

## **INTERGOVERNMENTAL COOPERATIVE AGREEMENT FOR THE HINKSON CREEK CHEMICAL ANALYSIS PROJECT**

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 (the “University”) and those parties enter this Intergovernmental Cooperative Agreement (Agreement) effective on the date of signing by the third party executing this Agreement (“Effective Date”).

Whereas, the parties entered an Intergovernmental Cooperation Agreement, attached hereto as Exhibit A, on April 2, 2013; and,

Whereas, in that Agreement the parties acknowledged their mutual obligations in certain projects initiated under a Collaborative Adaptive Management (CAM) process emanating from a Municipal Separate Storm Sewer System (MS4) permit issued by the Missouri Department of Natural Resources; and,

Whereas, the parties now wish to agree to the scope and details and costs of a sampling project known as the “Hinkson Creek Chemical Analysis Project”.

Whereas, the County will enter into the contract with the U.S. Geological Survey to perform work for the project.

Whereas, the County will provide the City and the University access to all data and deliverables received from the U.S. Geological Survey.

NOW, THEREFORE, in consideration of the mutual covenants in this Agreement, the parties agree as follows:

1. The parties agree to the scope and details of the project known as the “Hinkson Creek Chemical Analysis Project” as described in the attached Exhibit B. This project has a total not to exceed amount of \$75,392.00, with each of the parties’ total proportionate one-third costs not to exceed \$25,130.67. The proportionate payments shall be subject to the appropriations of each of the parties. Subject to appropriation, the City Finance Director will have the authority to make payment on behalf of the City to the County, after receiving an invoice for the proper amounts as set forth herein. Subject to appropriations, the University and County shall take whatever individual actions they deem appropriate to make payment for the proper amounts as set forth herein.
2. 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.

3. This Agreement is for the sole benefit of the parties, and nothing in this Agreement is intended to confer any rights or remedies on any third party.
4. 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.
5. 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.
6. 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.
7. 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.
8. The parties state that this Agreement, together with its attached Exhibits A and B, contains the entire agreement between the parties, and there are no other oral, written, express, or implied promises, agreements, representations, or inducements not specified herein.
9. No Waiver of Sovereign Immunity. In no event shall the language of this Agreement constitute or be construed as a waiver or limitation for any Party's rights or defenses with regard to each Party's applicable sovereign, governmental, or official immunities and protections as provided by federal and state constitution or law.

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: \_\_\_\_\_  
Name

\_\_\_\_\_  
Date

**CITY OF COLUMBIA, MISSOURI**

By:

\_\_\_\_\_  
John Glascock, City Manager 

\_\_\_\_\_  
Date

ATTEST:

\_\_\_\_\_  
Sheela Amin, City Clerk

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 55806620-504990 and that there is an unencumbered balance to the credit of such account sufficient to pay therefore.

\_\_\_\_\_  
Matthew Lue, Director of Finance

**BOONE COUNTY, MISSOURI**

By:

\_\_\_\_\_  
Dan Atwill, Presiding Commissioner

\_\_\_\_\_  
Date

ATTEST:

\_\_\_\_\_  
Brianna L. Lennon, County Clerk

APPROVED AS TO LEGAL FORM:

\_\_\_\_\_  
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 w do not create a measurable county obligation at this time.)

\_\_\_\_\_  
County Auditor

\_\_\_\_\_  
Date

## INTERGOVERNMENTAL COOPERATION AGREEMENT

This intergovernmental cooperation agreement (the "Agreement") is entered into on this 2<sup>ND</sup> day of APRIL, 2013, by and between the City of Columbia, Missouri, a Constitutional charter city of the State of Missouri (hereinafter referred to as the "City"), and the County of Boone in the State of Missouri (hereinafter referred to as "County"), and The Curators of the University of Missouri (hereinafter referred to as "University"); and may collectively be referred to as the "Parties."

WHEREAS, a Total Maximum Daily Load (TMDL) for Hinkson Creek was issued by the Federal Environmental Protection Agency (EPA) in 2011; and

WHEREAS, the City, County, and University are partners in a Municipal Separate Storm Sewer System (MS4) permit issued by the Missouri Department of Natural Resources, which is affected by the TMDL; and

WHEREAS, the City, County, and University entered into an agreement with the EPA and the Missouri Department of Natural Resources (DNR) to address the TMDL with a Collaborative Adaptive Management (CAM) process; and

WHEREAS, the City, County, and University wish to enter into an agreement with regard to how the Parties will contribute to projects that are initiated in the CAM process to address the TMDL.

