

Papillion Creek Watershed Partnership

New Water Quality Ordinances



Meeting Agenda

1:00 p.m. – 1:10 p.m.	<p>Stormwater Ordinance - <i>Marty Grate, City of Omaha</i></p> <p>The existing Stormwater Ordinance and the planned amendments.</p>
1:10 p.m. – 1:30 p.m.	<p>Post Construction Plan</p> <p>Post Construction Guidance Document, the PCSMP Application, and the Maintenance Agreement.</p>
1:30 p.m. – 1:45 p.m.	<p>City of Omaha's Expectations and Approval Process</p> <p>What the City expects from the design engineers, what is required for City approval, and what is still considered work in progress.</p>
1:45 p.m. – 2:00 p.m.	<p>P-MRNRD's Expectations and Approval Process</p> <p>P-MRNRD's review process and coordination with the Papillion Creek Watershed Partnership.</p>
2:00 p.m. – 3:00 p.m.	<p>Wrap-up</p> <p>Q&A Panel <i>All speakers</i></p>

Papillion Creek Watershed Partnership (PCWP) Mission

“Address issues related to water quality and storm water quantity in the Papillion Creek Watershed by establishing regionally common goals and standards for the development of the watershed through 2040.”

Established August 2001

PCWP July 2006 Targets

- **Update Master Plan to include stormwater policies**
- **Adopt a new stormwater ordinance**
- **Revise Omaha Stormwater Design Manual to include BMPs**

Stormwater Policies of 2006

Group

- #1 Stormwater Management Financing
- #2 Peak Flow Reduction
- #3 Pollution Control
- #4 Landscape Preservation,
Restoration, and Conservation
- #5 Erosion and Sediment Control
- #6 Floodplain Management

#3: Pollution Control

Root Policy: Reduce pollution from contributing sources including, but not limited to agricultural activities and combined sewer overflows.

Sub-Policies:

- 1) Protect surface resources from contamination
- 2) Preserve, protect and mitigate wetlands
- 3) Support NDEQ in TMDL development
- 4) Implement BMPs

#4: Landscape Preservation, Restoration, and Conservation

Root Policy: Utilize landscape preservation, restoration, and conservation techniques to meet stormwater management objectives

- Sub-Policies:*
- 1) Incorporate stormwater strategies
 - 2) Define natural resources
 - 3) Encourage low-impact development
 - 4) Dedicate a creek setback (3:1 plus 50')
 - 5) Minimum creek setback for maintenance (3:1 plus 20')

Stage IV Activities from August 2006 to the Present

- Additional public involvement (7 open houses & 2 public officials meetings)
- Additional technical study on some of the potential regional detention sites and water quality basins
- Evaluation of LID alternatives
- Coordinate with development and the logical extension of infrastructure

Stage IV Conclusions

- LID is needed in all new developments to protect water quality
- LID for flood control would likely decrease density/increase sprawl
- Reservoirs offer some flood control benefits that cannot be duplicated through LID alone
- In some parts of the Watershed, opposition to new dams makes regional detention basins politically impractical

Sept. 2008 Ordinance Revisions—

- Made LID mandatory for new developments
- Defined LID
- Adopted control of first 1/2" runoff as target for Post Construction

Next Steps

Call for Boards/Councils located within Douglas, Sarpy and Washington Counties to....

**Renew PCWP Interlocal Agreement
(5-year term) and adopt:**

- Watershed Management Plan
- Implementation Plan
- Revised Stormwater Policies

Aug. 2009 Ordinance Package

- Revise Watershed Management Plan
- Adopt 3-year Regional Implementation Plan
- Add target for new development to maintain peak runoff for 2-year storm
- Require significant redevelopment to maintain peak run-off for 2, 10 and 100 – year storm

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Papillion Creek Watershed Partnership (PCWP)

- Guidance Completed July 2009
- ½” Stormwater Ordinance has been adopted by 8 out of 11 Government Entities in PCWP.
- Bellevue, Ralston and Douglas County have not adopted the ½” Ordinance

Documentation

www.omahastormwater.org

www.papiopartnership.org

Check for updates after today's presentation

Overview of Guidance Document

- Applicability
- Submittal Requirements
 - Application
 - Plan
 - Drainage Study
 - BMP Certification
 - Maintenance Agreement
- Plan Development and Additional Resources

APPLICABILITY

Any Preliminary Plat approved after July 1st, 2008

Any Replat with a Preliminary Plat approved before July 1st, 2008 as required by Planning Director

Low Impact Development BMP's that provide water quality control for the first ½" of runoff

