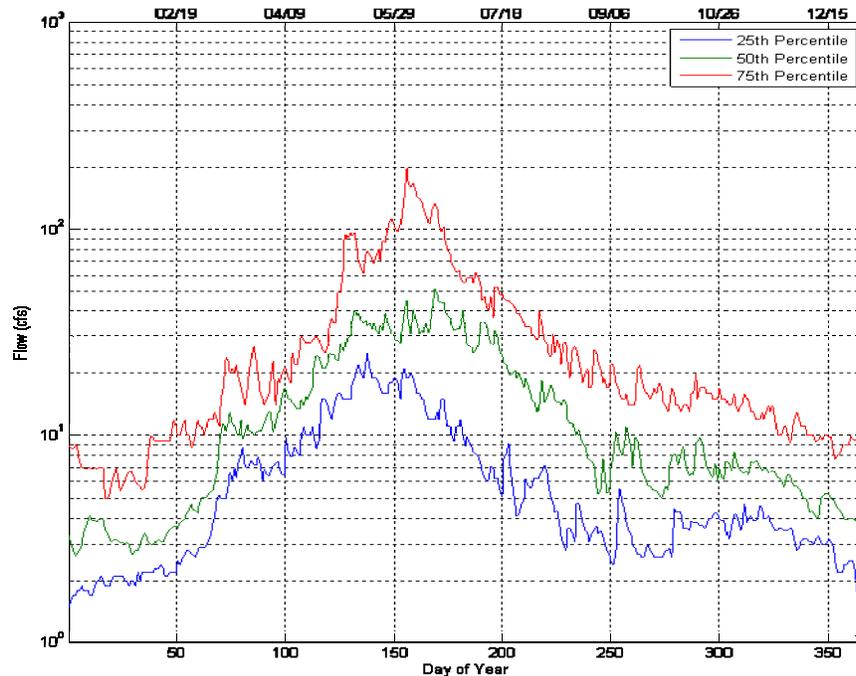
- 2.2** Spring Creek is a small perennial mountain stream located in Pennington and Custer Counties in the Black Hills of South Dakota. Spring Creek is a tributary of the Cheyenne River, which flows into the Missouri River. The drainage area of Spring Creek is approximately 425 square miles (1,100 square kilometers) at the confluence with the Cheyenne River.

The surface area of the watershed that impacts the impaired reach of Spring Creek above Sheridan Lake encompasses approximately 93,124 acres and includes Hydrologic Units 101201090901, 101201090902, 101201090903, 101201090904. The city of Hill City (population ~1,000) is the only municipality located in the Spring Creek Watershed.

Figure 2-1 displays the 25<sup>th</sup>, 50<sup>th</sup>, and 75<sup>th</sup> percentile annual flows from October 1, 1990–September 30, 2004, for U.S. Geological Survey (USGS) Station 06406920, located just above where Spring Creek empties into Sheridan Lake. Stream flows displayed seasonal variation for the period of record (October 1, 1990–September 30, 2004). Highest stream flows typically occur during late spring, with highest monthly average stream flow reported in June

(72 cubic feet per second (cfs)), and lowest stream flows occur during the winter months, with lowest monthly average stream flow reported in January (11 cfs). Fecal coliform concentrations also displayed seasonal variation and were positively correlated with stream flow.

RSI-996-09-052



**Figure 2-1.** Annual Hydrograph Displaying 25<sup>th</sup>, 50<sup>th</sup>, and 75<sup>th</sup> Percentile Flows for U.S. Geological Survey Station 06406920, Located Just Above Where Spring Creek Flows Into Sheridan Lake.

**2.3** The location of the Spring Creek Watershed is shown in Figure 2-2.

**2.4** Land use in the watershed is primarily silviculture, recreation, residential, and grazing. Some animal feeding areas are located in the watershed. Metamorphic slates and schists, along with granite rock, underlie a large portion of the basin and form the Central Crystalline Area of the Black Hills that covers the majority of the study area.

