

QUESTIONS AND ANSWERS FROM ALL PUBLIC FORUMS

Watershed by Design - Overview

Public Forum: November 17, 2004

Natural Resources Center at Chalco Hills Recreation Area

Questions Posed by Attendees

Green Watershed

1. What has been some of the main obstacles to trail construction (besides money)? How are they addressed in the Watershed Master Plan?

The main obstacle to constructing trails is finding available right-of-way to build within a heavily urbanized area. This is the main reason that the majority of our trails built to date, have been constructed along the Papillion Creek system. The next step in trail development is to work on a plan to connect trails to city parks to allow safe and convenient neighborhood access to the entire system.

2. How do we avoid losing green areas –such as Miracle Hills Golf Course to office developments, whose parking lots would pour higher volume and pollutants into the Big Papillion Creek?

Preventing development on previously unurbanized land is difficult and expensive because the public is forced to obtain land rights to preserve the area. A more practical and economic solution is to work with development to change the way the land is used in order to reduce excess runoff and reserve some areas for greenways and parks.

The relative amount of impervious areas (e.g. pavement and roof tops), versus vegetated areas definitely affect surface runoff volumes. The amounts of pollutants, such as sediment, bacteria, pesticides/herbicides, oils and greases, that may be discharges to a stream; however, depend both on the quantities of surface runoff and the present or absence of good management practices.

3. Will Watershed by Design consider the possibility of developing the watershed both aesthetically and recreationally? For instance, to allow kayaking and canoeing on segments of the Papillion Creek.

As part of the Green Watershed concept, the Watershed by Design effort will consider improving the beauty and public access to the Papillion Creeks and its tributaries so these areas are no longer viewed as simply a system of urban ditches. Adding recreation opportunities will draw more attention to these areas which will indirectly increase public awareness about the quality of our water.

The recently proposed low-level “break away” dams that would raise water levels in creek channels to facilitate recreational and aesthetic opportunities, while maintaining the current flood control, will be investigated.

Clean Watershed

4. What is a Section 404 Permit from the Corps of Engineers? Does it prevent developers from cleaning out sediment capture ponds?

Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into waters of the United States without a permit from the U.S. Army Corps of Engineers. Waters of the United States include wetlands, waterways and channels with a definable bed and bank. Temporary or permanent sedimentation basins require periodic maintenance and removal of the sediment. A Section 404 permit does not prevent the removal of sediment.

5. Are there any plans to try to regulate area farmers and livestock producers beyond what the Nebraska Department of Environmental Quality (NDEQ) requires?

Additional regulations, beyond those required by NDEQ, are not anticipated. However, in the spring of 2005, NDEQ will begin a monitoring effort of the Missouri Tributaries Basin (including the Papillion Creek). This effort will provide data that will be used to develop a Total Maximum Daily Load (TMDL). A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to pollutant sources. The TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non-point sources, including agricultural sources. The TMDL is expected to be completed in 2007 and may drive additional regulations by NDEQ on both urban and rural areas.

6. Does the Partnership’s stormwater permit address the need for immediate measures for trash and debris screening on all major tributaries of Papillion Creek?

No, the current permit relies more on the implementation of non-structural Best Management Practices (BMP) to reduce litter and debris. The Storm Water Management Plan (SWMP) for the Papio Watershed includes the following elements:

- a. Public Information & Outreach
- b. Public Participation & Involvement
- c. Illicit Discharge Detection & Elimination
- d. Construction Site Runoff Control
- e. Post-Construction Runoff Control
- f. Pollution Prevention & Good Housekeeping
- g. Monitoring

Depending upon the success of this plan, structural BMPs like outfall screens may be considered in future permit cycles.

7. Should Watershed by Design implement short term strategies totally focused on restoration and water quality management of all private and public lakes in the Watershed to get immediate results to drive long term comprehensive watershed management efforts?

Such a strategy is already being implemented as a “Community-Based Watershed Management Plan” has been developed individually for Walnut Creek, Wehrspann, Zorinsky and Standing Bear Lakes and is in the process of being developed for Cunningham Lake. These plans are viewed as a subset to the larger Watershed Master Plan and will be used as a guide in that effort. The Watershed Master Plan should include a balance of restoration, preservation, pollution prevention, BMPs and land use policies. Public input is needed to help establish priorities, given the limited funding currently available.

8. Of the seven reservoirs in the watershed how many have clean water (not polluted)?

NDEQ’s 2004 Surface Water Quality Integrated Report lists Walnut Creek as supporting all designated uses. Newport Landing near Bennington has not been assessed, but will likely support its uses. The remaining reservoirs are presently listed as impaired for aquatic life use.

9. What is the worst case scenario for trying to meet regulatory expectations in the future?

Failing to satisfy the requirements of the storm water permits recently issued could result in penalties in the amount of \$27,500 per day per violation for each community covered under the permit. Overt refusal to come into compliance also could lead to additional judicial penalties and even criminal charges.

10. Why do they spray copper sulfate in the water and use a sickle mower to remove tall grasses and algae at Newport Landing if it is so CLEAN?

The growth of algae and emergent vegetation in a shallow water body is highly dependent on sunlight penetration. In “dirty” lakes with limited sunlight penetration, growth of algae and emergent vegetation is inhibited, except, perhaps, in shallow water areas. Newport Landing has relatively clear water with high sunlight penetration. Aquatic vegetation can be physically removed or copper sulfate, a well known algaecide, can be used.

11. I noticed in your presentation, Wehrspann and Zorinsky Lakes are full of sediment. When do you anticipate Newport Landing to fill with similar sediment? What do you plan to do to control this problem?

