

# Technical Memo



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**To:** Shingle Creek/West Mississippi WMC TAC

**From:** Ed Matthiesen, Wenck Associates, Inc.  
Tom Berry, Wenck Associates, Inc.

**Date:** January 25, 2018

**Subject:** Shingle Creek WMC Partnership Cost-Share Application (Autumn Ridge Participatory Landscape Project)

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The purpose of this technical memo is a summary of a Partnership Cost-Share Program Application for the Autumn Ridge Apartments in Brooklyn Park to fund the first phase of a 5-year stormwater retrofit plan for the site. The first phase includes the installation of 5 raingardens, 2 trench drains, a native planting, permeable pavement and removal and installation of trees.

## Project Details

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The Shingle Creek Watershed Management Commission from time to time makes funds available to its member cities to help fund the cost of BMPs partnership projects with private landowners. Shingle Creek recently received a completed Partnership Cost-Share Program Application for the Autumn Ridge Apartments in Brooklyn Park. (See attached application).

Application partners including the residents of Autumn Ridge, Sherman Associates (property owners), Metro Blooms and the City of Brooklyn Park. Application partners have been developing a 5-year stormwater retrofit plan for the site. The first phase of the 5-year stormwater plan includes the installation of 5 raingardens, 2 trench drains, a native planting, permeable pavement, removal and installation of trees and training of maintenance staff for installation and maintenance of stormwater practices. This application pertains to the first phase only.

## Project Budget

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The proposed project budget is \$135,358. The applicants request \$50,000 from Shingle Creek WMC. The applicants are also requesting \$55,000 from Hennepin County. The property owner will contribute \$30,358.

A review of the construction cost estimate items was conducted. The total cost of the project seems appropriate for the scope and scale of the project; however, the costs associated with Raingardens 1 and 2 are on the low side of industry standards. The low costs may be attributed to project partner in-kind services and installation assistance through volunteer labor.

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## Water Quality Benefits

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Shingle Creek is impaired for chloride. The application states the proposed project addresses the chloride impairment through runoff volume reduction, the use of permeable pavement in the most heavily foot trafficked area on site, and maintenance training for the proper application of road salt.

The application mentions that on-site maintenance staff and the Autumn Ridge's property manager will participate in training sessions lead by Metro Bloom's Landscape Architect both during and after installation of BMPs. According to the application, following installation, training will focus on proper maintenance of each practice, including sweeping and vacuuming permeable pavement, weed identification and management, watering, inlet/outlet clearing, plant/mulch replacement and repairing signs of erosion. Metro Blooms will also provide this training for any landscape contracting company the property owner hires to maintain Autumn Ridge outdoor spaces. In addition, the property owner will require their maintenance and property manager to attend a course on proper winter salt application.

The application states that the proposed stormwater best management practices capture 14.7 lbs. of Total Phosphorus, 4,418 lbs. of solids and 2,667,374 gallons of runoff water annually as modeled in WinSLAMM. The cost per pound phosphorus removal is \$9,208 based on construction costs. This is slightly under the \$10,000 seen as typical for rain gardens.

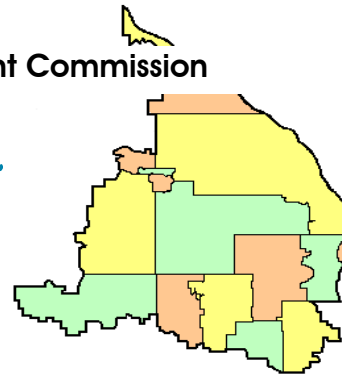
There are no BMPs currently on site. The proposed BMPs will provide good treatment. However, as proposed they are not sized adequately to treat to the full watershed district goal of a 90% annual volume reduction. Therefore, we encourage the applicant to revisit sizing of the BMPs in footprint and depth to maximize treatment potential.