The watershed’s major soil types are Pactola, Buska, Mocmont, and Stovho. The Pactola series of soils, which cover most of the basin, were formed by the weathering of materials in steeply tilted metamorphic rock. The Buska series descends from micaceous schist while the Mocmont formed from material weathered from granite. Those two series generally occur in the upper reaches of the basin in the Harney Peak area. The Stovho series formed from the weathering of limestone and calcareous sandstone and is found in the upper reaches of the basin in the area underlain by the Madison Limestone Formation.

Digital Elevation Models (DEMs) of the area show the average slope to be approximately 20 percent. Much of the land is located within the Black Hills National Forest and is predominantly forested with ponderosa pine. Other cover includes grasslands and hardwoods.

The average annual precipitation in the watershed is 20.8 inches; 80 percent usually falls in April through September. Tornadoes and severe thunderstorms strike occasionally. These storms are local and of short duration and occasionally produce heavy rainfall events. The average seasonal snow pack is 27.3 inches per year.

**2.5** The results of the TMDL assessment indicate that more than half (63.5 percent) of the bacteria load originates from livestock and other agricultural land uses. The remaining load originates from urban runoff (13.7 percent) and other human sources (14.8 percent), including failing septic and leaking sanitary sewer systems.

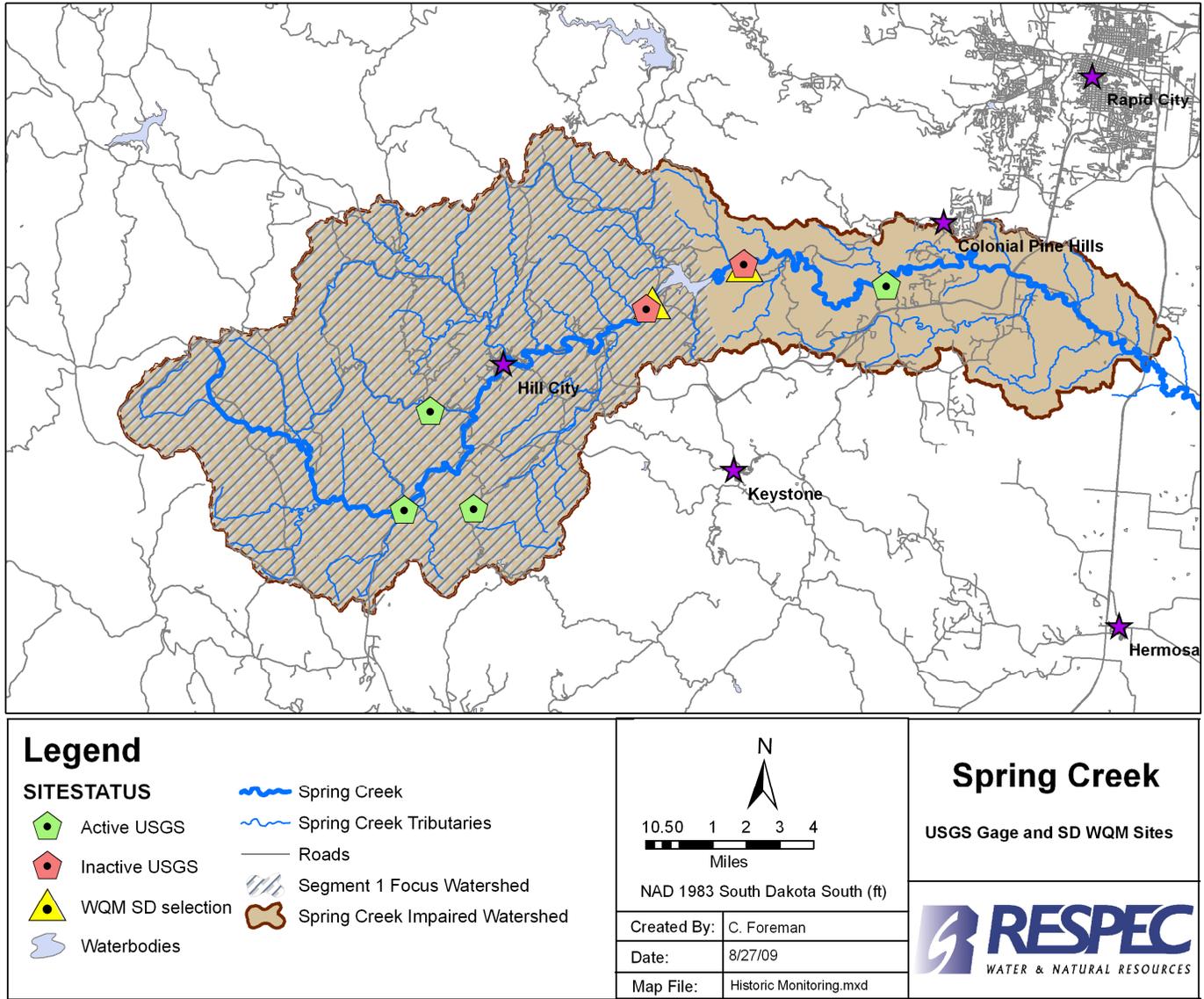


Figure 2-2. Location of the Spring Creek Watershed.

Critical conditions occur within the basin during the summer. Typically, greatest numbers of livestock and tourist activities (i.e., trail rides, camping) occur in the basin during summer months. Combined with the peak in bacteria sources, high-intensity rainstorm events are also common during summer and produce a significant amount of fecal coliform load because of bacterial washoff from the watershed.

### **3.0 PROJECT DESCRIPTION**

The below subsections describe the overall project goals, objectives, and tasks for Segment I of the Spring Creek Watershed Management and Project Implementation Plan.

#### **3.1 GOALS**

The project goal is to bring Spring Creek into compliance for fecal coliform/*E. coli* by implementing the recommended best management practices (BMPs) by 2021. The goal of this project segment, as set forth in the Spring Creek/Sheridan Lake TMDL study, is to:

- Implement several BMP pilot projects that will be used to demonstrate and promote the effectiveness of BMP implementation on water quality.