Wehrspann and mainly Zorinsky Lake have been impacted by excessive sedimentation in the past. However, recent measures have been taken in both watersheds to trap this sediment and prevent it from reaching the lake. Similarly, upstream water quality basins were incorporated in the construction of Newport Landing and Walnut Creek to reduce the impact sediment will have on water quality and aquatic habitat.

12. If the streams that provide water to these proposed reservoirs are of poor quality (i.e. toxic algae, bacteria, etc.) how will the water quality improve when placed in a stagnant pool of water. These contaminants multiply!

A watershed master plan is needed to ensure that reservoirs and the streams feeding them meet water quality standards.

Safe Watershed

Dams and Reservoirs

13. Please elaborate on the plans to compensate landowners for developed property affected from shallow backwater usually grown up in weeds, cattails, dead trees and infested with mosquitoes.

P-MRNRD has typically acquired property below the normal pool elevation by fee title and secured permanent easements between the normal pool and top of dam elevations. Compensation would be based on fair market value for the property. Compensation in some cases can also include impacts the acquisition may leave on the landowners' adjoining property. Based on the topography of the reservoir pool area, unavoidable shallow backwaters would be created, but normally on P-MRNRD property. These used to be referred to as "swampy" areas, but are now referred to as "wetlands" and are considered a vital part of a complete watershed ecosystem.

14. Why can't we concrete the Big Papillion Creek like in California?

From a flood control perspective, concreting the channels of the Papillion Creek is similar in concept to earthen channel improvements or levees designed to carry more water downstream faster. Concrete lining the Big Papillion Creek through Omaha could negate existing flood control measures (e.g. levees and channel improvements) and worsen downstream flooding. Other major deterrents to lining channels are environmental and financial issues. There is also the issue of aesthetics to consider for earthen channels versus concrete lined channels. Typically concrete channels in California are water supply channels and losing water into the ground is undesirable.

15. How can the cost of reservoirs justify the small amount of flood control they provide?

The cost of reservoirs can be expensive, especially the land acquisition. Channel enlargement is another alternative, but much of the channel system is constrained by adjoining properties, and there are numerous bridges involved – all of which would potentially involve enormous sums of money to alter.

Protecting lives and property requires a combination of structural and nonstructural stormwater management “tools”. Structural tools include the construction of upstream reservoirs to store flood waters and downstream channel improvements to convey large storm events. Nonstructural tools include floodplain regulations which prohibit development and purchasing flood-prone properties. Using a combination of these “tools” provides the most efficient and cost effective stormwater management solution.

16. Since the 1960’s, farmers have added hundreds of miles of terraces and the creek rarely comes out of its bank. Do your studies include these facts?

Terraces and other “grade-control” structures such as small dams, farm ponds, “no till” operations, vegetated buffer strips, etc. provide valuable conservation of top soil, but were primarily designed to prevent erosion, not to control flooding. They are designed to handle 10-year (and sometimes 25-year) storms. Under the design condition (100-year or greater) it is almost as if they weren’t even there. The computer models used to estimate the peak flow rates from the upstream agricultural areas were calibrated and verified to 3 different storm events. The rainfall-runoff response from the terraced areas would have been accounted for at the gaging stations located in the upper portion of the Big Papillion Creek Watershed.

17. Are dry dams a viable flood control alternative to the 10 proposed reservoirs? If not, please elaborate.

Dry dams may be able to provide the same amount of flood control as the proposed reservoirs. However, even with upstream sedimentation controls, they would have to provide additional storage for sedimentation, where a conventional reservoir would store both water and sediment by design. The amount of land needed for dry dam type reservoirs in most cases would not be greatly reduced from that of a conventional reservoir to provide equal protection from flooding. Dry dams would also not provide offsetting economic benefits from water-based recreation.

18. If reservoirs have 100-year life span none of these new reservoirs will be useful for the 500-year rain.

These two terms have different meanings. The “100-year life span” of a dam means that it will theoretically take approximately 100 years from the time of its initial construction for the lake to be filled with sediment to a pre-determined elevation. In the case of the Papillion Creek Watershed, a “500-year rain” refers

to the statistical chance (0.2% probability of occurrence) that a storm event would meet or exceed 8.7 inches of rainfall in a 24-hour period during any given year. In other words, the probability of occurrence of a storm does not directly relate to a time span for determining sediment accumulation.

- 19. Can meaningful flood control be achieved without dams/retention lakes in Washington County? Will lawsuits and/or condemnations against Washington County and landowners happen?**

The P-MRNRD must evaluate all reasonable options or combinations of options for flood protection within the Watershed in order to protect lives and property. Upstream reservoirs within the Watershed must at least be considered along with various other potential stormwater runoff controls to achieve the desired level of protection. The evaluation of potential solutions is a complex process.

The rate of urbanization within the Watershed makes it imperative to derive a master plan for how best to handle the increased flooding potential. Litigation, condemnations, etc. are certainly not desirable recourses, but are sometimes necessary to achieve the will of the general public. Therefore, input from the public is a valuable part of planning and any proposed solution must be capable of being properly financed, implemented, and maintained.

- 20. How can you blame Washington County for flooding? There was no rain there when Saddle Creek flooded!**

In the July 22, 2004 storm example cited for the recent Saddle Creek flooding, the storm was indeed a very intense, localized event. There was no intent whatsoever to “blame” anyone or claim that Saddle Creek flooding was caused by runoff from Washington County. These localized storms can occur anywhere in the Watershed. In this case, the capacity of the Saddle Creek drainage system was exceeded, much the same way the capacity of rural conservation measures can be exceeded during intense, localized storms.

