

City of Columbia

701 East Broadway, Columbia, Missouri 65201



Agenda Item Number: B 186-15

Department Source: Public Works

To: City Council

From: City Manager & Staff

Council Meeting Date: 7/6/2015

Re: Intergovernmental Cost Share Agreement for Hinkson Creek Bacteria Assessment

Documents Included With This Agenda Item

Council memo, Resolution/Ordinance, Exhibits to Resolution/Ordinance

Supporting documentation includes: None

Executive Summary

Staff has prepared for Council consideration an ordinance authorizing the City Manager to execute an intergovernmental cooperation agreement with the County of Boone and the Curators of the University of Missouri to outline responsibilities and funding an assessment of existing bacteria levels in Hinkson Creek.

Discussion

Section 303(d) of the Clean Water Act requires the Missouri Department of Natural Resources (MDNR) identify waters that do not meet water quality standards. This list is developed and provided to the United States Environmental Protection Agency (EPA) every two years, and is removed from the list when certain conditions are met. EPA also requires MDNR to develop a Total Maximum Daily Load (TMDL) for impaired waters. All data collected, that meets MDNR requirements, will be used to develop the TMDL.

In 2012, MDNR added Hinkson Creek, above Providence Road, to the 303(d) list of impaired waters because bacteria data exceeded criteria. Two major Hinkson Creek tributaries also have bacteria impairments. Hominy Branch was added to the 303(d) list in 2012, and Grindstone Creek was added in 2006. Waterbodies are considered impaired for bacteria if the geometric mean of at least five bacteria samples collected between April 1st and October 31st exceeds the criterion in any one of the last three years of available data.

Much of the existing bacteria data in the Hinkson Creek watershed was collected before 2006. Over the past two years, MDNR has been monitoring sites to quantify current bacteria levels and presumably reassess the impairment status of Hinkson Creek, Hominy Branch and Grindstone Creek. Since 2013, MDNR has monitored six locations on the streams. The recent data suggest that all three streams may still be impaired for bacteria, and lower Hinkson Creek below Providence Road, may also be impaired.

MDNR's current monitoring approach collects a minimum number of samples at the most downstream end of each segment. In 2013 and 2014, MDNR collected between 2 and 10 samples at

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each sampling site. This approach does not adequately characterize the overall conditions of the streams and ensures that future impairment decisions will be made with limited information.

The assessment, funded by this agreement, provides for additional monitoring sites and more frequent monitoring, producing more data to be incorporated into the geometric mean. All data collected will meet MDNR requirements. Eleven monitoring sites will be evaluated on a biweekly basis until October 31, 2015. Additional sites and samples will help to develop a more representative estimate of current bacteria levels. This study will sample multiple sites in each segment of the creek on the same date. Data can then be aggregated to calculate a reach average estimate rather than a point estimate. This is preferable because the influence of single, potential unrepresentative sample results can be moderated. This is different than how MDNR sampled the creeks.

As Municipal Separate Storm Sewer System (MS4) co-permittees, the City, the University of Missouri and County of Boone will likely bear the responsibility for addressing any impairments to Hinkson Creek due to bacteria. In an effort to better define the impairments, and take a proactive step to addressing it, the University assumed all costs of Phase I of the Hinkson Creek Bacteria Assessment, which included developing a monitoring plan. Phase II of the Assessment is to implement the monitoring plan. The intergovernmental cooperation agreement states that each of the parties will pay one third of the cost of Phase II of the Hinkson Creek Bacteria Assessment which shall not exceed \$45,000, or \$15,167 each. The University will be responsible for ensuring the completion of the Phase II plan.

Fiscal Impact

Short-Term Impact: The total cost of the project proposal is \$45,500. The City's portion of that cost will not exceed \$15,167, to be paid from the Stormwater Utility.

Long-Term Impact: There is no long term cost to the proposed legislation.