- Develop a 10-year Spring Creek Watershed Project Plan, Stormwater Management Plan, and Septic System Management Plan that will help prioritize BMP implementation and public outreach efforts.
- Conduct significant public education and outreach to stakeholders within the Spring Creek Watershed.
- Perform water-quality monitoring to aid in developing a baseline condition that will ensure that BMPs are effective and proper BMPs are being implemented.

#### **3.2 OBJECTIVES AND TASKS**

The strategy of the Spring Creek Watershed Implementation Team is to progressively and efficiently implement BMPs within the Spring Creek Watershed to bring the creek back into compliance with its assigned beneficial uses. This project segment focuses heavily on planning and public outreach that will ensure the proper prioritization and adoption of BMPs. Baseline and event monitoring will be conducted to assess preimplementation conditions and measure improvement. The project strategy will be reviewed annually to measure overall success to determine adjustments and to obtain funding for the future project segments. Federal, state, and private funding will be used to fund BMPs. A final report will be produced for each 319 project segment completed. Additional projects and funding proposals will be submitted during the next 10 years to continue installing BMPs that reduce fecal coliform, temperature, and nutrients to meet the TMDLs.

#### **OBJECTIVE 1: Implement BMPs Recommended in the Spring Creek Watershed TMDL**

The Spring Creek TMDL recommends BMPs focusing on improving riparian zone management, controlling stormwater runoff, identification and repair of defective septic systems and sewers, and sediment removal in Mitchell and Major Lakes.

The TMDL identifies that a load reduction of 90 percent needs to be achieved in the high flow zone (48–525 cfs), 16 percent reduction in the moist flow zone (14–47 cfs), and 38 percent reduction in the low flow zone (0–2.1 cfs) for the stream to meet its assigned beneficial uses. BMPs implemented in this project segment will be focused on highly visible areas in the watershed and be used to promote the adoption of similar BMPs in future segments.

##### **Task 1 Riparian Vegetation and Manure Management Improvements**

Results from the HSPF model developed in the TMDL assessment indicate that approximately 63.5 percent of the current bacteria load originates from livestock and other agricultural land uses. Types of BMPs suggested in the TMDL include livestock access (offstream water supply), manure management, buffer zones, and stream bank stabilization. The focus of this project segment will be to identify, implement, and assess the effectiveness of two riparian vegetation improvement projects.