- 21. Are the upstream cities and counties willing to bite the bullet so downstream cities and counties don't have to bear the brunt of the upstream development?
SH__ RUNS DOWN HILL!**

This is the very reason why stormwater planning should be done on a watershed wide basis, rather than according to superficial political (community) boundaries. The watershed master planning process will attempt to achieve the best balance between technically sound and publicly acceptable solutions. The choices will be difficult, and issues of “fairness” always arise, but the worst course of action would be to do nothing at all. The Partnership is dedicated to addressing the environmental and flood protection issues within the Watershed to the best of its ability. To do that, public input to the process is a must.

Development Controls

22. Why not focus on the cause instead of the symptom? Development is what needs to be properly managed and controlled from spreading like wildfire with little or no regulations on its potential impact.

The Watershed master planning effort must also address policy issues for development. The Partnership does not have any legal authority to impose such policies, but its members will collectively suggest and recommend uniform policies for their individual governing bodies to enact. There is much value in achieving uniformity to policy making, so that developers come to know what will be expected for Best Management Practices regardless of where they do business in the Watershed.

23. How effective was the design of the creek in the Kansas City Country Club area during the floods this year? If effective, can we do something like that and where? If not effective, why?

The most recent project on Brush Creek located in downtown Kansas City, Missouri was developed through a cooperative effort between the city of Kansas City, Missouri's Parks Board and the U.S. Army Corps of Engineers. This Federal project was designed to:

- a. mitigate flood damage potential within the Brush Creek Corridor,**
- b. reduce hazards to human life from flooding,**
- c. maintain the significant esthetic and cultural qualities,**
- d. increase recreation opportunities,**
- e. provide transportation improvements, and**
- f. address environmental concerns & water quality issues.**

The channel was deepened and widened and a series of concrete weirs or walls were constructed in the channel to impound water and create a water feature. During the storm events of 2004 the Federal project was effective in storing and conveying flood flows.

There are segments along the Big Papillion Creek and its tributaries which may be conducive to the creation of channel impoundments. The location of a weir structure (such as an inflatable dam or concrete weir) will need to be located such that the existing drainage system will not be impaired and create flooding along the tributaries. Omaha by Design has suggested the Little Papillion Creek/Cole Creek confluence area near Dodge Street or the Little Papillion Creek near Ak-Sar-Ben as locations for channel impoundments.

24. The question is about handling storm runoff in the city limits? You showed a picture of flooding on Saddle Creek Road in Omaha. The storm sewer under Saddle Creek is huge. It is almost as wide as Saddle Creek Road alone. During flood rains the storm sewer can not handle the storm water flow. Being there is no room in the storm sewer it has to flood Saddle Creek Road. In the Papillion

Creek Watershed the only answer is to enlarge the channel of Papillion Creeks to handle the storm water.

As a point of information, a Saddle Creek Sewer Evaluation Project will begin yet this year and will attempt to identify various options to minimize flooding impacts. Again, the issues are complex. In the case of the Papillion Creek System, channel enlargement is a concept that can be considered. One of the confounding problems is that much of the channel system is constrained by adjoining properties, and there are numerous bridges involved – all of which would potentially involve enormous sums of money to alter. Nonetheless, the master planning process should consider a range of possibilities for enhanced flood control, and channel enlargement may be applicable for certain stream segments.

- 25. How do we encourage developers to add “natural habitat” (e.g. trees/grasses) to stream and drainage areas? The current channelization trend appears to remove the habitat.**

Channelization can be an effective means of flood control, but natural habitat suffers. Natural habitat provides some flood control by storing and absorbing rainfall runoff, but land for development is sacrificed. A balance is needed. Developers are recognizing the need to not only provide a development site but to provide amenities to improve the “quality of life” of its’ residents. One such way is to maintain or restore the natural habitat along our waterways. These measures, although not traditional, can lower the cost of development by reducing drainage facility needs which is a major factor in development decisions. Having a watershed master plan will provide a guide for developers to consider during their planning process.

- 26. What can the P-MRNRD and its partners do to encourage landowners, especially those with large impervious surfaces, to provide storm water retention and filtration facilities to reduce the need for reservoirs and other large flood control projects?**

The Watershed master planning process will help to identify a “menu” or choices for stormwater controls. One of the measures could involve subdivision regulation by cities and counties that call for “no net increase” in runoff over pre-developed conditions. This can be accomplished on a site-by-site or regional basis, both having some limitations. Local controls may be beneficial in not only retarding the rate and timing of surface runoff, but there may be water quality enhancements as well. Also, adoption of an impervious surface-based stormwater utility fee would be an encouragement for developers to construct less impervious surface or install Best Management Practices to minimize its impact. The Partnership hopes to facilitate consensus-building to adopt necessary policies, Best Management Practices, and funding alternatives through its public education efforts.

27. I think you should mention that storm water catch basins and no net increase of runoff will also help control litter in the stream and also provide water to recharge the aquifer. The aquifer is being diminished under concrete and roofs?

Points well taken. The “rest of the story” is that there also needs to be scheduled maintenance for such catch basins to remove debris accumulations. Where catch basins should be located and who bears the financial responsibility for long-term maintenance must be part of the decision making process.

Floodplain

28. Do you anticipate any area with housing to be remapped as floodplains? If so, where. What would that mean to a homeowner in that area?

The P-MRNRD is currently remapping the floodplain along the West Papillion Creek and its tributaries. Due to the developmental changes that have occurred since the last floodplain mapping effort (1970s), it is probable that certain properties will fall into the 100-year floodplain where they were not previously. It is too early in the re-mapping process to predict where such changes will occur. The typical consequences for property owners that fall within floodplain limits is a tendency for decreased property values and the need to purchase flood insurance. This is one of the important reasons why it is desirable to adopt policies restricting development within existing floodplains or in areas likely to become part of a floodplain given future development.