Vision, Strategic & Comprehensive Plan Impact

Vision Impact: Environment

Strategic Plan Impact: Health, Safety and Wellbeing

Comprehensive Plan Impact: Environmental Management

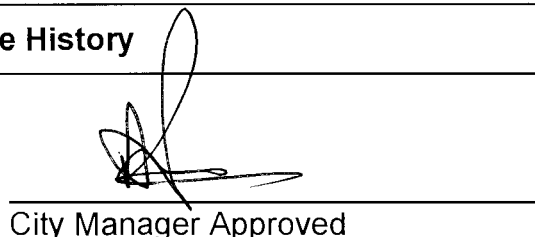
Suggested Council Action

City Council authorizes the City Manager to execute the intergovernmental agreement.

Legislative History

None


Department Approved


City Manager Approved

Introduced by _____

First Reading _____

Second Reading _____

Ordinance No. _____

Council Bill No. B 186-15

AN ORDINANCE

authorizing an inter-governmental cooperative agreement with the County of Boone and The Curators of the University of Missouri for assessment of bacteria levels in Hinkson Creek; and fixing the time when this ordinance shall become effective.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. The City Manager is hereby authorized to execute an inter-governmental cooperative agreement with the County of Boone and The Curators of the University of Missouri for assessment of bacteria levels in Hinkson Creek. The form and content of the agreement shall be substantially in the same form as set forth in "Exhibit A" attached hereto.

SECTION 2. This ordinance shall be in full force and effect from and after its passage.

PASSED this _____ day of _____, 2015.

ATTEST:

City Clerk

Mayor and Presiding Officer

APPROVED AS TO FORM:

City Counselor

**HINKSON BACTERIA ASSESSMENT
INTER-GOVERNMENTAL COOPERATIVE AGREEMENT**

The parties hereto are the City of Columbia, Missouri, a Constitutional charter city of the State of Missouri (the "City"), the County of Boone, a first class non-charter county and political subdivision of the State of Missouri by and through its County Commission (the "County"), and The Curators of the University of Missouri (University) and those parties enter this Cooperative Agreement (Agreement) this ____ day of _____, 2015, by stating as follows:

WHEREAS, the parties are cooperating on watershed bacteria assessment projects in Boone County, Missouri; and

WHEREAS, University has initiated a project entitled Hinkson Creek Bacteria Assessment (Assessment) in two phases, both being performed by Geosyntec Consultants, Inc, (Geosyntec); and

WHEREAS, the Plan is to be Phase II of the Assessment, with Phase I now completed and fully funded by University, with the City and the County bearing no responsibility for any Phase I funding; and,

WHEREAS, Geosyntec has now produced and presented to University a 2015 Preliminary Monitoring Plan (the Plan), attached hereto as Addendum A intended as Phase II of the Assessment; and,

WHEREAS, part of the Plan includes remedies of Phase I insufficiencies; and,

WHEREAS, the parties now wish to agree regarding the scope and details of the Plan,

NOW, THEREFORE, IN CONSIDERATION of the mutual undertakings and agreements in this document, the parties agree that:

1. The University will implement and coordinate the Plan, and will be charged as the parties' sole liason with Geosyntec.
2. The scope and details of the project are as set forth in Addendum A - the Plan.

3. Each of the parties will be responsible for one-third of the project cost.
4. The total cost of the Plan to the parties shall exceed neither Forty-five Thousand Five Hundred Dollars (\$45,500.00) collectively nor Fifteen Thousand One Hundred Sixty-seven Dollars (\$15,167.00) individually, with each party paying one-third of the Plan's cost upon completion.
5. The University will be solely responsible for ensuring the Plan's completion by the termination date, and neither the City nor the County will have any payment obligation under this Agreement until the University certifies in writing that the Plan is completed.
6. The University will timely provide to the County and the City that Summary Memorandum that Geosytec is to provide to the University, as described in Attachment A to Addendum A, Phase 2 Scope of Services, Task 2.3. The University will so provide that Memorandum to the County and the City so that they will have sufficient time to review and comment on that Memorandum before the stakeholders meeting described in that Task 2.3.
7. No party may assign or transfer any of its rights or obligations under this Agreement to any other person or entity without the prior, written consent of the other parties.
8. This Agreement is for the sole benefit of parties, and nothing in this Agreement is intended to confer any rights or remedies on any third party.
9. Nothing in this Agreement will be deemed or construed by the parties, nor by any other entity or person, as creating any principal and agent relationship, or partnership, or joint venture, between the parties.
10. This Agreement will be governed by the laws of the State of Missouri, and any action relating to this Agreement will be brought in the Circuit Court of Boone County, Missouri.
11. The covenants, agreements, and obligations in this Agreement will extend to, bind, and inure to the benefit of the parties and their respective successors and approved assigns.

