
TASK ORDER No. GC016-01 (DRAFT)
GENERAL CIVIL ENGINEERING SERVICES

Client: Town of Allenstown, New Hampshire

Task Description: **PHASE 2 BACTERIA SOURCE INVESTIGATION AND SAMPLING FOR MS4**

Task Fee: **\$ 19,880.00** (Actual Cost, Not-to-Exceed)

Date: February 08, 2016

SCOPE OF SERVICES:

Based on the results of the initial dry-weather sampling and testing of the stormwater outfalls, follow up dry weather sampling was done in the catchment areas tributary to Outfalls No. 1 and No. 18 in an effort to track/identify the source(s) or potential sources of the *E. coli* bacteria detected during initial dry-weather sampling and testing work.

The objective of the work under this Task Order is to conduct further evaluation of the storm drain catchment areas tributary to Outfalls **No.1** and **No. 18** in order to identify the source(s) of the *E. coli* bacteria detected during prior sampling and testing so that the bacteria sources can be mitigated or eliminated using Illicit Discharge and Detection Elimination (IDDE) protocols and the information obtained during the previous evaluations. This is the next step towards finding and eliminating potential illicit discharges to Allenstown's stormwater collection and conveyance system as required by the IDDE program requirements of the Draft MS4 Stormwater Permit.

Hoyle, Tanner & Associates, Inc. (CONSULTANT) will complete the next phase of the bacteria source tracking evaluation and identification in accordance with the detailed Scope of Services included as part of this Task Order. A detailed *Scope of Services* is attached and hereby made part of this Task Order.

Attachments: *Scope of Services*

Reference: Hoyle Tanner Project No. [013633]

This Task Order is made pursuant to the *Agreement for Professional Engineering Services, General Civil Engineering Services*; effective June 03, 2013, between the Town of Allenstown, acting through its Board of Selectmen, (CLIENT) and Hoyle, Tanner & Associates, Inc. (CONSULTANT) for General Civil Engineering Services. The *Agreement* is hereby made part of this Task Order by reference.

IN WITNESS WHEREOF, the CLIENT and the CONSULTANT have made and executed this AGREEMENT.

CLIENT:

CONSULTANT:

**TOWN OF ALLENSTOWN, NH
TOWN ADMINISTRATOR**

HOYLE, TANNER & ASSOCIATES, INC.

(signature)

Michael A. Trainque, P.E.
Vice President

Shaun Mulholland
Town Administrator

February 8, 2016
(date)

(date)

SCOPE OF SERVICES - DRAFT

PROJECT: **PHASE 2 BACTERIA SOURCE INVESTIGATION AND SAMPLING FOR MS4**
Task Order GC016-01
Town of Allenstown, NH

DATE: February 2, 2016

I. PROJECT DESCRIPTION

The EPA issued a draft of the New Hampshire Small Municipal Separate Storm Sewer System (MS4) permit in 2008. EPA has since revised the draft NH Small MS4 stormwater permit based on input it received during the public comment period. EPA issued a revised Draft NH Small MS4 stormwater permit in February 2013. The revised draft Small MS4 permit is considerably expanded over the original draft permit and includes extensive, detailed requirements that MS4 communities (Allenstown) will be required to comply with once the permit is finalized. In order to continue progress toward meeting the requirements of the MS4 the Town of Allenstown wants to complete bacterial source investigation and sampling in order to isolate and remove potential illicit discharges to the stormwater conveyance system.

Previously, dry-weather sampling and testing was completed for the stormwater outfalls in Allenstown within or affecting the (MS4) area in an effort to characterize the dry weather conditions at each outfall and to determine if there were any problem areas that needed further investigation pursuant to and in preparation for the pending MS4 stormwater permit for New Hampshire that will be issued by the EPA in the near future. Two outfalls, Number 1 and number 18, were found to have *E. coli* bacteria present in dry weather flow at levels that exceed the water quality criteria as specified in the Draft MS4 Stormwater Permit.

Based on the results of the initial sampling and testing, follow up dry weather sampling was done in the catchment areas tributary to Outfalls No. 1 and No. 18 in an effort to track/identify the source(s) or potential sources of the *E. coli* bacteria showing up in the during the initial dry-weather sampling and testing.

The objective of the work under this Task Order is to conduct further evaluation of the storm drain catchment areas tributary to Outfalls No.1 and No. 18 in order to determine the source(s) of the *E. coli* bacteria detected during prior sampling and testing so that the bacteria sources can be mitigated or eliminated using Illicit Discharge and Detection Elimination (IDDE) protocols and the information obtained during the previous evaluations. This is the next step towards finding and eliminating potential illicit discharges to the town's stormwater collection system as required by the IDDE program requirements of the Draft MS4 Stormwater Permit.

