ENVIRONMENTAL MANAGEMENT SYSTEM
Project Financial Assistance Form

SECTION 1 – Applicant Identification Information

Application Date: 11-01-19
Applicant (EMS participant): Cedar Rapids Linn County Solid Waste Agency
Contact Person: Joe Horaney
Mailing Address: 1954 County Home Road, Marion, IA 52302
Telephone: 319-377-5290 Email: jhoraney@solidwasteagency.org

SECTION 2 – Project Proposal (30 points)

1. **Project Title** Indian Creek Bioreactor & Wetlands Project
2. **Total DNR $ Grant Assistance Requested:** 24,999

3. **Project Information**
   - Check EMS Component Area(s) this project is associated with
     - ☐ Organics Waste Management
     - ☐ Household Hazardous Waste Collection
     - ☒ Water Quality Improvement
     - ☐ Greenhouse Gas Reduction
     - ☐ Recycling
     - ☒ Environmental Education

4. **Describe the project (short narrative) and fill out the Task/Activity information below.**
The Cedar Rapids Linn County Solid Waste Agency (Agency) owns adjacent cropland that acts as a buffer to its Site 2 Marion location, where a landfill and resource recovery facility are located. Indian Creek, a priority stream, runs through the property. This project will include installation of a denitrifying wetland, denitrifying bioreactor and filter strip to reduce nutrients entering the stream, to improve wildlife habitat, and be a demonstration site for best management practices. The expected size of the wetland: 5.7 acre wetland and buffer; 1.1 acre filter strip (60ft wide). The bioreactor will treat 92 acres. The wetland will treat 92 acres (separate watersheds).

5. **Identify how this project is directly tied to one or more Component Area.**
Water Quality Improvement: Indian Creek is listed on Iowa's 303(d) impaired waters list due to pathogens and degraded habitat for aquatic life. The wetland, bioreactor, and filterstrip will reduce nitrates, phosphorus, and sediment that enters the stream. Environmental education: The site will act as a demonstration site for best management practices for water quality. The Agency's Education Director will feature the project during tours and presentations given throughout Linn County (more than 14,000 people have been reached through tours and visits to schools and groups in calendar year 2019 so far). The Agency will also host field days for farmers, landowners, and contractors highlighting the beneficials uses of the wetland and bioreactor to hopefully spur their use at other locations. Pictures of the wetlands and bioreactor will be posted on the Agency's Facebook page and used in presentations about Agency activities beyond landfilling and recycling.

6. **List Project Tasks or Activities planned with tentative information:**

Task or Activity	Planned Begin Date	Planned End Date	Responsible Party
Design Bioreactor	Pending grant approval	4-01-20	NRCS, Emery Davis
Design Wetlands	Pending grant approval	4-01-20	NRCS, Emery Davis
Construct bioreactor	4-01-20 (weather permitting)	4-30-20	Davis, contractor
Construct wetlands	4-01-20 (weather permitting)	4-30-20	Davis, contractor

SECTION 3 – Project Impact & Monitoring (40 points)

7. **Project Impact**
   a. **Identify the potential long and short term environmental impacts of the project. If the project will take place inside the facility "fenceline", identify how it will benefit the planning/service area such as residents and businesses. Examples may include: An on-site project to provide access to recycling could divert waste from the landfill, improving recycling access for planning area residents. This is where you should "make your case" for this project.**

   The Solid Waste Agency is and will be using several best management practices outlined in the Nutrient Reduction Strategey for reducing nutrient loss. Several of these practices are management practices that do not require funding such as no-till and cover crops. Practices already completed on site include waterways and riparian buffers. Completion of a denitrifying wetland and denitrifying bioreactor and filter strip will make this farm a showcase of best management practices while keeping the farm in production. This will have short term benefits to the stream by reducing nutrients and long term benefits to the community who will, hopefully, follow suit to do all that they can to help protect Linn County streams.

   b. **List any partnerships that have been secured for this project and the potential benefits resulting from those partnerships.**

   Working with the Agency on this project will be: the Indian Creek Watershed Management Authority, the Natural Resources Conservation Service (NRCS), the Linn County Soil and Water Conservation District, Coe College Water Quality Lab, East Central Iowa Council of Governments. Benefits include technical assistance, design, water quality monitoring. The project will also serve as a showcase and an example of the benefits these designs can have environmentally. Emery Davis will be the lead on the project. Davis is the Soil Health Coordinator for the Linn County Soil Conservation Department. He coordinates and works closely with the Indian Creek Watershed Management Authority and NRCS as part of the Indian Creek Soil Health Partnership Project. His position is funded with a $306,500 grant from the U.S. Department of Agriculture's Natural Resources Conservation Service Iowa Partners for Conservation program, along with money from the Indian Creek Watershed Management Authority and Linn County Conservation. That funding allows him to lead the Agency's project. Coe College's support also provides tremendous value. Water quality monitoring by Coe will take place four times yearly, with an estimated worth of $7,776. Other sampling will include fourteen weeks of analyzing nitrates and dissolved reactive phosphorus, sampling worth $1,944 that Coe will do as part of the partnership for no charge. Survey and design work by NRCS is worth an esitmated $38,000.

