Hinkson Science Team Meeting Minutes

A meeting of the Hinkson Creek Science Team was held at the Allstate Consultants' Conference Room (3312 Lemone Industrial Blvd, Columbia, MO 65201) on February 11, 2020, from 3PM to 5:15 PM.

Science Team Members

Name	Organization	Present/Absent for Meeting
Catherine Wooster-Brown	U.S. Environmental Protection Agency	Present (phone)
Paul Blanchard	Missouri Department of Conservation	Present
Robert Voss	Missouri Department of Natural Resources	Present
John Holmes	Allstate Consultants	Present
Robb Jacobson	U.S. Geological Survey	Present
Dave Michaelson	Missouri Department of Natural Resources	Present
Dan Obrecht	University of Missouri	Present
Enos Inniss	University of Missouri	Present (phone)
Barry Poulton	U.S. Geological Survey	Present

Other People in Attendance: Michele Woolbright, Tim Rielly, Tom Wellman, Richard Stone, Cody Luebbering, Georganne Bowman, Jon White, Alba Argerich, Lynne Hooper, Joe Engeln, Mike Belt.

Minutes

It was decided to table the vote to approve the January 7, 2020, meeting minutes until more Science Team members had a chance to review them.

Discussion Items

1. Richard Stone--Columbia Public Works de-icing methods
    - Richard's presentation provided an overview of Columbia's winter weather response actions.
    - The City has certain snowfall threshold amounts that determine types of removal methods.
        i. Snows of ≥8 inches require piling snow in downtown intersections and machinery to move these piles off site to melt (Cosmo Park and University Village [a one-time occurrence]).

ii. The goal is always to get the roads to a "passable" condition, which means that a street is passable by a front wheel drive vehicle driven in a weather-prudent manner.

- Richard had a slide showing the number of tons of salt used by fiscal year going back to 2013. Usage ranged from 1,717 tons in FY2016 to 4,837 tons in FY2014. Thus far, in FY2020, 4,118 tons have been used.
- Depending on weather and road conditions, Columbia uses salt, salt brine and beet juice, and calcium chloride.
  i. The salt brine and beet juice mix is used to pre-wet, which enables salt to stick to road surfaces and reduces scattering.
  ii. Calcium chloride is used very sparingly because it is a more aggressive compound than sodium chloride (more prone to damaging infrastructure). It is more effective, however, in sub-zero degree Fahrenheit conditions.
  iii. In extremely cold temperatures with icy roads, sand is deployed for vehicle traction.
- The City is experimenting with potassium acetate and calcium-magnesium acetate at the Columbia Regional Airport this winter. These compounds are extremely expensive compared to sodium chloride (~$1,000/ton vs. $65-100/ton).
- John Holmes has saved the de-icing presentations and supporting literature from this meeting and past meetings to: https://drive.google.com/drive/folders/1wkdiJGviJQ20jfDxdDZq8qDOB3NH0-ri

2. Mike Belt—MoDOT de-icing methods
   - MoDOT's snow removal and road treatment methods are generally very similar to those used by Columbia.
   - MoDOT has been experimenting with using sawdust as an abrasive. Mike asked the Team to consider whether sawdust use would have negative effects on water quality.
   - MoDOT follows Federal Highway Administration road treatment guidance charts.
     i. These charts provide guidance on virtually all types of weather events.
     ii. Minimum suggested application rate for road salt is 100 lbs./lane mile, which roughly equates to one salt grain per square foot.
   - Mike also talked about using Geomelt (a liquid mixture of sodium chloride brine and beet juice) as a pre-treatment. It helps to break the bond between the pavement and the snowpack, making for more effective plowing.

3. Update on the Invertebrate Data Project
   - Jon White (MU Environmental Health and Safety) has provided additional publications to Geosyntec for their use in analyzing the Hinkson Creek macroinvertebrate data.

4. April 28 All-Team Joint Meeting discussion
   - The Team discussed topics to present at the April 28 meeting.
   - The meeting format is meant to be weighted more toward discussion than presentations. Each team is expected to give a 20-minute overview, leaving the remainder of the 3-hour meeting open for conversation.
   - The following points were suggested for the Science Team presentation:

i. Start with a reiteration of the role of the Science Team;
ii. Briefly discuss the conceptual model, giving a quick rundown of its features;
iii. List the studies that have been completed and how they have fit with the conceptual model;
iv. List the projects currently underway and those that are planned for the upcoming field season.
    - Dr. Alba Argerich's (MU) ongoing Hinkson Creek water quality study.
    - Macroinvertebrate data mining project by Geosyntec.
    - Dr. Dave Alvarez's (USGS) upcoming contaminants monitoring study.

- Tim Rielly volunteered to create a draft presentation by the next meeting. The Team will review and provide comments.

5. Next Meeting

The next meeting for the Science Team is currently scheduled from 3 pm to 5pm on March 3, 2020, at the Allstate Consultants' Conference Room (3312 Lemone Industrial Blvd, Columbia, MO 65201).