12. All the parties will execute six originals of this document, with each party to receive two executed originals.

13. Each person signing this Agreement on behalf of any of the parties represents that he or she has been duly authorized and empowered, by order, ordinance, or otherwise, to execute this Agreement and that all necessary action on behalf of that party to effectuate that authorization has been taken and done.

IN WITNESS WHEREOF the parties hereto have caused this Agreement to be executed by their duly-authorized officers on day and year indicated by their signature below.

The Curators of the University of Missouri

By:

Date:

BOONE COUNTY, MISSOURI

BY: _____
Dan Atwill, Presiding Commissioner

ATTEST:

Wendy S. Noren, County Clerk

APPROVED AS TO LEGAL FORM:

By: Ron Sweet
C.J. Dykhouse, County Counselor

Boone County Auditor Certification:

I hereby certify that a sufficient, unencumbered appropriation balance exists and is available to satisfy the obligation arising from this contract. (Note: Certification of this contract is not required if the terms of this contract do not create a measurable county obligation at this time.)

County Auditor

Date _____

CITY OF COLUMBIA, MISSOURI

BY: _____
Mike Matthes, City Manager

ATTEST:

Sheela Amin, City Clerk

Date _____

APPROVED AS TO FORM:

Nancy Thompson, City Counselor

I hereby certify that this Contract is within the purpose of the appropriation to which it is to be charged, that is, account _____ and that there is an unencumbered balance to the credit of such account sufficient to pay therefore.

John Blattel
City Finance Director



engineers | scientists | innovators

HINKSON CREEK BACTERIA ASSESSMENT

2015 Preliminary Monitoring Plan

Prepared for

University of Missouri
Environmental Health and Safety
8 Research Park Development Building
Columbia, Missouri 65211

Prepared by

Geosyntec Consultants, Inc.
108 E. Green Meadows Road, Suite 9
Columbia, Missouri 65203

April 2015

Project Number MOW5368

Privileged and Confidential – For Discussion Only

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Attachment A. Hinkson Creek Bacteria Assessment 2015 Sampling Locations.

1. PROJECT BACKGROUND AND OBJECTIVES

Hinkson Creek is a 26.4 mile long stream in Boone County, Missouri (County). In its headwaters, the watershed is dominated by rural and agricultural land uses; the majority of the lower two-thirds of the stream flows through developed land, including the City of Columbia's (Columbia) city limits and University of Missouri (MU) property.

For regulatory purposes, Hinkson Creek is composed of two discrete reaches with unique waterbody identification numbers (WBID). The upper reach, WBID 1008, is a Class C water that flows 18.8 miles from the headwaters to the Providence Road crossing in Columbia. WBID 1008 is designated for Whole Body Contact Recreation – A (WBCR-A). The WBCR-A *Escherichia coli* (bacteria) criterion is 126/100 mL. The lower reach, WBID 1007, is a Class P water that continues from Providence Road for 7.6 miles downstream to the confluence with Perche Creek. WBID 1008 is designated for Whole Body Contact Recreation – B (WBCR-A). The WBCR-B bacteria criterion is 206/100 mL.

