Harrisburg Wastewater Treatment Facility Plan Amendment #1

Harrisburg, SD

June 2018

STOCKWELL

Contact
Stockwell Engineers, Inc.
Sioux Falls, South Dakota
605.338.6668 phone
605.338.8750 fax

AMENDMENT #1 OF THE

WASTEWATER FACILITIES PLAN

FOR

THE

CITY OF HARRISBURG

June 2018

SEI NO. 4915

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of South Dakota.

Jon Brown, P.E.

S.D. Registration No. 6853

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 6853
JON R. BROWN
SOUTH DAKOTA
6-18-18

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PURPOSE OF AMENDMENT

The City of Harrisburg has opted to pursue funding for Treatment Alternative 2.3: SEQUOX® by Aeromod, Inc. The purpose of this amendment is to provide new information including but not limited to population projections, cost estimates, environmental assessments, etc.

COMMUNITY INFORMATION

GENERAL

No changes.

FINANCIAL STATISTICS

No changes.

POPULATION STATISTICS

Many local developers have expressed interest in building in Harrisburg. If these developers move forward, there is great potential for the population growth to exceed the 4% annual growth rate utilized in the 2016 Facility Plan. In November of 2017, Stockwell met with City Staff and determined the following growth projection to plan for future wastewater improvements.

Table 1 Population Statistics

Year	Population	Year	Population
1910	164	2000	958
1920	193	2010	4,089
1930	205	2016	5,698
1940	241	2020 (proj)	7,329
1950	274	2025 (proj)	9,992
1960	313	2030 (proj)	12,156
1970	338	2035 (proj)	14,790
1980	558	2040 (proj)	17,994
1990	727	2045 (proj)	21,893

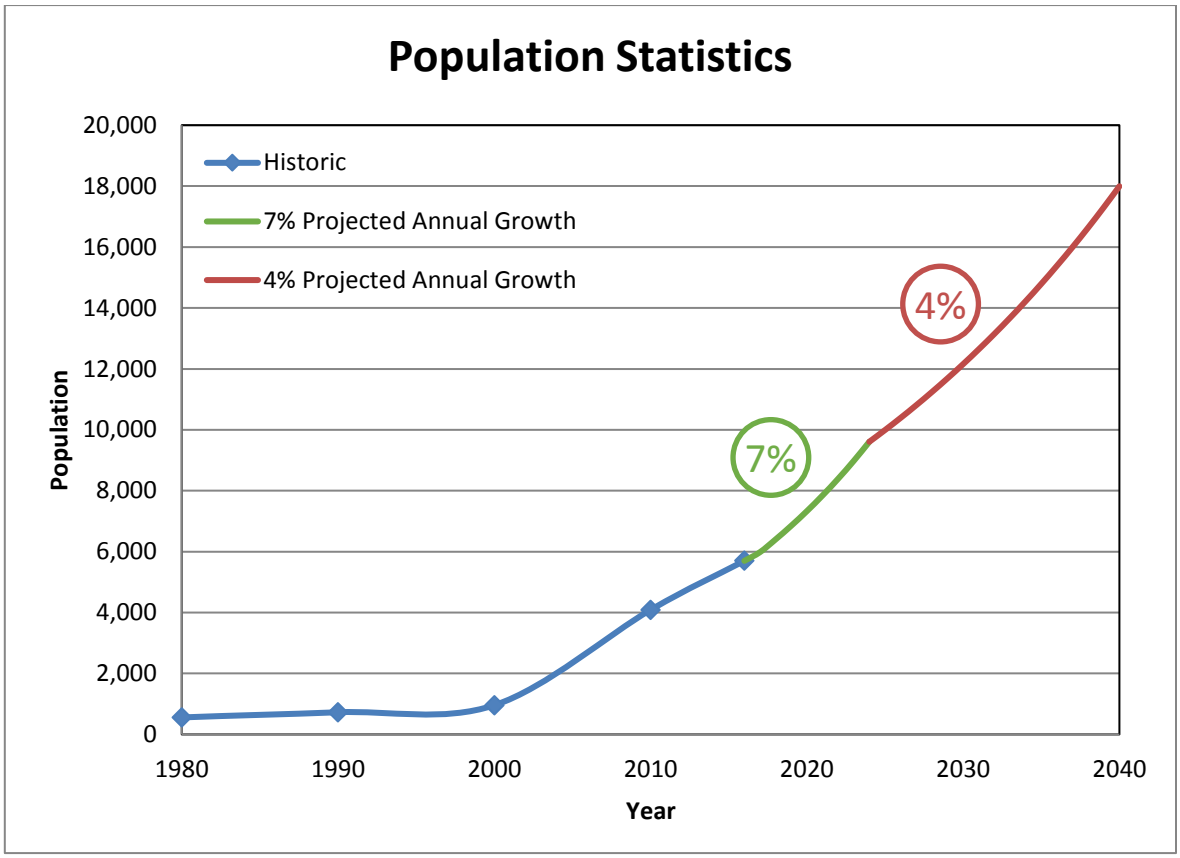


Figure 1 Population Statistics

EXISTING WASTEWATER SYSTEM

GENERAL COLLECTION SYSTEM

No changes.

WASTEWATER TREATMENT

No changes.

DEVELOPMENT OF WASTEWATER ALTERNATIVES

GENERAL ALTERNATIVE INFORMATION

No Changes.

EQUIVALENT UNIFORM ANNUAL COST

No Changes.

WASTEWATER COLLECTION ALTERNATIVES

No Changes.

WASTEWATER TREATMENT ALTERNATIVES

WASTEWATER FLOWS

The 20-year average daily design flow has been adjusted to serve a population of 15,997 by 2037. The average daily design flow is thus 1,040,000 (15,997 population x 65 gpcpd).

PERMIT LIMITS

The recommended discharge location is to the Big Sioux River. The alternative locations (Schindler or Spring Creek) were anticipated to be difficult to secure land and permit for the outfall structure due to public opposition. Kathleen Grigg with the Surface Water Quality Program for the SD DENR was contacted regarding effluent limits for a discharge to the Big Sioux River. The correspondence is included in the Appendices. The following table summarizes the estimated limits.

Table 2 Estimated Big Sioux River Effluent Limits

Predicted Effluent Flows		**Today**	**Future**
gallons per day		400,000	1,100,000
cubic feet per second		0.62	1.7
Predicted Effluent Limits			
Ammona (mg/L)	Daily Max	Monitor	3
	30-Day Average	3.5	<1
TSS (mg/L)	Max 7-day Average	45	45
	30-Day Average	30	30
BOD_5 (mg/L)	Max 7-day Average	45	45
	30-Day Average	30	30
pH (su)	Daily Max	9	9
	Daily Min	6.5	6.5
E. coli (#/100mL)	Daily Max	235	235
	30-day Geometic Mean	126	126
DO (mg/L)	Daily Min	5	5
Nitrate (mg/L)	Daily Max	Monitor	Unknown
	30-Day Average	Monitor	Unknown
Total P (mg/L)	Daily Max	Monitor	Unknown
	30-Day Average	Monitor	Unknown

TREATMENT ALTERNATIVE 2.3: SEQUOX® BY AEROMOD, INC.

The cost estimate was updated to include the following:

1. Inflation assuming a completion date in the year 2022
2. Updated design population from 12,485 to 15,997
3. Oversizing the of buildings to allow for substantial future expansion
4. Reclamation of the existing wastewater ponds
5. Discharge outfall along the Big Sioux River
6. Increase costs for land acquisition

Table 3 Cost Estimate for Treatment Alternative 2.3: SEQUOX®

Description	Price
General Items	
Mobilization	$550,000
Site Preparation and Finished grading	$400,000
Private Utilities	$150,000
Water and Sewer Service to Site	$500,000
Existing Lagoon Reclaimation	
Remove Existing Dikes	$225,000
Miscellaneous Earthwork	$100,000
Biosolids Removal	$1,100,000
Headworks	
Influent Pump Station and Forcemain	$400,000
Site Piping and Influent Splitter Box	$600,000
Bar Screen and Building	$800,000
Biological Treatment Process	
Biological Process Equipment	$2,250,000
Concrete for Biological Basins	$2,000,000
UV Disinfection	$400,000
Mechanical and Biosolids Handling	
Mechanical Building and Sludge Process Equipment	$1,300,000
Biosolid Storage Building	$550,000
Land Application Equipment	$180,000
Administration	
Office and Lab Building	$450,000
Outfall	
Effluent Pump Station and Forcemain	$4,130,000
Site Generator and Enclosure	$750,000
Outfall Structure at Big Sioux River	$100,000
Subtotal	$16,935,000
Contingencies (20%)	$3,387,000
Total Construction Costs	**$20,322,000**
Bonding & Legal	$405,000
Engineering, Administration & Testing	$3,760,000
Land Acquisition	$3,250,000
Total Project Costs	**$27,737,000**

Table 4 EUAC for Treatment Alternative 2.3: SEQUOX®

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
General Items				
Mobilization	$550,000	$0	$0	$550,000
Site Preparation and Finished grading	$400,000	$0	$0	$400,000
Private Utilities	$150,000	$90,000	$49,831	$100,169
Water and Sewer Service to Site	$500,000	$300,000	$166,103	$333,897
Existing Lagoon Reclaimation				
Remove Existing Dikes	$225,000	$0	$0	$225,000
Miscellaneous Earthwork	$100,000	$0	$0	$100,000
Biosolids Removal	$1,100,000	$0	$0	$1,100,000
Headworks				
Influent Pump Station and Forcemain	$400,000	$240,000	$132,882	$267,118
Site Piping and Influent Splitter Box	$600,000	$360,000	$199,323	$400,677
Bar Screen and Building	$800,000	$480,000	$265,764	$534,236
Biological Treatment Process				
Biological Process Equipment	$2,250,000	$1,350,000	$747,462	$1,502,538
Concrete for Biological Basins	$2,000,000	$1,200,000	$664,411	$1,335,589
UV Disinfection	$400,000	$240,000	$132,882	$267,118
Mechanical and Biosolids Handling				
Mechanical Building and Sludge Process Equipment	$1,300,000	$780,000	$431,867	$868,133
Biosolid Storage Building	$550,000	$330,000	$182,713	$367,287
Land Application Equipment	$180,000	$108,000	$59,797	$120,203
Administration				
Office and Lab Building	$450,000	$270,000	$149,492	$300,508
Outfall				
Effluent Pump Station and Forcemain	$4,130,000	$2,478,000	$1,372,009	$2,757,991
Site Generator and Enclosure	$750,000	$450,000	$249,154	$500,846
Outfall Structure at Big Sioux River	$100,000	$60,000	$33,221	$66,779
Remaining Capital Costs				
Contingencies	$3,387,000	$2,032,200	$1,125,180	$2,261,820
Bonding & Legal	$405,000	$0	$0	$405,000
Engineering, Administration & Testing	$3,760,000	$0	$0	$3,760,000
Land Acquisition	$3,250,000	$3,250,000	$3,250,000	$0
Total Construction Cost	**$27,737,000**	**$14,018,200**	**$9,212,091**	**$18,524,909**