II. SCOPE OF SERVICES

The work to be provided under this **Task Order No. GC016-01** includes physical evaluation of pipes and structures as well as additional sampling and testing as the next phase (Phase 2) of the bacteria source tracking, detection and elimination in the catchment areas tributary to

Outfalls No. 1 and No. 18. The proposed detailed Scope of Professional Services for this Task Order follows.

1. EVALUATE CATCHMENT AREA TRIBUTARY TO OUTFALL NO. 1

TASK 1.1 Conduct internal closed-circuit television (CCTV) inspection of approximately 3,040 linear feet of storm drain pipes in an effort to find illicit cross-connections to the storm drain system and create a visual record of the storm drainage system. This will include the storm drains in and around the wastewater treatment facility as well as the storm drain lines on Ferry Street only to the extent they are tributary to Outfall No. 1. Stormwater catch basins will be examined visually. The condition of the manholes will be recorded in addition to observations of any potential illicit discharges. The footage of pipe to be CCTV inspected can be reduced as needed and limited to “high-interest” areas in order to meet budgetary constraints.

All of the sanitary sewer lines within the wastewater treatment facility site have already been inspected using CCTV. The videos and the inspection logs are available for review. If we find a suspected cross connection location in a storm drain the sewer inspection video for that location can be reviewed in conjunction with the video inspection of the storm drain to evaluate potential cross-connection.

TASK 1.2 Conduct smoke testing of approximately 3,040 linear feet of storm drain pipes in an effort to find illicit cross-connections to the storm drain system. Photographs of smoke discharges from suspected cross-connections or suspected illicit connections will be taken and included as part of the documentation for the evaluation efforts. Of particular concern will be any discharges of smoke from house sanitary vents or from the sanitary sewer system.

TASK 1.3 In conjunction with staff of the Allentown Sewer Department, conduct an on-site evaluation to try to determine/confirm whether Recycling Mechanical has any direct connections to the storm drainage system. At this time Recycling Mechanical is in the process of constructing facilities to connect its wastewater discharge to the municipal sanitary sewer system. Conduct dye testing if needed, subject to approval of the property owner, to confirm connections to the storm drain system.

TASK 1.4 Sampling/Testing. Additional dry-weather sampling and testing will be done using field test kits to test for ammonia, chlorine and surfactants since these are considered indicators for the potential presence of wastewater. If there is indication of likely wastewater influence, sampling and testing for *E. coli* bacteria will also be completed if/as warranted. The staff at the wastewater treatment facility has offered to run the *E. coli* test procedure on collected samples.

Task 1.5 Wet-weather sampling and testing. One (1) round of wet-weather sampling and testing (screening) will be conducted on Outfall No. 1 for the purpose of determining whether wet weather-induced high flows in sanitary sewers or high groundwater in areas served by septic systems result in discharges of sanitary flow to the storm drain system. The wet weather sampling and testing will be done in accordance with the requirements set forth in the draft Small MS4 General Permit. The sampling will be conducted during or after a storm event of sufficient depth or intensity to produce a stormwater discharge during the period from March 1 – June

1. While EPA does not define the required size or intensity of the rainfall event we recommend that the sampling be done during or after a rainfall event of not less than 0.25 inch in a 24-hour period subject to the condition that the rainfall event produces sufficient flow in the outfall to facilitate sampling. We also recommend that the sampling be done after the first flush flow has subsided.

Samples obtained during wet weather sampling will be analyzed for ammonia, chlorine, conductivity, salinity, *E. coli* bacteria, surfactants and temperature. All of the testing, except for the *E. coli* bacteria will be done using field test kits. Testing for *E. coli* bacteria will require laboratory.

2. EVALUATE CATCHMENT AREA TRIBUTARY TO OUTFALL No. 18

TASK 2.1 Conduct internal closed-circuit television (CCTV) inspection of approximately 1,550 linear feet of storm drain pipes in an effort to find illicit cross-connections to the storm drain system and create a visual record of the storm drainage system. This will include the storm drains in and around the vicinity of Granite Street to Townhouse Road to Meadow Lane to River Road. Stormwater catch basins will be examined visually. The condition of the manholes will be recorded in addition to observations of any potential illicit discharges. The footage of pipe to be CCTV inspected can be reduced as needed and limited to “high-interest” areas in order to meet budgetary constraints.

All of the sanitary sewer lines on Granite Street, Townhouse Road, Meadow Lane and River Road have already been inspected using CCTV. The videos and the inspection logs are available for review. If we find a suspected cross connection location in a storm drain the sewer inspection video for that location can be reviewed in conjunction with the video inspection of the storm drain to evaluate potential cross-connection.