   c. **Identify how the project will be monitored for continuous improvement. Note if metrics be utilized and how results might be shared with others such as staff, a board of directors and the public.**

Coe College Water Quality Lab will conduct water quality tests. The results will be the metric. Bioreactors have shown as average effectiveness of 43% and wetlands a rate of 52% nitrate-N load reduction. Further detail on the metrics is contained in answer to 8B.

SECTION 4 – Project Budget & Sustainability (30 points)

8. Sustainability and Budget. There are three (3) parts to this section. Each will help the review committee better understand the overall costs of the project.

Budget Item	EMS $ Assistance Request	Local Share – Cash*	Total
Earthwork & Installation	17,348	5,783	23,130
Drains	7,651	5,340	12,990
Seeding		3,290	3,290
TOTALS:	24,999	$ 14413	$ 39,412

*Note: There must be a minimum 25% cash match, which is calculated on the **Total** for each budget line item in which EMS financial assistance is requested.
Provide at least three (3) quotes or estimates for each type of item to be purchased. If three quotes are not secured, please provide a reason in the narrative below.

Totals: EMS Project Funding Information:

Amount of Financial Assistance Requested: $24,999

Amount of Matching Cash Funds: $14,413

Total Estimated Project(s) Cost: $39,412

A. **Provide a detailed budget narrative related to this project and specify how funds from the EMS Grant Program will be used. Provide information regarding who will own the property that will be purchased if it will not be the grantee.**
Preliminary cost estimates for a denitrifying bioreactor and wetland for treatment of subsurface drainage discharge are attached.

B. **Estimate the environmental benefit or benefit compared to the cost if information is available. For example: purchase of a trailer to divert cardboard from the landfill. Opportunities: cost of trailer, cardboard airspace (estimated cubic yards), cardboard tons (estimated), and EPA's Warm Model information on greenhouse gas reduction based on tons recycled.**
Reducing the amount of nitrates in waterways is an extremely important issue in regards to environmental safety and stewardship. By addressing the issue using bioreactors and wetlands, the cost down the road will be lessened by addressing the problem before it is created. Healthy, clean waterways are invaluable in Iowa and everywhere. These are goals for this project: Baseline assumptions: 92 acres of 100% corn-soybean rotation with 160 lbs of commercial N per acre applied in fall on 50 acres and 160 applied in the spring on the remaining 42 acres. No other conservation practices or rotations and it is assumed 100% tile drained. This results in 33 lbs per acre nitrate-N loss at a concentration of 12.35 mg/L.

With a bioreactor installed to treat all 92 acres, the estimated nitrate loss would be 19 lbs per acre at a concentration of 7.11 mg/L.

A wetland installed to treat all 92 acres would result in 15.97 lbs/ac nitrate loss at a concentration of 5.93 mg/L.

C. **Identify how the project will be supported financially now and in the future after project funds are expended. Costs may include but are not limited to labor, upkeep of equipment and systems, and technology, such as updates after web-sites are completed.**
The Agency will take care of the project and support it fanancially after EMS funds have been used. The Coe College monitoring is done for no charge. Wetland maintenace will be minimal after construction. The Agency will replace wood chips in the bioreactor using wood chips produced at the Agency's compost facility. This will be done once a decade at an estimated cost of $15,000.

Please Note:
Ineligible costs: Financial assistance shall not be provided or used for costs including, but not limited to, the following:

1. Taxes.
2. Vehicle registration.
3. Legal costs.
4. Contingency funds.
5. Proposal preparation.
6. Contractual project administration.
7. Land acquisition.
8. Office furniture, office computers, fax machines and other office furnishings and equipment.
9. Costs for which payment has been or will be received under another federal, state or private financial assistance program.
10. Costs incurred before a written agreement between the applicant and the department has been executed.
11. Passenger vehicles

For information about EMS project applications that have not been funded in the past, contact Becky Jolly: becky.jolly@dnr.iowa.gov or 515-725-8308.

SECTION 5 – Signature

I affirm the information provided on this Application is true, and that I will provide all other information requested for further substantiation. I agree that if awarded financial assistance for a project(s), I will execute the contract the DNR provides for conveying those funds, which contract will include but not be limited to conditions for expending those funds, and for making reasonable accounting of those expenditures and matching funds or in-kind expenses.