29. Building in the floodplain obviously increases flooding probability. What is being done to make the zoning laws more restrictive in the floodplain? Why are we still allowing development in those areas?

The view of floodplain zoning regulations will be a part of the watershed master planning process. Present regulations essentially meet minimum State and Federal requirements. Development is allowed in floodplain fringes if it is properly elevated from being flooded. A stricter regulation to prohibit all development in existing and probable floodplains will be investigated.

30. What can be done to prevent more filling of property (motel and church on east side of Big Papio Creek) increasing flood levels/threats to homes and business on west side (Lamp Park Area)?

Continued development of property adjacent to our waterways is clearly an issue that needs to be addressed in the Watershed master planning process. Ultimately communities will need to revise zoning and development requirements if there is a consensus that development in such areas should be further restricted.

31. With floodplain mapping being a “current” view according to MAPA, can the Partnership aid the towns during comprehensive plan updating to incorporate a future mapping view (in an economized fashion)?

According to Federal standards, floodplain mapping has traditionally been a “moving target” situation that is based on the current state of a Watershed, rather than attempt to project impacts from unknown future land uses. However, the West Papillion Creek and tributaries (Elkhorn, West Omaha, Millard, Gretna, and Papillion areas) floodplain remapping effort presently being conducted by the P-MRNRD will include a projected future (Year 2040) floodplain based upon MAPA and community comprehensive land use plans. The future condition essentially assumes a fully urbanized watershed in Douglas and Sarpy counties. The P-MRNRD will be encouraging communities to adopt regulations based on the future conditions floodplain mapping. Remapping of the Big and Little Papillion Creek floodplain is expected to follow.

Other

32. Describe the money from the lottery that goes to environmental quality that was voted on in the last election. What happens to it?

According to a prescribed formula, the Environmental Trust Fund (Fund) receives approximately half of the State lottery system proceeds (the other half goes to education). The Fund is used to provide grant money for a variety of individual environmental projects that are submitted to the Fund managers for priority ranking. The requests for such grants have far exceeded the available \$7-\$10 million per year. The November 2004 Election made this a state constitutional provision (rather than just statutory) and provided that 5 percent of lottery proceeds be taken from the Environmental Trust Fund to finance the Nebraska State Fair. To learn more, visit their website at: www.environmentaltrust.org

33. Is slide presentation on website?

Yes. It was uploaded to the website on November 22, 2004 and may be accessed by clicking on the Watershed By Design logo.

34. Could you post the questions and answers on your website? It would be beneficial to attendees and those unable to attend.

Yes.

35. How do we fund this project? Is there any Federal money for this?

Funding for watershed master planning will, for the most part, have to be derived from property tax or utility revenues, according to the desires of the

public and the Partnership members, unless other funding sources can be secured. The State Legislature has considered allowing local entities to implement a stormwater utility fee system. However, no consensus on that concept has been achieved to date and future actions are uncertain at this point. The prospect of Federal grant money for this project is not promising. The EPA has issued “watershed initiative” grant money in the past, but only 20 recipients nation-wide actually received funds. There are a variety of grant pursuits that can be considered, but often times it costs a great deal of time and expense to pursue a grant; with no guarantees on the outcome. Financing is a very difficult issue that will be discussed at length as the master planning process continues.

36. How will this Federal mandate be funded? What is the penalty if mandate is not complied with?

See response to Question No. 4 above. For those entities that have permits through the Nebraska Department of Environmental Quality on behalf of the EPA, non-compliance of established permit conditions is not an option. There are very serious consequences for knowingly ignoring permit conditions. Good-faith efforts must be made. Penalties in the amount of \$27,500 per day per violations could result. Over time, refusal to comply could lead to criminal charges. Funding for the stormwater program must be extracted from existing revenue sources or new ones must be implemented.

37. You have the priorities wrong. The watershed must be safe before we worry about clean and green.

The “Green”, “Clean” and “Safe” initiatives are not listed in a priority order. All three initiatives must work in concert with one another to maximize the overall value of the Watershed, rather than trying to segregate activities in a piece-meal fashion.

Being “safe” is the most obvious need and will certainly demand a high priority. However, given the Federal mandates and the developmental pressures within the Watershed, the Partnership needs to address the theme elements of “clean” and “green” as well. If the citizenry within the Watershed do not comprehensively examine and support the “clean” and “green” initiatives right along with the “safe” initiative, then important, cost-effective opportunities may be lost.

38. Where’s the coffee and cookies?

We’ll see what we can do for future public meetings in this regard.

Watershed by Design – Green Watershed Public Forum: January 20, 2005 Natural Resources Center at Chalco Hills Recreation Area Questions Posed by Attendees

39. How do we encourage developers to use “Green Watershed” in their design of housing and businesses?

A result of the Watershed Master Plan will be to develop policies and eventually ordinances that will provide direction on how best to design and manage future and existing development from a watershed perspective. “Green” issues will be an important part of these policies. Present efforts include reaching out to the development community to provide education and examples where “green” concepts can add to the value of developments. Many developers are already embracing the desirability and demand for “green” amenities in new developments, and the master plan will likely reinforce the feasibility of merging water-based aesthetics with economic development.

40. You mentioned Federal guidelines/mandates are a factor or requirement in water management. Are there one or more options you presented that are more cost efficient given these Federal mandates?

Current mandates require the development of a watershed master plan. Cost efficiencies will be evaluated as a part of this plan. The cost effectiveness of options for stormwater management is frequently site specific. No single Best Management Practice (BMP) can be identified as a universal solution. In each case, consideration must be given to effectiveness, up-front costs, and long-term operation and maintenance requirements.

41. Are there any plans for creek improvement on West Papillion Creek, 144th & “F” Streets, and through Millard area?

To date, channel improvements have been made in the Altech Business Park and Woodhaven areas located upstream of “F” Street, and bank stabilization measures have been implemented downstream of 144th Street to L Street. There are presently no plans for further improvements in this area.

42. How does the development of proposed lakes fit into the Watershed Master Plan?

Considerations for local and regional types of reservoirs will be incorporated into the Watershed Master Plan as part of the “Safe” Watershed initiative, along with other flood control measures. Flood reservoirs could also provide an important “green” element of the Watershed Master Plan; but in order to be effective, the ultimate plan will need to provide a package of BMPs, both

structural and nonstructural. In addition to the safety benefits of flood control structures, “green” benefits often accompany such facilities. Examples in the Watershed include open spaces available to the public at Walnut Creek, Cunningham, Standing Bear, and Zorinsky Lakes, as well as Chalco Hills Recreation Area.

43. Who does the NRD answer to – your superior power?

The Papio-Missouri River Natural Resources District (the NRD) is governed by an elected board of directors. Board members are elected to four-year terms by citizens in subdistricts of approximately equal population.

44. What are you doing to put “teeth” into construction runoff laws? Are there such laws?

Construction site sediment and erosion control requirements are federally mandated under EPA’s National Pollutant Discharge Elimination System (NPDES), and control of runoff from construction sites has improved dramatically over the last five years. Fines of more than \$10,000 have been collected from developments that have violated their permits. More importantly, however, there has been a strong effort to reach out, educate, and communicate with developers, engineering consultants, and grading contractors to make the requirements known and to emphasize the importance of effective sediment and erosion controls. A uniform approach for inspection and enforcement of construction site sediment and erosion controls is on the horizon. In satisfying the NPDES stormwater permit issued to the members of the Partnership, a regional design manual is under development, and the goal is for communities within the Watershed to establish consistent ordinances.

45. Who stands to gain the most, financially, from these projects? Who stands to lose the most?

It is of little benefit to try to draw lines between financial “winners” and “losers” in developing an effective Watershed Master Plan. In many cases, increased costs will be required to meet the NPDES requirements to minimize impacts associated with runoff, and these unfunded federal mandates will require the communities in the Watershed to devise an equitable mechanism to fund these improvements. It is believed, the general public stands to gain the most from implementing projects identified in the master plan and lose the most, if they are not.

46. I understand there is potential Nebraska legislation (LB 102) that will allow an NRD to charge fees for stormwater management. Will those fees be used by the Papillion partnership? If yes, how?

LB 102 is permissive legislation that would authorize local communities to establish a system of user charges to fund stormwater management programs. This bill would allow a city, a county, or an NRD (but not more than one entity) to assess a charge for runoff from a property. The Partnership will not be authorized to charge a fee. Implementation may be facilitated by the Partnership, but the funding issues are all a function of the individual entities. If LB 102 or similar enabling legislation passes, the Partnership members' local elected officials will need to decide whether or how to use this new funding alternative to meet the NPDES requirements and how to properly manage stormwater in the Watershed.

47. What is NRD's position on the legislative bill (LB 102) mentioned?

The NRD supports LB 102, as the bill provides a financing mechanism to help fund stormwater management programs and projects.

48. What funding sources are available? Can we be more proactive and do some of this before we must undo existing work?

In the past, funding sources for these types of projects have included both public and private funds. Limited federal and state grants are available to assist in the stormwater program, but the competition nationwide for these funds is great. The pending LB 102 would provide another funding mechanism to assist in the planning and implementation of stormwater systems. Yes, establishing policies today will help prepare for the future.

49. Could you please give a complete and detailed definition of storm water? If less than 1% of runoff comes from natural conditions, why would you want to put a dam there? Why not treat runoff at the point of largest percentage of runoff only?

The U.S. Environmental Protection Agency (EPA) describes "stormwater" as "runoff from land and impervious areas such as paved streets, parking lots, and building rooftops during rainfall and snow events that often contain pollutants in quantities that could adversely affect water quality." Stormwater comes from both rural and urban areas. Interrelated factors such as land use, development density, impervious area, and management practices influence the quantity and quality of stormwater.

Flood control reservoirs must be designed based on extreme stormwater runoff events, where the soils are assumed to be fully saturated and a 100-year or greater storm event has occurred. Under such extreme conditions, even agricultural areas contribute enormous quantities of water. The natural

condition mentioned, which yields 1% runoff, referred to natural forest and grassland areas under less intense storm conditions.

A flood control reservoir must be carefully positioned within a watershed in order to be effective. It must be sited far enough upstream in the watershed to feasibly store the volume of runoff required under dam safety standards, but not so far upstream that it lacks a sufficient storage volume to protect people or property from dangerous floodwaters.

As is the case in most watersheds, the only physical spaces remaining to site regional-type reservoirs are in rural areas. It is not physically feasible to locate these reservoirs in the urban areas where runoff rates are greater. Other means of flood damage reduction are incorporated in these urban settings.

50. Was any innovative stormwater management included in the Omaha Missouri Riverfront development; e. g., Qwest Center, Lewis & Clark Landing? How big of a storm can the Rockbrook project handle?

Millions of dollars were spent proactively in the Riverfront Redevelopment to separate the existing combined sewers. A large new storm sewer was constructed through the site to help relieve the existing sewers. In addition, two existing outfall ditches to the Missouri River were enclosed. Trash/debris screening structures with automatic cleaning rakes were constructed for three of the storm sewer outfalls. Large odor control fans and carbon tanks were installed at the screening structure near the convention center to help control odors associated with the screening. A total of four pump stations were constructed throughout the site to pump water to the Missouri River when water levels in the river are high. In addition to pumping, the parking lots for the convention center were designed to detain storm water during large storm events.

Rockbrook channel and detention pond were designed for a 100-year flood (that is, the flood resulting from a rainfall in excess of 7-inches in a 24-hour period that has a 1 percent chance of being equaled or exceeded each year). The pond is a wet, extended-detention water quality pond designed to treat the "first flush" which is equivalent to approximately 0.5" of rainfall over the watershed area.

51. Define "best management practices". Who establishes the guidelines for best management practices? Is there a web site?

BMPs are water quality and water quantity practices, programs, or projects designed and carried out to control or reduce the adverse impacts from discharges or stormwater runoff.

There are many sources of BMP guidance. The EPA's stormwater homepage is a good starting point: <http://www.epa.gov/npdes/stormwater>. There is also an International Stormwater Best Management Practices (BMP) Database project web site (at: <http://www.bmpdatabase.org/>), which features technical documents, software, and an extensive database developed over the past decade.

52. What was the cost of Rockbrook project? Who financed it? Why isn't the Partnership being proactive in supporting similar projects?

Financing was provided by a developer and a small grant from the Nebraska Department of Environmental Quality. Construction cost for the channel realignment, sanitary sewer work, storm sewer improvements, structural BMPs, and utility relocations is estimated at \$970,000.

The Partnership supports and is a proponent of effective stormwater management.

53. What is the role of the NDEQ (Nebraska Department of Environmental Quality) in watershed management? Why is the DEQ not in the Partnership?

NDEQ's formal role in watershed management includes that of the EPA-delegated NPDES permitting and enforcement authority. NDEQ also establishes water quality standards, classifies stream and lakes based on their uses, and determines whether these waters are meeting the established standards. Over the next few years, NDEQ will be monitoring the water quality in the Watershed and preparing a Total Maximum Daily Load (TMDL) to allocate acceptable pollutant loads to the various sources of water quality impairment. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources" (EPA).

NDEQ has been involved with the Partnership from its inception and will continue to be involved. Several other state and local agencies attend Partnership meetings, but the "paying" members of the Partnership are limited to the communities located within the Watershed boundaries. NDEQ regularly attends Partnership meetings to provide guidance and assistance in preparing stormwater management plans used for NPDES permits. NDEQ is the regulatory agency that oversees the permitting process, and the Watershed Master Plan will be submitted to NDEQ for review. It's appropriate for the Partnership to work cooperatively with NDEQ, but it would be inappropriate for the agency providing regulatory oversight to be an actual member of the Partnership.

54. Instead of building dams at the cost of \$100 million, why couldn't pumps be designed to carry the water downstream?

Dams and pumps serve different purposes. Dams are used to store flood waters near its source, while pumps are used to transport water to another location. The number and size of pumps required to handle even small flood flows would far exceed \$100 million. Flood control channels are normally considered a more effective and economical means of transportation.

Over the course of many years, various studies regarding stormwater have been completed by the U.S. Army Corps of Engineers, the NRD, and others. These studies take into account factors such as safety, economic and engineering feasibility, and effectiveness in solving stormwater issues. Flood control reservoirs in the Watershed continue to be a viable stormwater management alternative.

55. Why does it appear that development can and does occur in flood plains? (Example: 132nd & Nebraska Avenue, directly east of Standing Bear Lake). What can we do to protect areas in the watershed? Specific development northeast of 156th & Fort, Castlecreek housing development.

Federal, state, and local regulations never intended to totally prohibit development in floodplains. Development is precluded in an area near the stream (called the floodway) which is to remain unobstructed to allow for the passage of floodwaters. Development is allowed in the fringe areas of the floodplain as long as structures are elevated well above flood levels.

There are many things that can be done to better protect and manage the Watershed. With regard to managing floodplains, the NRD recently obtained a grant from the Federal Emergency Management Agency (FEMA) to update flood hazard mapping along the West Papillion Creek and its tributaries. This new study will enable better planning and management along 52 miles of the Watershed's streams. It is hoped that updating the flood hazard mapping in the Big and Little Papillion Creek Subwatersheds will follow in the near future. The Watershed Master Plan will facilitate the development of policies and ordinances that will help Partnership members to better protect and manage the Watershed and its floodplains.

56. Could you explain "break away" dams and how they can create recreational opportunities for the watershed?

Rubber dams or "break-away dams" are long tubular-shaped fabrics placed across channels or streams to raise the upstream water under normal flow conditions. The membrane is a multi-layer fabric made of synthetic fiber which may be rubberized on one or both sides and possibly coated with plastic film. Inflatable dams can be filled with water, air, or both and are typically only a few feet in height. When the rubber dam is inflated, the water level

rises until it reaches the height of the rubber dam. The area behind the rubber dam creates a pool of water that can provide recreational opportunities. The membrane is usually deflated for large overflows in order to prevent increased flooding.

Like any modification to an active stream, the addition of “break-away” dams would require careful engineering to ensure that induced pools do not sacrifice flood control or create additional water quality problems. Experience with such dams in Kansas City's Brush Creek and Wichita's Arkansas River has shown that such projects can serve as an attractive community amenity or recreational opportunity. To thoroughly address the inherent challenges, however, there needs to be a strong commitment to proper design, operation, and maintenance of the system.

Watershed by Design – Clean Watershed
Public Forum: February 17, 2005
Natural Resources Center at Chalco Hills Recreation Area
Questions Posed by Attendees

57. When will the city begin to require sediment control measures on individual home sites (new construction)?

This year, the City of Omaha will be focusing on the individual home building sites within a subdivision. Perimeter controls around the subdivision has been the focus in past years and with the establishment of proper controls, now is the time to focus on individual lots. The practice of requiring permanent detention basins in individual developments and their effect will be addressed as part of this Watershed Master Plan.

58. If you consistently see silt fence down, is there someone you can contact?

Yes, the City of Omaha's hotline at 444-3908 or report online at www.papiopartnership.org. The city of Omaha is the clearing house for calls and if the concern is outside of their jurisdiction, the proper jurisdiction will be notified for enforcement.

59. How long do you think it will take before we get to the point where new developments are required to contain the new runoff problems that are created and pay for their retention?

New stormwater drainage policies will be developed in the preparation of the watershed master plan. Regional or local detention will be evaluated. Many of these decisions will be made within the next two years.

60. What are the options or plans for aesthetics?

At our January 20, 2005 "Green Watershed" meeting, we discussed how we can enhance and expand the open spaces along our stream corridors. Present efforts include reaching out to the development community to provide education and examples where "green" concepts can add to the value of developments. Many developers are already embracing the desirability and demand for "green" amenities in new developments, and the master plan will likely reinforce the feasibility of merging water-based aesthetics with economic development.

- 61. Median and boulevard green space is wonderful in southern climate. Why do you promote it in northern climate where we use salt and chemicals on all roadways in winter?**

The salts and chemical we use to deice the streets can accumulate along green spaces. Plant selection is important and by using salt tolerant species, the need to replant is reduced. In addition, less aggressive chemicals or vegetation friendly chemicals can be applied to the streets with varying deicing success.

- 62. I just returned from the AWRA National Water Policy Dialogue where they emphasized the importance of groups like this. Grass roots effects are to be commended and with continued effort, make a difference in watershed quality.**

We agree. Regulations alone will not help us achieve a "Clean Watershed". Everyone will need to do their part in creating a "Green, Clean, and Safe" Watershed. The public needs to assist in changing public policy which will in turn change the way we are doing business.

- 63. What will and can be done to protect the integrity of waterways upstream of the regional detention facilities?**

A variety of things can be done upstream of detention facilities to protect the receiving water bodies. Stopping the pollutants at the source offers the best protection. This includes items such as proper application of fertilizers and disposal of oils and fuels. Once the pollutant becomes non-point, other practices can be implemented such as vegetative practices (buffer strips) or detention (wetlands) or physical methods (infiltration devices).

- 64. What can be done with detention ponds to protect existing lakes like Zorinsky?**

In a 1999 Community-Based Watershed Management Plan for Zorinsky Lake, four upstream grade and sediment control devices and filter strips were identified to improve the water quality in Zorinsky Lake. Of the four sediment control devices, two have been constructed, including the one as an integral part of the Whitehawk Subdivision development.

- 65. When will Omaha ban the sale of phosphate fertilizers?**

Probably never, unless it is shown to be the source of a problem. Banning is not the solution, but informed applicators are the first approach in reducing phosphate fertilizers from entering our lakes and streams. Education can teach the proper use, application rate, and cleanup procedures.

- 66. From a clean water perspective, what is the distance you would recommend an automotive facility be separated from a body of water within a developed area of town? The concern being petroleum and oil.**

It depends on other measures such as filter or buffer strips placed between the two. Often the way drainage from an impervious surface such as a parking lot is the key to reducing its impact. For example, before water enters storm drains or public streets it could be treated using separation to remove floating oil, grease, and trash, and as always, these practices would require proper maintenance.

67. Walnut Creek is a fairly new site with primarily new development around it. With it being so new, what would be the reason for the high count? How could this be avoided when it was first created?

Bacteria can come from many sources, including agricultural practices and wildlife. Walnut Creek is not currently listed on the 303(d) list for any water quality impairment. Bacteria loading can be mitigated thru vegetative practices or detention methods.

68. You mentioned that CSO problems are actually worse in the Missouri River Watershed and steep areas. The Ponca Creek watershed must be more erode able than the Papillion Creek Watershed. Will actions, education, and BMP's etc., apply to these other areas? Is water quality monitored in these other areas?

In the older part of Omaha, combined sewers are common. Action, education, and BMPs, etc. derived in the Papillion Creek Watershed can easily be transferable to other parts of the community. It is likely that policies and practices identified in the Papillion Creek Watershed will be used to some extent in adjoining areas regulated by the cities and counties in the Partnership. The US Geological Survey monitors water quality in the Missouri River, and testing of the intake water at MUD's Florence water treatment plant provides additional environmental data on the river. Little data has been obtained the smaller tributaries like Ponca Creek.

69. Are the State/Federal standards excessively strict and if so, should an effort be undertaken to change the standards?

In some cases, the state/federal standards are too restrictive. Legal challenges have been undertaken by some communities in order to prove that the regulations are not realistic. This process typically takes 5 to 10 years. As an example, fecal coliform is an indicator parameter for bacteria. EPA's guidance is saying that fecal coliform is not a good indicator of human health risk and E. Coli should be used. There may be a need to fine tune a standard. As more and more research is being conducted, the standard will most likely change.

70. How does LB 102 affect this process and the master plan?

LB 102 is permissive legislation that would authorize local communities to establish a system of user charges to fund stormwater management programs. Fees authorized under LB 102 could be used to enforce BMPs for water quality and erosion control, create water quality improvement projects, and manage combined sewer overflows.