NOW, THEREFORE, the parties agree as follows:

- 1 **TYPES OF PROJECTS.** The Parties will contribute to projects which are initiated in the CAM process to address the TMDL for research, study, or monitoring-type projects and for construction projects.

For research, study, or monitoring-type projects, the three entities will each be responsible for one-third of the project cost. The University shall coordinate research, study, or monitoring-type projects on behalf of the parties. Before any research, study, or monitoring-type project is started, the Parties shall agree in writing regarding the scope and details of the project, including a not-to-exceed amount for each project.

For construction projects, each entity will exercise discretion and control over projects and be responsible for the costs of projects conducted on its own property unless otherwise agreed between the parties in writing.

2. **APPROPRIATIONS.** All types of projects shall be subject to the appropriations of the Parties who shall pay for the projects. Subject to these appropriations, the Parties shall each delegate in writing a person who shall be responsible for implementing this agreement and any associated documents or contracts to give this agreement effect.



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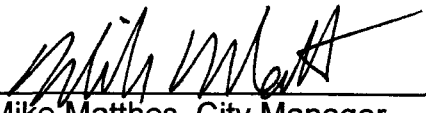
COL CITY  
CAM PROJ HINKSON CREEK

3. **TERM.** The effective date of this Agreement is the date the last party executes the Agreement and provides original executed documents to the other Parties. Any of the Parties may terminate this Agreement at any time by providing the other Parties written notice of their intent to terminate at least thirty (30) days in advance of the intended termination date
4. **ASSIGNMENT.** None of the Parties 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.
5. **SOLE BENEFIT OF PARTIES.** This Agreement is for the sole benefit of the City, County and University. Nothing in this Agreement is intended to confer any rights or remedies on any third party.
6. **ENTIRE AGREEMENT.** The Parties state that this Agreement contains the entire agreement between the Parties, and there are no other oral, written, express or implied promises, agreements, representations or inducements not specified herein.
7. **AUTHORITY.** The signatories to this Agreement warrant and certify that they have obtained the necessary authority, by resolution or otherwise, to execute this Agreement on behalf of the named party for whom they are signing.

[SIGNATURES ON THE FOLLOWING PAGES]

IN WITNESS WHEREOF, the Parties hereto have been duly authorized to execute this Agreement as of the day and year first above written.

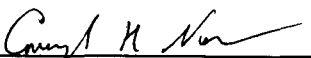
**CITY OF COLUMBIA, MISSOURI**

By:   
Mike Matthes, City Manager

ATTEST:

  
Sheela Amin, City Clerk

APPROVED AS TO FORM:

  
~~Fred Boeckmann~~, City Counselor  
Cavanagh Nae

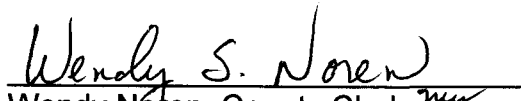


**BOONE COUNTY, MISSOURI**

By:

  
Dan Atwill, Presiding Commissioner

ATTEST:

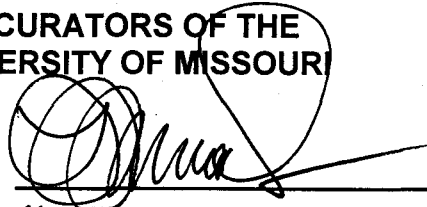
  
Wendy Noren, County Clerk *my*

APPROVED AS TO FORM:

  
C.J. Dykhouse, County Attorney

THE CURATORS OF THE  
UNIVERSITY OF MISSOURI

By:



Lisa J. Wimmenauer  
Assoc. Director, Business Services

ATTEST:

Approved By

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MAR 05 2013  
PJH  
General Counsel via EMAIL

163 -2013

## CERTIFIED COPY OF ORDER

STATE OF MISSOURI

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ea.