In order to determine funding eligibility, the Department reserves the right to verify any information presented in the application and to determine the applicant's compliance status with applicable Local, State and Federal statutes and regulations. If an applicant is selected to receive financial assistance, an offer of financial assistance may be rescinded if the applicant is determined to be out of compliance with applicable Local, State and Federal regulations.

Joe Holaney, Communications Director — **Signature, Title**

11-01-19 — **Date**

Note: Applications may be emailed, but a signed copy (electronically, scanned or original) must be on file at DNR.

SECTION 6 – Forms

New: Include signed copies of required forms with your application. Forms may be found on the EMS website: http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Waste-Planning-Recycling/Solid-Waste-EMS/EMS-Participants

- W-9 Form
- Minority Impact Statement

Minority Impact Statement

Pursuant to 2008 Iowa Acts, HF 2393, Iowa Code Section 8.11, all grant applications submitted to the State of Iowa which are due beginning January 1, 2009 shall include a Minority Impact Statement. This is the state's mechanism to require grant applicants to consider the potential impact of the grant project's proposed programs or policies on minority groups.

Please choose the statement(s) that pertains to this grant application. Complete all the information requested for the chosen statement(s).

☐ The proposed grant project programs or policies could have a disproportionate or unique **positive** impact on minority persons.

Describe the positive impact expected from this project

Indicate which group is impacted:

___ Women
___ Persons with a Disability
___ Blacks
___ Latinos
___ Asians
___ Pacific Islanders
___ American Indians
___ Alaskan Native Americans
___ Other

☐ The proposed grant project programs or policies could have a disproportionate or unique **negative** impact on minority persons.

Describe the negative impact expected from this project

Present the rationale for the existence of the proposed program or policy.

Provide evidence of consultation of representatives of the minority groups impacted.

Indicate which group is impacted:

___ Women
___ Persons with a Disability
___ Blacks
___ Latinos
___ Asians
___ Pacific Islanders
___ American Indians
___ Alaskan Native Americans
___ Other

☑ The proposed grant project programs or policies are **not expected to have** a disproportionate or unique impact on minority persons.

Present the rationale for determining no impact.

I hereby certify that the information on this form is complete and accurate, to the best of my knowledge:
Name: Joe Heaney
Title: Communication Director

Definitions

"Minority Persons", as defined in Iowa Code Section 8.11, mean individuals who are women, persons with a disability, Blacks, Latinos, Asians or Pacific Islanders, American Indians, and Alaskan Native Americans.

"Disability", as defined in Iowa Code Section 15.102, subsection 5. paragraph "b", subparagraph (1):
b. As used in this subsection:

(1) *"Disability"* means, with respect to an individual, a physical or mental impairment that substantially limits one or more of the major life activities of the individual, a record of physical or mental impairment that substantially limits one or more of the major life activities of the individual, or being regarded as an individual with a physical or mental impairment that substantially limits one or more of the major life activities of the individual.

"Disability" does not include any of the following:

(a) Homosexuality or bisexuality.

(b) Transvestism, transsexualism, pedophilia, exhibitionism, voyeurism, gender identity disorders not resulting from physical impairments or other sexual behavior disorders.

(c) Compulsive gambling, kleptomania, or pyromania.

(d) Psychoactive substance abuse disorders resulting from current illegal use of drugs.

"State Agency", as defined in Iowa Code Section 8.11, means a department, board, bureau, commission, or other agency or authority of the State of Iowa.

Solid Waste Agency

Cedar Rapids • Linn County

Minority Impact Statement Rationale

The Cedar Rapids Linn County Solid Waste Agency's proposed grant project, "Indian Creek Bioreactor & Wetlands Project," is not expected to have a disproportionate or unique impact on minority persons. The reason being the positive environmental benefits that will result from the bioreactor and wetlands will be enjoyed by all persons living along Indian Creek as it runs through Linn County, regardless of status.

Sincerely,

Joe Horaney
Communications Director
Cedar Rapids/Linn County Solid Waste Agency

Landowner Cedar Rapids/Linn county Solid Waste Tract. No 10664
Location NE1/4 Section 17 T.84N. - R.6W.
Township Marion Watershed Linn county

Date: 09/27/19 By: Jeff A. Lutz
Date: Checked By:

Preliminary COST ESTIMATE

Denitrifying Bioreactor

EARTHWORK & INSTALLATION

360 cubic yards excavating for denitrifying bioreactor
price in $/ cubic yard $3.50 cost $1,260.00

120 feet shaping surface drainage from biore 70 cu. Yds.
price in $/foot $ 2.00 cost $ 240.00

320 cubic yards wood chips for bioreactor amendment delivered
price in $/cubic yard $ 15.00 cost $ 4,800.00

400 square yards plastic liner 4 mils delivered
price in $/square yard $ 0.75 cost $ 300.00

280 square yards geotextile, nonwoven class III delivered
price in $/square yard $ 2.00 cost $ 560.00