APPLICABILITY

Continued

- Any Preliminary Plan approved before July 1st, 2008
- Developments and Redevelopments that disturb more than 1 acre and do not require preliminary plat

Include BMP's and where reasonably practical, provide water quality control of the first ½" of runoff from the site

APPLICABILITY

Continued

- Significant Redevelopment Less than 1 Acre and more than 5,000 Square Feet

Include BMP's

Significant Redevelopment

- Expansion of a Building Footprint
 - Addition or Replacement of a Structure
 - Replacement of impervious surface, not part of routine maintenance
 - Land disturbing activities related to structural or impervious surfaces.
- *Does not include routine maintenance that maintains original line and grade, hydraulic capacity and original purpose of facility.**
- *Does not include emergency redevelopment activities.**

Application

Papillion Creek Watershed Partnership www.omahastormwater.org		PCWP PROJECT NUMBER	
POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN APPLICATION			
<input type="checkbox"/> Conceptual PCSMP <input type="checkbox"/> Final PCSMP (Please mark the appropriate submittal)			
1.0 PROJECT INFORMATION			
1.1 Name & Location			
Provide the project information in the fields provided below. The following guidelines must be adhered to: (1) Post-Construction Stormwater Management Plans (PCSMP) are frequently done as a requirement of a subdivision agreement. The project name must match the subdivision agreement name if such a document exists. (2) PCSMPs are frequently done as a requirement of a building permit. The project address must match the building permit address if such a document exists. (3) All requested information must be provided for each field.			
Project Name _____		Address _____	
Subdivision Name _____	S&ID # _____	City _____	State _____ Zip Code _____
OPW Project Number (For City of Omaha Projects Only) _____			
2.0 SUBMITTAL INFORMATION			
2.1 Submittal Instructions			
The following submittal and acceptance steps must be adhered to:			
2.1.1 Determine if your project has to submit a Post Construction Stormwater Management Plan (PCSMP) and whether a Conceptual and/or Final PCSMP will be required. The City of Omaha Post Construction Stormwater Management Planning Guidance document at www.omahastormwater.org is available to assist with this determination and provides additional information on submittal requirements.			
2.1.2 The APPLICANT may request to meet with the Public Works Department to present a PCSMP.			
2.1.3 The DESIGNER must submit all aforementioned documents (Plans; Supporting Computation; Application, BMP Maintenance Requirements; Maintenance Agreement and Easement; etc) to Selma Kessler (selma.kessler@ci.omaha.ne.us) in the Portable Document Format (PDF).			
2.1.4 The DESIGNER must be a licensed professional civil engineer registered in the State of Nebraska or other professional approved by the City of Omaha Public Works Department.			
2.1.5 The Public Works Department will coordinate with the DESIGNER until an acceptable PCSMP has been developed.			
2.1.6 The APPLICANT must record the PWD accepted PCSMP Maintenance Agreement and Easement with the Register Of Deeds.			
2.1.7 The PCSMP will be stamped as accepted by the Public Works Department and issued to the APPLICANT.			

- Need OPW Number – selma.kessler@ci.omaha.ne.us
- Check Conceptual or Final
- Submittals include
 - Application
 - Plan Set
 - Drainage Study & BMP Calculations
 - Maintenance Requirements (Final Only)
 - Maintenance Agreement & Easement (Final Only)

Application

Continued

- Miscellaneous Submittals (i.e. other permit documentation)
- Public vs. Private BMPs
- Applicant Certification
 - Designer must be licensed professional engineer or other professional approved by the City
 - Inspector shall be the on-site construction inspector / observer

PCSMP Plan

- Conceptual Plan required for Preliminary Plats
 - Application, Plan Sheets, Drainage Study and BMP Calculations
- Final Plan required with Storm Sewer Construction Plans, Grading Permit Applications if more than one acre, and Building Permit Application if less than one acre
 - Application, Plan Sheets, BMP Calcs, Drainage Study, BMP Maintenance Requirements, and documentation of recorded Maintenance Agreement

BMP Certification

- BMPs must be certified by a licensed professional civil engineer or other professional approved by the City
- Include BMP inspector and report holder contact information
- Applicable to both public and private projects
- Submit with Record Drawings to Joan Green

Maintenance Agreement

- Agreement between property owner and city of Omaha or other community
- Maintenance to be provided by property owner
- Regular Maintenance and Annual Inspection Required
 - Qualified Professional includes PE, LA, CPESC, CPSWQ, CISEC
- In event of default, City can perform repairs at owner's expense
- File with Register of Deeds

