

Agenda Item: 11.

Memo

To: Programs, Projects, & Operations Subcommittee

From: John Winkler, Marlin Petermann, Amanda Grint, and Lori Laster

Date: March 4, 2013

RE: Proposed Max LID Control Structure Program

Low impact development (LID) strategies are approaches to land development (or redevelopment) that manage stormwater as close to its source as possible to reduce the impact of built areas and promotes natural movement of water within a watershed. LID is defined as a land development and management approach whereby stormwater runoff is managed using design techniques that promote infiltration, filtration, storage, evaporation and temporary detention close to its source. In 2009 the Papillion Creek Watershed Partnership (PCWP) adopted a Watershed Management Plan that incorporated two types of LID practices. The PCWP members adopted Water Quality LID to control the first one-half inch of runoff and to maintain peak discharge rates from a 2-year storm event from new development or significant redevelopment.

Based on the stormwater policies for new development adopted by Douglas County and Washington County, the areas in the Papillion Creek Watershed outside of the PCWP members' boundaries would be controlled by Maximum LID. Maximum LID is defined as the use of LID strategies and on-site detention to reduce peak flows by approximately 90% for new development and significant redevelopment.

The proposed Max LID Control Structure Assistance Program is not LID and not consistent with the adopted policies of Douglas and Washington Counties or the PCWP Watershed Management Plan that has been adopted by the District. It appears that the proposed program would be implemented on lands currently used for agricultural purposes with no impending plans for development. LID is a strategy for developed land.

The proposed program appears to be a modification of the District's Small Flood Control Structure Program. The proposed program calls for construction of small detention facilities to control the 100-year storm event. However, there are numerous concerns with the program as presented.

- As previously discussed, both LID and Max LID are implemented with development. This proposal is for undeveloped land. The District currently has two programs in place for stormwater management on undeveloped agricultural lands. The Conservation Assistance Program (CAP) provides cost share for water quality practices (erosion control) for small storm events (2-10 year). The Small Flood Control Structure Program provides cost share for structures that provide peak flow reduction (flood control) from larger storm events (100-year).

Participation from landowners in CAP has historically been great, but there has been very little interest and/or participation in the Small Flood Control Structure Program.

- Douglas and Washington Counties have already adopted policies to require 90% stormwater peak flow reduction practices for new development and significant redevelopment. The District does not normally cost share on items that are required by regulation or ordinance.
- The proposed program would require that a 100-year storm be detained for 24 hours. Each structure would need to have hydrology and hydraulic analyses of the watershed upstream of the structure to determine the design criteria of the structure.
- The proposed program limits the eligibility of applicants to those in the Papio Watershed but outside of the boundaries of PCWP communities. The only eligible applicants would be landowners in a portion of western Douglas County, a portion of Washington County, and Bennington. As stated above, Douglas and Washington Counties have adopted stricter stormwater management policies for development than the PCWP communities. The Small Flood Control Structures Program states that watersheds should be at least 500 acres. The proposed program states that it should be for watersheds above structures less than 500 acres in size. The District does not want to encourage or promote small 5-acre watershed structures. To do so, the District would end up with thousands of structures to track and maintain. Any flood control measures that others count on must be significant and control significant areas. Staff does not recommend revising the watershed size for eligible small flood control structures.
- Requiring that all property owned by the applicant in the Papio Watershed be adequately treated is unnecessary and a major detriment to the program and the landowners. For example, some applicants may own 10,000 acres throughout the Papio Watershed. Only acres in the structure's watershed need to be treated. The Small Structures Flood Control Program requires a level of treatment of 5 tons/acre for the structure's watershed.
- Limiting review time of the District is not good policy. Policies and programs are written to protect the District, not limit it. The proposed program doesn't provide for submittal of additional information if needed. Staff recommends that the submittal process for the Small Structures Flood Control Program remain unchanged.
- The District has always cost shared on actual project costs, not by a set volume or quantity of water. For example, two structures may detain or store the same amount of water but due to site conditions may vary greatly in cost. Payment for flood control by acre-feet of water stored is not customary and not appropriate.
- There are a plethora of concerns with landowners building the structures and then being reimbursed by the District. The District cost shares with landowners on conservation practices, but the NRCS designs and inspects the projects. All elements of a project would need to be certified by a professional engineer at a bare minimum. There are concerns about the ability of landowners to cash-flow these projects.
- An application form can't contain all the necessary engineering plans and reports. There are many reports (soils analyses, geotechnical reports, hydrology and hydraulic studies) that must be completed by a Professional Engineer and submitted for review by the District. All necessary permits (404, NDNR, NDEQ, etc.) must be submitted also.

