



## Capitol Region Watershed District

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**APPROVED**

### **Citizen Advisory Committee Meeting Wednesday, January 9, 2013 – 7:00 p.m.**

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#### **CAC Members Present:**

Bill Barton, Pat Byrne, Janna Caywood, Steve Duerre, Michael MacDonald, Ted McCaslin, Kathryn Swanson, Richard Weil

#### **Members absent with notice:**

David Arbeit, Michael Trojan, Michelle Ulrich, Gwen Willems

#### **Others Present:**

Shirley Reider, CRWD Manager  
Mark Doneux, CRWD Staff  
Dawn Nelson, CRWD Staff  
Wes Saunders-Pearce, City of Saint Paul

#### **Welcome, Announcements, and Updates**

Ted McCaslin opened the meeting at 7:05 p.m. with a request for announcements. There were no announcements.

#### **Public Comment – For items not on the Agenda.**

There were no public comments.

#### **Approval of Agenda**

Mr. McCaslin asked for additions or changes to the Agenda. There were no additions or changes to the Agenda.

#### **CAC 13-001 Motion:** *To approve the CAC January 9, 2013 agenda as provided.*

Duerre/MacDonald

Unanimously approved

#### **Approval of the December 12, 2012 CAC Minutes**

Mr. McCaslin asked for additions or changes to the December 12, 2012 CAC Minutes. Dawn Nelson noted Janna Caywood provided corrections via email.

#### **CAC 13-002 Motion:** *To approve the CAC December 12, 2012 CAC Minutes as revised.*

Duerre/Weil

Unanimously approved

#### **Items for Review and Comment Requested by the Board of Managers**

##### **City of St. Paul Pervious Alley Pilot Project, Wes Saunders-Pearce, Water Resource Coordinator**

Administrator Doneux introduced Wes Saunders-Pearce from the City of St. Paul. Wes Saunders-Pearce, Water Resource Coordinator for the City of St. Paul, reviewed with the Committee the pervious pavement pilot project.

Mr. Saunders-Pearce stated that the City of St. Paul has recently completed construction of a pervious alley pilot project on an “H” alley bounded by Snelling, Minnehaha, Asbury, and Van Buren. The existing “H” alley was in fair to good condition. The underlying soils are suitable for infiltration and there was interest by

the community to try a porous pavement in an alley. Interest and demand for porous alleys and streets has outpaced the City's ability to understand and address uncertainties associated with current or new permeable pavement installations. Saunders-Pearce said the goals of the pilot project were to:

1. Develop first-hand knowledge of the durability of a permeable surface in a context other than parking lots.
2. Better understand the associated maintenance ramifications; and,
3. If possible, compare the cost and benefit to stormwater mitigation relative to the City's conventional approach currently considered the most cost-effective.

The proposed system consists of permeable asphalt over the entire alley area. Storm sewer was provided for overflow drainage. A 6-inch subbase and 4' wide trench filled with clean quarry rock underlie the permeable pavement. The trench depth varies, with the goal of tying into an underlying native sand layer. The trench depth is generally be 4'-5'. For the east alley, drainage is to the north and south to two new catch basins near each end of the alley. These capture excess runoff not infiltrated into the permeable pavement and allow for measurement of this runoff with flow meters. The goal is to maximize overland flow over the permeable pavement prior to reaching the catch basins. Storm sewer drains toward the midpoint of the alley and then west along the mid-alley. The mid-alley drains west to a new catch basin at the midpoint of the west alley. Again, overland drainage is maximized over the permeable pavement. Storm sewer in the mid-alley drains west to the west alley storm sewer. A portion of the west alley drains to the new catch basin at the midpoint of the alley. The remainder drains to a new catch basin in the southern portion of the alley. Storm sewer in the west alley drains south to the existing storm sewer along Van Buren Avenue. The existing storm sewer in the alley has been largely maintained and reused. The Hamline Midway Library roof drain has been redirected as a subsurface connection to a new manhole in the mid-alley. This manhole has an open bottom that ties directly into the quarry rock or underlying sand layer. The goal is to infiltrate the roof runoff to the greatest extent possible. Overflow discharges through the storm sewer along the mid-alley.

The Hamline Midway Library parking lot was reconstructed as part of the project, using standard (not permeable) asphalt. The southern portion of the parking lot has been graded to drain to the mid-alley, while the northern portion drains west to a new catch basin near the corner of the library. This catch basin has an open bottom, similar to the manhole for the library roof, again with the goal of maximizing infiltration. A storm sewer drains southwest to the catch basin at the west alley midpoint. As stated above, it is assumed that the main church building does not drain to the alley.

### **Flow Monitoring**

Flow meters will be installed to measure the runoff which is not captured by the permeable pavement or open-bottomed structures and instead discharges via the storm sewer. Flow monitoring will occur during the calendar years 2013 and 2014. Two primary flow meters are proposed:

- In the new manhole in the west alley, immediately south of the new catch basin at the midpoint of the alley
  - In the existing manhole on Van Buren Avenue, where the alley storm sewer connects to the existing storm sewer in the street
- The goal of the flow metering will be to monitor, in conjunction with precipitation data for the area, the amount of flow that leaves the site via storm sewer (and therefore to estimate the amount that is captured by the permeable pavement and open-bottomed structures). Taking measurements over two years will both quantify the infiltration and identify trends over time.
- In addition to the two primary flow meters, two optional flow meters will also be considered:
  - In the open-bottomed manhole where the library roof drain connects in

*"Our mission is to protect, manage, and improve the water resources of the Capitol Region Watershed District."*

- In the open-bottomed catch basin near the corner of the library

Providing these flow meters would quantify the direct runoff from the library roof and parking lot that enters the storm sewer and would help quantify the effectiveness of the open-bottomed structures at infiltrating runoff.

