Sparta Phosphorus Trading
Documentation Report

City of Sparta
Sparta, Wisconsin

September 2014

Prepared by:

Cedar Corporation
2820 Walton Commons West
Suite 142
Madison, WI  53718
September 29, 2014

Wisconsin Department of Natural Resources
ATTN: Julia Stephenson
West Central Region -- La Crosse
3550 Mormon Coulee Road
La Crosse, WI 54601

Dear Ms. Stephenson

RE: City of Sparta – Phosphorus Trading Documentation Report

On behalf of the City of Sparta, we are submitting the Phosphorus Trading Documentation Report requested in the conditional approval from Mike Vollrath dated, June 11, 2014, for the City’s water quality trading plan. The stream bank stabilization project along Farmers Valley Creek in Sparta was completed in June 2014. We are requesting your review and approval of this information to allow the City to receive official recognition of the phosphorus credits at the wastewater treatment facility.

I am also sending a complete submittal to Mike Vollrath and Amanda Minks to help coordinate the approval process. Please call me with any questions you may have at 608-354-0037.

Sincerely,

David K. Sauer, P.E.
Cedar Corporation

CC: Mark Flock, City of Sparta
    Mike Vollrath, WDNR Western District Head Quarters
    Amanda Minks, WDNR Madison Office
## Sparta Phosphorus Trading Documentation Report

### Distribution

<table>
<thead>
<tr>
<th>No. of Copies</th>
<th>Sent To</th>
</tr>
</thead>
</table>
| 1             | Julie Stephenson  
Wisconsin Department of Natural Resources  
West Central Region – La Crosse  
3550 Mormon Coulee Road  
La Crosse, WI  54601 | |
| 1             | Mike Vollrath  
WDNR  
1300 West Clairemont Avenue  
Eau Claire, WI  54701 | |
| 1             | Amanda Minks  
WDNR  
101 S Webster Street  
Madison, WI  53703 | |
| 1             | Mark Flock  
City of Sparta  
WW Plant Manager  
201 W. Oak Street  
Sparta, WI  54656 | |
| 1             | Lynn Jerome  
City of Sparta  
201 W. Oak Street  
Sparta, WI  54656 | |
| 1             | Todd Fahning  
City of Sparta  
201 W. Oak Street  
Sparta, WI  54656 | |
| 1             | Mark Sund  
City of Sparta  
201 W. Oak Street  
Sparta, WI  54656 | |
Bob Micheel
Monroe County Land Conservation Dept.
820 Industrial Drive, Suite 3
Sparta, WI 54656
Sparta Phosphorus Trading
Documentation Report

Project ID: S3680-0006

Prepared for
City of Sparta
204 W. Oak Street
Sparta, WI 54656

Prepared by
Cedar Corporation

September 2014

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2820 Walton Commons West, Suite 142, Madison, WI 53718 • www.cedercorp.com
Phone: (608) 354-0037 • Fax: (608) 249-5824

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Contents

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2  Water Quality Trading Agreement .................................................. 3
3  Phosphorus Credit Documentation ................................................. 4
4  Photo Documentation .................................................................. 5

Appendix

Appendix 1 – Phosphorus Soil Test Lab Results from June 23, 2014
Appendix 2 – As-Built Documentation Report from Monroe County Land Conservation District
Appendix 3 – Trade Ratio for Farmers Valley Creek from Trading Plan Dated June 2014
1 Operation and Maintenance Plan
Operation and Maintenance Plan
Streambank and Shoreline Protection

Cooperator: City of Sparta

By: Mark Flock

Project Location: Farmers Valley Creek between East Avenue and La Crosse River

Date: 9-11-14

Title: WWTF Superintendent

I agree to the following for the next ___ years (Perpetual)

1. Check the riprap, plantings, and/or tree revetments at least once each year and immediately after severe floods. Rock removed or displaced shall be replaced as needed. Replant any dead or damaged tree plantings. Repair or replace any damaged or missing revetments. Repair work shall take place during periods of low stream flow.