NOTE: Smoke testing of the area tributary to Outfall No. 18 is not recommended at this time due to the characteristics of the area.

TASK 2.2 Samples of the water in “Frog Pond” near Granite Street will be obtained and tested for the presence of *E. coli* bacteria. This will be done to determine whether bacteria laden runoff has impacted the pond and, in turn, whether the discharge from the pond may potentially be impacted the stormwater drainage system.

TASK 2.3 Sampling/Testing. Additional dry-weather sampling and testing will be done using field test kits to test for ammonia, chlorine and surfactants since these are considered indicators for the potential presence of wastewater. If there is indication of likely wastewater influence, sampling and testing for *E. coli* bacteria will also be completed if warranted. The staff at the wastewater treatment facility has offered to run the *E. coli* test procedure on collected samples.

TASK 2.4 Wet-weather sampling and testing. One (1) round of wet-weather sampling and testing (screening) will be conducted on Outfall No. 18 for the purpose of determining whether wet weather-induced high flows in sanitary sewers or high groundwater in areas served by septic systems result in discharges of sanitary flow to the storm drain system. The wet weather sampling and testing will be done in

accordance with the requirements set forth in the draft Small MS4 General Permit. The sampling will be conducted during or after a storm event of sufficient depth or intensity to produce a stormwater discharge during the period from March 1 – June 1. While EPA does not define the required size or intensity of the rainfall event we recommend that the sampling be done during or after a rainfall event of not less than 0.25 inch in a 24-hour period subject to the condition that the rainfall event produces sufficient flow in the outfall to facilitate sampling. We also recommend that the sampling be done after the first flush flow has subsided.

Samples obtained during wet weather sampling will be analyzed for ammonia, chlorine, conductivity, salinity, E. coli bacteria, surfactants and temperature. All of the testing, except for the E. coli bacteria will be done using field test kits. Testing for E. coli bacteria will require laboratory.

TASK 2.5 OPTIONAL. Conduct dyed water tracing if and as appropriate to simulate potential bacteria conveyance to the stormwater drainage system as a result of rainfall-induced stormwater runoff. This would be done at additional cost to be determined.

3 PREPARE AND SUBMIT REPORT

TASK 3.1 Prepare a written report summarizing the work completed under this Task Order as outlined above. The report will include our findings and conclusions based on the work under this Task Order as well our recommendations for any subsequent work or actions that may be required. Results of sampling and analysis will also be included in the report. We will submit a draft copy of the summary report to the Client for review. We will submit one electronic file in pdf format and five (5) hard copies of the report to the CLIENT for its use.

As part of this task, we will update the Town of Allenstown's GIS mapping for any noted changes in the location or layout of the storm drain system.

4 MEETINGS

TASK 4.1 The results of the stormwater evaluation and sampling will be presented to and discussed with the Town Administrator and other Town officials as appropriate.

DELIVERABLES

1. Furnish a written summary report of the results of the bacteria source investigation work described in the tasks above presenting our findings, conclusions and recommendations.
2. Meet with the Town Administrator (and others) to present and discuss the results of the bacterial source investigations completed under this Task Order.

CLIENT RESPONSIBILITIES

Your responsibilities under this agreement will include:

- Provide all available information as to the project and the Town's requirements.
- Furnish Town/Highway Department personnel to assist as needed for field work.
- Arrange to provide access to the sampling site(s) and the work as outlined above.
- Designate a single contact person who can act with the CLIENT's authority regarding this project.
- Provide reasonable notice of times of requested service.

SCHEDULE

Work under this Task Order will begin when weather conditions are favorable for the type of work included herein. Any dry-weather sampling is likely to begin no sooner than June 2016, and will be weather-dependent (dry weather is required for this sampling). We propose to complete the services outlined in this *Scope of Services* within three (3) months beginning in June 2016 but subject to weather conditions conducive to the type of work to be done.

BASIS OF PAYMENT

The CONSULTANT shall charge for all services requested by the CLIENT and rendered by the CONSULTANT in connection with the PROJECT in strict accordance with the conditions set forth in the original *Agreement for Professional Engineering Services*, effective June 3, 2013, between the Town of Allentown (CLIENT) and Hoyle, Tanner & Associates, Inc. (CONSULTANT) for General Civil Engineering Services. The *Agreement* is hereby made part of this Task Order by reference.

The charges made by the CONSULTANT under this Article and the payment of said charges by the CLIENT shall constitute full compensation for all expenses incurred by the CONSULTANT in connection with the services rendered including F.I.C.A. taxes, Federal and State unemployment taxes, costs in connection with employees' benefits, office expenses, supplies and equipment, the general costs of doing business, and the CONSULTANT's profit.

