

THIS SCOPE OF WORK FALLS UNDER SOURCE TYPES 9025 AND 6265

PROJECT DESCRIPTION

In 2011, State installed an iron-enhanced filtration system on a pond near Trunk Highway (TH) 610 and County Road 81 in Maple Grove, Minnesota. The pond, with a two-cell system, is an infiltration/filtration system which flows into part of TH 610 and the County Road 81 drain. The east cell is a wet pond and the west cell is a pond equipped with an iron-enhanced filter to remove dissolved phosphorus from runoff through infiltration and filtration. Water flows from the pond to the filtration basin through a pipe connecting the two cells. During flood events (high water levels), water flows from the east cell over the ripped section of the berm between the two cells. Water flows out of the filtration cell through drains underneath the filter as well as through an overflow pipe. All outflows from the filtration basin are combined in a single manhole structure. Water samples and water levels have been collected at two locations since February 2012. The two monitoring stations (or locations) are: 1) Inside a manhole on the connecting pipe between the two cells; and 2) inside a manhole on the outlet pipe of the west cell on the northwest part of the pond. Water levels and influent water samples are collected at location 1, and water levels and effluent water samples are collected at location 2. State has been monitoring the basin with the assistance of the Office of Environmental Stewardship's Testing Unit. State is planning to monitor the pond for an additional five years.

PROJECT APPROACH

To accomplish State's intended goals for this project; Contractor will review and analyze the data collected since 2012 and provide feedback on the monitoring protocol. The modified or updated protocol will be used for the next five years. In addition, Contractor will review the monitoring data and provide an annual summary of results and the basin performance for 2015 through 2019. A full report of all monitoring data and the basin performance will be provided at the end of the 5-year period.

PROJECT TASKS

Under this contract, Contractor will conduct the following tasks:

Task 1: Reviewing the Monitoring Protocol

Contractor will hold a conference call or a face-to-face meeting with State's monitoring team to discuss the details of the current monitoring protocol.

Task 2: Analyze Data Collected from 2012 through 2014

State will provide Contractor with data collected from 2012 through 2014 for Contractor's review. Using the data collected, Contractor will conduct a water balance of the pond using the stage-storage function developed from the bathymetry data, the rainfall data collected at the site or the nearby rain gages if the rainfall data are not complete, and other weather data to estimate pond evaporation. Following the water balance analysis of the pond, Contractor will estimate the volume of infiltration from the pond and the amount of dissolved and total phosphorus removed by the iron-enhanced filtration/infiltration pond from runoff.

Task 3: Prepare a Report for the Monitoring Period of 2012 through 2014

Contractor will prepare a report summarizing the results of the analysis. The report will also include any potential discrepancy in the data collection that would impact the conclusiveness of the analysis. If necessary, Contractor will provide recommendations regarding the monitoring protocol and any additional data that are necessary to be collected at the site for a better assessment of the pond efficiency in removing dissolved and total phosphorus from stormwater runoff. Contractor will hold a meeting with State to present the results and the content of the draft report.

Task 4: Analyze the Data to be Collected from 2015 through 2019

From 2015 through 2019, on a monthly basis, Contractor will receive the monitoring data from State and analytical data from the laboratory. To analyze the data from 2015 to 2019, Contractor will complete the following subtasks:

- Task 4.1: Contractor will review the data on a monthly basis and provide a short memo summarizing the data received and potential problems with the data collection if there is any.
- Task 4.2: Contractor will analyze the data at the end of each calendar year and summarizes the results of the analyses in annual reports. The analyses include water balance of the pond and efficiency assessment of the pond in removing dissolved and total phosphorus.

Task 4.3: At the end of the 5-year period, Contractor will compile all reports and memos in one report and synthesizes the TH 610 pond in removing dissolved and total phosphorus from surface runoff. In the final report, Contractor will provide recommendations for other sites that this type of filtration/infiltration pond can be effective. The content of the final report will also be presented to State's representatives.

PROJECT TEAM

Following is a list of key personnel for this project:

- John Hanson will serve as Contractor's Principal-in-Charge for this project.
- Omid Mohseni will serve as Contractor's Project Manager for this study and help with the analysis of the data.
- Eric Novotny will conduct all of the data analyses for Contractor.
- Annie Breitenbucher will review and edit documents for Contractor.

PROJECT DELIVERABLES

1. A conference call/meeting with State to discuss any changes to the monitoring protocol. Contractor will supply meeting minutes, documenting the meeting and summarizing the discussion will be prepared and submitted.
2. A draft report summarizing the data analysis of the monitoring period 2012-2014.
3. A meeting at State, to present the content of the draft report. Contractor will supply meeting minutes, documenting the meeting and summarizing the discussion.
4. After receiving the comments from State, and incorporating the comments, Contractor will prepare a final report for the 2012-2014 data and submit it to State. This memo may include some data from 2015 if available.
5. Monthly memos from 2015 through 2019, summarizing the field and laboratory data collected at the site and potential problems with the data.
6. Four annual reports, summarizing the results of the analyses conducted on the data collected from 2015 through 2018.
7. A draft report, compiling all the previous annual reports, and the results of the analysis conducted on the data collected in 2019. The draft report will be prepared following State's publication guidelines, to document project activities, findings, and recommendations.
8. A meeting at State, presenting the content of the draft report. Contractor will supply meeting minutes, documenting the meeting and summarizing the discussion.
9. After receiving the comments from State, and incorporating the comments, Contractor will prepare a final report, approved for publication, for all data collected and submit it to State.

PROJECT SCHEDULE

Timeline Deliverables	Date to be Completed
Meeting to discuss monitoring protocol	2 weeks after contract signed
Draft report for data collected from 2012-2014	8 weeks after contract signed
PowerPoint presentation of the analysis done of data from 2012-2014	10 weeks after contract signed
Final report on the data collected from 2012-2014	12 weeks after contract signed
Monthly memos	2 weeks after receiving the data
2015 annual report	January 29, 2016
2016 annual report	January 27, 2017
2017 annual report	January 26, 2018
2018 annual report	January 25, 2019
Draft report for data collected from 2012-2019	March 2, 2020
PowerPoint presentation of the analysis of all data from 2012-2019	March 13, 2020
Final report for data collected from 2012-2019	April 30, 2020