EAST-WEST GATEWAY
Council of Governments

Creating Solutions Across Jurisdictional Boundaries

AGENDA
WATER RESOURCES ADVISORY COMMITTEE
Thursday, March 28, 2019
10:30 AM – 12:00 PM
East-West Gateway Boardroom

1. CALL TO ORDER - Carol Lawrence, Chair, East-West Gateway Council of Governments

   A. Introductions

2. DISCUSSION ITEMS

   A. Project Clear Stormwater Capital Rate Proposal
      - Brian Hoelscher, Metropolitan St. Louis Sewer District
      - Sean Hadley, Metropolitan St. Louis Sewer District

   B. Fourth National Climate Assessment / Green Infrastructure Strategies
      - John Posey, East-West Gateway Council of Governments

   C. Green Infrastructure Elements of the Great Streets Program
      - Paul Hubbman, East-West Gateway Council of Governments

   D. Water Matters – Nine Network

   E. Report from OneSTL Water and Green Infrastructure Working Group

3. OTHER BUSINESS/ANNOUNCEMENTS

4. ADJOURNMENT

Chair
Mark A. Kern
Chairman, St. Clair County Board
Vice Chair
Steve Ehlmann
County Executive
St. Charles County
2nd Vice Chair
Robert Elmore
Chairman, Board of Commissioners
Monroe County
Executive Committee
Tim Brinker
Presiding Commissioner
Franklin County
Dennis Gannon
County Executive
Jefferson County
Lyda Krewson
Mayor, City of St. Louis
Kurt Prenzler
Chairman, Madison County Board
Steve Stenger
County Executive
St. Louis County
Members
Ron Counts
Mayor, City of Arnold
Franklin County
Emeka Jackson-Hicks
Mayor, City of East St. Louis
Reggie Jones
St. Louis County
Mark Kupsky
Vice President,
Southwestern Illinois
Council of Mayors
Norman C. McCourt
Municipal League of Metro St. Louis
Roy Mosley
St. Clair County
Lewis Reed
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Herbert Simmons
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Tom Smith
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Richard Kellett
John A. Laker
Non-voting Members
Erin Aleman
Illinois Department of
Transportation
Erika Kennett
Illinois Department of Commerce
and Economic Opportunity
Patrick McKenna
Missouri Department of
Transportation
Taulby Roach
Bi-State Development
Aaron Willard
Missouri Office of Administration
Executive Director
James M. Wild

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Minutes

Regional Water Resources Advisory Committee
Thursday, September 27, 2018
10:30 am – 12:00 pm
East-West Gateway Council of Governments Board Room

Attendees:
Carol Lawrence, Chair – East-West Gateway Council of Governments
Matt Vielhaber – U.S. Army Corps of Engineers
Barbara Charry – The Nature Conservancy
Molly Saunders – Nine Network of Public Media
Rebecca Weaver – The Nature Conservancy
Steven Brendel – Madison County P&D
Jason Peterein – Metropolitan St. Louis Sewer District
Libby Reuter – Watershed Cairns
Gene Rovak – Horner & Shifrin EWRI/ASCE
Chad Mason – HR Green, Inc.
Bill Malach – City of St. Peters
James Holtzman – Clean Energy Design
Janet Buchanan – Heartlands Conservancy
A.J. Girondo – Green Building Alliance
Mike Hartoin – SCI Engineering
Danelle Haake – Saint Louis University
Paul Oryem – Our Sustainable Response
Gary Moore – University of Missouri St. Louis/Washington University, EWRI/ASCE
Jay Hoskins – Metropolitan St. Louis Sewer District
Todd Miller – Missouri Department of Transportation
Allie Magee – Nine Network of Public Media

Staff:
Mary Grace Lewandowski Aaron Young Jennifer Vuitel Bonnie Harper Maureen McCarthy

1. CALL TO ORDER

The meeting of the Regional Water Resources Advisory Committee (WRC) was called to order by Chair Carol Lawrence, East-West Gateway Council of Governments (EWG).