2. Logs, trees, driftwood, and other debris lodged in or near the riprap shall be removed.

3. Check for sloughing, erosion, or damage to vegetative cover. Damaged areas shall be graded, shaped, and re-vegetated as soon as possible.

4. If fences are installed, they shall be maintained to prevent unauthorized human or livestock access.

5. Immediately repair any vandalism, vehicle or livestock damage.

6. Eliminate access of foot traffic to the streambank within the buffer area with the exception of any designated pathway areas.

7. Eliminate all burrowing rodents and repair damage caused by them.

8. Additional Recommendations:

Cooperator's signature: Mark A. Flock

Date: 9/11/14

I have discussed the maintenance guidelines with the above cooperator.

Conservationist's signature: Bob Michael

Date: 9/11/14
2 Water Quality Trading Agreement
Appendix F. Example Trade Agreement for Point to Nonpoint Source Trades

Notice

This is an example agreement and should be amended to meet the needs and conditions of the specific agreement. The Department does not require final trade agreements to be submitted with the trading plan. However, those documents must be presented upon request by the Department.

Permittee Information

Credit User Name (Permittee)  
City of Sparta

Permit Number  
WI-0020737-09-01

Credit User Address  
805 Richgruber Road, Sparta, WI 54656

Permittee/Broker/Exchange Name (if applicable)  
City of Sparta

Trade Agreement Number

Permittee/Broker/Exchange Address (if applicable)

Street Address  
201 W. Oak Street

City  
Sparta

State  
WI

ZIP Code  
54656

Project Name  
Farmers Valley Creek Stream Bank Stabilization Project

Name of Credit Generator (Lendowner/Operator) (Last, First, M.I.)

City of Sparta

Street Address  
201 W. Oak Street

City  
Sparta

State  
WI

ZIP Code  
54656

Property Information

Name of Landowner(s) (if not Operator) (Last, First, M.I.)

Street Address

Legal Description of Property - Contiguous sites under the same ownership: (add additional sheets if necessary)

660 linear feet of stream bank on Farmers Valley Creek located between East Avenue Bridge and La Crosse River, all located with Sparta City Park

Parcel ID(s):  
281001820000

Site Locator for Construction Projects

<table>
<thead>
<tr>
<th>County</th>
<th>Township</th>
<th>Range</th>
<th>E/W</th>
<th>Section</th>
<th>Quarter/Quarter (e.g., NW ¼ of the NE ¼)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monroe</td>
<td>17 N</td>
<td>4W</td>
<td>24</td>
<td></td>
<td>NE 1/4 of the NW 1/4</td>
</tr>
</tbody>
</table>

Agreement

The property described above is enrolled in a Water Quality Trade Agreement. Funds are provided to the landowner/operator in return for the installation, operation and maintenance of best management practices (BMPs) designed to enhance water quality. This agreement commits the landowner/operator, their heirs, successors and assigns to fulfill the trade agreement until a satisfaction or release is filed by the grantee.

Addenda which describe the BMPs, costs, installation schedule, and conditions are hereby incorporated into this agreement and are on file with the grantee and may be given to Wisconsin DNR upon request by the Department.
Landowner/Operator

Signed this __________ day of ____________________________, 2014

Signature of Landowner/Operator

Mark D. Sinz

Typed Name of Landowner/Operator

Signature of Landowner/Operator

Typed Name of Landowner/Operator

STATE OF WISCONSIN

Monroe County

Personally came before me this 26th day of September, 2014.

The above named Mark D. Sinz to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Julie A. Hanson

Signature of Notary Public

Typed Name of Notary Public

Monroe County, Wisconsin

Notary Public

My commission (is permanent) (expires 3-31-17).

Landowners (if not operator)

If the landowner section is not completed, check (X) one or both of the following that apply

☐ Landowner is also operator

☒ Trade agreement contains only high residue management, nutrient management, pesticide management, cover crop (green manure)

Signed this __________ day of ____________________________, 2014

Signature of Landowner (if not operator)

Typed Name of Landowner (if not operator)

STATE OF WISCONSIN

Monroe County

Personally came before me this __________ day of ____________________________, 2014.