Annual Operation and Maintenance Cost

Description	EUAC	Net Present Worth
Equipment	$73,386	$1,091,800
Utilities	$135,747	$2,019,576
Solids Handling	$181,077	$2,693,970
Testing	$20,061	$298,463
Chemicals for Biological Treatment	$31,944	$475,239
Labor	$233,609	$3,475,508
Contingencies (10%)	$64,950	$966,295
Total Equivalent Annual Costs	**$740,774**	**$10,035,103**

Total Net Present Worth	**$28,560,012**
EUAC	**$1,919,681**

IMPLEMENTATION OF ALTERNATIVES

WASTEWATER COLLECTION

No changes.

WASTEWATER TREATMENT

The recommended treatment alternative has been changed to Aeromod's SEQUOX®. The costs and performance for all three mechanical options are competitive. City staff has visited several nearby facilities has expressed preference towards Aeromod's SEQUOX® process. The company has a history of supporting their facilities to ensure successful treatment. This can be a valuable tool to ensure compliance with permit limits. Conversations with DENR staff has also indicated that a vetting process should not be a major issue due to Aeromod's long history of many successful plants.

IMPACT ON OWNER'S BUDGET

Due to the increase in the estimated construction cost ($27,737,000) for treatment alternative 2.3, the City would need to increase rates beyond the recommended values for 2018. Rather than increase rates, the collection improvements will be delayed and no longer prioritized. The rates for 2017 have been adopted ($20.96 and a usage charge of $9.08 per 1,000 gallons). The proposed rates for 2018 are a minimum monthly rate of $29.30 and usage charge of $12.90 per 1,000 gallons. The actual rates will be adjusted in response to the actual capital costs, loans, grants, design modifications, inflation, etc.

Table 5 Proposed Sewer Rates for Wastewater Treatment Improvements

Cost for 5,000 gallons			
Year	Base Minimum (monthly)	Volume Charge (1,000 gallon)	Monthly Bill
2014	$ 15.45	$ 6.70	$ 48.95
2015	$ 15.91	$ 6.89	$ 50.36
2016	$ 18.28	$ 7.92	$ 57.88
2017	$ 20.96	$ 9.08	$ 66.36
Proposed	$ 29.30	$ 12.90	$ 93.80

ENVIRONMENTAL EVALUATION

Environmental review letters were requested in November 2016. Responses have been received. The letters are included in the appendices. Since the letters have been sent out, Harrisburg is no longer pursuing Site 2 or Site 3 and the location of an outfall structure has been identified. New request letters were recently mailed in June of 2018 and are pending. Further discussion is contained in the *land acquisition* section.

VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

A meeting is currently scheduled for June 18, 2018

JUSTIFICATION AND DESCRIPTION OF SELECTED PLAN

No changes.

DESIGN OF SELECTED PLAN

No changes.

STAGED CONSTRUCTION

No changes.

LAND ACQUISITION

Sites 2 and 3 are not currently being considered. The purchase of Site 1 is currently under negotiations and a purchase agreement is probable. The figure below shows the proposed construction limits for Site 1.

IMPLEMENTATION SCHEDULE

The city should plan on at least one year to close on the land, at least one year for design and at least two years for construction. This means the earliest the treatment facility can be fully operational is 2022.

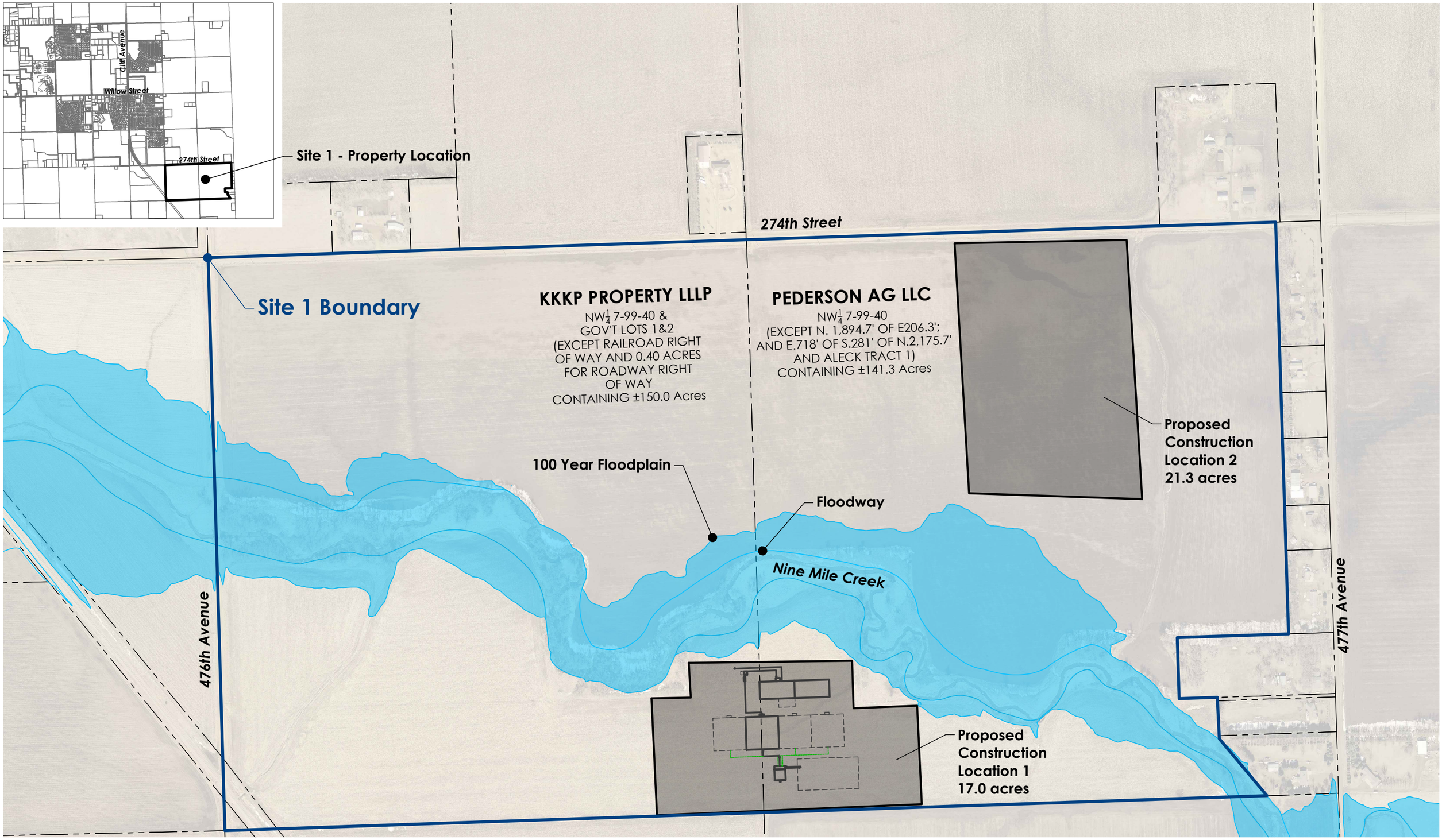


Figure 2 | Site 1 Proposed Construction Area(s)

Scale: 1" = 400'

CITY OF HARRISBURG SOUTH DAKOTA

STOCKWELL ENGINEERS

Appendix J
Big Sioux River Discharge Correspondence

Ryan Truax

From: Grigg, Kathleen <Kathleen.Grigg@state.sd.us>
Sent: Thursday, May 31, 2018 2:49 PM
To: Ryan Truax
Cc: Spangler, Albert
Subject: RE: NPDES Permit New Application Timeline

Hello Ryan,

Apparently it's been a while since we looked at limits for Harrisburg. TSS, BOD_5, E. coli, and pH limits should be the same as those included in the table. For ammonia, we've been able to update the estimates with the 1999 ammonia criteria currently in place, the 2013 ammonia criteria proposed for the future surface water quality standards, and antidegradation calculations for new dischargers.

If Harrisburg were to discharge about 400,000 gpd and antidegradation were calculated using the 1999 criteria for a new discharger, their 30-day average limit would be approximately 3.5 mg/L year. Daily maximum limits would be monitored without a limit, as the values calculated are much greater than what is expected in treated domestic wastewater.

Years and years from now, if Harrisburg were to discharge about 1,100,000 gpd and limits were calculated using the 2013 criteria for that permit renewal, their smallest 30-day average limit would be less than 1 mg/L and smallest daily maximum limit would be approximately 3 mg/L.

Thank you,

Kathleen Grigg
Engineer II, Surface Water Quality Program
SD Dept. of Environment and Natural Resources
Joe Foss Building, 523 E. Capitol, Pierre, SD 57501
Kathleen.Grigg@state.sd.us
(605) 773-3351

SDG823728 Harrisburg Correspondence

Table from 2014 facility plan referenced in the correspondence.