### **Drainage Computations**

The total drainage area is 42,800 ft<sup>2</sup> (nearly entirely impervious), broken down as follows:

- Library roof: 3,900 ft<sup>2</sup>
- Library parking lot: 1,600 ft<sup>2</sup>
- Area draining to flow meter in new manhole near midpoint of west alley: 27,000 ft<sup>2</sup>
- Area draining to flow meter in existing manhole on Van Buren Avenue: 10,300 ft<sup>2</sup>

The total quantity of quarry rock in the subbase (including the trench) is 16,693 ft<sup>3</sup>.

Using a porosity of 40%, this results in an available storage volume in the subbase of 6,677 ft<sup>3</sup>. Based on the total drainage area of 42,800 ft<sup>2</sup>, this equates to 1.9” of runoff over the drainage area. This is a conservative estimate, in that infiltration into the underlying native sand layer would increase the capacity of the subbase to capture site runoff. As part of the construction, we will obtain double-ring infiltrometer measurements to quantify the infiltration capacity of the sand layer, which will allow for revised estimates of the capacity of the permeable pavement to capture runoff. Because there is no increase in impervious surface in the project area, there will be no increase in peak flows. For this reason, no rate control measures (other than that provided by the permeable pavement) are proposed.

At the September 19, 2012 Board Meeting, the Managers approved a deposit of 2,128 cubic feet of volume reduction credits to the St. Paul Public Works Volume Bank subject to review of as-built volumes.

Administrator Doneux stated that since Mr. Saunders-Pearce was at the meeting tonight he asked that he also give a short overview of a presentation that was given at the 2012 Water Resources Conference. The title of the presentation was: “Maximizing Goals for Stormwater and Forestry in an Urban Neighborhood” and was co-presented at the Water Resource Conference by Zach Jorgensen, City of Saint Paul Parks and Recreation Department Forester.

Mr. Saunders-Pearce stated that the value of blending stormwater management and trees is becoming better understood. This is particularly relevant with the emergence and management of Emerald Ash Borer (EAB) as a significant forest pest in the Twin Cities. This presentation illustrated how stormwater and forestry needs were integrated on a Saint Paul Public Works street project to maximize City resource goals.

The City of Saint Paul annually reconstructs residential roadways in various neighborhoods as part of its long-term Residential Street Vitality Program (RSVP). Stormwater management for the 2012 RSVP in the Prior-Goodrich neighborhood was constrained by poorly draining soils as well as existing utility lines. In response, Saint Paul expanded its design toolbox to better align cross-discipline goals for tree canopy cover and sustainable stormwater management.

Areas of the neighborhood will be improved to include new deciduous trees receiving stormwater in depressed boulevards featuring structural (Cornell University, or “CU”) soil. The presentation gave the audience a strong visual understanding of how the stormwater features were constructed. Technical information about stormwater sizing and costs for CU soil installation were shared. The audience learned about Saint Paul’s citywide tree canopy inventory and canopy cover goals; the City’s approach to controlling

and responding to Emerald Ash Borer infestations; and discovering the delicate balance between resource management goals and property owner perspectives on a linear project in an urban neighborhood.

Mr. Saunders-Pearce reviewed many of the challenges the City faces implementing these innovative practices.

The Committee thanked Mr. Saunders-Pearce for his presentations and invited him back next year to update the group on future projects.

## **Staff and Program Updates**

### **2013 Board and CAC Meeting Schedule and Contact Lists**

Administrator Doneux said that there was a 2013 meeting calendar in the packet. Mr. Doneux reviewed the 2013 meeting schedule and stated that the Board shifted the July meetings back one week because of the Fourth of July Holiday. This meant that the July CAC meeting would take place on July 17<sup>th</sup> and not the 10<sup>th</sup>. Mr. Doneux also noted an updated Board, CAC and Staff contact list was included in the packet.

### **2013 Agenda Plan**

Administrator Doneux said that he normally tracks potential Board requests and other agenda items for the CAC. He stated that he now wants to more formally track potential Agenda items on the enclosed Agenda Plan. Mr. Doneux reviewed the plan with the committee noting that there is always some need for flexibility in the Agenda schedule however the plan should help both the Committee and staff prioritize action items and updates. The Committee offered several new agenda topics for inclusion in 2013.

### **2013 Work Plan Review**

Administrator Doneux said the last time the Committee reviewed the 2013 Work Plan was back in August of 2012. Mr. Doneux said he included the 2013 Work Plan in the packet and reviewed it with the Committee.

### **Board of Managers and CAC Observer Update**

Manager Reider reviewed recent Board actions. Steve Duerre attended the December 19<sup>th</sup> Board meeting and gave a short overview. The January 2, 2013 Board meeting was cancelled. Michelle Ulrich would be attending the January 16<sup>th</sup> Board meeting and Ted McCaslin will attend the February 6<sup>th</sup> Board Meeting.

### **Discussion - New & Old Issues**

No Discussion

### **February 13, 2013 Agenda Overview**

The Stop the Rain Drain will be presented to the Committee along with the McCarron's Subwatershed Study.

**Adjourn** – The meeting adjourned at 9:12 pm by consensus.

Respectfully submitted,

Mark Doneux

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