- Land rights must be provided in favor of the District. At a minimum the District must be granted a permanent easement not only for construction but also for operation and maintenance. If the landowner defaults on O&M, the District or other governmental entity would have to step in to ensure these facilities are operated properly in perpetuity.
- The proposed program states that the landowner agreement and land rights may terminate after 50 years and that the landowner must reimburse a prorated cost if the project is removed within 5 years. All of these provisions are incomprehensible and unfathomable. There is no conceivable way that these flood control structures can ever be terminated or removed. These structures must remain in perpetuity as they would form a role in flood control to downstream residents. To remove them would jeopardize life and property and may cause a liability issue.
- Without an administrative framework and formal policies in place there is no definition to key general elements such as ownership, approvals, O&M requirements and responsibilities, and enforcement. There are also no enforcement and administrative actions defined to ensure long term function of the structures. Any new program developed or changes made to an existing program would need to be reviewed by District legal counsel to ensure all aspects of a program are properly addressed to reduce liability risk for the District.

In addition to the specific concerns with the proposed program listed above, in February 2009 the District received a letter from the Washington County Board of Supervisors which stated that Washington County currently has stormwater management policies in place for controlling runoff for development. The letter also states that the policies require the practices to be 100% developer funded.

**Staff does not recommend adoption of a new program or changes to any current District programs at this time.**

**17.37 Small Flood Control Structure Program.** The Small Flood Control Structure Program is an authorized program of the District to provide technical and financial assistance to landowners in the installation of small flood control structures within the Papillion Creek Watershed.

A. Criteria for Assistance:

1. The watershed for each structure shall be at least 500 acres.
2. All projects shall be designed as high hazard flood control structures to contain the 100-year flood below the emergency spillway.
3. Projects under this program shall have a total project cost of less than \$500,000, such costs to include but are not limited to preliminary design, geotechnical investigations, final design and construction engineering, soils and materials testing and project construction.
4. At least 75% of the applicant's property in the watershed shall have adequate land treatment. Adequate land treatment shall be defined as having 5 tons per acre per year or less soil loss as determined by the Revised Universal Soil Loss Equation (RUSLE).
5. For structure sites involving more than one landowner, a joint application shall be submitted.
6. Projects must be in conformance with all local, state and federal laws.

B. District Responsibilities:

1. Administer the Small Flood Control Structure Program.
2. Management shall review and prioritize all applications annually.
3. The District shall contract with a consulting engineering firm for final design, geotechnical investigations and construction engineering services for the project.
4. The District shall select a contractor and administer a contract for the construction of the project.
5. The District shall fund 75% of the total project costs.
6. Upon completion of the construction, the District will operate and maintain the structure.

C. Applicant Responsibilities:

1. Submit an applications on a form provided by the District, and,

- a. Submit a preliminary engineering design and report prepared by a qualified, licensed professional engineer; a USGS quadrangle map "level of design;" a field survey of the structure centerline; preliminary flood routings and earthwork computations; and, a preliminary cost estimate.
  - b. Submit an adequate land treatment determination for the applicant's property.
2. The applicant(s) shall donate any needed land rights (easements) for the project. The easement shall include the right of ingress and egress to survey, design, construct, operate and maintain the structure, the right to permanently and/or temporarily store flood waters behind the structure and the right to limit other uses.
3. The applicant(s) shall donate an easement over their adjoining property within the watershed guaranteeing the adequate land treatment will be maintained in perpetuity.
4. The applicant(s) shall fund 25% of the total project costs, such funding to be placed in escrow prior to project construction.
5. The applicant(s) shall establish and maintain permanent vegetative cover on a 100 foot strip of land adjacent to the permanent pool of the structure.
6. The total project cost may exceed \$500,000 if the applicant(s) pays for all costs exceeding that limit. The applicant(s) shall also agree to fund those project features that are beyond minimum standards for flood control structure design (e.g., a roadway on top of a dam).
7. The applicant(s) shall execute an agreement with the District incorporating these guidelines.