Table 15 Big Sioux River Discharge Limits

	30-Day Average	7-Day Average	Daily Maximum
BOD5 (mg/L)	30	45	N/A
Total Suspended Solids (mg/L)	30	45	N/A
E. coli (#/100mL)			
May 1 - September 30	126		235
Ammonia-Nitrogen(mg/L)			
180,000 gpd	23.4		172
900,000 gpd	4.9		36.2
pH	6.5 - 9.0		

Appendix K
Environmental Assessment Letters

November 7, 2016

Environmental Assessment Template

Dear

In accordance with state regulations, regulatory agencies are being contacted for comments regarding environmental impacts for the above mentioned project. Attached to this letter are maps illustrating the proposed projects. Construction will occur in the existing public right of way, on City property and in easements. Sanitary system improvements include constructing a new mechanical wastewater treatment facility and installation of new collection lines. There are three proposed sites for the new treatment facility. The City is pursuing purchase agreements for sites #1 and #2. Site #3 is City property.

Harrisburg is located in northern Lincoln County and is planning to apply for funding from these agencies: Clean Water State Revolving Fund (CW-SRF), Consolidated Fund, Community Development Block Grant and Rural Development to make these improvements. A written response is requested within 30 days. If you have any questions, please contact our office at your earliest convenience.

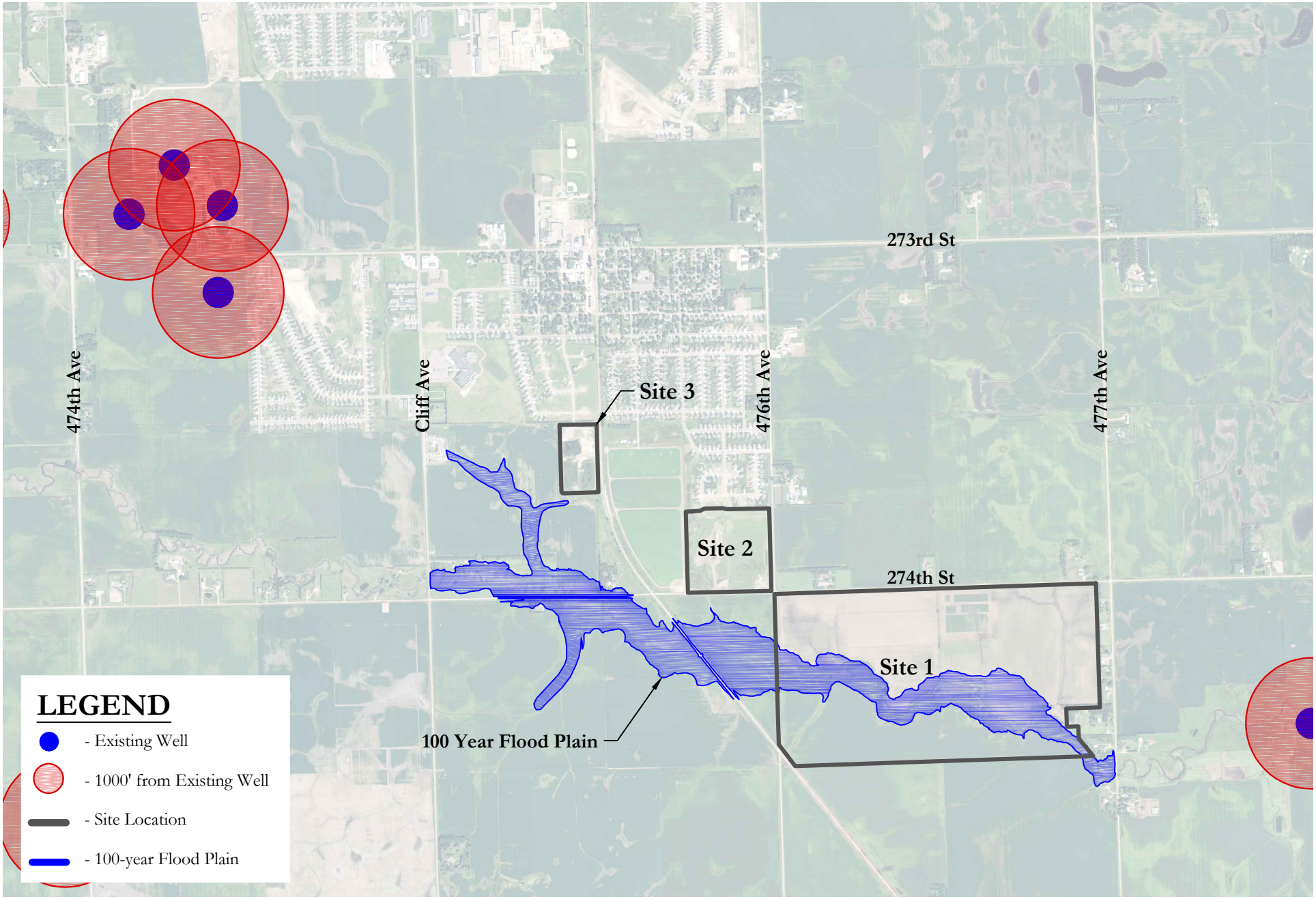
Respectfully submitted,

STOCKWELL ENGINEERS, INC.

Ryan Truax, E.I.T.
Project Engineer
rtruax@stockwellengineers.com

Enclosures: 2 maps

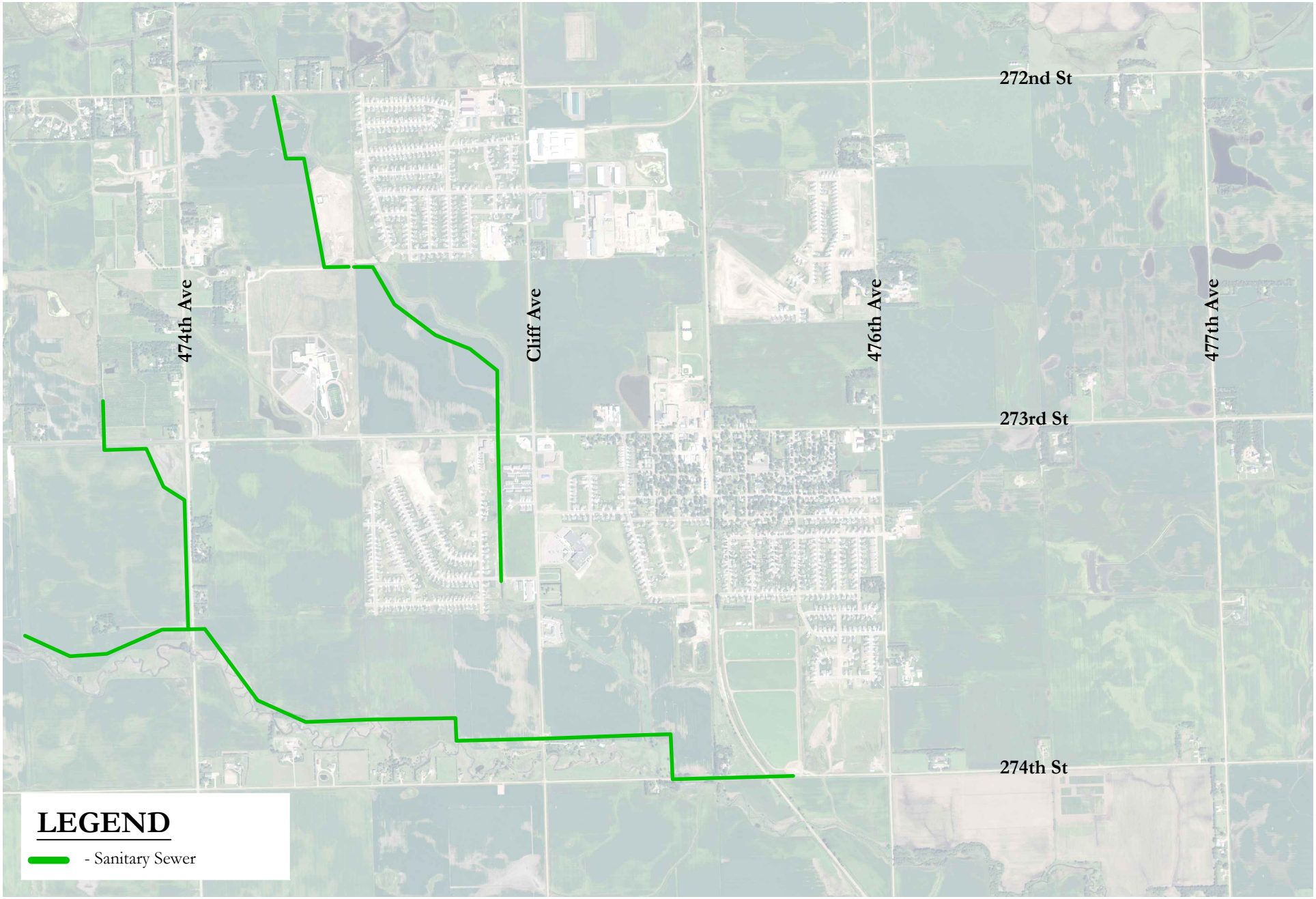
cc: SEI Project File: 4915\Correspondence



Proposed Wastewater Treatment Sites | Harrsiburg, SD

1" = 2000'

STOCKWELL ENGINEERS



Proposed Sanitary Sewer Collection Lines | Harrsiburg, SD

1" = 2000'

STOCKWELL ENGINEERS

CULTURAL RESOURCES EFFECTS ASSESSMENT SUMMARY

Applicant City of Harrisburg Project Contact Ryan Truax, Stockwell Engineers

Address 600 N Main Ave, Ste 100, Sioux Falls, SD 57104 Telephone Number (605) 338-6668

Legal Location of Project S7, T99N, R49W S1,2,3, T99N, R50W S34,35, T100N, R50W

City Harrisburg County Lincoln Project No. _____

Project Description

The project scope includes the following elements:

Construction of a new mechanical wastewater treatment facility and installation of new sanitary sewer collection system. There are 3 proposed sites for the mechanical wastewater treatment facility. A reference map is attached for your review.