A. Introductions

2. DISCUSSION ITEMS

A. Water Matters Impact Report
- Allie Magee, Senior Develop Manager, Nine Network of Public Media

The Water Matters community engagement initiative began in 2014 with the Nine Network of Public Media and The Nature Conservancy (TNC). Nine Network is working on an impact report that will describe all of the activities of Water Matters and its

partners in one place. When the report is finished, it will be shared with the funders and partners of Water Matters. The report will also include data from quarterly surveys given to community members and Nine Network viewers. People have been asked if they have heard of Water Matters and if so, do they know the extent of the work that is being done. Copies of the draft report were made available at the Water Resources meeting and it may also be sent through email.

Nine Network has produced a documentary about the Missouri River valley called *River Towns* which premiered on September 26th. The documentary is based off of a book called "Growing Up on the River". More information can be found on the Nine Network website.

B. Update from the U.S. Army Corps of Engineers
- Matt Vielhaber, U.S. Army Corps of Engineers
    - Meramec River Basin Ecosystem Restoration Feasibility Study

The Meramec River Basin study area includes portions of Jefferson and St. Louis Counties. It covers approximately 75 miles of the Big River and 50 miles of the Meramec River. This area is ecologically significant because it is home to five federally listed threatened and endangered freshwater mussels. Due to historical lead mining south of the watershed, the Big River is an active operable unit of the U.S. Environmental Protection Agency under the Superfund program. This has caused close monitoring of sediment flowing downstream from the study area to help reduce the impacts of pollution in the Big River.

There are many partners working with the U.S. Army Corps of Engineers (COE) on this project. This has assisted with leveraging federal funding and continuation with the project. Collaboration is key to expanding and leveraging efforts already underway within the Meramec Watershed.

The COE has developed a Tentatively Selected Plan (TSP) based off of the findings of the feasibility study. The strategies in the TSP includes bank stabilizations, sediment captures, rock riffle structures, excavation structures, and reforestation areas which are estimated to cost approximately $78.8 million. The suggested restoration features will lead to improved functions and processes for the river. This feasibility study was set to be a three year process, but the COE has recently been given approval to extend the study period. The feasibility study itself costs $3 million and will not cost any more with the time extension. Scoping and an alternatives evaluation have already taken place and currently the COE is working with its partners to design a project based off of the feasibility recommendations. Eventually the COE would like to have this project and funding assistance for the project approved by Congress so construction can begin. The goal is to have the final report sent to Congress for approval no later than November of 2019. Public support for this project will be crucial when the COE seeks federal funding.

Currently, all of the areas identified as needing restoration in the plan are along private land. The COE is working to educate the private land owners on the importance of

restoring the watershed and the benefits that come with it. Some landowners are on board with the restoration. Others have not been as interested in it. The COE is working to show the importance of the watershed from both an environmental and recreational standpoint.

- Meramec/ Big River Urban Waters Federal Partnership

Another part of Mr. Vielhaber's job is serving as the Urban Waters Ambassador for the Meramec River and Big River Urban Waters Federal Partnership. This position is jointly funded between the EPA and the COE. This position entails communicating what is being done in the Meramec watershed and the Big River watershed by the COE and other organizations to address lead contamination from legacy mining in the watershed and improve the health of the public and the river. The Meramec and Big Rivers project covers 12 counties and 360 linear river miles. The Big River flows north into the Meramec River which in turn flows into the Mississippi River. The goals of this program are to help the different organizations work together; promote a more efficient and effective use of federal resources; build on local efforts and leadership by engaging and serving community partners; work with local partners to leverage area resources and stimulate local economies to create local jobs; and to learn from early and visible victories to fuel long-term action.

To help fulfill the public education and outreach goal of the Urban Waters Partnership, events such as Paddle Your Parks were created. The Paddle Your Parks event took place over two days at George Winter Park along the Meramec River in St. Louis County. Those who participated were fourth grade students that live within the watersheds. It served as a way to increase awareness of the watersheds, give students responsibility for their impact on the environment, build bridges between the classroom and nature, and to challenge students to learn the importance of communication, respect, and community.