The above named _______________ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Julie A. Hanson

Signature of Notary Public

Typed Name of Notary Public

Monroe County, Wisconsin

Notary Public

My commission (is permanent) (expires ____________________________).

Credit user/broker/exchange

Mark A. Flock

Signature of credit user/broker/exchange

Mark A. Flock

Typed Name of credit user/broker/exchange

STATE OF WISCONSIN

Monroe County

Personally came before me this 26th day of September, 2014.

The above named Mark A. Flock to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Julie A. Hanson

Signature of Notary Public

Typed Name of Notary Public

Monroe County, Wisconsin

Notary Public

My commission (is permanent) (expires 3-31-17).
STATE OF WISCONSIN

Dane County

Personally came before me this 25th day of September, 2014.

The above named David K. Sauer to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

Dane County, Wisconsin

My commission (is permanent) (expires August 18, 2019).

STATE OF WISCONSIN

________ County

Personally came before me this _______ day of __________________________, 20___.

The above named _____________________________ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

________ County, Wisconsin

My commission (is permanent) (expires ___________).
Section A – General Requirements
Example:
A 1. This agreement may be amended by mutual agreement of either party, so long as the agreement has not yet expired.
A 2. If a significant archeological or historical site is found, construction is to cease immediately and the BMP will be relocated, redesigned, or deleted to prevent damage to the archeological or historical site. The BMP may be deleted only if approved in writing by the Department of Natural Resources.

Section B – Landowner/Operator Shall:
Example:
B 1. Design, install, operate and maintain BMPs listed in Addendum 2 of this agreement.
B 2. Allow access to the installed BMP by the grantee, or an authorized representative of the grantee for site inspection of the BMP for installation, operation and maintenance.

Section C – Grantee Shall:
Example:
C 1. Provide cost sharing to the landowner/operator consistent with Addendum 2.
C 2. Make cost-share payments to the landowner/operator after payment is requested and evidence of contractor payment by the landowner/operator has been received, and the grantee verifies proper BMP installation.

<table>
<thead>
<tr>
<th>TA Number</th>
<th>Typed Name of Landowner/Operator</th>
<th>City of Sparta</th>
<th>Initials of Landowner/Operator</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>MDS</td>
<td>7/20/14</td>
</tr>
</tbody>
</table>
The cost-share recipient shall implement and maintain all best management practices listed in this Addendum, unless otherwise amended in accordance with this agreement.

<table>
<thead>
<tr>
<th>Field #</th>
<th>DNR BMP Code</th>
<th>Practice Name</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Cost</th>
<th>Estimated Total Cost</th>
<th>Reimbursement Rate (%)</th>
<th>Estimated Cost-Share Amt.</th>
<th>Cost-Share Amt. From Other Programs*</th>
<th>Estimated Year to be Installed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Stream Bank Stabilization</td>
<td>600</td>
<td>LF</td>
<td>22.40</td>
<td>14,766.85</td>
<td>52</td>
<td>7,220.31</td>
<td>7,866.54</td>
<td>2014</td>
</tr>
</tbody>
</table>

* Identify Program Names: See Attached

TOTALS: 14,786.85 52 7,220.31 7,866.54 2014

CSA Number: Typd Name of Landowner/Operator: City of Sparta

Initials of Landowner/Operator: Date: 9/26/14
3 Phosphorus Credit Documentation
Farmers Valley Creek – Sparta
Verification Information for Existing Stream Bank Heights
September 2014

North Side of Stream Bank – 330 LF

<table>
<thead>
<tr>
<th>Description</th>
<th>Length (ft.)</th>
<th>Height (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>La Crosse R to East</td>
<td>140</td>
<td>5</td>
</tr>
<tr>
<td>East 1 to East</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>East 2 to East</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>East 3 to East</td>
<td>40</td>
<td>7</td>
</tr>
<tr>
<td>East 4 to East</td>
<td>70</td>
<td>8</td>
</tr>
<tr>
<td>East 5 to East Ave. Bridge</td>
<td>20</td>
<td>10</td>
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</table>

Weighted average bank height – 6.7 ft

South Side of Stream – 330 LF

<table>
<thead>
<tr>
<th>Description</th>
<th>Length (ft.)</th>
<th>Height (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>La Crosse R to East</td>
<td>120</td>
<td>3</td>
</tr>
<tr>
<td>East 1 to East Ave. Bridge</td>
<td>210</td>
<td>4</td>
</tr>
</tbody>
</table>

Weighted average bank height – 3.6 ft.