## Recommendation

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Recommend funding the partnership cost-share program for the Autumn Ridge Participatory Landscape Project in an amount of \$50,000, subject to the relevant Partnership Cost-Share Guidelines including but not limited to:

- Cost-share is on a reimbursable basis following completion of the project.
- The property owner (Sherman Associates) must dedicate a public easement or equivalent to install and maintain the BMPs.
- The member city (Brooklyn Park) must obtain a recordable maintenance agreement from the property owner (Sherman Associates) that specifies maintenance requirements and schedule; authorizes the City (Brooklyn Park) to inspect the BMPs and order maintenance and improvement; and authorizes the City (Brooklyn Park) to undertake ordered maintenance and improvement no completed by the property owner (Sherman Associates), and assess the cost of work to the property.
- The standard Commission/Member Cooperative Agreement will be executed prior to project construction.

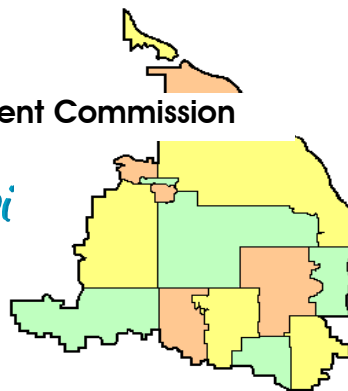


A meeting of the joint Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions is scheduled for 8:30 a.m., Thursday, February 1, 2018, at Crystal City Hall, 4141 Douglas Drive North, Crystal, MN.

#### A G E N D A

Meeting docs (\*) are posted on the website at  
<http://www.shinglecreek.org/tac-meetings.html>

1. Approve agenda\*
2. Approve Minutes of November 30, 2017 meeting\*
3. Autumn Ridge Apartments – SCWM Partnership Cost Share Grant\*
4. Twin Lake Carp Project
  - a. Removals and next steps
  - b. Aeration system
  - c. Carp barriers
5. Draft Aquatic Vegetation Management Policy
6. Dissolved Phosphorus 319 Grant
7. Update on watershed-based Funding Pilot\*
8. CIP and Cost-Share Schedule\*
9. Other business.
10. Next meeting \_\_\_\_\_



## MINUTES

November 30, 2017

A meeting of the Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions was called to order by Chairman Richard McCoy at 8:31 a.m., Thursday, November 30, 2017, at Crystal City Hall, 4141 Douglas Drive North, Crystal, MN.

Present were: Andrew Hogg, Brooklyn Center; Mitch Robinson, Brooklyn Park; Mark Ray, Crystal; Rick Lestina, Maple Grove; Liz Stout, Minneapolis; Ben Scharenbroich, Plymouth; Richard McCoy and Marta Roser, Robbinsdale; Ed Matthiesen, Wenck Associates, Inc.; and Judie Anderson, JASS.

Not represented: Champlin, New Hope and Osseo.

- I. Motion by Ray, second by Scharenbroich to approve the **agenda**. *Motion carried unanimously.*
- II. Motion by Scharenbroich, second by Hogg to approve the **minutes of the October 26, 2017 meeting**.\* *Motion carried unanimously.*
- III. **SCWM FEMA Updates.**

**Shingle Creek Model Update.** The Federal Emergency Management Agency (FEMA) has awarded the MnDNR a grant to update the Special Flood Hazard Areas (SFHAs) in the Twin Cities HUC8 watershed. Representatives from the DNR were present at the October 26 TAC meeting to discuss the project and present the scope of the grant. A map of the FEMA Study Areas in the SCWM hydrologic boundary showing which reaches should be studied was also distributed at that meeting.

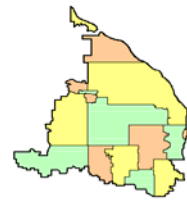
In their November 28, 2017 letter,\* Wenck staff has put together a draft scope of work and cost estimate for consideration by the DNR. It sets forth eight tasks and includes a line item budget and schedule for key meetings and deliverables.

Matthiesen queried whether any member cities will have surveying personnel available to assist with this project.

**IV. Twin Lake Carp Project.** Matthiesen showed the presentation given to the Twin/Ryan Lake residents at their December 13, 2017 community meeting. He stated that residents indicated they did not want to get involved in vegetation management. Future steps must include educating the residents. It was suggested that one way to accommodate the residents may be to create a channel for recreation. It was also suggested that a lake improvement district be created for long term maintenance. Currently the lake associations are paying for fish stocking.