C. Road Salt & Urban Streams
- Danelle Haake, St. Louis University

Road salt was the focus of Danelle Haake's PhD research and has been an interest of hers for several years. Road salt causes many problems for both the built environment and the natural environment. There is corrosion of metal and concrete on the roads and bridges where it is applied. Vehicles can also sustain damage from the salt. A study in 1992 by Vitaliano estimated that one ton of salt, which costs about $50 or $60, can do damage to infrastructure that costs over $600 to repair. Dissolved salts run off paved surfaces onto adjacent land where they are toxic to plants, including grass and street trees. The salt also runs into the storm water system which carries the salty water into nearby freshwater streams, creating toxic conditions for aquatic life. Road salt use has increased the amount of salt found in streams, lakes, and groundwater across the northern half of the US. These same streams and groundwater reservoirs serve as drinking water supplies. Increased salt levels in freshwater have raised concerns about higher sodium intake, general water potability, and the corrosive potential to drinking water infrastructure.

There are several best management practices that can be used by road crews to decrease the amount of salt used. One of these is brining. This uses the same road salt that is normally spread on the roads during storms, but instead it is dissolved in water and sprayed on the pavement as brine solution in advance of the storm. This prevents the initial snow and ice from building up on the pavement, and allows the first inch of snow to be removed using only half as much salt. This decrease in salt use should have the benefits of protecting human and environmental health, decreasing corrosion, and saving money for the municipality both in material and labor.

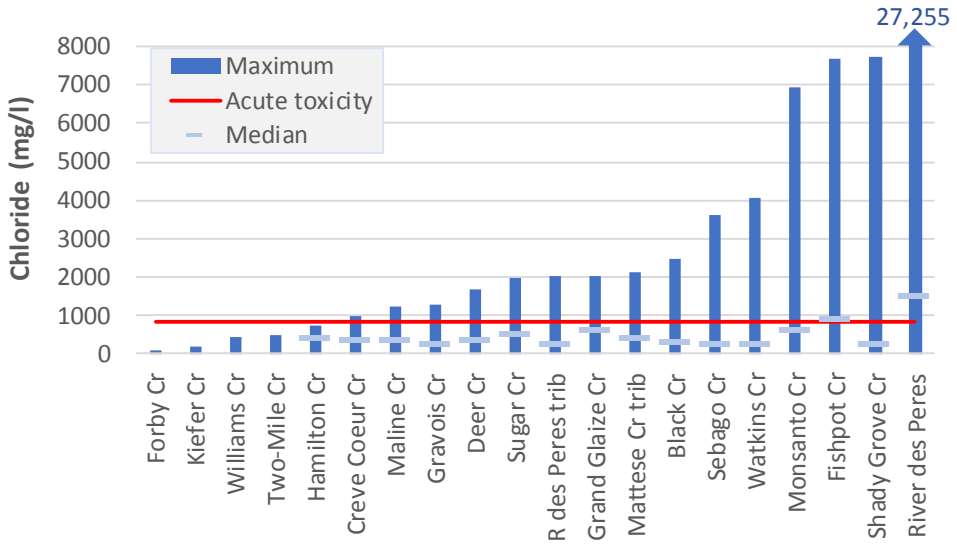
In order to address the uncertainty associated with the practice of using salt brine, Ms. Haake studied stormwater in six municipalities in St. Louis County. Municipalities were in three pairs in different areas of the county (North, West, and central). In each pair one uses only rock salt and the other uses brine and supplements with rock salt. The study was conducted in 24 stormwater pipes, four in each municipality. One pair of municipalities showed that brining had significantly less salt runoff than rock salt. The second pair showed similarly low salt which was due to little salt being used during the study period. The final pair had some days with brining being lower than rock salt, and some with rock salt being lower than brining.

There are a couple of conclusions that can be drawn from this data. First, the significant difference by storm indicates that municipal managers and their road crews take into account the characteristics of each storm when selecting best management practices to apply salt for a given storm. Second, the use of brine did lead to a marginally significant decrease in the amount of chloride conveyed from road surfaces to the stormwater system. The fact that the difference is marginal appears to be driven by the generally low use of salt in both northern zone municipalities. Looking at brine use in the west and central zones, about one fewer pounds of salt was applied per square meter of road over the course of the three storms. One pound of salt is enough to pollute 120 gallons of water to the acute toxicity threshold.

To supplement the data gathered from the brining study, Ms. Haake utilized data collected from creeks around the region. During the five winters between fall of 2012 and spring 2017, thirty-six trained volunteers across the region have used strips provided by Missouri Stream Team to take chloride readings at sixty sites throughout St. Louis County. Over 2,000 chloride readings were reported. A map in Ms. Haake's presentation shows the maximum chloride concentrations measured at each site between 2012 and 2018.

The bar graph below shows the chloride concentrations in twenty St. Louis County streams in January and February of 2018. The vertical bars are the maximum concentration at a site. The short horizontal bars are the median values during the two month period. The one long horizontal line is the threshold for acute toxicity to aquatic life according to Missouri water quality standards (860 mg/l). Only five of the streams did not reach concentrations that violate the standards. Note that the chloride concentration in seawater is 19,400 mg/l; three sites are over one third of the way to that mark and one site far surpassed this concentration. That site was in the River Des Peres

and it was at a concentration above 10,000 mg/l for three hours during the two month period.



In order to examine the impact on aquatic life, Ms. Haake collected lab data during the past winter from several types of invertebrates. The salt content was measured using a lethal concentration for 50 percent of the animals in the study (LC50). She ran toxicity studies on scuds and mayflies at both the standard temperature of twenty degrees Celsius and a winter temperature of six degrees Celsius. She found that the invertebrates were able to survive longer in cold temperatures. A non-lethal measurement for the scuds and mayflies was their eating habits. She measured leaf litter consumption over the course of one week to check for non-lethal affects.

	***Gammarus minus* (scud)**		***Stenonema femoratum* (mayfly)**	
Trial Length	**Cold (6 ^{o}C)**	**Warm (19 ^{o}C)**	**Cold (6 ^{o}C)**	**Warm (19 ^{o}C)**
2-day LC50	6,500 mg/l	5,300 mg/l	--	--
7-day LC50	5,000 mg/l	2,700 mg/l	8,400 mg/l	3,200 mg/l

Ms. Haake's presentation can be found on the East-West Gateway website.

D. OneSTL Water and Green Infrastructure Working Group Activities

This group has been meeting once a month on every third Wednesday. The members have organized themselves into three different sub-groups; data analysis, action projects, and outreach and communication. The target for this working group is to have 100 percent of the land in the St. Louis region to have active organizations and quality watershed plans in progress by 2025 and plans completed by 2030. Ms. Weaver works with the action projects group which is currently focused on exploring an ecosystems services evaluation study and public interest in watershed management plans and

projects. East-West Gateway has been keeping track of who has completed watershed plans in the region, which is what the target from OneSTL is based on.

The education and outreach group is focused on increasing awareness of what a watershed is. This sub-group is taking stock of all of the organizations in the region that are working to educate citizens about watersheds and will create a network map. After gathering this information the goal will be to bring all of these groups together to identify a way to coordinate watershed education messaging in order to have a larger impact.

When the water and green infrastructure working group meets it is an opportunity for the sub-groups to share what they have been working on. If anyone who is not in the working group would like to receive invitations to these meetings they can contact Mr. Young or Ms. Buchanan.

Ms. Buchanan provided information from Collin Wellenkamp, who is with the Mississippi Rivers and Towns Initiative, about their meeting to launch a water quality assessment project. At their meeting in September a landmark agreement was signed with the COE, the U.S. Geological Survey, and the Department of Transportation. The water quality assessment project that was agreed upon will help provide more regular and thorough water quality data from the Mississippi River. An agreement to reduce plastic waste by 20 percent by 2020 was also signed at this meeting.

3. OTHER BUSINESS/ ANNOUNCEMENTS

Mr. Hoskins, Metropolitan St. Louis Sewer District (MSD), announced that MSD is going to propose a stormwater rate to address erosion and flooding system-wide in the City of St. Louis and St. Louis County. The average cost per customer would be $2.25 per month. The Rate Commission approved the rate using the recommendations provided by MSD. This rate would be separate from the waste water consent decree. There will be a vote in April 2019. More information about this rate will be released in the coming months.

The meetings and event announcements assembled for this meeting can be found in a presentation on the East-West Gateway website.
https://www.ewgateway.org/library-post/2018-09-27-water-resources-committeemeeting-documents/?unique_id=MTG-COM-WRC&header_id=4

4. ADJOURNMENT

There being no other business, the meeting was adjourned. The next meeting of the Water Resources Advisory Committee will be in 2019.