For projects that involve new construction on vacant land please include information as to what previously occupied the site and whether that site has any known historic or archaeological significance.

The project will take place on previously disturbed land. The new treatment facility will be installed on farm land or the city maintenance shop property. The collection lines will be in public ROW along existing roads.

Please describe below or attach information supporting the determination of effect.

An online search of the National Registry of Historic Places was completed and there are no historic sites in the area(s).

A map showing the project location is required. Drawings or photographs may also be helpful.

Please indicate the effect the project will have on cultural resources based on the review performed:

X No Historic Properties Affected: There are no historic properties present or the undertaking will not affect any properties eligible for or listed in the National Register of Historic Preservation.

_____ No Adverse Effect: This property is listed in or eligible for the National Register of Historic Places. This project will have no adverse effect upon the historic significance of the property because the proposed undertaking meets the Secretary of the Interior's Standards for the Treatment of Historic Properties.

_____ Adverse Effect: This property is listed in or eligible for eligible for the National Register of Historic Places. This project will have an adverse effect upon the historic significance of the property. (Attach proposed mitigation measures that may minimize the adverse effect.)

Prepared by: _____ Date _____

DETERMINATION OF EFFECTS

I have reviewed the project description and the information provided concerning historical and cultural effects of this project. Based on that review, the Department of Environment and Natural Resources concurs with the applicant's determination of the effects that the construction of this project will have on historical or cultural resources. Additionally, if historical or cultural resources are discovered during project construction, the contractor is required to cease construction and notify the State Historical Preservation Officer.

Approved by: _____ Date _____

SD Department of Environment and Natural Resources

ARCHEOLOGY LABORATORY
AUGUSTANA UNIVERSITY

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SIOUX FALLS, SOUTH DAKOTA 57105
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Dr. L. ADRIEN HANNUS
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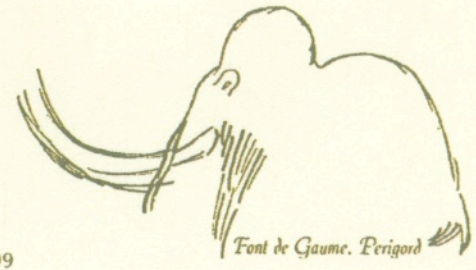


November 20, 2017

Jon Brown, PE
President
Stockwell Engineers, Inc.
801 N Phillips Ave., Suite 100
Sioux Falls, SD 57104
605.338.6668 Phone
605.310.2531 Direct
JBrown@stockwellengineers.com

Re: A Letter Report of the Level III Cultural Resources Survey of the City of Harrisburg Wastewater Treatment Project, Section 7, T99N, R49W, Lincoln County, South Dakota

The Archeology Laboratory, Augustana University (Augustana), conducted a Level III cultural resources survey in the Lower Big Sioux Archaeological Region for Stockwell Engineers, Inc., Sioux Falls, South Dakota, on behalf of the City of Harrisburg, South Dakota. The project areas are located in the SE1/4 NW1/4 and NE1/4 of Section 7, T99N, R49W and are known as the Harrisburg Wastewater Treatment project. The project involves two block areas, Locality 1 and Locality 2. The Locality 1 survey area, 17.0 acres, measures approximately 1,184 feet (360.8 m) long by approximately 703 feet (214.4 m) wide (Figures 1 and 2). The Locality 2 survey area, 21.3 acres, measures approximately 1,189 feet (362.4 m) long by approximately 833.3 feet (254 m) wide (see Figures 1 and 2). A total of approximately 38.3 acres (15.4 hectares) was investigated on November 14, 2017. The Area of Potential Effect (APE) is situated on nearly level to rolling uplands and slight- to moderately-sloped backslopes. The elevation ranges from a low of 419.0 meters (ca. 1,375 feet) near the Ninemile Creek breaks to a high of ca. 423.6 meters (ca. 1,390 feet) at the southwest corner of the project areas. Elevations are Above Mean Sea Level. Ninemile Creek, a permanent water source, flows between Locality 1 and Locality 2.

The South Dakota State Historical Society, Archaeological Research Center in Rapid City, South Dakota, conducted a records search on November 13, 2017. According to the records search results, there are no sites or surveys previously recorded within the APE. Three archeological sites (see Table 1) are recorded within one mile of the project area. Nine archeological surveys are previously recorded within one mile of the project area (Emerson and Emerson 1978; Hannus et al. 1986; Lueck 1993, 2007, 2009, 2010; Strait

and Lueck 1997; Trader 2015; Winham et al. 1999). No historic structures are recorded within one mile of the project area. Four atlases/maps (Andreas 1884; Geo. A. Ogle and Company 1910; Midwest Atlas Company 1964; and Peterson 1904) on file or at the Center for Western Studies on the campus of Augustana University in Sioux Falls, South Dakota were searched for potential historic properties. These sources indicated no evidence of structures within the project area.

Table 1. Archeological Sites Recorded within One Mile of the APE.

Site Number	Site Description	NRHP Eligibility
39LN0064	Euroamerican artifact scatter; Native American artifact scatter	Not Eligible
39LN0057	Native American artifact scatter	Not Eligible
39LN2007	Chicago, Milwaukee, St. Paul And Pacific Railroad	Eligible

NRHP = National Register of Historic Places

Jon Brown, P.E. and president, Stockwell Engineers, Inc., Sioux Falls, provided a project map and background information on November 14, 2017. The project area is shown as being in the Wentworth-Chancellor and Egan-Chancellor soil associations (Driessen 1976). Both are formed in glacial drift and glacial till on uplands. Soils in the Wentworth-Chancellor association are deep, well drained and somewhat poorly drained, nearly level, silty soils. Soils in the Egan-Chancellor association are deep, well drained and somewhat poorly drained, mainly gently undulating or gently sloping silty soils (see Driessen 1976). Chancellor-Viborg silty clay loams (Cd), Wentworth silty clay loam, 0 to 2 percent slopes (WeA), and Wentworth-Chancellor silty clay loam, 0 to 2 percent slopes (WhA) are mapped in the Locality 2 project APE. Wentworth-Chancellor silty clay loam, 0 to 2 percent slopes (WhA), Egan silty clay loam, 3 to 6 percent slopes (EaB), Lamo silty clay loam, cool, 0 to 2 percent slopes, occasionally flooded (La), and Chancellor-Viborg silty clay loams (Cd) are mapped in the Locality 1 project APE.

On November 14, 2017, Augustana archeologist Edward J. Lueck conducted a Level III pedestrian survey of the project localities utilizing 30-m-interval transects along the length of the APE. Vegetation in the Locality 1 project area currently consists of soybean stubble (30-100 percent visibility)(Figure 3). Vegetation in the Locality 2 project area currently consists of disked corn stubble (40-70 percent visibility)(Figure 5).

One nearby cutbank (see Figures 1, 2 and 4) was used to help evaluate the project area. The profile is as follows:

0-20 cm	Very dark brown (10YR 2/2) silty clay loam, gravelly;
20-100+ cm	Brown (10YR 4/3) silty clay loam, gravelly;
100-150+ cm	Yellowish brown (10YR 5/4) clay loam, gravelly.

The extent of gravels on the surface, especially in Locality 1, suggest that the cutbank profile is similar to the soil mapped in the Locality 1 project area and the northwestern portion of the Locality 2 project area.

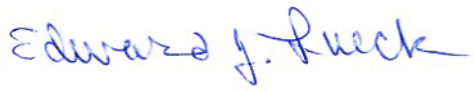
The results of the pedestrian survey indicate that the proposed project area has experienced extensive surface disturbances from cultivation. Given the ground surface visibility, the setting, and the nature of previous disturbances, the pedestrian survey and inspection of a nearby cutbank were sufficient to evaluate the project area. No cultural material was observed during the pedestrian survey.

Based on the results of the current pedestrian survey and an examination of maps and aerial photographs, there appear to be no intact landforms within the proposed project area that would contain significant archeological resources.

No evidence of cultural material was observed during the current survey. It is highly unlikely that the project area contains significant archeological resources eligible for listing in the National Register of Historic Places. A determination of No Historic Properties Affected is recommended. Augustana recommends that no further archeological work be conducted for the proposed Harrisburg Wastewater Treatment project.

Thank you for the opportunity to provide Stockwell Engineers, Inc. with cultural resources services. If you have any questions about this letter report, please advise Edward J. Lueck at (605) 274-5493.

Sincerely,
Archeology Laboratory, Augustana University



Edward J. Lueck
Principal Investigator

Enclosures

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United States Geological Survey
1962 Harrisburg. USGS 7.5' quadrangle (1962). United States Geological Survey, Department of the Interior. Washington, D.C.

Winham, R. Peter, Edward Lueck, and Linda Palmer
1999 *Intensive Cultural Resources Survey of the Proposed City of Harrisburg, Wastewater Facility Expansion Project, Lincoln County, South Dakota.* Project No. 990222002f. Archeology Laboratory, Augustana College, Sioux Falls, SD. ALN-0058.