Implementation projects require working with the landowners and agriculture producers to fill out applications, project planning, and checking practices when they are complete along with organizing and filing applications and bills. Grant Reporting and Track System (GRTS) Reports will be completed as required by the US EPA. A final report will be submitted to the EPA at the conclusion of the project. This report will cover all work completed during this segment of implementation and estimated effects BMPs will have on the water quality in Spring Creek. Additional grants will be written to assist in resolving water-quality issues and support the cost of implementation projects.

Products:

3. Public Outreach/Project Management

Total Product Cost: \$269,500

319 Cost: \$166,500

- Lead Group: Watershed Coordinator Consultants
- Other Group: Conservation Districts, city of Hill City, Pennington County, Black Hills Resource Conservation and Development (RC&D)
- Milestone: June 2011, GRTS reports, one final report, nine public meetings, one Web site, two watershed tours, (see timeline, page 11)

**OBJECTIVE 3: Develop Project Planning Documents**

Any successful implementation project requires sufficient project planning to further assess current conditions and to determine timing and prioritization of BMP implementation and public outreach. These documents build on information and recommendations provided in the TMDL and further focus the implementation phase.

Task 4

**Septic System Management Plan Study and Final Document**

It is estimated there are over 700 septic systems within the project area, most of them being adjacent to Spring Creek and its tributaries. The current condition of these systems is relatively unknown. The number of systems is sure to increase in the coming years because of increased development in the area.

A septic system management plan will be developed that assesses the number and effectiveness of current systems, model the estimated load contributions based on proximity to streams, list the current rules and policies in place for installation, and develop a prioritized implementation matrix that will guide future implementation and policy decisions.

Products:

4. Septic System Management Plan Document

Total Product Cost: \$50,000

319 Cost: \$50,000

- Lead Group: Watershed Coordinator Consultants
- Other Group: Pennington County, Conservation Districts, Western Dakota Water Development District (WDWDD)
- Milestone: June 2011, Septic System Management Plan document (see timeline, page 11)

Task 5

**Stormwater Management Plan Study and Final Document**

Two percent of the study area is characterized as impervious area. Most of the impervious area is located in Hill City (Spring Creek), the Rafter J Campground (Spring Creek), Crooked Creek Campground (Spring Creek), and the KOA Campground (Palmer Creek). Residential areas located along Spring Creek, downstream of Hill City, also contribute surface runoff. Water-quality samples taken during storm events show a 30 percent increase in fecal coliform bacteria levels in Spring Creek between locations upstream and downstream of Hill City. This indicates that urban runoff from Hill City has a major impact on the water quality of Spring Creek. A Stormwater Management Plan study is necessary to assess the current state of stormwater treatment within the impervious areas and to help



state's ambient water-quality monitoring program, to identify any recent changes in water quality related to changing watershed condition or climatic patterns. Water-quality monitoring will occur monthly during the recreation season in 2010 and twice during the nonrecreational season; stage-recording devices will be installed at six locations during monitoring. Four lake profiles, with top and bottom phosphorus, will be performed during the 2010 sampling season.

**Table 2-1. Load Duration Curve Flow Zone Analysis From TMDL**

TMDL Component	Flow Zone (expressed as cfu×109/day)				
	High	Moist	Midrange	Dry	Low
	48–525 cfs	14–47 cfs	6.8–13 cfs	2.2–6.7 cfs	0–2.1 cfs
Load Allocation (LA)	2,443.07	328.99	94.09	40.26	1.11
Waste Load Allocation (WLA)	3.78	3.78	3.78	3.78	3.78
Margin of Safety (MOS)	362.13	88.09	29.36	16.64	15.66
TMDL	2,808.98	420.86	127.24	60.68	20.55
Current Load	27,575.98	502.09	118.43	18.45	33.01
Load Reduction	90%	16%	0%	0%	38%