Average stream bank height = \( \frac{6.7 + 3.6}{2} = 5.15 \) ft.

Additional Information

A. This information was documented on a site visit on June 13, 2014 by Dave Sauer, Cedar Corporation.

B. Construction began June 12, 2014 and was completed by June 27, 2014.

C. Soil samples were taken by Bob Micheel, Monroe County LCD on approximately June 13, 2014 by taking a number of individual grab samples and combining them into one large composite soil sample. This large soil sample was taken for lab testing.
Farmers Valley Creek – Sparta
Calculation of Soil Loss, Phosphorus Loss, Phosphorus Credit
September 2014

A. Reference Information:

1. DNR formula stream bank loss in tons/year = length x height x annual lateral recession
   \[\frac{20}{20}\]

2. Soil and Plant Analysis Lab Test – June 23, 2014 sample
   Total Phosphorus – 0.03% (based on 2 tests from one sample)

3. Calculated trade ratio = 2:1

B. Calculation(s)

Soil loss = \(\frac{660 \times 5.15 \times 0.5}{20}\) = 1699.5 tons/year (assumes 100 lbs/CF for soil)

Phosphorus Loss = 1699.5 \times 0.03 = 51 lb/year

Phosphorus Loss per 100 LF = 7.7 lb

Phosphorus Point Credit at WWTF = \(\frac{51}{2}\) = 25.5 lb/year
4 Photo Documentation
Sparta, WI
Farmers Valley Creek
Lunker, Flat Limestone Construction Practice
6-13-14

Sparta, WI
Farmers Valley Creek
Stabilized/Finished Section (Looking Downstream, At Where Creek Enters The La Crosse River)
6-13-14
Sparta, WI
Farmers Valley Creek
Stabilized/Finished Section (Looking Upstream Lunker on Left Side of Stream Bank)
6-13-14

Sparta, WI
Farmers Valley Creek
Stabilized/Finished Section (Looking Upstream at North Bank, Lunker Under Flat Limestone at Streambank)
6-13-14
Sparta, WI
Farmers Valley Creek
Stabilized/Finished Section (Looking Across Stream 50' From La Crosse River)
6-16-14
Sparta, WI
Farmers Valley Creek
Stabilized/Finished Section (Looking At North Bank 100' From La Crosse River)
6-16-14

Sparta, WI
Farmers Valley Creek
Stabilized/Finished Section (Looking Across Stream, 150' From La Crosse River)
6-16-14
Sparta, WI
Farmers Valley Creek
Stabilized/Finished Section (Looking Downstream, 225' From La Crosse River)
6-16-14

Sparta, WI
Farmers Valley Creek
Stream Bank Under Construction (Looking Upstream, 225' From La Crosse River)
6-16-14
City of Sparta
Farmers Valley Creek
July 2014

Looking South Or Cross Section From Where Project Work Started

Looking Downstream 50' From Where Project Work Started
Looking Upstream 50' From Where Project Work Start Point

Looking South Or Cross Section 50' From Where Project Work Started
City of Sparta
Farmers Valley Creek
July 2014

Lunker Structure Along South Bank At Project Start Location

Looking Upstream 100' From Project Work Start Point
City of Sparta
Farmers Valley Creek
July 2014

Looking Upstream 100' From Project Work Start Point

Looking Downstream 100' From Project Work Start Point
Looking South (Cross Section) 100' From Project Start Point
City of Sparta
Farmers Valley Creek
July 2014

Looking South (Cross Section) 150' From Project Start Point

Looking Upstream 150' From Project Start Point
City of Sparta
Farmers Valley Creek
July 2014

Looking Downstream 150' From Project Start Point

Looking Upstream 200' From Project Start Point
City of Sparta
Farmers Valley Creek
July 2014