In 2012, the Missouri Department of Natural Resources (MDNR) added WBID 1008 to the 303(d) list of impaired waters because bacteria data exceeded criteria. According to MDNR's listing methodology document (LMD)¹, waterbodies are considered impaired if the geometric mean of at least five bacteria samples collected between April 1 and October 31 exceeds the criterion in any one of the last three years of available data. For Hinkson Creek, sufficient data were available in 2004 and 2005; the 2004 geometric mean exceeded the criterion. Two major Hinkson Creek tributaries, Hominy Branch (WBCR-B, 2012 303(d) list) and Grindstone Creek (WBCR-A, 2006 303(d) list), also have bacteria impairments.

Much of the existing bacteria data in the Hinkson Creek watershed was collected before 2006. Over the past two years, MDNR has been monitoring sites to quantify current bacteria levels and presumably reassess the impairment status of Hinkson Creek, Hominy Branch, and Grindstone Creek (collectively the "study streams"). Since 2013, MDNR has monitored six locations on the streams. These recent data suggest that all three streams and all four WBIDs may still be impaired for bacteria for sites with sufficient data (**Table 1**).

¹ MDNR. 2014. Methodology for the Development of the 2016 Section 303(d) List in Missouri. Water Protection Program. Jefferson City, MO.

Table 1. Summary of Bacteria Data Collected by MDNR between April and October in 2013 and 2014. Bolded values reflect potential impairments. Potential impairments were evaluated using MDNR's 2016 LMD requirements (considered impaired if the geometric mean of at least five samples exceeds the criterion in any one of the last three years). Geometric mean units are bacteria counts/100 mL.

Stream (WBID)	Site Description	Designated Whole Body Contact Use and Associated Criterion	2013 Results Geomean (Sample #)	2014 Results Geomean (Sample #)	Potential 303(d) Status
Hinkson (1008)	Recreation Drive	WBCR-A (126)	94 (2)	206 (5)	Impaired
	Providence Road	WBCR-A (126)	126 (4)	250 (2)	Unimpaired / Insufficient data
Hinkson (1007)	Twin Lakes	WBCR-B (206)	---	243 (10)	Impaired
	Scott Blvd	WBCR-B (206)	258 (4)	---	Unimpaired / Insufficient data
Grindstone Creek (1009)	Near Mouth	WBCR-A (126)	174 (5)	90 (10)	Impaired
Hominy Branch (1011)	Green Valley Drive	WBCR-B (206)	322 (4)	298 (10)	Impaired

MDNR's current monitoring approach is limiting because it only provides information on bacteria levels at the most downstream end of each segment. This approach does not adequately characterize overall conditions in the study stream (particularly in Hinkson Creek) and ensures that future impairment decisions will be made with limited information, as described above and presented in **Table 1**. Given the length and complexity of the study streams, additional locations should be monitored during 2015. Data from these additional sites can be used to develop a more representative estimate of bacteria levels in Hinkson Creek.

Due to the limitation associated with MDNR's approach, MU has asked Geosyntec Consultants, Inc. (Geosyntec), to assist in developing a sampling plan that will:

- Provide sufficient bacteria data to develop a representative estimate of current bacteria levels in the study streams; and
- Ensure that appropriate quality assurance and quality control (QA/QC) procedures are applied such that the data can be used in regulatory discussions.

This document outlines the preliminary approach suggested by Geosyntec to meet these objectives and is intended to serve as a guide for planning discussions. Before sampling begins, the final monitoring plan will be incorporated into a quality assurance project plan (QAPP).