April Session of the April Adjourned

Term. 20 13

County of Boone

In the County Commission of said county, on the

2nd

day of April

20 13

the following, among other proceedings, were had, viz:

Now on this day the County Commission of the County of Boone does hereby approve the Intergovernmental Cooperation Agreement between the County of Boone, the City of Columbia and The Curators of the University of Missouri as it relates to the collaborative adaptive management implementation process for Hinson Creek.

The terms of this Cooperative Contract are stipulated in the attached Intergovernmental Cooperation Agreement. It is further ordered the Presiding Commissioner is hereby authorized to sign said Intergovernmental Cooperation Agreement.

Done this 2nd day of April, 2013.

ATTEST:

Wendy S. Noren  
Wendy S. Noren  
Clerk of the County Commission

Daniel K. Atwill  
Daniel K. Atwill  
Presiding Commissioner  
Karen M. Miller  
Karen M. Miller  
District I Commissioner  
Janet M. Thompson  
Janet M. Thompson  
District II Commissioner

UNITED STATES GOVERNMENT  
memorandum

DATE: June 16, 2021

REPLY TO  
ATTN OF: David Alvarez, USGS, 573-441-2970, [dalvarez@usgs.gov](mailto:dalvarez@usgs.gov)

SUBJECT: Revised cost estimate for the analysis of water and sediment samples from Hinkson Creek

TO: Lynne Hooper, Boone County Resource Management, [LHooper@boonecountymo.org](mailto:LHooper@boonecountymo.org)

Investigation of continued causes of impairment in Hinkson Creek is of interest to the Hinkson Creek Science Team. Some work has been done looking at basic water quality parameters, but little data exists looking at organic and inorganic contaminants which may be related to increased urbanization in the watershed. The Environmental Chemistry Branch at the USGS Columbia Environmental Research Center (CERC) was asked to develop a sampling plan which includes potential indicator chemicals that may indicate an increased contaminant loading into the Creek. Below is an estimate for the chemical analysis of water and sediment samples from Hinkson Creek.

The costs below represent totals for the sampling at 5 sites each during an upcoming Fall and Spring season. Options for both water and sediment analyzers are included. Proposed chemicals to be investigated include: a suite of metals typical of urban environments, current use pesticides (CUP) related to agriculture, wastewater indicators (WI), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides, polychlorinated biphenyls (total PCBs), and polybrominated diphenyl ether (PBDE) flame retardants. A tentative list of analytes is provided as an attachment to this memo. In addition to the specific chemical analyses, a screen for total estrogenicity of chemicals will be run using the *in vitro* yeast estrogen screen (YES). The YES assay is a cell-based assay where estrogens or estrogen-mimicking chemicals bind to an estrogen receptor which can be measured. Results from the YES can indicate the presence of potential endocrine disruptors. CERC is finalizing methods for the analysis of per and polyfluorinated surfactants (PFAS) in passive samplers and are planning methods for sediments. Depending on availability, these methods may be run as well.

Wastewater indicators includes a series of chemicals such as fragrances, surfactants, plasticizers, alternative fire retardants, and industrial chemicals which are indicative of wastewater and septic discharges. PAHs are components of petroleum products and are prevalent in urban environments. Organochlorine pesticides include the mostly banned, legacy pesticides such as chlordanes, endosulfans, and DDTs which along with the PCBs and PBDEs are persistent and are known to have toxicological effects.

For the organics in water, passive sampling devices will be used due to the expected low concentrations and episodic changes in concentrations over time. These devices will be deployed in the Creek for approximately 1 month. Whole water samples will be collected for the metals analysis. Sediment samples will be collected at each site by creating a composite sample from multiple subsamples of surficial sediment collected within a specific area at each site.