Looking Upstream 250' From Project Start Point

Looking Downstream 250' From Project Start Point
City of Sparta
Farmers Valley Creek
July 2014

Looking Downstream 300' From Project Start Point
(Entry Into La Crosse River)

Looking South (Cross Section) 300' From Project Start Point
Appendix 1 – Phosphorus Soil Test Lab Results from June 23, 2014
From: UW Soil and Plant Analysis Lab <soil-lab@mailplus.wisc.edu>
Sent: Monday, June 23, 2014 12:10 PM
To: Dave Sauer
Subject: Sample Confirmation

*** This is an automated message, replies will not be answered. Please call us at (608) 262-4364 if you need additional information. ***

This message is to notify you that we have received the 2 sample(s) you have submitted for analysis. For your reference, the lab number for your sample set is 6452.

Based on the analyses you have requested and the current volume of samples in our queue, we expect your results to be delivered on 7/2/14, plus or minus two business days. If your results are not delivered on time, please contact our Lab Manager with your questions at (608)262-4364 ext. 1112.

You can check the status of your samples and view reports as they become available by clicking or copying the following URL into your web browser: http://uwlab.soils.wisc.edu/test-status/?loc=A&lab=6452&labyear=2014&key=umzloBdhisvmCZ1b97pMOrWKWBraNrx9

Sincerely,

University of Wisconsin Soil and Plant Analysis Laboratory Staff
Re: 2 samples run from 1 original soil sample, received June 23, 2014
Results emailed: June 27, 2014

Results reported on a ‘dry weight’ basis. Unit: 1,000 ppb = ppm = mg/kg = mg/liter. 1% = 10,000 ppm.

The UW Soil & Plant Analysis Lab Standard Operation Procedures of ICP-OES/MS are available from the following links:
http://uwlabs.soils.wisc.edu/files/procedures/animal_icp.pdf

## ELEMENTAL ANALYSIS- TOTAL MINERALS

<table>
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<tr>
<th>Sample ID</th>
<th>P</th>
<th>K</th>
<th>Ca</th>
<th>Mg</th>
<th>S</th>
<th>Zn</th>
<th>B</th>
<th>Mn</th>
<th>Fe</th>
<th>Cu</th>
<th>Al</th>
<th>Na</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.03</td>
<td>0.07</td>
<td>0.12</td>
<td>0.09</td>
<td>0.01</td>
<td>26.28</td>
<td>5.80</td>
<td>190.54</td>
<td>5862.4</td>
<td>4.09</td>
<td>4813.3</td>
<td>34.6</td>
</tr>
<tr>
<td>2</td>
<td>0.03</td>
<td>0.07</td>
<td>0.11</td>
<td>0.08</td>
<td>0.01</td>
<td>25.87</td>
<td>4.86</td>
<td>167.15</td>
<td>5421.7</td>
<td>2.06</td>
<td>4285.9</td>
<td>26.2</td>
</tr>
</tbody>
</table>
Appendix 2 – As-Built Documentation Report for Monroe County
Land Conservation District
Dave Sauer

From: Bob Micheel <Bob.Micheel@co.monroe.wi.us>
Sent: Tuesday, July 29, 2014 12:05 PM
To: Dave Sauer
Subject: FW: 20140729112738490.pdf
Attachments: 20140729112738490.pdf

Dave,

Attached the city of Sparta As-Build approval cover sheet for the Farmers Valley Creek project.

Let me know if you need anything else.

Bob

CONFIDENTIALITY NOTICE: This message and any included attachments are from Monroe County, Wisconsin and are for the sole use of the intended recipient(s). This message may contain confidential and privileged information. Unauthorized review, use, disclosure or distribution is strictly prohibited and may be unlawful. If you are not the intended recipient, please promptly delete this message and notify the sender of the delivery error by e-mail or you may call Monroe County at (608) 269-8696.
(Farmers Valley Creek)
(Cost-Share Payment Schedule)