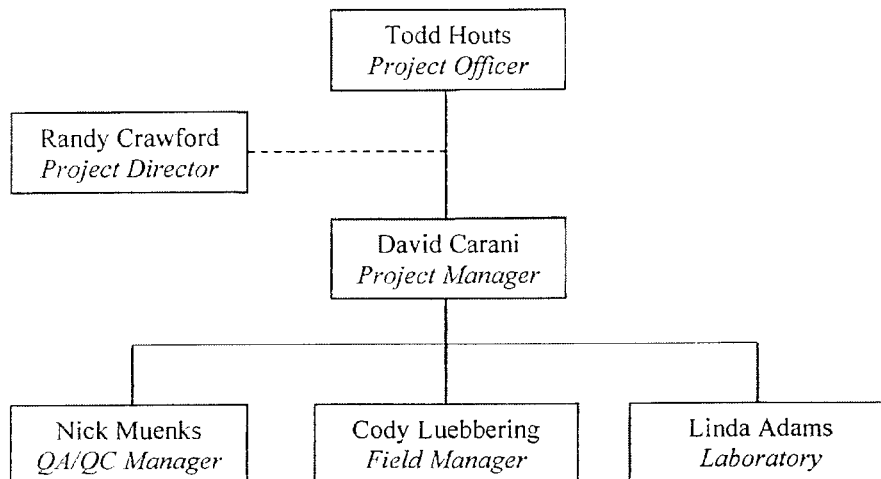
2. PROJECT TEAM

The project team includes a project officer, project director, project manager, QA/QC manager, field manager, and laboratory manager (**Table 2, Figure 1**).

Table 2. Hinkson Creek Bacteria Assessment Project Team.

Role	Team Member	Affiliation
Project Officer	Todd Houts	University of Missouri
Project Director	Randy Crawford	Geosyntec, Inc.
Project Manager	David Carani	Geosyntec, Inc.
QA/QC Manager	Nick Muenks	Geosyntec, Inc.
Field Manager	Cody Luebbering	Geosyntec, Inc.
Laboratory Manager	Linda Adams	Environmental Survey and Services, Inc.

Figure 1. Project Team Organizational Chart.



3. STUDY DESIGN

Preliminary discussions with MDNR indicate that MDNR field staff will be monitoring four sites in the watershed during 2015 (**Attachment A**). These include two on Hinkson Creek (Recreation Drive and Twin Lakes), one on Hominy Branch (Green Valley Drive), and one on Grindstone Creek (near mouth). MDNR will collect bacteria and flow from these locations on a bi-weekly basis between April 1 and October 31.

As described in Section 1, additional monitoring sites are needed to develop a more representative estimate of current bacteria levels. This preliminary monitoring plan outlines the additional monitoring efforts, sites, parameters, and frequencies necessary to do the assessment.

3.1 Suggested Sites and Parameters

Eleven monitoring sites are proposed for 2015 (**Table 3, Attachment A**). These include nine sites on Hinkson Creek, one on Grindstone Creek, and one on Hominy Branch. Guidelines offered by the United States Geological Survey (USGS)² were considered before selecting the sites. Preference was given to sites that are evenly-spaced (approximately 1 site every 3 miles of stream segment), are far enough above or below major confluences such that they are fully mixed, and are likely to maintain permanent flow during the monitoring period.

Table 3. Suggested 2015 Sampling Locations.

Stream	WBID	Site ID	Site Description	MDNR 2015 Site?
Hinkson Creek	1008	1	Rogers Road	No
	1008	2	Hinkson Creek Road	No
	1008	3	Upstream Highway 63	No
	1008	4	Broadway	No
	1008	5	Stadium	No
	1008	6	Recreation Drive	Yes
	1007	7	Forum Boulevard	No
	1007	8	Twin Lakes	Yes
	1007	9	Near CRWWTP	No
Grindstone Creek	1009	10	Near Mouth	Yes
Hominy Branch	1001	11	Green Valley Drive	Yes

² Wilde, F.D., 2005, Preparations for water sampling: U.S. Geological Survey Techniques of Water-Resources Investigations, book 9, chap. A1, January 2005, accessed [April 23, 2015], at <http://pubs.water.usgs.gov/twri9A1/>.

Water quality grab samples will be collected at each site on a bi-weekly basis through October 31, 2015. Field parameters include dissolved oxygen, temperature, pH, conductivity, and open-channel flow. Field parameters will be measured using appropriate field instruments concurrent with sample collection at each of the monitoring sites. Streamflow data will also be downloaded monthly from the Broadway USGS gage station (USGS 06910230). Laboratory parameters will include bacteria and total suspended solids (TSS).