[February 10, 2000]

**WASHINGTON COUNTY  
BOARD OF SUPERVISORS**

Courthouse - 1555 Colfax Street  
PO Box 466, Blair, Nebraska 68008  
Phone 402-426-6822

**Duane Wilcox**  
Chairman

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February 10, 2009

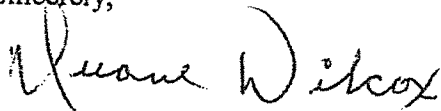
Papillion Creek Watershed Partnership  
c/o Natural Resources Center  
Attention: John Winkler  
8901 So 154<sup>th</sup> Street  
Omaha, Nebraska 68138

Dear Mr. Winkler;

At the regular meeting of the Washington County Board of Supervisors held Tuesday, February 10, 2009, the Board went on record to request any reference to Washington County in the Papillion Creek Watershed Partnership Management Plan be removed, specifically, in reference to fees collected in "Rural Estates".

Washington County currently has their own Stormwater Management Policies in place for controlling stormwater runoff. Fees in regards to Washington County Stormwater Policies are 100% developer funded.

Sincerely,



Duane Wilcox, Chairperson  
Washington County Board of Supervisors

## Winkler, John

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**From:** Egr, Emmett  
**Sent:** Tuesday, February 17, 2009 10:23 AM  
**To:** Winkler, John; Petermann, Marlin; Grint, Amanda; Laster, Lori; (dwolf@nrdnet.org); phil@pmyco.com  
**Subject:** two articles. Wash County Newspapers on water plan

Wash. County Enterprise 2-13-09

# County wants no part of water plan

**Stephanie Ludwig**  
Reporter

Officials in Washington County have said they want out of a new stormwater and flood control plan drafted by a coalition of neighboring governments.

County supervisors voted Tuesday to send a letter to the Papillion Creek Watershed Partnership stating they want any reference to Washington County to be removed from a management plan the partnership will be presenting at a workshop on Saturday.

It also states that all references to Washington County should be removed, "specifically, in reference to fees collected in 'rural estates.'"

The board said the county already has stormwater management policies in place, and that fees associated with these policies are developer funded.

John **Winkler**, general manager of the Papio-Missouri River Natural Resources District, said he had not received the letter from the county as of Thursday morning, but called the board's action "extremely unfortunate" because the plan covers the entire watershed.

Washington County sits at the head of the Papio Creek Watershed.

"This will break up the planning process because this is watershed-wide," **Winkler** said. "That would make it more difficult, from a coordination aspect and a practical aspect."

Winkler acknowledged that the NRD and the county may not agree on best management practices but that without Washington County, it may be difficult to make the rest of the plan work together to form an efficient system.

The Papillion Creek Watershed Partnership, which consists of 11 governmental bodies and the Papio-Missouri NRD, will be presenting its watershed management plan and management policies at a meeting at the Scott Conference Center, 6450 Pine Street, in Omaha this Saturday, February 14, from 9 a.m. until noon.

The public is welcome to attend; however, public comment will be restricted to two open houses before and after the presentation.

Washington County declined membership in the Watershed Partnership several years ago, but because the county is at the head of the Papillion Creek floodplain, it is considered part of the watershed itself.

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February 17, 2009 • Blair, Nebraska

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## County out of dam plan- for now

**Stephanie Ludwig**  
**Reporter**

For opponents of dams in Washington County, there's good news.

The Papillion Creek Watershed Partnership recommended in a plan unveiled Saturday that seven dams be built by 2013, none of them in Washington County.

The plan was presented by the partnership, an agency of 11 governmental bodies created to improve stormwater management in the Papio Creek watershed, a 402-square mile area covering parts of Washington, Douglas and Sarpy counties. Officials in the watershed as well as the public were invited to attend a workshop Saturday that unveiled the plan.

HDR Inc., helped draft the plan, which calls for the seven dams in Douglas and Sarpy counties at a cost of approximately \$134 million. Maximum Low Impact Development (LID) was recommended for Washington County.

"I think they've definitely been listening to us. We've been firm on not wanting dams in Washington County," said County Board chairman Harlo Wilcox.

Wilcox said the county's stormwater management plan calls for LIDs in new developments.

Wilcox, as well as many board members and citizens in the county, believe that much of the watershed's flooding problems have not been caused by runoff from Washington County, but rather developments in the floodplain in Douglas and Sarpy counties. Because of this, many oppose the building of dams in the county, or even paying for partnership projects that do not benefit locally.