Landowner: City of Sparta  
Date: 7/29/2014

<table>
<thead>
<tr>
<th>Project:</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Riprap (Gerke)</td>
<td>$ 2,891.65</td>
</tr>
<tr>
<td>2.) Riprap (Antony's)</td>
<td>$ 2,941.50</td>
</tr>
<tr>
<td>3.) Installation (Holtz)</td>
<td>$ 8,878.81</td>
</tr>
<tr>
<td>4.) quarter Logs (Larson)</td>
<td>$ 48.00</td>
</tr>
<tr>
<td>5.) Bolts</td>
<td>$ 26.89</td>
</tr>
</tbody>
</table>

Total Cost = $ 14,786.85

---

### Partner Contribution

<table>
<thead>
<tr>
<th>Group</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) USFW</td>
<td>$ 2,891.65</td>
</tr>
<tr>
<td>2.) LCD</td>
<td>$ 74.89</td>
</tr>
<tr>
<td>3.) Oak Brook TU</td>
<td>$ 3,600.00</td>
</tr>
<tr>
<td>4.) Coulee Chapter TU</td>
<td>$ 500.000</td>
</tr>
<tr>
<td>5.)</td>
<td></td>
</tr>
</tbody>
</table>

Total = $ 7,066.54

---

### Unit Cost

<table>
<thead>
<tr>
<th>Project:</th>
<th>Cost</th>
<th>Installed</th>
<th>Rate/Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Stream Restoration</td>
<td>$ 14,786.85</td>
<td>660'</td>
<td>$ 22.40</td>
</tr>
<tr>
<td>2.)</td>
<td>-</td>
<td>18%</td>
<td>-</td>
</tr>
<tr>
<td>3.)</td>
<td>-</td>
<td>15%</td>
<td>-</td>
</tr>
<tr>
<td>4.)</td>
<td>-</td>
<td>0%</td>
<td>-</td>
</tr>
<tr>
<td>5.)</td>
<td>-</td>
<td>0%</td>
<td>-</td>
</tr>
</tbody>
</table>

Total =

---

### Total Amount Cost Shared

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Amount Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partners</td>
<td>$ 7,066.54</td>
</tr>
<tr>
<td>City of Sparta</td>
<td>$ 7,720.31</td>
</tr>
<tr>
<td></td>
<td>$</td>
</tr>
</tbody>
</table>

Total = $ 14,786.85
CONSTRUCTION PLAN

PRACTICE Stream Restoration

LANDOWNER City of Sparta

ADDRESS 1000 E. Montgomery St., Sparta, WI 54656

LANDOWNER PHONE NO. 608.269.6322 COUNTY Monroe

TOWNSHIP Sparta T 17 N, R 4 E/W Sec. 24

FIELD OFFICE Sparta TELEPHONE NO. 608.269.8975

DIGGERS HOTLINE

Call 3 Work Days Before You Dig!

Nationwide 811

Toll Free 1-800-242-4511

TOD 1-800-542-2299

Website www.diggershotline.com

NOTICE TO LANDOWNERS AND EXCAVATORS

Any representation made by the USDA, Natural Resources Conservation Service, or the Monroe County LCD, as to the approximate location or nonexistence of above or underground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities.

Call Diggers Hotline Ticket Number

CONSTRUCTION DRAWINGS AND SPECIFICATIONS ACCEPTANCE

I have reviewed and understand the construction plans and specifications and agree to complete the work accordingly. Failure to meet these plans and specifications may jeopardize any continued NRCS technical assistance or program cost sharing applied for. I understand that it is my responsibility to secure all necessary permits and licenses, and to complete the work in accordance with all local, state, and federal laws.

Modification of these construction plans or specifications must be approved by the NRCS before installation.

I assume all responsibility for negotiations and contract agreements with the construction contractors.

Signed: Bob Michael Date: 7-27-13

Designed by: Bob Michael Date: 7-22-13

Checked by: Dan Gunderson Date: 7-11-13

Approved by: Bob Michael Date: 7-14-13

The final practices comply with applicable NRCS technical standards and specifications. The "as-built" construction plans (as-built drawings) reflect changes made during construction.