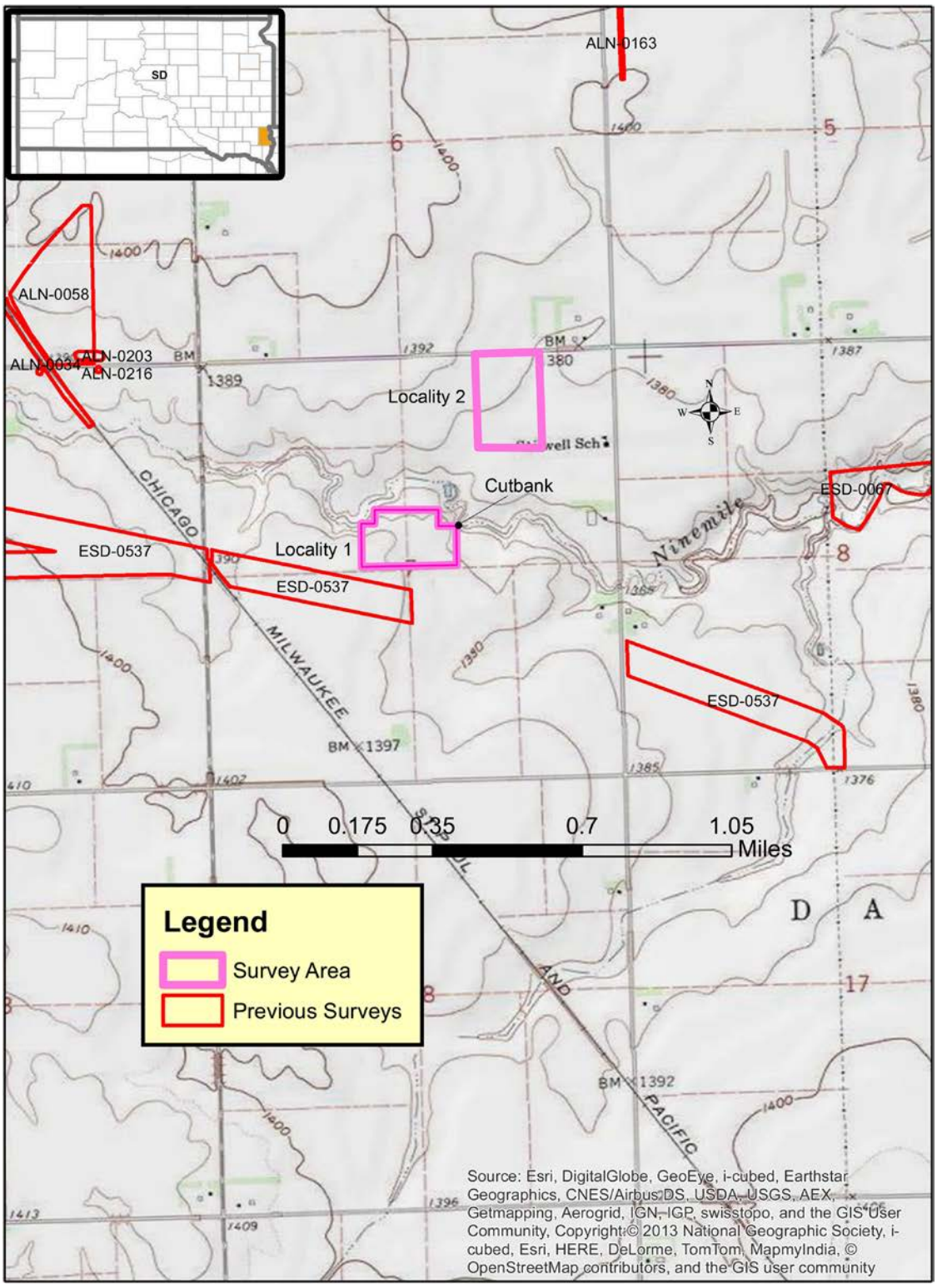


Figure 1. Location of Locality 1 and Locality 2 project areas in the NE1/4 and SE1/4 NW1/4 of Section 7, T99N, R49W. Shown on the USGS 7.5-minute quadrangle, Harrisburg (1962). Location of cutbank also shown.

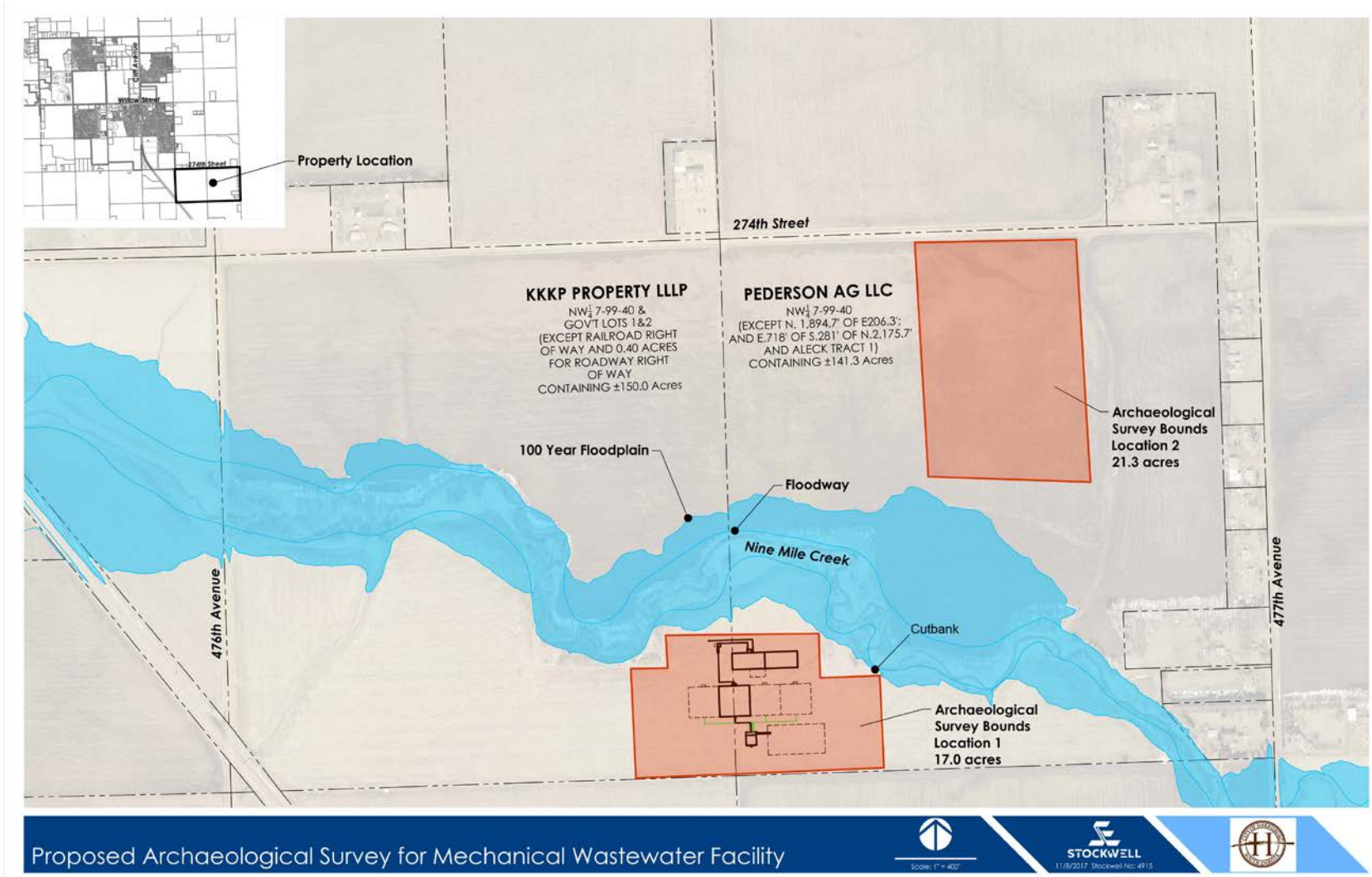


Figure 2. Map of project area. Location of cutbank also shown.

Figure 3. Overview of the Locality 1 project area, facing northeast.

Figure 4. Overview of the cutbank, facing west.

Figure 5. Overview of the Locality 2 project area, facing southeast.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

REPLY TO
ATTENTION OF

NOVEMBER 30, 2016

Planning, Programs, and Project Management Division

Mr. Ryan Truax
Stockwell Engineers.
600 N. Main Avenue, Suite 100
Sioux Falls, South Dakota, 57104

Dear Mr. Truax:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated November 7, 2016 (received November 14, 2016) regarding the environmental review of the proposed infrastructure improvements for the City of Harrisburg, in Lincoln County, South Dakota. It is understood that the proposed improvements would include constructing a new mechanical wastewater treatment facility, installation of new collection lines and a new treatment facility at one of three sites yet to be determined. Construction would occur in the existing right of way, on City property and in easements. We offer the following comments for your consideration:

Your plans should be coordinated with the state water quality office that has jurisdiction within the area where the project is located to ensure compliance with federal and state water quality standards and regulations mandated by the Clean Water Act and administered by the U.S. Environmental Protection Agency. Please coordinate with the South Dakota Department of Environment & Natural Resources concerning state water quality programs.

If you have not already done so, it is recommended you consult with the U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks regarding fish and wildlife resources. In addition, the South Dakota State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area.

The Federal floodplain management criterion basically states that construction which could be damaged by floodwaters or which could obstruct flood flows should not be located in the one percent annual chance floodplain. If this is not practicable, any residential construction that could be damaged by floodwater must be placed above the one percent annual chance floodwater surface elevation. Any nonresidential construction that could be damaged by floodwater must be placed above or flood proofed to above the one percent annual chance floodwater surface elevation. All construction should be designed to minimize potential harm to or within the floodplain. Higher levels of protection are encouraged to provide added safety. If the operation of the constructed facilities is considered critical during flood periods, the facilities should be protected from at least the 0.2 percent annual chance flood.

If construction must occur in the floodplain, it must be located outside the floodway. If a floodway has not been determined and designated, the construction should be as far from

the stream channel as possible. The goal of any construction in the floodplain is to achieve the highest level of flood protection with zero impact to adjacent property.

If the proposed waterline construction crosses the floodplains of small drainageways and streams, flood-related problems should not occur if the lines are buried far enough below the beds of drainageways and streams to prevent exposure due to streambed erosion during periods of high floodflows. Any aboveground construction subject to flood damage, such as pump houses, should either be placed above, or flood proofed to, a level above the one percent annual chance flood elevation.

Since the proposed project does not appear to be located within Corps owned or operated lands, your plans should be submitted to the local floodplain administrator for review and approval prior to construction. It should be ensured that the proposed project is in compliance with the floodplain management criteria of Lincoln County and the State of South Dakota. In addition, please coordinate with the following floodplain management office:

South Dakota Division of Emergency Management
Attention: Mr. Marc Macy
118 W. Capitol Avenue
Pierre, South Dakota 57501
Telephone: 605-773-3231
Fax: 605-773-3580
Email: marc.macy@state.sd.us

Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. You can visit the Omaha District's Regulatory website for permit applications and related information. Please review the information on the provided website (http://www.nwo.usace.army.mil/Missions/RegulatoryProgram.aspx) to determine if this project requires a 404 permit. For a detailed review of the permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers
Pierre Regulatory Office
Attention: Mr. Steve Naylor, CENWO-OD-R-SD
28563 Powerhouse Road, Room 120
Pierre, South Dakota 57501

If you have any questions, please contact Ms. Amee Rief of my staff at (402) 995-2544 or amee.l.rief@usace.army.mil and reference PD# 6977 in the subject line.