**Cost estimates 2 sampling events (Fall and Spring) at 5 sites along Hinkson Creek**

	<b>Requested Funds</b>	<b>USGS Contributed Funds</b>
<b>Water</b>		
<i>Passive Samplers for Organics</i>		
PAHs, OC/PCB/PBDE, WI, CUP	\$ 37,793	\$ -
(or) PAHs, OC/PCB/PBDE, WI	\$ 26,725	\$ -
PFAS	\$ -	\$ 7,520
YES assay	\$ -	\$ 3,760
<i>Discrete water sample for Inorganics</i>		
Recoverable metals	\$ 4,512	\$ -
General water quality	\$ 1,128	\$ -
Anions	\$ 1,053	\$ -
Cations	\$ 1,053	\$ -
<b>Sediments</b>		
PAHs	\$ 9,024	\$ -
WI/OC/PCB/PBDE (combined method)	\$ 15,039	\$ -
Total recoverable metals	\$ 5,790	\$ -
<b>Quality Control</b>		
All matrices + PI support	\$ -	\$ 45,631
<b>Total (full package)</b>	<b>\$ 75,392</b>	
USGS Contributed		\$ 56,911

CERC will contribute the analysis for PFAS (as methods are available), the YES assay, all QC costs along with the time of 2 principal investigators for project management, field sampling, data review and reporting. Data will be provided to the Hinkson Creek Science Team as an Excel spreadsheet and will also be released as a USGS data release package according to USGS guidelines. Depending on the findings, a publication of results in a scientific journal may be considered. The above costs include the USGS overhead of 50.391%.

## Appendix – Tentative Analyte Lists

### Total Recoverable Metals

Mercury, Chromium, Lead, Copper, Zinc, Silver, Cadmium, Nickel, Selenium, Vanadium, Cobalt

### General Water Quality

Hardness, Alkalinity, pH, Dissolved Oxygen, Ammonia

### Anions

Fluoride, Chloride, Nitrate+Nitrite (as nitrogen), Bromide, Sulfate, Phosphate

### Cations

Sodium, Magnesium, Calcium, Iron, Manganese, Strontium, Potassium

### Per and polyfluorinated surfactants (PFAS)

*Method in development – analyte list not yet available*

### Polycyclic Aromatic Hydrocarbons (PAHs)

1,2-dimethylnaphthalene  
1-ethylnaphthalene  
1-methylfluorene  
1-methylnaphthalene  
2,3,5-trimethylnaphthalene  
2-methylfluoranthene  
2-methylnaphthalene  
2-methylphenanthrene  
3,6-dimethylphenanthrene  
4-methylbiphenyl  
9-methylanthracene  
Acenaphthene  
Acenaphthylene  
Anthracene  
Benz[a]anthracene  
Benzo[a]pyrene  
Benzo[b]fluoranthene  
Benzo[b]naphtho[2,1-d]thiophene  
Benzo[b]thiophene  
Benzo[e]pyrene  
Benzo[g,h,i]perylene  
Benzo[k]fluoranthene  
Biphenyl  
Chrysene  
Dibenz[a,h]anthracene  
Dibenzothiophene  
Fluoranthene  
Fluorene  
Indeno[1,2,3-c,d]pyrene  
Naphthalene  
Perylene  
Phenanthrene  
Pyrene

Organochlorines, polychlorinated biphenyls, polybrominated diphenyl ethers (OC/PCB/PBDEs)

alpha-Benzenehexachloride (a-BHC)

beta-Benzenehexachloride (b-BHC)

Chlorpyrifos

cis-Chlordane

cis-Nonachlor

cis-Permethrin

Dacthal

delta-Benzenehexachloride (d-BHC)

Diazinon

Dieldrin

Endosulfan

Endosulfan Sulfate

Endosulfan-II

Endrin

Heptachlor

Heptachlor Epoxide

Hexachlorobenzene (HCB)

Lindane

Mirex

o,p'-DDD

o,p'-DDE

o,p'-DDT

Oxychlordane

p,p'-DDD

p,p'-DDE

p,p'-DDT

p,p'-Methoxychlor

Pentachloroanisole (PCA)

Tefluthrin

trans-Chlordane

trans-Nonachlor

trans-Permethrin

Trifluralin

Total Polychlorinated Biphenyls (Total PCBs)

Polybrominated Diphenyl Ether congener 28 (PBDE-28)

Polybrominated Diphenyl Ether congener 47 (PBDE-47)

Polybrominated Diphenyl Ether congener 66 (PBDE-66)

Polybrominated Diphenyl Ether congener 85 (PBDE-85)

Polybrominated Diphenyl Ether congener 99 (PBDE-99)

Polybrominated Diphenyl Ether congener 100 (PBDE-100)

Polybrominated Diphenyl Ether congener 153 (PBDE-153)