Maintenance Agreement

Continued

- Exhibit A – Real property description
 - Property Legal Description and Boundaries
 - Can Include Final PCSMP Plan Sheets (11x17)
- Exhibit B – Maintenance Schedule and BMP ID Table
 - Project Information
 - BMP Information (including coordinates)
 - BMP Maintenance Tasks and Schedule

BMP Information

BMP ID	TYPE OF BMP	State Plane Coordinates (N/E)	Longitude/Latitude

Maintenance Schedule

Wet Pond Maintenance Tasks and Schedule	
Task	Schedule
Remove debris from side slopes and trash rack	Monthly
Check and clear orifice of any obstructions	Monthly
Outlet/inlet inspection and cleanout	Monthly
Check pond side slopes and repair eroded areas	Monthly
Forebay inspection and cleanout	Monthly - remove sediment every 7 years or when 50% of storage volume has been lost
Basin inspection and cleanout	Annually- remove sediment every 20 years or when 25% of permanent pool volume has been lost
Inspect/Exercise all mechanical devices	Annually
Inspect for structural damage/leaks	Annually
Replace broken pipes	As needed
Replace filtration riprap that has been choked with sediment	As needed
Remove sediment	As needed
Pest control	As needed
Security	As needed

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City Expectations and Approval

- If Necessary, CO Hold Letter
 - Building permits contingent on preparation of PCSMP can be issued with CO Hold

Typical BMPs

- Infiltration (rain gardens, swales, green space)
 - Sod on fill does not count
 - If using green space, test permeability of soil
- Water quality detention (wet and dry detention)
 - 24 – 40 hour drawdown
- Green Roof
- Pervious Pavement/Pavers

Infiltration Orchard Park Rain Garden



Water Quality Detention Rockbrook Shopping Center



Green Roof Gallup Building



Photo courtesy of Kent Holm, Douglas County Environmental Services

Permeable Pavers

Park Avenue & Broadway, Council Bluffs



Typical BMPs

Continued

- Hydrodynamic separators
 - 80% treatment
- Subsurface storage
- Inlet filters

Reference: Chapter 8, Omaha Regional Stormwater Design Manual

Drainage Study

- Provide Narrative
- Drainage Map
- Methodology
- Assumptions
- *Clearly* compare existing and proposed conditions
- Supporting calculations
- *Drainage Study Checklist:*
www.omahastormwater.org

Drainage Study

Continued

- Make sure nomenclature is consistent between report tables and drainage map
- Maps need to be legible
- Even if you use software for the analysis the assumptions and variables should be listed in the body of the report
- *Engineer must stamp and sign drainage study*

Common Questions

- *Million Dollar Question: What is acceptable flow rate for the ½" runoff?*
 - Rational Method: 1-yr event, 20 minute duration
- What if single anchor going is as part of larger development?
 - BMP must be in place

Common Questions

Continued

- What if multiple projects underway in single area?
 - BMP's can be constructed with individual projects
 - Update drainage map as projects progress
- Larger area draining across parking lot project; does entire area need to be treated?
 - No, just what is being replaced

Common Questions

Continued

- What is required for roof drains?
 - The roof area needs to be treated.
- What is required for residential estates?
 - If plat includes more than one lot or is part of larger subdivision then the regulations apply.

PCSMP Plan Sheets

- Plans must be legible!
- Clearly show pre and post conditions topography
- Utilities
- BMP Locations
- Include City Approval Box
- *P.E. Needs to stamp plans*

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Papio Missouri River NRD's Role

- Guidance Documents
 - Utilized by all PCWP members with adopted stormwater ordinance
 - PCWP members will add their specific process to the document
 - Content and review expectations same as Omaha

Papio Missouri River NRD's Role

- NRD Review Process
 - If requested by community, NRD will provide technical assistance
 - Bellevue, Boys Town, Gretna, La Vista, Papillion, and Sarpy County
 - Conceptual Submittal – Preliminary Plat
 - Final Submittal – Final Plat
 - Maintenance Agreement with final submittal

Papio Missouri River NRD's Role

- NRD Review Process – City of Omaha
 - Development Review Committee
 - Conceptual PCSMP
 - Erosion and Sediment Control Plans
 - Floodplain Development

Papio Missouri River NRD's Role

- Obtain the application, guidance documents and maintenance agreement.
 - www.papiopartnership.org
 - Amanda Grint, agrint@papionrd.org or Lori Laster, llaster@papionrd.org
- Drainage studies must contain the information in the drainage study checklist and must be stamped, sealed by a PE

Papio Missouri River NRD's Role

It is strongly encouraged that bio infiltration techniques be utilized to meet this ordinance requirement. Soils should be analyzed on each site to determine the best management practice that can be utilized.

Questions??