Sincerely,

Eric A. Laux
Chief, Environmental Resources and Missouri River Recovery Program Plan Formulation Section

Copy Furnished:
CENWO-OD-R-SD/Naylor

STOCKWELL

November 7, 2016

SD DENR
Air Quality
Mr. Brad Schultz
Joe Foss Building
523 E Capitol Ave
Pierre, SD 57501

Re: Air Quality Comments
Infrastructure Improvements
Harrisburg, SD

Dear Mr. Schultz:

In accordance with state regulations, regulatory agencies are being contacted for comments regarding environmental impacts for the above mentioned project. Attached to this letter are maps illustrating the proposed projects. Construction will occur in the existing public right of way, on City property and in easements. Sanitary system improvements include constructing a new mechanical wastewater treatment facility and installation of new collection lines. There are three proposed sites for the new treatment facility. The City is pursuing purchase agreements for sites #1 and #2. Site #3 is City property.

Harrisburg is located in northern Lincoln County and is planning to apply for funding from these agencies: Clean Water State Revolving Fund (CW-SRF), Consolidated Fund, Community Development Block Grant and Rural Development to make these improvements. A written response is requested within 30 days. If you have any questions, please contact our office at your earliest convenience.

Respectfully submitted,

STOCKWELL ENGINEERS, INC.

Ryan Truax

Ryan Truax, E.I.T.
Project Engineer
rtruax@stockwellengineers.com

Enclosures: 2 maps

cc: SEI Project File: 4915\Correspondence

November 7, 2016

SD DENR
Drinking Water
Mr. Mark Mayer
Joe Foss Building
523 E Capitol Ave
Pierre, SD 57501

DRINKING WATER QUALITY DETERMINATION
It appears, based on the information provided, that this project will not have adverse environmental effects to drinking water in this area. This project is approved.
Approved by: Mark Mayer
Date: 12/2/16 ID No.: 20161106
605-773-3754 Fax 605-773-5286
SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT & NATURAL RESOURCES

Re: Drinking Water Comments
Infrastructure Improvements
Harrisburg, SD

Dear Mr. Mayer:

In accordance with state regulations, regulatory agencies are being contacted for comments regarding environmental impacts for the above mentioned project. Attached to this letter are maps illustrating the proposed projects. Construction will occur in the existing public right of way, on City property and in easements. Sanitary system improvements include constructing a new mechanical wastewater treatment facility and installation of new collection lines. There are three proposed sites for the new treatment facility. The City is pursuing purchase agreements for sites #1 and #2. Site #3 is City property.

Harrisburg is located in northern Lincoln County and is planning to apply for funding from these agencies: Clean Water State Revolving Fund (CW-SRF), Consolidated Fund, Community Development Block Grant and Rural Development to make these improvements. A written response is requested within 30 days. If you have any questions, please contact our office at your earliest convenience.

RECEIVED
NOV 09 2016
Drinking Water Program

Respectfully submitted,

STOCKWELL ENGINEERS, INC.
Ryan Truax

Ryan Truax, E.I.T.
Project Engineer
rtruax@stockwellengineers.com

Enclosures: 2 maps

cc: SEI Project File: 4915\Correspondence

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

November 16, 2016

Ryan Truax, Project Engineer
Stockwell Engineers
600 N Main Ave.
Suite 100
Sioux Falls, SD 57104

Re: Harrisburg Wastewater Treatment Improvements

Dear Mr. Truax:

The South Dakota Department of Environment and Natural Resources' (DENR) Ground Water Quality Program has reviewed the above-referenced project for potential impacts to ground water quality. Based on the information submitted in your letter, dated November 7, 2016, DENR does not anticipate adverse impacts to ground water quality by this project. However, plans and specifications for the wastewater treatment system improvements for the chosen site must be submitted to the Department for approval prior to construction. This is to ensure that any improvements and/or expansion plans meet the Department recommended design criteria for wastewater treatment systems.

If construction for this project disturbs one or more acre(s) of soil, a storm water permit may be required. For more information or to obtain a storm water permit, please contact the Department at 1-800-SD-Storm or visit:
http://denr.sd.gov/des/sw/StormWaterandConstruction.aspx.

There have been numerous petroleum and other chemical releases throughout the state. Of the releases reported to DENR, we have identified several release cases potentially in the vicinity of your project. A list of releases in Harrisburg or near your project areas is enclosed in Table 1. However, the locational information provided to us regarding releases is sometimes inaccurate or incomplete. If you would like to do more research, additional information on reported releases in South Dakota may be obtained at the following website: http://arcgis.sd.gov/server/denr/spillsviewer/.

In the event that contamination is encountered during construction activities or is caused by the construction activity, the City of Harrisburg, or its designated representative, must report

the contamination to DENR at 605-773-3296. Any contaminated soil encountered or caused by the construction must be temporarily stockpiled and sampled to determine disposal requirements.

Additionally, if construction for this project disturbs a major stream or surface water body please make sure you have received comments from the department's Surface Water Quality Program and the United States Army Corps of Engineers on this project. For the department's Surface Water Quality Program you can contact John Miller at (605) 773-3351.

Thank you for providing DENR the opportunity to comment on this project. If you have any questions regarding the information provided, please contact me at 605-773-3296.

Sincerely,

Kayla Fawcett

Kayla Fawcett, Engineer II
Ground Water Quality Program

Enclosure

c: Dan Fink, Utility Manager, City of Harrisburg, Harrisburg, SD

Table 1 - Known releases that may impact the Harrisburg Wastewater Treatment Improvements as of November 14, 2016.

DENR ID	Site Name	City	County	Street	Material	Status	R1	Latitude	Longitude
89018	Northern Natural Gas Company Facility	Harrisburg	Lincoln	272nd & 475th	UST	C	DM	43.445433	-96.709297
93039	Food N Fuel	Harrisburg	Lincoln	301 Willow Street	UST	C	RC	43.431275	-96.699244
96.149	The Station - UST Removals	Harrisburg	Lincoln	308 Willow Street	Gasoline	NFA	SB	43.431639	-96.698619
97.135	Transport Event	Harrisburg	Lincoln	Main Street @ Prairie	Pendimethalin & Fertilizer	C	KM	43.430586	-96.699483
98.176	Food N Fuel - Assessment	Harrisburg	Lincoln	301 Willow Street	Petroleum	C	TF	43.431338	-96.699188
98.244	Former Dick's Service - Tank Removals	Harrisburg	Lincoln	47402 273rd Street	Petroleum	NFA	SB	43.431875	-96.727079
2001.505	ATP - Hill Family Farm	Harrisburg	Lincoln	27303 475th Avenue	Petroleum	C	KM	43.430853	-96.708411
2002.346	ATP - Lynn Ustad Waters Property	Harrisburg	Lincoln	27203 Spruce Place	Fuel Oil	NFA	KH	43.445714	-96.731585
2004.15	ATP - Harrisburg Elementary School	Harrisburg	Lincoln	200 Willow Street	Fuel Oil	NFA	KH	43.431798	-96.700247
2010.237	ATP Liberty Elementary School	Harrisburg	Lincoln	200 Willow Street	Fuel Oil	NFA	TF	43.432555	-96.699215
2013.011	UST Removal - Former Food N Fuel	Harrisburg	Lincoln	301 Willow Street	Gasoline	NFA	DM	43.431317	-96.699275

DENR ID = DENR Case Number

Status: C = Closed, NFA = No Further Action, O/M = Open/Monitoring, I=Inactive, T=Tracking, W=Withdrawn

R1 = DENR reviewer's initials

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

November 21, 2016

Ryan Truax
Stockwell Engineers, Inc.
600 North Main Avenue
Suite 100
Sioux Falls, SD 57104

Dear Mr. Truax:

The South Dakota Department of Environment and Natural Resources (DENR) reviewed the project proposed by the City of Harrisburg concerning a Infrastructure Improvements. The DENR finds that this construction, using conventional construction techniques, should not cause violation of any statutes or regulations administered by the DENR based on the following recommendations:

1. At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site. Any construction activity that disturbs an area of one or more acres of land must have authorization under the General Permit for Storm Water Discharges Associated with Construction Activities. Contact the Department of Environment and Natural Resources for additional information or guidance at 1-800-SDSTORM (737-8676) or http://denr.sd.gov/des/sw/stormwater.aspx.

2. Wetlands/tributary at Site #1 may be impacted by this project. These water bodies are considered waters of the state and are protected under the South Dakota Surface Water Quality Standards. The discharge of pollutants from any source, including indiscriminate use of fill material, may not cause destruction or impairment except where authorized under Section 404 of the Federal Water Pollution Control Act. Please contact the U.S. Army Corps of Engineers concerning these permits.

If you have any questions concerning these comments, please contact me at (605) 773-3351.

Sincerely,

John Miller
Environmental Scientist
Surface Water Quality Program

STOCKWELL

November 7, 2016

US Dept. of Interior
Fish and Wildlife Service
Mr. Scott Larson
420 S. Garfield Avenue
Pierre, SD 57501-5408

This constitutes a report of the Department of the Interior prepared in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.). We have reviewed and have NO OBJECTION to this proposed project.

11/16/16 Scott Larson
Date Field Supervisor

Re: Wetland & Endangered Species Comments
Infrastructure Improvements
Harrisburg, SD

Dear Mr. Larson:

In accordance with state regulations, regulatory agencies are being contacted for comments regarding environmental impacts for the above mentioned project. Attached to this letter are maps illustrating the proposed projects. Construction will occur in the existing public right of way, on City property and in easements. Sanitary system improvements include constructing a new mechanical wastewater treatment facility and installation of new collection lines. There are three proposed sites for the new treatment facility. The City is pursuing purchase agreements for sites #1 and #2. Site #3 is City property.