Sampling multiple sites in each segment on the same day will better reflect current bacteria levels because data can be aggregated to calculate a reach average estimate, rather than a point estimate. This is preferable because the influence of single, potentially unrepresentative sample results can be moderated. It is important to note that the multiple site approach recommended for this study is different than the multiple site approach used by MDNR in previous studies. In those studies, MDNR did not always sample the same sites on the same day. As a result, a reach average estimate could not be calculated consistently.

3.2 Evaluating Upstream Sources

Three potential monitoring sites that could be used to evaluate the impact of upstream sources were also identified (**Table 4, Attachment A**) but the project team should discuss several issues before adding these sites to the monitoring plan. These issues include:

- The segments are intermittent streams that will likely not maintain permanent flow during dry conditions. Further, the Hominy Branch site is located downstream from several small impoundments that will restrict flow. Therefore, it may only be possible to collect data during wet-weather conditions when bacteria levels are generally higher.
- The segments are not currently impaired. If data collected from these locations are primarily limited to wet-weather events when bacteria levels are generally higher, the segments could potentially be listed as impaired during future 303(d) assessment cycles.
- Columbia city limits now extend farther eastward than they did during MDNR's initial assessment between 2004 and 2006. As a result, accessible upstream locations are limited to sites that now include the City. If high bacteria levels are measured at these sites, the City may potentially be identified as a contributing source.

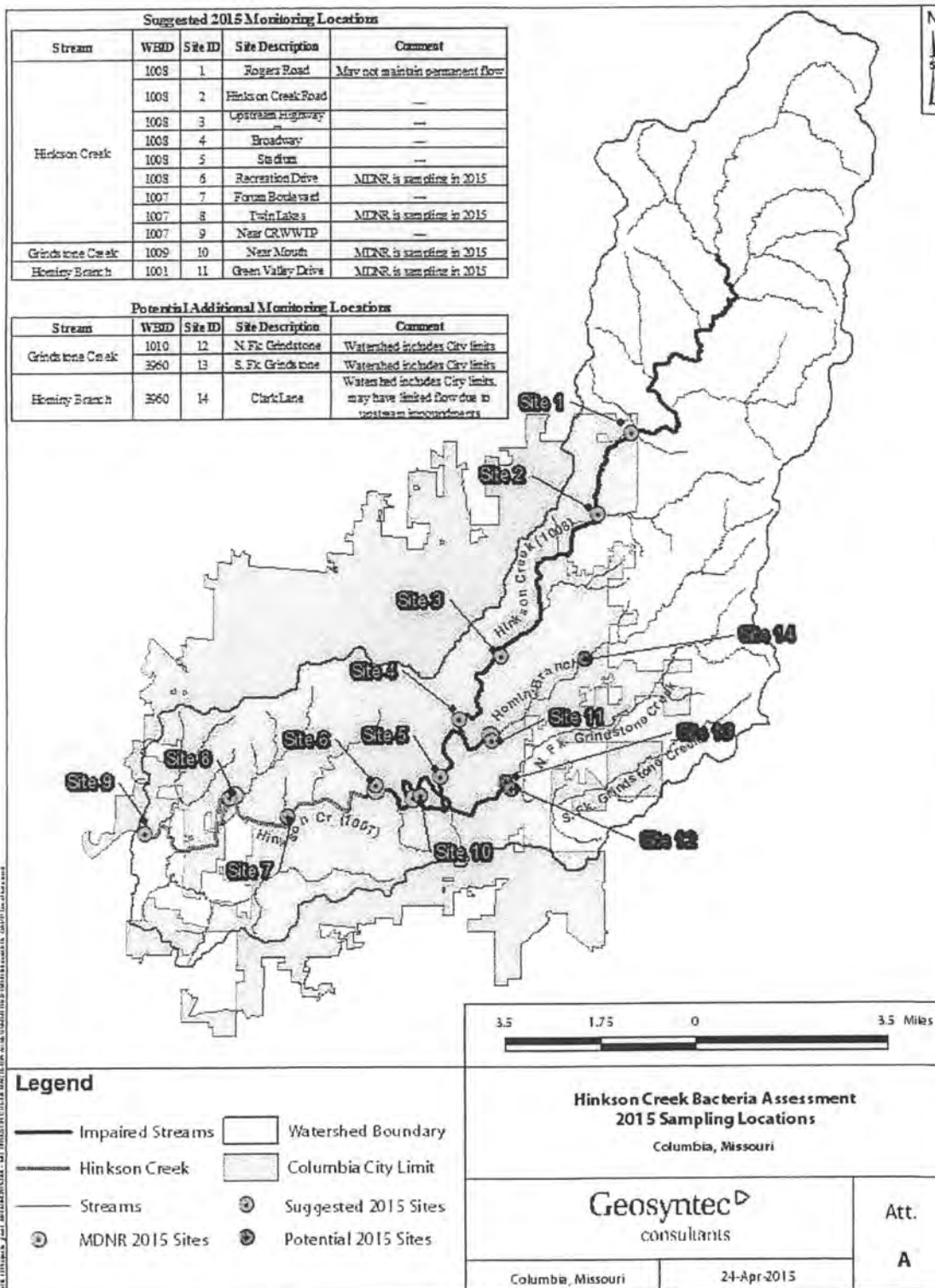
Table 4. Potential Monitoring Locations to Assess Upstream Sources.

Stream	WBID	Site ID	Site Description
Grindstone Creek	1010	12	N. Fk. Grindstone Cr.
	3960	13	S. Fk. Grindstone Cr.
Hominy Branch	3960	14	Clark Lane

4. QUALITY ASSURANCE PROJECT PLAN

As noted in Section 1, a QAPP will be developed to support monitoring activities. The QAPP requirements will be applicable to the activities of all participants involved with project implementation. The QAPP includes information on organization, responsibilities, procedures, quality control measures, data management and reporting to assure that:

- Proper preventive maintenance, equipment calibration, and approved analytical protocols are implemented so that all field measurements and analytical results are valid;
- Monitoring is conducted using sample tracking systems and chain-of-custody procedures that properly identify samples being collected and insure the control of those samples from field collection through analysis and data reduction;
- Records are produced and retained to document the quality of samples collected and analyzed, as well as the validity of applied procedures;
- Generated data are validated; and
- Calculations, evaluations, and decisions completed or deduced based on the results of the monitoring are accurate, appropriate, and consistent with the objectives of the plan.





Attachment A
Hinkson Creek 2015 Bacteria Evaluation
Phase 2 Scope of Services

Geosyntec Consultants, Inc. (Geosyntec), is working with the University of Missouri (MU) to re-evaluate existing bacteria levels in Hinkson Creek, Hominy Branch, and Grindstone Creek. In Phase 1, Geosyntec assisted in developing a quality assurance project plan (QAPP) that will be used to quantify current bacteria levels, identify potential sources, and support Hinkson Creek de-listing efforts, if supported by water quality data. For Phase 2, MU has requested that Geosyntec conduct the monitoring activities outlined in the QAPP. Specific tasks necessary to complete Phase 2 are described below.

Phase 2 Services – Conduct Monitoring

Task 2.1. Data Collection

Geosyntec will collect water quality and streamflow data as outlined in the QAPP developed in Phase 1. This task assumes the following:

- Bacteria, total suspended solids (TSS), and flow data will be collected at a total of 11 sites on Hinkson Creek and its tributaries.
- Samples will be collected on a bi-weekly basis beginning May 27, 2015 and ending October 31, 2015 (12 events).
- Water samples will be analyzed by an outside laboratory.

Task 2.2. Data Management

Geosyntec will organize, manage, and review data as outlined in the project QAPP. Final project data (field sheets, sample results, lab reports, quality assurance reports, etc.) will be saved electronically and given to MU at the end of the project.

Task 2.3. Reporting

Geosyntec will summarize the results of Tasks 2.1 and 2.2 in a brief memorandum. Geosyntec will submit a draft of the memorandum to MU for one round of review. This task includes time to modify and finalize the memorandum based on comments received from MU and attend one meeting to discuss results with stakeholders. *If additional support is needed, Geosyntec will prepare a separate scope and budget at MU's request.*

Considerations for Monitoring Services

Geosyntec strives to accommodate the needs and schedules of our clients. However, uncontrollable or unforeseen climatic events may delay collection of defensible and representative data. Geosyntec is not liable for project schedule delays resulting from uncontrollable climatic or discharge events that render sampling conditions non-representative or outside of regulatory sampling periods.

Landowner Access for Field Monitoring Services

MU will coordinate and obtain necessary landowner permissions to allow legal access by Geosyntec for all field monitoring tasks and sites.

Anticipated Phase 2 Schedule and Compensation

Assuming data collection ended October 31, 2015, Geosyntec would have the project summary memorandum finalized before December 31, 2015.

The budget for Tasks 2.1 – 2.3 is \$45,500 and will be performed on a time and materials basis in accordance with the rate schedule effective at the time services are rendered. This estimate will not be exceeded without MU's written consent. An itemized cost estimate is provided as Attachment B. Geosyntec's 2015 rate schedule, subject to change each calendar year, is provided as Attachment C.

Attachment B

Phase 2 Budget

Hinkson Creek 2015 Bacteria Evaluation Phase 2 Estimated Budget

	Rate	Unit	Units/Task			Total Units	Total Cost
			Task 1	Task 2	Task 3		
<i>Professional</i>							
Senior Professional	\$187	hour	6		12	18	\$3,366
Project Professional	\$167	hour	10	16	8	34	\$5,678
Professional	\$146	hour	20	16	28	64	\$9,344
Senior Staff Professional	\$126	hour	80	20	14	114	\$14,364
Project Administrator	\$59	hour	6	4	6	16	\$944
Subtotal (hrs)	---	---	122	56	68	230	---
Subtotal (cost)	---	---	\$16,146	\$7,764	\$9,786	---	\$33,696
<i>Non-Professional</i>							
Mileage	\$0.555	miles	\$ 144	\$ -	\$ -	260 miles	\$144
Direct Expenses - Eq. Purchases	Cost + 12%	task	\$ -	\$ -	\$ -	Cost + 12%	\$0
Direct Expenses - Other	Cost + 12%	task	\$ -	\$ -	\$ -	Cost + 12%	\$0
Subcontract Services	Cost + 12%	task	\$ 8,719	\$ -	\$ -	\$8,719	\$8,719
Communications Fee	2%	task	\$ 484	\$ 213	\$ 294	\$990	\$990
Subtotal	---	---	\$11,298	\$213	\$294	---	\$11,804
Total	---	---	\$27,444	\$7,977	\$10,080	\$45,500	

Task 1: Data Collection

Task 2: Data Management

Task 3: Reporting

Attachment C
GEOSYNTEC CONSULTANTS 2015 RATE SCHEDULE

	<u>Rate/Hour</u>
Staff Professional	\$106
Senior Staff Professional	\$126
Professional	\$146
Project Professional	\$167
Senior Professional	\$187
Associate	\$207
Principal	\$224
Engineering Technician I	\$ 50
Engineering Technician II	\$ 60
Senior Engineering Technician I	\$ 66
Senior Engineering Technician II	\$ 72
Site Manager I	\$ 79
Site Manager II	\$ 89
Construction Manager	\$100
Direct Expenses	Cost plus 10%
Subcontract Services	Cost plus 12%
Technology/Communications Fee	3% of Professional Fees
Specialized Computer Applications (per hour)	\$ 12
Personal Automobile (per mile)	Current Gov't Rate
Photocopies (per page)	\$.08

Rates are provided on a confidential basis and are client and project specific.

Unless otherwise agreed, rates will be adjusted annually based on a minimum of the applicable Consumer Price Index (CPI).

Rates for field equipment, health and safety equipment, and graphical supplies presented upon request.