GENERAL

Professional engineering services are to be performed by the ENGINEER as detailed herein. The CLIENT may, from time to time, request changes in the scope of services to be performed under the AGREEMENT. Any changes in scope, including an increase or decrease in the amount of the ENGINEER's compensation, shall be mutually agreed upon in writing by and between the CLIENT and the ENGINEER and shall be incorporated into the AGREEMENT by a formal written AMENDMENT to this Task Order signed by both parties.

BUDGET BY TASK

**PROJECT: STORMWATER BACTERIA PHASE 2 SOURCE INVESTIGATION FOR MS4
TASK ORDER GC2016-01
TOWN OF ALLENSTOWN, NEW HAMPSHIRE**

February 01, 2016

TASK NO.	DESCRIPTION	PRINCIPAL/ SR. PM		TECHNICAL SPECIALIST		SENIOR ENGINEER II		ENGINEER III		ENGINEER II		CADD TECHNICIAN II		INTERN		ADMINISTRATIVE PROFESSIONAL I		HOURS	BILLING LABOR
		Hours	Amount	Hours	Amount	Hours	Amount	Hours	Amount	Hours	Amount	Hours	Amount	Hours	Amount	Hours	Amount		
1	Catchment Tributary to Outfall No. 1																		
1.1	CCTV Inspection of Storm Drain Pipes	1	\$ 185.00	0	\$ -	0	\$ -	8	\$ 840.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	9	\$ 1,025.00
1.2	Smoke Testing of Storm Drain Pipes	0	\$ -	0	\$ -	0	\$ -	8	\$ 840.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	8	\$ 840.00
1.3	Investigate Recycling Mechanical - Sewer and Drain	0	\$ -	0	\$ -	2	\$ 250.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	2	\$ 250.00
1.4	Dry Weather Sampling and Testing	0	\$ -	0	\$ -	0	\$ -	8	\$ 840.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	8	\$ 840.00
1.5	Wet Weather Sampling and Testing	1	\$ 185.00	0	\$ -	0	\$ -	8	\$ 840.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	9	\$ 1,025.00
		0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
2	Catchment Tributary to Outfall No. 18																		
2.1	CCTV Inspection of Storm Drain Pipes	1	\$ 185.00	0	\$ -	0	\$ -	8	\$ 840.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	9	\$ 1,025.00
2.2	Sampling & Testing of Frog Pond	0	\$ -	0	\$ -	0	\$ -	2	\$ 210.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	2	\$ 210.00
2.3	Dry Weather Sampling & Testing	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
2.4	Wet Weather Sampling and Testing	1	\$ 185.00	0	\$ -	0	\$ -	8	\$ 840.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	9	\$ 1,025.00
2.5	OPTIONAL: Dyed Water Flooding Runoff Simulation	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
																		0	\$ -
3	Prepare Report	4	\$ 740.00	0	\$ -	4	\$ 500.00	28	\$ 2,940.00	0	\$ -	4	\$ 360.00	0	\$ -	2	\$ 148.00	42	\$ 4,688.00
																		0	\$ -
4	Meetings	2	\$ 370.00	0	\$ -	0	\$ -	4	\$ 420.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	6	\$ 790.00
			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	0	\$ -
																		0	\$ -
TOTALS		10	\$ 1,850.00	0	\$ -	6	\$ 750.00	82	\$ 8,610.00	0	\$ -	4	\$ 360.00	0	\$ -	2	\$ 148.00	104	\$ 11,718.00
RATES			\$185.00		\$140.00		\$125.00		\$105.00		\$95.00		\$90.00		\$50.00		\$74.00		

Hoyle, Tanner & Associates, Inc.
Manchester, New Hampshire

I:\013633\Contract\Task Order GC2016-01 SW Bacteria FEE 02 01 2016.xls\Phase 2

EXPENSES:		OUTSIDE SERVICES:		TOTAL LABOR (Incl. OH & P)	
Travel	\$ 100.00	CCTV Inspection	\$ 5,600.00		\$ 11,718.00
Print/Copy	\$ 142.00	Smoke Testing	\$ 1,550.00	Expenses	\$ 512.00
Phone/Fax	\$ -	Sampling/Testing	\$ 500.00	Outside Services	\$ 7,650.00
Shipping	\$ -		\$ -		
Materials	\$ 270.00		\$ -		
Other	\$ -		\$ -		
TOTAL	\$ 512.00	TOTAL	\$ 7,650.00	TOTAL (N.T.E.)	\$ 19,880