Construction Approved by: Bob Michael Date: 7-16-14

Job Approval Class III

Sheet 1 of 9
<table>
<thead>
<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>SHEET NUMBER</th>
<th>WI. CONSTRUCTION SPEC. OR JOB SHEET NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riprap</td>
<td>Lin. Ft.</td>
<td>660</td>
<td>4,5</td>
<td>WI. SPEC. 9</td>
</tr>
<tr>
<td>Rock/Log Weirs</td>
<td>No.</td>
<td>3</td>
<td>4,8</td>
<td>WI. SPEC. 9</td>
</tr>
<tr>
<td>LUNKERS</td>
<td>No.</td>
<td>10</td>
<td>4,6,7</td>
<td></td>
</tr>
<tr>
<td>Seeding &amp; Mulching</td>
<td>Acre</td>
<td>0.5</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Clearing</td>
<td>Job</td>
<td>1</td>
<td>4</td>
<td>WI. SPEC. 1</td>
</tr>
<tr>
<td>Concrete Required</td>
<td>Sq. Ft.</td>
<td>300</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Quantities are estimated to the neat lines and grades of in-place materials shown on the construction plan unless otherwise stated. Truck yardage, loose fill, shrinkage, etc., must be calculated and compensated for by the contractor preparing a bid or constructing the project.

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

ESTIMATED QUANTITIES

CLIENT: City of Sparta
COUNTY: Monroe

Designed: BAM 7/13
Drawn: 5/9
Checked: 5/9 7/13
Approved: 7/13

Drawing Name: WI-005

Sheet 2 of 2
Appendix 3 – Trade Ratio for Farmers Valley Creek from Trading Plan Dated June 2014
Sparta Water Quality Trading Plan

Project ID: S3680-0006

Prepared for
City of Sparta
204 W. Oak Street
Sparta, WI 54656

Prepared by
Cedar Corporation

June 2014

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4 Trade Ratios for Proposed Projects

4.1 Stream Bank Stabilization Projects

It is understood that trade ratios will need to be calculated for each proposed stream bank stabilization project. The trade ratio calculation takes in several factors as outlined in the WDNR Water Quality Trading Guidance Document dated August 2013. For Sparta, the basis of the trading ratio is to meet non-TMDL WQBELs. The trade ratio = (Delivery + Downstream + Equivalency + Uncertainty – Habitat Adjustment): 1.

Table 1 shows the proposed list of stream bank stabilization projects for Sparta. Table 1 also lists a proposed time line for the projects. The projects of particular interest are the ones planned to be completed in 2014. Trade ratios for the 2014 projects follow. It is planned that trade ratios for the remaining stream bank stabilization projects will be submitted for approval when those projects are more clearly defined.

For the Farmers Valley Creek stream bank improvements, the trade ratio is dependent upon the “Delivery Factor” since it is located in an upstream HUC 12 and the “Uncertainty Factor”. Refer to Figure 2 and Figure 3 for the HUC 12 watersheds. Using the SPARROW delivery fraction for this area of 1.01 and using the Delivery Factor formula of Delivery Factor = (1/SPARROW delivery fraction) – 1, the Delivery Factor is 0. For the “Uncertainty Factor”, reference is made to Table 4 in the WDNR Guidance Document for stream bank stabilization with aquatic habitat restoration. This table lists the Uncertainty Factor as 2. Since this improvement is upstream from the WWTF discharge, the downstream factor is 0. The Equivalency Factor for phosphorus is also 0. The calculated trade ratio for this project location is therefore 2:1. Reference is made to Appendix 5 for the SPARROW information used for this project.

For the La Crosse River stream bank improvements along the golf course, the trade ratio simplifies by using a SPARROW delivery fraction of 1.01 to account for the lake between the credit generator and the credit user and an Uncertainty Factor of 2 from Table 4 in the WDNR Guidance Document. The calculated trade ratio for this project is therefore 2:1.

4.2 Silt Trap Dredging of Perch Lake

Since the proposed location of the project is upstream from the WWTF discharge to the La Crosse River, the trade ratio appears to simplify to using the “Uncertainty Factor” from Table 4 in the WDNR Guidance Document. The Uncertainty Factor for this project is 2. The trade ratio is therefore 2:1.