The dams will be paid for through a combination of homebuilder and developer fees, levy revenues from the Papio-Missouri River Natural Resources District, and supplemental bonding revenues.

The NRD currently lacks bonding authority, a situation it is trying to rectify through a legislative bill currently under review with the Revenue Committee of the Nebraska Legislature. Another bill, LB 577, counteracts the bonding bill by allowing only citizens who will benefit from NRD projects to be taxed.

Wilcox said he thinks the plan's usefulness still hinges on whether the bonding bill will pass.

"That will sure change their plan," he said.

County Board members Jeff Quist, Kent Clausen and Mary Alice Johnson also attended Saturday's meeting.

While Washington County may be safe from dams at the moment, the future is uncertain. The plan calls for total flood prevention throughout the watershed by 2050. However, it has been estimated that less than 20 percent of the maximum LIDs will be completed by 2050 due to population growth estimates. As a result, the partnership may call for dams in the future.

Emmett J. Egr, APR  
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## RESOLUTION \_\_\_\_

### to Create a program of Maximum LID Control Structure Assistance

BE IT RESOLVED that a program entitled Max LID Control Structure Program be authorized and created by the District to provide technical and financial assistance to owners of real property within the District for installation of low impact development (LID) structures and elements for control of 100 year rain events, such Program to commence on \_\_\_\_ (date???) . Any such structure or element shall control a 100 year rain event for a minimum time period of 24 hours and must be located on real property within the Papio Creek watershed and outside of the Papio Creek Watershed Partnership's boundaries as such boundaries may exist at the time application to the program is made.

BE IT FURTHER RESOLVED that the following shall be criteria for application by landowners seeking technical or financial assistance from the Max LID Control Structure Program:

1. The watershed for each such proposed structure or element shall be less than 500 acres;
2. All proposed structures or elements shall be designed to detain a 100 year rain event for a minimum time period of 24 hours;
3. Any proposed structure or element to be benefitted by technical or financial assistance from this program shall have a total project cost of less than \$500,000, such total cost to include but not be limited to preliminary design, geotechnical investigation, final design, construction engineering, soils and material testing, and project construction in or upon the land upon which such structure or element is to be built;
4. At least 75% of the applicant's real property within the Papio Creek watershed shall possess adequate soil-loss prevention treatment. Adequate soil loss prevention treatment shall be defined as a degree of soil loss prevention as determined by the Revised Universal Soil Loss Equation (hereinafter referred to as RUSLE).
5. Any such proposed structure or element shall meet local, state and federal regulations and statutory requirements.

BE IT FURTHER RESOLVED that the District's role in any Max LID Control Structure Project shall be as follows:

1. Review of all application within 90 days of submission to the District in writing;
2. Approval shall be on a first-come, first served method;
3. The District shall pay \$7,500 per acre foot of stored water detained in such approved structure or element within a 100 year rain event;
4. Upon completion of the construction of a project, the District shall reimburse the applicant upon being provided with documentation of the final contracted sum and certification of project completion by applicant.
5. Pay for maintenance of the structure of 50 years or until the life of the agreement.

BE IT FURTHER RESOLVED that any applicant for technical and/or financial assistance from this program shall:

1. Submit an application on a form provided by the District containing
  - a. engineering plans
  - b. total estimated cost
  - c. implementation schedule
2. Administer all contracts for design, construction and inspection;
3. Save and hold harmless the District from damages and claim due to design or construction defects;
4. Provide sufficient land and access to applicant's land within the Papio Creek watershed necessary for completion of such project;
5. Provide adequate land treatment as defined as soil loss as determined by the Revised Universal Soil Loss Equation (RUSLE);
6. Maintain permanent vegetation at the site of such project, if necessary;
7. Record with the county registrar of deeds the Max LID agreement between applicant and District;
8. Obtain all necessary local and state permits, if applicable.

BE IT FURTHER RESOLVED that a total project cost may exceed \$500,000 if the applicant pays for all cost exceeding \$500,000. The applicant shall also agree to fund all features that are beyond minimum standards for 100 year flood control standards.

The applicant's agreement may terminate after 50 years.

The applicant's agreement must transfer with the land and may terminate 50 years after the completion of the project upon request of the District, applicant, or applicant's successor in interest.

If for any reason an approved Max LID project is removed voluntarily by applicant, applicant shall reimburse the Papio Missouri Natural Resource District on a prorated basis of applicant cost/ District cost within 5 years from the date of written demand for reimbursement by the District.