**Table 2-2. Example of BMP Implementation Matrix That Assigns a Relative Ability to Reduce Bacteria Loading in a Given Flow Zone**

Contributing Source Area	Flow Zone				
	High Flow	Moist	Midrange	Dry	Low Flow
Septic Systems				<i>M</i>	<i>H</i>
Stormwater: Impervious Areas		<i>H</i>	<i>H</i>	<i>H</i>	
Stormwater: Upland	<i>H</i>	<i>H</i>	<i>M</i>		
Riparian Areas/Streambank Stabilization	<i>H</i>	<i>M</i>			

**Note:** Potential relative importance of source area to contribute loads under given hydrologic condition (*H*: High; *M*: Medium)

Nineteen sites were selected for water-quality monitoring (Figure 3-1). These sites include background sampling sites near the headwaters of Spring Creek and key tributaries, upstream and downstream of Hill City and Rushmore Products Sawmill, and upstream/downstream of small impoundments in the watershed that potentially act as water-quality BMPs. Sites were chosen on each of the main tributaries to Sheridan Lake. Many sites were selected based on previous data collection efforts (USGS gaging, SD water-quality monitoring (WQM), and SDSM&T TMDL stations). In addition to the monthly in-stream grab sampling, storm water runoff will be sampled at four key locations in the watershed (Figure 3-1).

Constituents to be sampled include:

- Alkalinity
- Total Phosphorus





- **City of Rapid City**
- **Pennington Conservation District**
- **Pennington County**
- **South Dakota Game, Fish, and Parks (SD GF&P)**
- **South Dakota School of Mines and Technology (SDSM&T)**
- **US Natural Resource Conservation Service (NRCS)**
- **US Forest Service (USFS)**
- **West Dakota Water Development District (WDWDD).**

#### **4.2 LETTERS OF SUPPORT**

Letters of support will be supplied by local organizations to the DENR supporting the Spring Creek Watershed Implementation project upon request.

#### **4.3 COORDINATION WITH OTHER PROGRAMS**

The local stakeholder group will continue to coordinate activities with state, federal, and local government agencies through frequent personal communication and bimonthly steering committee meetings. SD GF&P, USFWS, NRCS, DENR, local organizations, and local government agencies will provide input and involvement in this project. Extra coordination with local NRCS personnel, USFS, and SD GF&P will be necessary for riparian vegetation projects.

#### **4.4 SIMILAR ACTIVITIES IN WATERSHED**

All practices within the Spring Creek Watershed are included in the funding table. Additional partners and projects may be identified during the coordination segment.

#### **5.0 EVALUATION AND MONITORING PLAN**

##### **5.1 QUALITY CONTROL AND ASSURANCE**

The collection of field data will be performed in accordance with the SD DENR's *Standard Operating Procedures for Field Samplers, Tributary and In-Lake Sampling Techniques*. A minimum of 10 percent (one sample) of all samples collected will be quality assurance/quality control (QA/QC) samples. QA/QC samples will consist of field duplicates blanks and field replicate samples.

##### **5.2 DATA**

The data will be provided to SD DENR. The data and analysis for this project will be documented in a final report and the Spring Creek steering committee will review and submit the final report to SD DENR.

**BASINS** and **HSPF** were used to model the Spring Creek Watershed when the TMDL was developed. To develop the TMDL and to determine the necessary load reductions, several BMPs were modeled in these programs to reduce bacteria concentrations in the streams within the Spring Creek Watershed. The following activities will be completed to determine the progress made to achieving the goals of the TMDL plan:

1. Monitor Present Progress Against Plan in Midyear and Annual Reports (Load Reductions Reported Annually).

Evaluation of project success in reaching the project objectives and goals will be accomplished by measuring:

- The scheduled versus the actual milestone completion dates.
- Comparisons of water chemistry data and annual loads pre- and postimplementation.
- Development of a sustainable watershed implementation project measured in part by the participation and approval of additional grants money for BMP implementation.

Project monitoring will be reviewed by the Spring Creek steering committee in quarterly meetings to report progress toward the goals and objectives.

## 2. Monitor Water-Quality Improvement.

Water-quality monitoring will use a targeted approach. Water-quality data will be collected at sites used during the watershed assessment as well as additional sites identified in the “evaluation and monitoring plan.”

The SD DENR Surface Water-Quality Program also has two monitoring stations within the watershed, Spring Creek near Sheridan Lake (WQM 460654) and Spring Creek near Rapid City (WQM 460649). Comparisons over time will be performed using applicable sites to measure the large-scale changes in water quality.

## 5.3 MODELS

The **Better Assessment Science Integrating Point and Nonpoint Sources (BASINS)** model version 3.0, along with **HSPF**, were used to determine the contribution of fecal coliform bacteria from identified sources and to evaluate the implementation of BMPs to control these sources. The Spring Creek Watershed was represented using four subbasins in the model to represent the upper and lower Spring Creek and key tributaries (Palmer and Newton Fork Creeks). The nonpoint sources in the study area are modeled in **HSPF** by estimating per-acre fecal coliform accumulation rates and maximum fecal coliform storage rates for each source. The buildup and wash-off of fecal coliform is simulated based on these rates and precipitation. The values for the accumulation and storage rates were calculated using the **Bacterial Indicator Tool (BIT)**. Human sources (failing septic systems, leaking sanitary sewer lines, and leaking lagoons) and livestock in streams are nonpoint sources that are modeled as point sources because the coliform they produce cannot be adequately represented by buildup and accumulation rates. The **BIT** calculates a flow rate and a fecal coliform count per hour that are used in the simulation model to represent cattle in streams and human sources.

## 5.4 LONG-TERM OPERATION AND MAINTENANCE (O&M) FUNDING

The long-term O&M funding for BMPs installed will be funded and maintained by the grantees.

## 6.0 BUDGET

Table 6-1 identifies the funding sources and cash flow during the project. Tables 6-2 and 6-3 present the budget for the 319 funds as well as the matching funds for the project. EPA 319 funds represent less than 30 percent of the total project budget.

**Table 6-1. Cash Flow**

<b>Budget</b>	<b>June '10–May '11 (\$)</b>	<b>June '11–May '12 (\$)</b>	<b>Total (\$)</b>
<b>319 Funds</b>	<b>215,250</b>	<b>215,250</b>	<b>430,500</b>
<b>Matching Funds</b>			
Agriculture Producer	16,667	16,666	33,333
Pennington County	57,105	117,105	174,210
SDSM&T	8,559	8,559	17,118
City of Hill City	10,000	10,000	20,000
City of Rapid City	30,000		30,000
WDWDD	10,000	10,000	20,000
<b>Subtotal</b>	<b>132,331</b>	<b>162,330</b>	<b>294,661</b>
<b>Total Budget</b>	<b>347,581</b>	<b>377,580</b>	<b>725,161</b>

**Table 6-2. Budget of 319 Funds**

<b>Project Description</b>	<b>Consultants (\$)</b>	<b>SDSM&amp;T (\$)</b>	<b>Local Citizens (\$)</b>	<b>Totals (\$)</b>
<b>Objective 1. Implement BMPs Recommended in the Spring Creek Watershed TMDL</b>				
<i>Task 1. Riparian Vegetation and Manure Management Improvements</i>				
Product 1. Riparian Vegetation Pilot Projects			60,000	60,000
<i>Task 2. Septic System Improvements</i>				
Product 2. Septic System Pilot Project			40,000	40,000
<b>Objective 2. Public Outreach and Education/Project Management</b>				
<i>Task 3. Public Outreach and Education, Implementation Record Keeping, Report and Future Grant Writing</i>				
Product 3. Public Outreach/Project Management	166,500			166,500
<b>Objective 3. Develop Project Planning Documents</b>				
<i>Task 4. Septic System Management Plan Study and Final Document</i>				
Product 4. Septic System Management Plan Document	50,000			50,000
<i>Task 5. Stormwater Management Plan Study and Final Document</i>				
Product 5. Stormwater Management Plan Document		74,000		74,000
<i>Task 6. Spring Creek Watershed 10-Year Strategic Implementation Plan</i>				
Product 6. Spring Creek Watershed 10-Year Implementation Plan Document	40,000			40,000
<b>Objective 4. Complete Essential Water-Quality Monitoring</b>				
<i>Task 7. Evaluation and Monitoring</i>				
Product 7. Compile Water-Quality Monitoring Data				—
<b>Project Totals</b>	<b>256,500</b>	<b>74,000</b>	<b>100,000</b>	<b>430,500</b>

**Table 6-3. EPA 319 and Matching Funds Budget by Task**

Project Description	EPA 319 (\$)	Matching Funds						Sum of Matching Funds (\$)
		Producer (\$)	Pennington County (\$)	SDSM&T (In-Kind) (\$)	City of Hill City (\$)	City of Rapid City (\$)	WDWDD (\$)	
<b>Objective 1. Implement BMPs Recommended in the Spring Creek Watershed TMDL</b>								
<i>Task 1. Riparian Vegetation and Manure Management Improvements</i>								
Product 1. Riparian Vegetation Pilot Projects	60,000	20,000						20,000
<i>Task 2. Septic System Improvements</i>								
Product 2. Septic System Pilot Project	40,000	13,333						13,333
<b>Objective 2. Public Outreach and Education/Project Management</b>								
<i>Task 3. Public Outreach and Education, Implementation Record Keeping, Report and Future Grant Writing</i>								
Product 3. Public Outreach/Project Management	166,500		103,000					103,000
<b>Objective 3. Develop Project Planning Documents</b>								
<i>Task 4. Septic System Management Plan Study and Final Document</i>								
Product 4. Septic System Management Plan Document	50,000							0
<i>Task 5. Stormwater Management Plan Study and Final Document</i>								
Product 5. Stormwater Management Plan Document	74,000			17,118			10,000	27,118
<i>Task 6. Spring Creek Watershed 10-Year Strategic Implementation Plan</i>								
Product 6. Spring Creek Watershed 10-Year Strategic Implementation Plan Document	40,000		5,000					5,000
<b>Objective 4: Complete Essential Water-Quality Monitoring</b>								
<i>Task 7. Evaluation and Monitoring</i>								
Product 7. Compile Water-Quality Monitoring Data			66,210		20,000	30,000	10,000	126,210
<b>Project Totals</b>	<b>430,500</b>	<b>33,333</b>	<b>174,210</b>	<b>17,118</b>	<b>20,000</b>	<b>30,000</b>	<b>20,000</b>	<b>294,661</b>

## **7.0 PUBLIC INVOLVEMENT**

Communication with the major stakeholders in this project is critical to success. Public involvement in the project will be continued through public meetings with stakeholders, newsletters, word of mouth, and by the Web site that will be developed within this project.

## **8.0 THREATENED AND ENDANGERED SPECIES**

The black-tailed prairie dog is identified as a threatened species by the SD GF&P that is located within and/or migrating through the Upper Spring Creek Watershed in Pennington County. The implementation of this project is not expected to impact this species.

The procedure that will be followed to ensure that threatened and endangered species are not adversely affected by project activities is based on three main premises which are the same ones used for Segments I and II:

- The managed grazing systems, planned and implemented, will promote the restoration or preservation of critical grassland habitat.
- It is anticipated that many of the grazing systems planned and implemented will be within areas with compliance plans in place.
- Involvement of NRCS, GF&P, and the USFWS in planning and construction grazing systems ensures personnel trained with mitigating threatened and endangered species will be involved with the design and implementation of project BMPs.

The black-tailed prairie dog is listed as a “Candidate” species with a “possibility” of occurrence in the Upper Spring Creek Watershed. Black-tailed prairie dog colonies are almost exclusively located in grassland habitat because their primary diet consists of vegetation.

The 319-funded activities will be widely dispersed over the landscape and not related to black-tailed prairie dog habitat. The activities will not significantly increase or expand the level of human activity. Activities that disturb or reduce food sources are not anticipated. Therefore, EPA-funded activities are expected to have no effect on the black-tailed prairie dog and no consultation with the USFWS is planned.