Harrisburg is located in northern Lincoln County and is planning to apply for funding from these agencies: Clean Water State Revolving Fund (CW-SRF), Consolidated Fund, Community Development Block Grant and Rural Development to make these improvements. A written response is requested within 30 days. If you have any questions, please contact our office at your earliest convenience.

Respectfully submitted,

STOCKWELL ENGINEERS, INC.

Ryan Truax

Ryan Truax, E.I.T.
Project Engineer
rtruax@stockwellengineers.com

Enclosures: 2 maps

cc: SEI Project File: 4915\Correspondence

SOUTH DAKOTA DEPARTMENT OF
GAME, FISH AND PARKS
523 EAST CAPITOL AVENUE | PIERRE, SD 57501

November 9, 2016

Mr. Ryan Truax
Stockwell Engineers
600 N. Main Ave. #100
Sioux Falls, SD 57104

RE: Sanitary System Improvements
Harrisburg, South Dakota

Dear Ryan:

This letter is in response to your request for environmental comments regarding the above referenced project which involves improvements to the sanitary system in the City of Harrisburg, South Dakota. A new wastewater treatment facility will be constructed and new collection lines will be installed.

Based upon the information submitted with the preliminary coordination letter, we do not anticipate that the project will have any impacts to fish and wildlife resources if the following comments are considered and addressed during the balance of project planning and during the construction and installation of new collection lines.

1. Disturbance to riparian areas should be kept to a minimum. We suggest that criteria be used to prevent the use of option borrow areas that result in impacts to riparian and wetland areas.

2. Riparian vegetation losses should be quantified and replaced on site. Seeding of indigenous species should be accomplished immediately after construction is complete to reduce sediment and erosion potential.

3. Nine Mile Creek and an unnamed tributary to Nine Mile Creek are immediately adjacent to the proposed collection line route. A sediment and erosion control plan should be made part of the project plan and implemented at the direction of the project staff to prevent sediment from entering the creeks.

4. A post construction erosion control plan should also be implemented in order to provide interim control prior to re-establishment of permanent vegetative cover on the disturbed site.

Wetlands may be encountered along the project. If a project may impact wetlands or other important fish and wildlife habitats, the South Dakota Department of Game, Fish and Parks, Division of Wildlife, first recommends avoidance of these areas, if possible; followed by minimization of adverse impacts to these areas; then replacement of any lost acres. All project alternatives should be considered and the least damaging practical alternative selected. If impacts to wetlands are determined to be unavoidable, a mitigation plan addressing the number and types of impacted acres and methods of replacement should be submitted to the resource agencies for review.

Thank you for the opportunity to provide comments on this project. If you have any questions, or if the project design changes, please contact me at 605.773.6208.

Sincerely,

Leslie Murphy
523 East Capitol Avenue
Pierre, SD 57501
Leslie.Murphy@state.sd.us

RECEIVED
NOV 0 9 2016
Dept. of Environment and
Natural Resources
Waste Management

November 7, 2016

SD DENR
Waste Management
Ms. Vonni Kallemeyn
Joe Foss Building
523 E Capitol Ave
Pierre, SD 57501

Waste Management Determination
Hazardous Waste/Solid Waste/Asbestos
It appears, based on the information provided, that this project will have little or no impact on the waste management in this area.
Approved By: Vonni Kallemeyn
Date: 11-16-16
South Dakota Department of Environment & Natural Resources
Phone: (605) 773-3153 Fax: (605) 773-6035

Re: Waste Management Comments
Infrastructure Improvements
Harrisburg, SD

Dear Ms. Kallemeyn:

In accordance with state regulations, regulatory agencies are being contacted for comments regarding environmental impacts for the above mentioned project. Attached to this letter are maps illustrating the proposed projects. Construction will occur in the existing public right of way, on City property and in easements. Sanitary system improvements include constructing a new mechanical wastewater treatment facility and installation of new collection lines. There are three proposed sites for the new treatment facility. The City is pursuing purchase agreements for sites #1 and #2. Site #3 is City property.

Harrisburg is located in northern Lincoln County and is planning to apply for funding from these agencies: Clean Water State Revolving Fund (CW-SRF), Consolidated Fund, Community Development Block Grant and Rural Development to make these improvements. A written response is requested within 30 days. If you have any questions, please contact our office at your earliest convenience.

Respectfully submitted,

STOCKWELL ENGINEERS, INC.
Ryan Truax
Ryan Truax, E.I.T.
Project Engineer
rtruax@stockwellengineers.com

Enclosures: 2 maps

cc: SEI Project File: 4915\Correspondence

November 17, 2016

Ryan Truax, E.I.T.
600 N Main Ave, Suite 100
Sioux Falls. SD 57104

RE: Environmental Review:
Prime Farmland Comments
Infrastructure Improvements
Harrisburg, SD

Dear Name:

Thank you for the opportunity to provide Farmland Protection Policy Act (FPPA) review of this project.

The project **may** impact prime farmland and land of statewide importance, depending on where the project is actually located. All of sites 1 and 2 are Prime and Important Farmland. Site 3 is not considered farmland for FPPA consideration.

See enclosed soil maps identifying the FPPA classifications for sites 1 and 2. I have included a Farmland Conversion Impact Rating Form (AD-1006) for this project rating site 1 and 2 as alternative sites. We have completed Parts II, IV, and V of the form. Please complete parts I, III, VI, and VII as per instructions on the back of the form and following pages. If the TOTAL POINTS in part VII is less than 160 points, the proposed activity will have no significant impact on the prime farmland or farmland of statewide importance in Lincoln County, and no further alternatives need be considered.

The Natural Resources Conservation Service (NRCS) would advise the applicant to consult with the local NRCS and Farm Service Agency offices regarding any United States Department of Agriculture easements or contracts in the project areas that may be affected. For any other easements outside of the NRCS, you should check with the local courthouse.

If you have any questions, please contact me at (605) 348-2889 ext. 104.

Sincerely,

Tim Nordquist

Timothy Nordquist
NRCS Conservation Agronomist

Attachments

Natural Resources Conservation Service
414 E Stumer Road, Suite 700
Voice: 605.348.2889 ext 104 Fax: 855.256.2553

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name Of Project	Federal Agency Involved
Proposed Land Use	County And State

PART II *(To be completed by NRCS)*	Date Request Received By NRCS 11/9/16	
Does the site contain prime, unique, statewide or local important farmland? Yes ☑ No ☐ *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Acres Irrigated	Average Farm Size 389
Major Crop(s) Field crops	Farmable Land In Govt. Jurisdiction Acres: 327,335 % 89	Amount Of Farmland As Defined in FPPA Acres: 325,659 % 88
Name Of Land Evaluation System Used Relative Cropland Value	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS 11/17/16

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	0.0	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	125.6	4.6		
B. Total Acres Statewide And Local Important Farmland	157.4	36.2		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.0	0.0		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	51.0	52.0		
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	86	85		0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	86	85		0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	86	85	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

This form was electronically produced by National Production Services Staff

Clear Form

Form AD-1006 (10-83)

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 – Federal agencies involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form.

Step 2 – Originator will send copies A, B and C together with maps indicating locations of site(s), to the Natural Resources Conservation Service (NRCS) local field office and retain copy D for their files. (Note: NRCS has a field office in most counties in the U.S. The field office is usually located in the county seat. A list of field office locations are available from the NRCS State Conservationist in each state).

Step 3 – NRCS will, within 45 calendar days after receipt of form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland.

Step '4 – In cases where farmland covered by the FPPA will be converted by the proposed project, NRCS field offices will complete Parts II, IV and V of the form.

Step 5 – NRCS will return copy A and B of the form to the Federal agency involved in the project. (Copy C will be retained for NRCS records).

Step 6 – The Federal agency involved in the proposed project will complete Parts VI and VII of the form.

Step 7 – The Federal agency involved in the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA and the agency's internal policies.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

Part I: In completing the "County And State" questions list all the local governments that are responsible for local land controls where site(s) are to be evaluated.

Part III: In completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them.

2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities) that will cause a direct conversion.

Part VI: Do not complete Part VI if a local site assessment is used.

Assign the maximum points for each site assessment criterion as shown in § 658.5 (b) of CFR. In cases of corridor-type projects such as transportation, powerline and flood control, criteria #5 and #6 will not apply and will, be weighed zero, however, criterion #8 will be weighed a maximum of 25 points, and criterion #11 a maximum of 25 points.