Polybrominated Diphenyl Ether congener 154 (PBDE-154)

Polybrominated Diphenyl Ether congener 183 (PBDE-183)

**Wastewater Indicator Chemicals (WI)**

<b>Chemical</b>	<b>Common Use</b>
1,4-Dichlorobenzene	moth repellant, fumigant, deodorant
4-n-octylphenol	surfactant
Acetophenone	fragrance in detergent and tobacco, flavor in beverages
Anthraquinone	manufacturing dye/textiles, seed treatment, bird repellant
Atrazine	herbicide
Benzophenone	fixative for perfumes and soaps
Bromacil	herbicide, general use pesticide, usage on grass/brush
Bromoform	wastewater ozonation byproduct, military/explosives
Caffeine	beverages, diuretic
Camphor	flavor, odorant, ointments, moth repellent, fireworks (nitrocellulose plasticizer)
Carbaryl	insecticide, crop and garden uses
Carbazole	insecticide, manufacturing dyes, explosives, and lubricants
Cashmeran (DPMI)	fragrance
Celestolide (ADBI)	fragrance
Chlorpyrifos	Insecticide
Cholesterol	often a fecal indicator, plant sterol
Cotinine	primary nicotine metabolite
Diazinon	insecticide
Dichlorvos	insecticide, pet collars, flies, also a degradate of naled or trichlofon
Diethyl phthalate	Plasticizer
Diethylhexylphthalate (DEHP)	Plasticizer
d-Limonene	fungicide, antimicrobial, antiviral, fragrance in aerosols
Ethyl citrate	cosmetics, pharmaceuticals
Galaxolide (HHCB)	fragrance
Indole	pesticide inert ingredient, fragrance in coffee
Isophorone	solvent for lacquer, plastic, oil, silicone, resin
Isopropylbenzene (cumene)	manufacturing phenol/acetone, fuels, and paint thinner
Isoquinoline	flavors and fragrances
Menthol	cigarettes, cough drops, liniment, mouthwash
Metalaxyl	herbicide, fungicide, general use pesticide, golf/turf application
Methyl salicylate	liniment, food, beverage, UV-absorbing lotions
Methyl Triclosan	metabolite of triclosan (an antibacterial agent)
N,N-diethyltoluamide (DEET)	insect repellent
N-butyl benzenesulfonamide	plasticizer in nylon production
para-Cresol	wood preservative
Phantolide (AHMI)	fragrance
Phenol	disinfectant, manufacturing of several products
Prometon	herbicide, applied prior to blacktop application
p-tert-Octylphenol	surfactant
Tetrachloroethylene	solvent, degreaser, veterinary anthelmintic
Tonalide (AHTN)	fragrance
Traseolide (ATII)	fragrance
Tributyl phosphate (TBP)	flame retardant
Triphenyl phosphate (TPP)	flame retardant, plasticizer in resins waxes, roofing paper
Tris(1,3-dichloro-2-propyl)phosphate (TDCPP)	flame retardant
Tris(1-chloro-2-propyl)phosphate (TCPP)	flame retardant
Tris(2-butoxyethyl)phosphate (TBEP)	flame retardant
Tris(2-chloroethyl)phosphate (TCEP)	flame retardant
Tris(2-ethylhexyl)phosphate (TEHP)	flame retardant



### Current-use Pesticides (CUPs)

2,6-diethylaniline  
acetochlor  
alachlor  
atrazine  
benfluralin  
butylate  
carbaryl  
carbofuran  
chlorpyrifos  
cyanazine  
dacthal  
deethylatrazine  
desulfinylfipronil  
diazinon  
dieldrin  
disulfoton  
eptam (eptc)  
ethalfluralin  
ethoprop  
fipronil  
fipronil degradate  
fipronil sulfide  
fipronil sulfone  
fonofos  
lindane  
linuron  
malathion  
methyl azinphos  
methyl parathion  
metolachlor  
metribuzin  
molinate  
napropamid  
parathion  
pebulate  
pendimethalin  
phorate  
prometon  
pronamide  
propachlor  
propanil  
propargites  
simazine  
tebuthiuron  
terbacil  
terbufos  
thiobencarb  
triallate  
trifluralin