4 hours labor to place plastic liner, laying and connecting distribution and collection manifold lines, leveling and mounding wood chips, placing goetextile fabric
price in $/hour $ 25.00 cost $ 100.00

5 hours machine time: placing wood chips; placing soil over geotextile
price in $/hour $ 200.00 cost $ 1,000.00

EARTHWORK & INSTALLATION TOTAL ESTIMATE $8,260.00

SEEDING

0.2 acres Seeded and fertilized
price in $/acre $ 400.00 cost $ 80.00

SUBSURFACE DRAIN

2	number	water control structure: 6 ft. height, 8" x 10" with 6" conduit size delivered and installed	price in $/each $1,900.00	cost $ 3,800.00
0	feet	5" nonperforated plastic tubing installed	price in $/foot $ 1.75	cost $ -
130	feet	6" PVC schedule 40 pipe installed	price in $/foot $ 9.00	cost $ 1,170.00
205	feet	6" nonperforated plastic tubing installed	price in $/foot $ 2.25	cost $ 461.25
44	feet	6" perforated plastic tubing installed	price in $/foot $ 2.25	cost $ 99.00
0	feet	Outlet tube installed with rodent guard (size: 8")	price in $/foot $ 15.00	cost $ -
	cubic yards	earthwork: mounding over shallow tile for cover (8' top width; 3:1 side slopes)	price in $/cubic yards $ 3.50	cost $ -
0	hours	backhoe time: locating and removal	price in $/hour $ 125.00	cost $ -
		Miscellaneous (tees, junctions, connections, etc.)		cost $ 329.75

SUBSURFACE DRAIN TOTAL ESTIMATE $ 5,860.00

DENTRIFYING BIOREACTOR COST ESTIMATE TOTAL $14,200.00

Note: This estimate is based on conditions known before construction has started. Unforeseen conditions could cause actual cost to increase. This can be especially true when utilizing existing tile systems as an outlet.

Landowner	Cedar Rapids Linn County Solid Wa	Tract. No	10664
Location	NE1/4	Section	17 T.84N. - R.6W.
Township	Marion	Watershed	Linn county

Date: 09/27/19 By: Jeff A. Lutz
Date: Checked By:

Preliminary COST ESTIMATE

Wetland for treatment of subsurface drainage discharge

EARTHWORK

2000 cubic yards excavating shallow water wetland cells and channel between them
price in $/ cubic yard $3.50 cost $7,000.00

750 feet shaping dikes 1800 cu. Yds.
price in $/foot $ 8.50 cost $ 6,375.00

23000 square feet stripping topsoil & vegetation 425 cu. Yds.
price in $/ square foot $ 0.07 cost $ 1,495.00

EARTHWORK TOTAL ESTIMATE $14,870.00

SEEDING

4 acres Seeded and fertilized; wetland cell dikes, channel between, and buffer area
price in $/acre $ 500.00 cost $ 2,000.00

SUBSURFACE DRAIN

170 feet 6" PVC shedule 40 pipe with two rodent guards installed
price in $/foot $ 9.00 cost $ 1,530.00

0 feet 5" perforated plastic tubing installed
price in $/foot $ 1.50 cost $ -

0 feet 5" nonperforated plastic tubing installed
price in $/foot $ 1.50 cost $ -

0 feet 6" perforated plactic tubing installed
price in $/foot $ 2.25 cost $ -

630 feet 6" nonperforated plastic tubing installed
price in $/foot $ 2.25 cost $ 1,417.50

feet 8" nonperforated plastic tubing installed
price in $/foot $ 3.50 cost $ -

40 feet Outlet tube(s) installed with rodent guard (size: 8")
price in $/foot $ 15.00 cost $ 600.00

40 cubic yards earthwork: mounding over shallow tile

for cover (8' top width; 3:1 side slopes)
price in $/cubic yards | $ 3.50 | cost | $ 140.00

1 | number | Water Control Structure 8" x10" 6' height with 6" conduit size installed
price in $/each | $1,900.00 | cost | $ 1,900.00

| cubic yards | sand and/or gravel bedding installed around and 6 inches above tile for a blind inlet
price in $/cubic yards | | cost | $ -

| cubic yards | rock riprap (rock size: 9 inch to 3 inch) delivered
price in $/cubic yards | | cost | $ -

8 | hours | backhoe time: locating and removal
price in $/hour | $ 150.00 | cost | $ 1,200.00

Miscellaneous (tees, junctions, connections, etc.)
cost | $ 342.50

SUBSURFACE DRAIN TOTAL ESTIMATE | $ 7,130.00

WETLAND PROJECT COST ESTIMATE TOTAL | $24,000.00

Note: This estimate is based on conditions known before construction has started. Unforeseen conditions could cause actual cost to increase. This can be especially true when utilizing existing tile systems as an outlet.