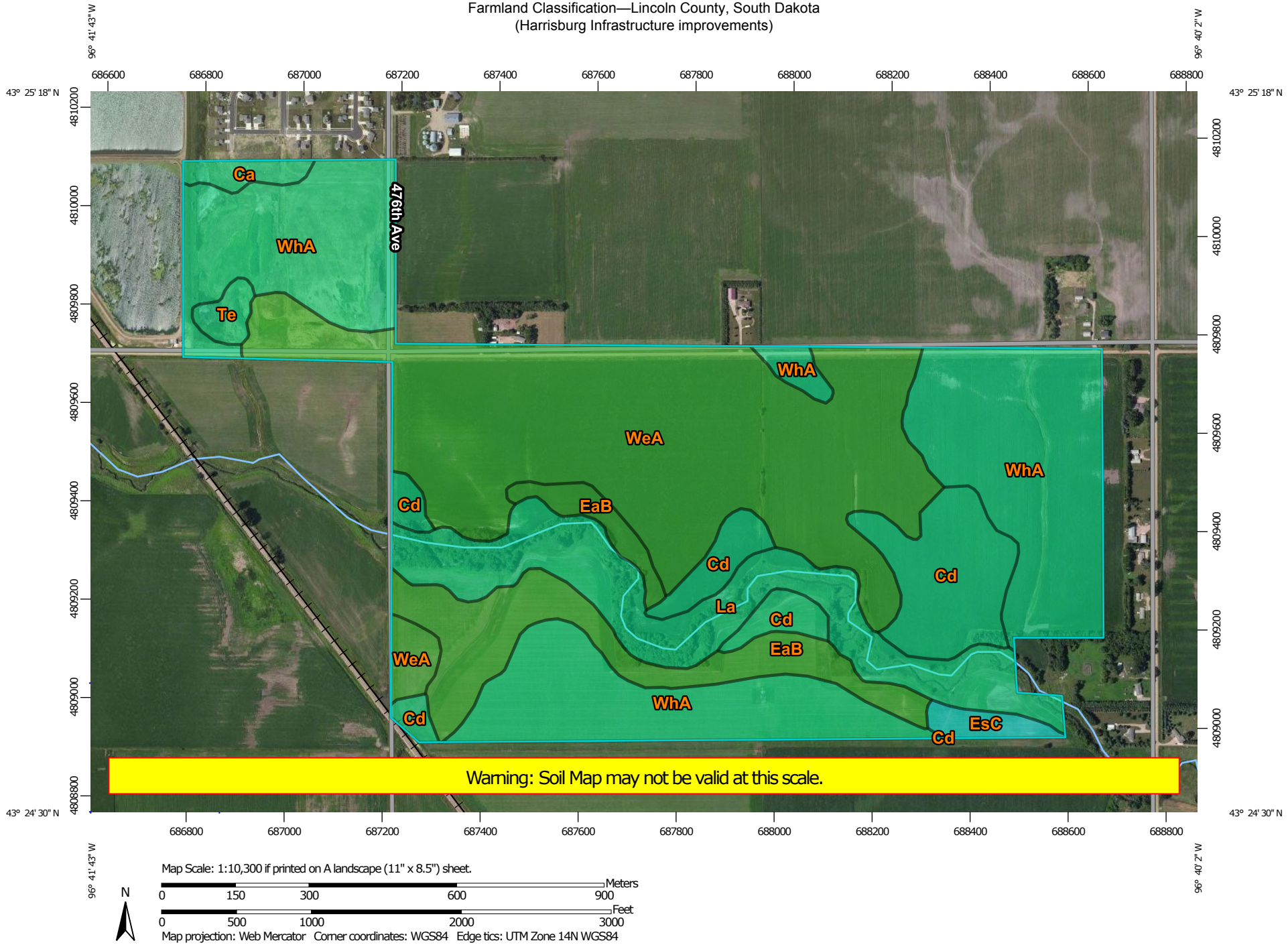
Individual Federal agencies at the national level, may assign relative weights among the 12 site assessment criteria other than those shown in the FPPA rule. In all cases where other weights are assigned relative adjustments must be made to maintain the maximum total weight points at l60.

In rating alternative sites, Federal agencies shall consider each of the criteria and assign points within the limits established in the FPPA rule. Sites most suitable for protection under these criteria will receive the highest total scores, and sites least suitable, the lowest scores.

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, adjust the site assessment points to a base of 160. Example: if the Site Assessment maximum is 200 points, and alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site "A."}$$

Farmland Classification—Lincoln County, South Dakota
(Harrisburg Infrastructure improvements)



Map Scale: 1:10,300 if printed on A landscape (11" x 8.5") sheet.

N

0 150 300 600 900 Meters

0 500 1000 2000 3000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Water Features

MAP INFORMATION

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lincoln County, South Dakota
Survey Area Data: Version 17, Sep 21, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 6, 2010—Sep 7, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

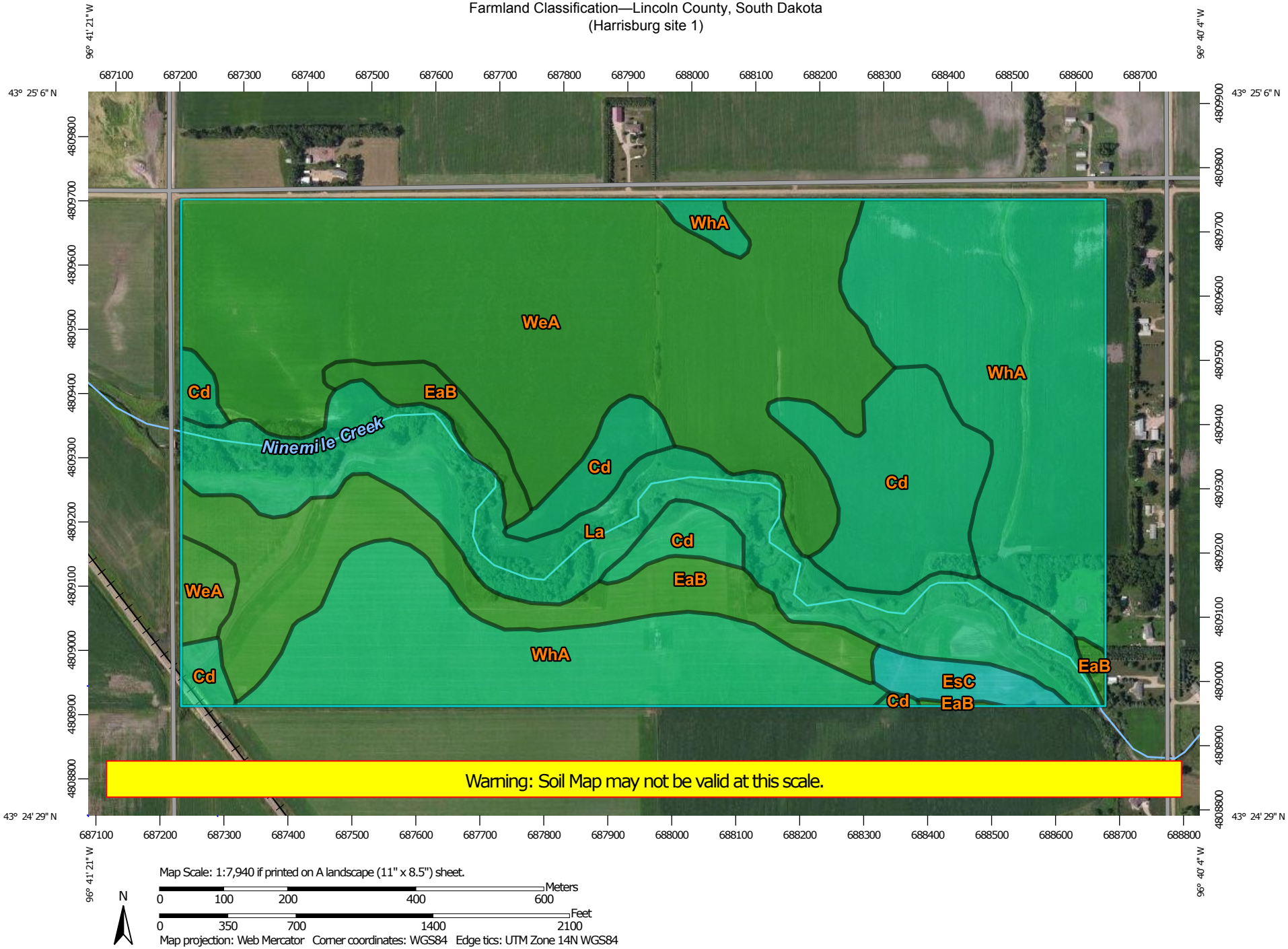
Farmland Classification— Summary by Map Unit — Lincoln County, South Dakota (SD083)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Ca	Chancellor-Tetonka silty clay loams	Prime farmland if drained	3.2	1.0%
Cd	Chancellor-Viborg silty clay loams	Prime farmland if drained	30.1	9.3%
EaB	Egan silty clay loam, 3 to 6 percent slopes	All areas are prime farmland	30.4	9.4%
EsC	Egan-Shindler complex, 6 to 9 percent slopes	Farmland of statewide importance	3.3	1.0%
La	Lamo silty clay loam, cool, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained	39.6	12.2%
Te	Tetonka silty clay loam	Prime farmland if drained	2.7	0.8%
WeA	Wentworth silty clay loam, 0 to 2 percent slopes	All areas are prime farmland	109.1	33.6%
WhA	Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes	Prime farmland if drained	106.2	32.7%
Totals for Area of Interest			**324.6**	**100.0%**

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Farmland Classification—Lincoln County, South Dakota
(Harrisburg site 1)



Map Scale: 1:7,940 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Water Features

MAP INFORMATION

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Major Roads

Local Roads

Background

Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Lincoln County, South Dakota
Survey Area Data: Version 17, Sep 21, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 6, 2010—Sep 7, 2011

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Farmland Classification

Farmland Classification— Summary by Map Unit — Lincoln County, South Dakota (SD083)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Cd	Chancellor-Viborg silty clay loams	Prime farmland if drained	30.3	10.7%
EaB	Egan silty clay loam, 3 to 6 percent slopes	All areas are prime farmland	31.0	10.9%
EsC	Egan-Shindler complex, 6 to 9 percent slopes	Farmland of statewide importance	4.1	1.5%
La	Lamo silty clay loam, cool, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained	42.4	15.0%
WeA	Wentworth silty clay loam, 0 to 2 percent slopes	All areas are prime farmland	94.6	33.4%
WhA	Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes	Prime farmland if drained	80.6	28.5%
Totals for Area of Interest			**282.9**	**100.0%**

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Farmland Classification—Lincoln County, South Dakota
(Harrisburg Site 2)

Map Scale: 1:3,160 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Water Features

MAP INFORMATION

Streams and Canals

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Aerial Photography

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Farmland Classification

Farmland Classification— Summary by Map Unit — Lincoln County, South Dakota (SD083)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Ca	Chancellor-Tetonka silty clay loams	Prime farmland if drained	4.1	10.1%
Te	Tetonka silty clay loam	Prime farmland if drained	2.7	6.6%
WeA	Wentworth silty clay loam, 0 to 2 percent slopes	All areas are prime farmland	4.6	11.3%
WhA	Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes	Prime farmland if drained	29.5	72.0%
Totals for Area of Interest			**41.0**	**100.0%**

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower