

Collaborative Adaptive Management (CAM) Progress Report
Stakeholder Committee
January 1, 2020– December 31, 2020

Committee Members

Monica Espinosa, EPA CAM Facilitator

Members	Representing
Karl Skala	City of Columbia
Fred Parry	Boone County Commission
Todd Houts	University of Missouri
Tim Rielly	Missouri Department of Natural Resources
Tom Trabue	Chamber of Commerce
Mark Farnen	Central Missouri Development Council
Della Streaty-Wilhoit	Columbia School Board
Dee Dokken	Sierra Club
Diane Oerly	Stream Teams
Jeanine Pagan	Property Owner
Paul Mehrle	Property Owner
Frank Gordon	Soil & Water Conservation Board
Nathan Odle	Large Scale Commercial Representative
Jay Turner	Agricultural Community

In 2011 the U.S. Environmental Protection Agency (EPA) established the Hinkson Creek TMDL calling for a substantial reduction in peak flow for specified design storm events. An alternate plan was negotiated in 2012 among the EPA, Missouri Department of Natural Resources (MDNR), Boone County, the City of Columbia, and the University of Missouri which involved Collaborative Adaptive Management (CAM.) “Collaborative adaptive management is a science-driven, stakeholder-based process for decision-making while dealing with the scientific unknowns inherent in many physical and biological systems. It uses” an iterative “process to make changes and then to determine the effect of those changes.”

<http://www.helpthehinkson.org/stakeholders.asp> The EPA provides a facilitator, MDNR provided three years of testing and participates in CAM committees, and the local entities share costs and provide support for the CAM committees. The standing committees are: Stakeholder Committee, Action Team, and Science Team. The stakeholders were selected to represent a broad spectrum of local interests who make recommendations to Boone County, the City of Columbia, and the University of Missouri. The Action Team members are professionals associated with Boone County, the City of Columbia, the University of Missouri, Boone County

Regional Sewer District, and Missouri Department of Transportation who provide support to the Stakeholder Committee. The Science Team members are volunteer scientists and a stormwater engineer. This team makes recommendations to the stakeholders about projects to learn more about Hinkson Creek and ways to improve its water quality. To date, Stakeholder Committee recommendations have been based on recommendations from the Science and Action Teams.

The goal of the CAM process is to improve the water quality of Hinkson Creek so it can be removed from an impaired status. The criterion for delisting Hinkson Creek includes three consecutive tests, in which all the test sites are fully supporting (16 or better on the Macroinvertebrate Stream Condition Index [MSCI] Scores.) An alternate criterion is the percent of fully supporting sites in the reference stream in the Ozark/Moreau/Loutre Ecological Drainage Unit. For example, if 85% of the reference stream sites are fully supporting then at least 85% of the Hinkson Creek sites must be fully supporting as well. As an aside, dissolving CAM would reinstate the EPA TMDL process.

This year found us in the middle of the COVID-19 pandemic. Due to locally issued health directives, many agency, staff, and committee volunteers found themselves limited in their contributions. After regrouping, committees began meeting virtually. Action items that were in progress continued as planned. Other action items were delayed or postponed. While the committees did not make or approve any new proposals, good progress was still made towards understanding Hinkson Creek's stressors.

Commented [NF1]: Still working on this section.

The following is a summary of the CAM Stakeholder Committee activities for 2020 with appropriate online links. The CAM Stakeholder Committee was scheduled to meet one time since the last report. Minutes exist for that meeting and can be found at <http://www.helpthehinkson.org/CAMStakeholders.asp>.

- I. Presentations and Reports
 - a. None
- II. Riparian Sub-Committee met two times in 2020. Minutes are at: <http://www.helpthehinkson.org/RiparianSub-committee.asp>
 - a. There was planning for a USDA Regional Conservation Partnership Program (RCP) grant proposal for riparian cost share BMPs. Action is on hold awaiting an RFP.
- III. Recommendations and Actions
 - a. Actions:
 - i. Hinkson Creek Aquatic Macroinvertebrate Data Mining Project - ongoing
 - ii. Forum Nature Area Monitoring Project was completed in November 2019 and the analysis and reporting phase was completed in 2020.
 - iii. Sediment Mapping Project was completed in August 2018 and is in the data analysis phase.
 - iv. University of Missouri Watershed Water Quality Assessment began in July 2020. Students will be collecting samples at 30 sites on mainstem Hinkson Creek and 10 sites along its tributaries. This assessment will

evaluate water chemistry under different hydrologic conditions by analyzing for chlorides, nitrogen, phosphorus, and fine sediments. In 2020, nine sites were sampled. Sample collection will continue through 2022. Once the project is complete, Dr. Argerich will compile the data and create a model to show where stressors are present.

- v. USGS Comprehensive Chemical Sampling is on hold pending funding and completion of USGS backlog due to COVID-19 restrictions. The City, County, and MU are hopeful to fund this in 2022.
- b. Recommendations:
 - i. CAM website redesign.
- c. Proposals:
 - i. None

IV. Macroinvertebrate Results (MSCI scores determine 303d status.)

- a. Macroinvertebrate results through 2017 are presented in tabular form at: [http://www.helpthehinkson.org/documents/2017_Hinkson_MSCI_Table%20\(002\).pdf](http://www.helpthehinkson.org/documents/2017_Hinkson_MSCI_Table%20(002).pdf) The last nine test periods produced mixed results. The best results were in the Fall of 2014 (8 of 11 sites fully supporting) and Spring of 2016 (8 of 11 fully supporting). In the Fall of 2014 seven supporting sites were at stations HC 4-8 while in Spring 2016 seven supporting sites were at stations HC 1-5.5. The worst results were the Spring of 2017 (3 of 11 supporting) and the Fall of 2017 (2 of 8 supporting). Every site was fully supporting at least three times (3-6) and not fully supporting at least two times (2-6). Very dry weather probably was a factor for some of the poor results.
- b. Due to the mixed results and cost of testing, the Action Team decided not to sample for the next 1-3 years until they know where to target their sampling.
- c. The Hinkson Creek Aquatic Macroinvertebrate Data Mining Project (IV.a.i. above) introduced a Request for a Statement of Qualifications (RSQ) on March 1, 2019. A Consultant was selected in July and their findings were presented at the first Science Team meeting after the contract ended in late July 2020. Findings will be presented to the Stakeholders at the next All Team Meeting in Spring 2021.

Appendix

The City of Columbia, Boone County, and the University of Missouri completed additional storm water projects that were independent of CAM. Below are some of these projects.

Boone County

- The El Chaparral Ave. Culvert Rehab Project installed a Cured In-Place Pipe (CIPP) system in the existing twin 66: diameter corrugated metal culvert crossing. Due to numerous underground utilities and the repair location being the only ingress/egress point for half of the subdivision, rehabilitating the pipes in place with a no-dig technique was selected over pipe replacement. The entire cost for the project was \$160,834.00.

- The Water's Edge Estates Stormwater Improvements Phase II Project replaced a zig-zag outlet pipe with new pipe and junction boxes in one location and replaced an outlet pipe and installed approx. 130 feet of new pipe and junction boxes at another location. Total cost for the project was \$75,722.00.

City of Columbia

Stormwater and Sanitary Sewer Utility Work:

Stormwater:

- Hinkson Creek Watershed, Grindstone Creek Subwatershed - Removed invasive plants at the El Chaparral Riparian Restoration project site.
- Hinkson Creek Watershed, County House Branch Subwatershed – Replaced two existing inlets and 27 linear feet of CMP stormwater pipe on Parkridge Dr.
- Hinkson Creek Watershed, Flat Branch Subwatershed – Replaced 8 linear feet of CMP stormwater pipe on South Glenwood.

Wastewater Treatment Plant & Wetlands:

- Hinkson Creek & Perche Creek Watersheds – Prairie Pollinator, Riparian and Forest Restoration Project – Work included site preparation, invasive control, tree grow out for fall planting, seedling plug production of native wildflowers, seeding of prepared plots, overseeding of existing plots, and ongoing maintenance activities including mowing and spot spraying.

Sanitary Sewer:

- Hinkson Creek Main Stem – Relocated 216 linear feet of 8” sewer at Columbia Country Club.
- Hinkson Creek Watershed, Flat Branch Subwatershed – Replaced 2,786 linear feet of failing 8” sewers as part of a Private Common Collector Elimination (PCCE) project.
- Hinkson Creek Watershed, County House Branch Subwatershed – Replaced 179 linear feet of failing 8” sewers as part of a PCCE project.

University of Missouri-Columbia

- Installation of a stormwater detention facility ant the MUHC North Clinic Building.