**A.** Staff's November 24, 2017 memo\* recapped their discussion with MnDNR. The primary objective of the meeting was to discuss and determine the best management strategy to remove the carp from the system, limit recruitment post removals, and develop submerged aquatic vegetation (SAV) response options.

**B.** The following next steps were identified:



1. Determine whether Ryan Lake will be included in the carp management actions. If yes, then aeration should occur on Ryan Lake in addition to Upper Twin. A barrier will be installed at the outlet of Ryan Lake at the Osseo Road culvert to prevent movement of fish into Ryan Lake from Shingle Creek. If no, then Ryan Lake will not be aerated and the fish barrier will be placed on the France Avenue bridge. This will be determined by a review of project budget for design and construction costs and the cities/commission willingness to operate and fund annual aeration and barrier maintenance related tasks.

2. Contact commercial fisherman and schedule tentative winter seine removals. Establish terms and compensation of removals. Determine needed assistance and volunteers.

3. Determine whether aeration will be pursued and who will operate and pay for electricity, maintenance, and other operating costs/labor.

4. Finalize location and design of barrier(s).

5. Apply for aeration permits through Ecology and Water Resources division of MnDNR (if applicable).

6. Apply for permanent barrier permits through Ecology and Water Resources division of MnDNR (if applicable). Any temporary barriers are permitted through the Fisheries division (if applicable).

7. Discuss and review SAV management options. If treatment is pursued, who will fund? A variance application to go above standard treatment limits need only be pursued if available funds are sufficient to treat greater acreage. (Standard treatment acreage is equal to 15% of the littoral habitat within a lake.)

*[Scharenbroich departed 9:32 a.m.]*

#### **V. Biochar Project.**

Matthiesen provided a preview of the Wenck presentation, "Biochar/iron/sand filters to remove bacteria and nutrients in an urban watershed," which will be given at the 2018 International Erosion Control Association's Annual Conference in January. The presentation will discuss the use of biochar, iron and sand filters to remove bacteria and phosphorus from urban runoff. Catch basin inserts, pond filter benches and a filter box were installed and stormwater inflow and outflow were monitored for two years. Results will be discussed.

#### **VI. Local Water Management Plan Updates.**

Revisions to Minnesota Rules 8410 adopted in 2015 include significant changes in the timing of local water plan revisions. Per 8410.0105 sub-paragraph 9 and 8410.0160 subparagraph 6:

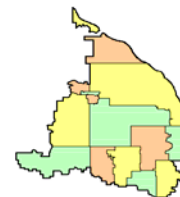
A. Local water plans must be prepared by metropolitan cities and towns (municipalities) and a local water plan must become part of the local comprehensive plan for a municipality.

B. Local water plans must be revised essentially once every ten years in alignment with the local comprehensive plan schedule.

C. A municipality has two years before its local comprehensive plan is due to adopt its local water plan.

D. Prior to adoption, a municipality must prepare its local water plan, distribute it for comment, and have it approved by the organization with jurisdiction in the municipality.

E. The next local comprehensive plans are due December 31, 2018. All cities and towns in the seven-county metropolitan area must complete and adopt their local water plans between January 1, 2017 and December 31, 2018. Thereafter, add ten years to each of the previous dates.



- F. Local water plans may be updated more frequently by a municipality at its discretion.

**VII. Other Business.**

A. Stout announced that the City of Minneapolis's NPDES MS4 Phase I permit has been issued for public comment thorough January 10, 2018. There is new language in the permit regarding prohibitions to infiltration that the MPCA has indicated will also be added to the upcoming reissuance of the General Construction Permit and the MS4 Phase II permit for smaller cities. This language will increase the prohibitions for where infiltration practices can be implemented. These new prohibitions include a prohibition against constructing infiltration practices in Drinking Water Supply Management Areas (DWSMAs) that have a high or very high vulnerability per the MN Department of Health.

B. Staff have been contacted by Steve Woods of the Freshwater Society, which has been facilitating a loose coalition of organizations and individuals called StopOverSalting (SOS). Their primary purpose is to promote and lobby for legislation which would **limit the liability of salt application contractors** that are certified by the MPCA through its training program. The coalition is looking for additional parties to support this effort.

The MPCA put forward a proposal to the Governor's office to include action on chloride in recommendations to the legislature. Governor Dayton's decision will be announced the first week of March. Brooke Asleson (who led the Metro Chloride TMDL), in her new full-time chloride position at the MPCA, has been working on a sustainable "Smart Salting" education component and draft legislation that more closely aligns with Minnesota liability law - requested earlier this fall by Clean Water Council.

The group is working with potential authors and strategies for legislative presentations. SOS has met with four legislators in the last several weeks who are supporting the bill: Representatives Dario Anselmo and Frank Hornstein and Senators Melisa Franzen and Scott Dibble. Members are encouraged to contact their cities as well. Two contact persons are: Sue Nissen, ([n.sue4408@gmail.com](mailto:n.sue4408@gmail.com)) or Larry Johnson at MNLA ([larry@mnla.biz](mailto:larry@mnla.biz)).

C. The **next meeting** of the Technical Advisory Committee is scheduled for February 1, 2018, at 8:30 a.m. at Crystal City Hall.

- D. The meeting was adjourned at 10:00 a.m.

Respectfully submitted,

A handwritten signature in black ink that reads "Judie A. Anderson".

Judie A. Anderson  
Recording Secretary

# Technical Memo



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**To:** Shingle Creek/West Mississippi TAC

**From:** Ed Matthiesen, P.E.  
Diane Spector

**Date:** January 26, 2018

**Subject:** CIP and Cost-Share Schedule

## Capital Improvement Program (CIP)

Tables 1 and 2 show the current Shingle Creek and West Mississippi CIPs. The Commissions may reschedule projects from year to year or remove projects from the CIP with no need for a plan amendment, but a minor plan amendment will be needed to add projects, modify the estimated cost and Commission contribution by more than  $\pm 25\%$ , or add specificity to a project. At this time, the Shingle Creek Commission expects to undertake a minor plan amendment to add the proposed dissolved phosphorus 319 grant project to the CIP and to specify that the 2018 lake internal load project will be alum treatments on Bass and Pomerleau Lakes.

Staff reviewed potential projects to consider for the CIP, some of which might fall under one of the generic projects already on the CIP. These include:

- Bass Creek Restoration in Bass Creek Park (Brooklyn Park)
- Shingle Creek Stabilization, Northland Wetland to Bottineau Blvd (Brooklyn Park)
- Brookdale Park Offline Ponds Habitat Enhancement
- Palmer Lake Outlet Stabilization (Brooklyn Center)
- Pike Lake Internal Load Project (Plymouth/Maple Grove)
- Meadow Lake Drawdown (New Hope)
- Mattson Brook Stabilization, 85<sup>th</sup> to West River Road (Brooklyn Park)

If cities have projects to add to the CIP they should be submitted for consideration as soon in advance of the next TAC meeting. The application can be found at: [shinglecreek.org/member-city-resources.html](http://shinglecreek.org/member-city-resources.html).

**Table 1. Current Shingle Creek WMC CIP.**

CAPITAL IMPROVEMENT PROGRAM	2018	2019	2020	2021	2022
Cost Share Program	200,000	200,000	200,000	200,000	200,000
Commission Contribution	100,000	100,000	100,000	100,000	100,000
Local Contribution	100,000	100,000	100,000	100,000	100,000
Maple Grove Pond P57		648,000			
Commission Contribution		162,000			
Local Contribution		486,000			

CAPITAL IMPROVEMENT PROGRAM	2018	2019	2020	2021	2022
Maple Grove Pond P33		574,000			
Commission Contribution		143,500			
Local Contribution		430,500			
Maple Grove Pond P55			855,000		
Commission Contribution			213,800		
Local Contribution			641,200		
Shingle Cr Brookdale Park Habitat Enhancement		150,000			
Commission Contribution		37,500			
Local Contribution		112,500			
Lake Internal Load Improvement Project	200,000		200,000		200,000
Commission Contribution	200,000		200,000		200,000
Local Contribution					
Minneapolis Webber Park Stream Restoration		500,000			
Commission Contribution		125,000			
Local Contribution		375,000			
Shingle Cr Restoration, Regent to Brooklyn Blvd			400,000		
Commission Contribution			100,000		
Local Contribution			300,000		
Minneapolis Flood Area 5 Water Quality Projects		6,000,000			
Commission Contribution		250,000			
Local Contribution		5,750,000			
Shingle Creek or Bass Creek Restoration Project	500,000	500,000			
Commission Contribution	125,000	125,000			
Local Contribution	375,000	375,000			
Becker Park Infiltration Project	2,500,000				
Commission Contribution	250,000				
Local Contribution	2,250,000				
Palmer Creek Estates Bass Creek Restoration				450,000	
Commission Contribution				112,500	
Local Contribution				337,500	
Partnership Cost-Share BMP Projects	100,000	100,000	100,000	100,000	100,000
Commission Contribution	50,000	50,000	50,000	50,000	50,000
Local Contribution	50,000	50,000	50,000	50,000	50,000
<b>TOTAL PROJECT COST</b>	<b>3,500,000</b>	<b>8,672,000</b>	<b>900,000</b>	<b>750,000</b>	<b>500,000</b>
<b>TOTAL COMMISSION SHARE</b>	<b>725,000</b>	<b>993,000</b>	<b>663,800</b>	<b>262,500</b>	<b>350,000</b>
<b>TOTAL CITY SHARE</b>	<b>2,775,000</b>	<b>7,679,000</b>	<b>450,000</b>	<b>487,500</b>	<b>150,000</b>

Staff did not identify any potential projects in West Mississippi.

**Table 2. Current West Mississippi WMC CIP.**

CAPITAL IMPROVEMENT PROGRAM	2018	2019	2020	2021	2022
Cost Share Program	100,000	100,000	100,000	100,000	100,000
Commission Contribution	50,000	50,000	50,000	50,000	50,000
Local Contribution	50,000	50,000	50,000	50,000	50,000
Mississippi Crossings Phase B Infiltration Vault	200,000				
Commission Contribution	50,000				
Local Contribution	150,000				
Champlin Woods Trail Rain Gardens		180,000			
Commission Contribution		45,000			
Local Contribution		135,000			



CAPITAL IMPROVEMENT PROGRAM	2018	2019	2020	2021	2022
Wetland Restoration Project		250,000		500,000	
Commission Contribution		62,500		125,000	
Local Contribution		187,500		375,000	
<b>TOTAL PROJECT COST</b>	<b>300,000</b>	<b>530,000</b>	<b>100,000</b>	<b>600,000</b>	<b>100,000</b>
<b>TOTAL COMMISSION SHARE</b>	<b>100,000</b>	<b>157,500</b>	<b>50,000</b>	<b>175,000</b>	<b>50,000</b>
<b>TOTAL CITY SHARE</b>	<b>200,000</b>	<b>372,500</b>	<b>50,000</b>	<b>425,000</b>	<b>50,000</b>

### Cost Share Projects

Funds are available for City Cost Share projects; the maximum per project amount is \$50,000. The application can be found at: [shinglecreek.org/member-city-resources.html](http://shinglecreek.org/member-city-resources.html).

**Table 3. Shingle Creek WMC City Cost Share Account.**

2015	Request	Final
Levy	\$50,000	\$47,710
Brooklyn Center City Garage	\$30,000	\$28,116
New Hope Street Project Rain Garden	\$17,200	\$17,200
-Encumbered		
Balance		\$19,594
2016	Request	Final
Encumbered Balance	\$19,594	\$19,594
Levy	\$100,000	\$98,546
Brooklyn Park Bass Cr Neighborhood BMPs	\$30,200	
Blooming Alleys for Crystal Lake	\$17,000	
Balance		\$118,140
-Encumbered	\$47,200	\$47,200
Encumbered Balance		\$70,940
2017	Request	Final
Encumbered Balance	\$70,940	\$70,940
Levy	\$101,000	
Crystal Skyway Neighborhood	\$50,000	\$50,000
Robbinsdale 37th Avenue	\$50,000	
Balance		\$121,940
-Encumbered	\$50,000	\$50,000
Encumbered Balance		\$71,940
2018	Request	Final
Encumbered Balance	\$71,940	\$-
Levy	\$101,000	
Balance		\$172,940
-Encumbered	\$ -	\$ -
Encumbered Balance		\$172,940

**Table 4. West Mississippi WMC City Cost Share Account.**

2015	Request	Final
Levy	\$50,000	\$50,108
Balance	\$50,000	\$50,108
2016	Request	Final
Levy	\$50,000	\$49,653
Balance	\$100,000	\$99,761

<b>2017</b>	<b>Request</b>	<b>Final</b>
Encumbered Balance	\$99,761	\$99,761
Levy	\$50,500	\$49,960
Balance		\$149,721
<b>2018</b>	<b>Request</b>	<b>Final</b>
Encumbered Balance	\$149,721	
Levy	\$50,500	
Balance	\$200,221	

# Technical Memo



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**To:** Shingle Creek/West Mississippi TAC

**From:** Diane Spector

**Date:** January 26, 2018

**Subject:** Watershed-Based Funding Pilot

BWSR is in the process of transitioning Clean Water Funds from a statewide competitive model to a geographically-focused model. As consortia of watersheds, counties, and other groups prepare their One Water One Plan (1W1P) plans, BWSR will provide each with a pot of money so the groups can immediately start implementing high-priority projects and programs. Over time the amount of funds available for the annual competitive grants will be significantly reduced and reallocated to this new strategy. The Metro area is not part of the 1W1P program at BWSR because planning for Metro watersheds is governed under a different statute and rule. However, BWSR recognizes that Metro WMOs have undergone significant planning and prioritization efforts in developing their management plans, and has been weighing how to make 1W1P implementation funding available to Metro WMOs.

After holding a number of listening sessions, the BWSR Board developed the Watershed-Based Funding Pilot Program. The organizing unit in planning for this Pilot Program is the county. Each of the counties in the Metro will be allocated a share of the \$5.59 million available for the Metro. Hennepin County's share is \$1.018 million. In each county, eligible entities must identify a Convener, and the Conveners will work with the eligible local governments to develop a "Collaborative PTM Implementation Plan" by June 30, 2018. (PTM is the latest acronym and stands for Prioritize, Target, and Measure.) This Plan must describe the process used to select projects and programs, how success will be evaluated, *and lay out the specific projects and programs recommended for funding*. By June 30. An option offered by BWSR is that rather than develop a PTM Implementation plan, counties may opt into a Metro Competitive Grant program implemented by BWSR.

On January 23, 2018 I attended a "pre-meeting" convened by Hennepin County to take the pulse of the 11 WMOs in the county. Representatives from all 11 WMOs plus BWSR staff and Karen Galles (HCEE) discussed possible directions. It was the consensus that the group would prefer that the funds set aside for Hennepin County should stay in Hennepin County instead of in a Metro Competitive Grant program and that. There was also an interest in aligning the funding to the three basins in the county – the area to the west draining to the Crow River, the area to the south draining to the Minnesota River, and the area draining to the Mississippi River.

Complicating the issue is that the BWSR Board policy states that the local governments eligible to receive these funds are WMOs, cities, counties, and SWCDs with approved and adopted management plans. Hennepin County as both the county and SWCD is not eligible because the county groundwater

plan was never adopted by the County Board, leaving cities and WMOs as the only eligible applicants. The Pilot Project policy requires that eligible local governments within the county be part of the PTM Implementation Plan planning. If that is the case, then not only would the 11 WMOs be part of the planning process, but also the 45 cities in the county, a committee of 56. The 11 WMOs asked BWSR staff to determine if cities can delegate their planning responsibilities (and their grant eligibility) to the WMO(s) in their city, and if that can be done administratively through a letter or if a resolution from the City Council would be required. This question must be resolved before the local governments in Hennepin County convene formally to do the PTM Plan. It was the consensus of the group that if that must be done by resolution, or if some cities do not agree to delegate their eligibility it will not be possible to complete the Plan before June 30 and for the first year the group would default to a competitive grant process.

The informal planning group will meet again in a month. Until that time:

1. Any questions or comments?
2. Would the member cities be willing to delegate eligibility and planning authority?
3. Thoughts regarding a potential basin focus?