71. What sort of storm water runoff funding is being applied for?

Unlike the national initiative in the 1970's to construct wastewater treatment plants for sanitary sewage, the mandate to now address storm water runoff includes little in the way of federal funding. Some limited funding for demonstration projects and the like may be possible, but most of the costs will be paid through local property taxes, unless alternate funding sources are established. LB 102 is permissive legislation that would authorize local communities to establish a system of user charges to help fund stormwater management programs.

72. Who pays compliance costs? City? County? Landowner? What are the least cost options? Compliance timetable?

The questions of who pays and what is the least cost option depend on the type of project and who benefits from the project. An evaluation of financing options would identify the best use of public and private dollars. Currently the members of the Papillion Creek Watershed are working on the permit conditions of a 5-year compliance schedule for a NPDES program. There are policies, programs, and projects identified in the permit for construction site runoff control and post-construction runoff controls.

Watershed by Design – Safe Watershed
Public Forum: March 23, 2005
Natural Resources Center at Chalco Hills Recreation Area
Questions Posed by Attendees

73. How do you plan to fund this program? LB 102? Please explain LB 102?

In the past, funding sources for these types of projects have included both public and private funds. Limited federal and state grants are available to assist in the stormwater program, but the competition nationwide for these funds is great. The pending LB 102 would provide another funding mechanism to assist in the planning and implementation of stormwater systems.

LB 102 is permissive legislation that would authorize local communities to establish a system of user charges to fund stormwater management programs. This bill would allow a city, a county, or an NRD (but not more than one entity) to assess a charge for runoff from a property. The Partnership itself has no legal authority and will not be authorized to charge a fee. Implementation may be facilitated by the Partnership, but the funding issues are all a function of the individual entities. If LB 102 or similar enabling legislation passes, the Partnership members' local elected officials will need to decide whether or how to use this new funding alternative to meet the NPDES requirements and how to properly manage stormwater in the Watershed.

74. Kansas City is also prone to major floods events (flash flooding at Country Club Plaza in late 1980's, Missouri and Kaw Rivers flooding in summer 1993). Kansas City has completed several projects to prevent flooding (e.g. improvements to creek through Country Club Plaza). Can we learn from Kansas City examples?

Yes, we can learn from the Kansas City project. Brush Creek is located south of downtown Kansas City, Missouri and the latest project was developed through a cooperative effort between the city of Kansas City, Missouri's Parks Board and the U.S. Army Corps of Engineers. This Federal project was designed to:

- a. mitigate flood damage potential within the Brush Creek Corridor,**
- b. reduce hazards to human life from flooding,**
- c. maintain the significant esthetic and cultural qualities,**
- d. increase recreation opportunities,**
- e. provide transportation improvements, and**
- f. address environmental concerns & water quality issues.**

The channel was deepened and widened and a series of concrete weirs or walls were constructed in the channel to impound water and create a water feature.

75. You speak of BMPs. Can you give some examples of how other cities have successfully addressed these issues?

Here are some examples that are reasonably close to the Omaha metro area:

- ◆ Lincoln, NE – many recent examples of on-site stormwater detention basins, regional flood control reservoirs in Salt Valley Watershed (most constructed in the mid-1960s), and planned extensive capacity improvements to Antelope Creek which runs through the heart of the City.
- ◆ Dubuque, IA – reservoirs and major floodway construction.
- ◆ Sioux City, IA – stormwater management of development and USACE major channel restoration.
- ◆ Des Moines, IA – USACE upstream dam, Saylorville Lake.
- ◆ Kansas City channel restoration green belt construction.
- ◆ Sioux Falls, SD diversion channel along Big Sioux River.

76. Will Federal water quality standards require that storage be provided to capture sediment which occurs during storm event?

Nebraska Department of Environmental Quality (NDEQ) designates on a two-year cycle, waters of the state that are impaired in accordance with Title 117. For example, several area reservoirs are on the Section 303(d) (of the Clean Water Act) impairment list for sediment. If impairment exists, corrective action must be taken. One solution for sediment control is to construct upstream interceptor basins or wetlands to minimize the sediment entering the main water body.

77. Will the future reservoirs be public or private?

It is hoped that the remaining reservoirs will be public. There are seven existing reservoirs: five of which are public (Cunningham, Standing Bear, Wehrspann, Zorinsky and Walnut Creek) and two of which are private (Candlewood and Newport Landing). The city of Omaha has incorporated the remaining reservoirs into their Suburban Park Plan as public facilities.

78. Why isn't there more emphasis on controlling runoff at the site and project level, i.e. construction of retention/detention ponds, limit the rate of runoff from newly developed properties, limiting the quantity of runoff from newly developed properties, etc.

Controlling runoff at the site can help in improving water quality, and in controlling the flow rate and the volume of water for smaller, more frequent storms. By minimizing the amount of imperviousness or by creating natural depressions to store stormwater, the natural infiltration process can be mimicked. Imperviousness can be reduced by: parking lots draining to grassed swales/infiltration systems instead of using area drains that directly flows into storm sewer pipes; the use of paver blocks with grass/sand fill for the joints to encourage infiltration or porous pavement; or by increasing the use of vegetative landscaping and filter strips.

Currently, the City of Omaha does not have a "no-net increase in runoff" policy requiring development to provide on-site storage to maintain the pre-development discharge rate. For the last 10-years, the City of LaVista has been requiring new development to have on-site storage. Locations for on-site detention will have to be evaluated with respect to achieving compatible timing with respect to flood routing in the main channels and that there may be many areas where they provide some net advantages rather than placing so much emphasis on why they may not work.

79. Where can we find out more about the location of the proposed additional reservoirs you mentioned such as 5 additional ones for the Big Papillion Creek?

Copies of the Multi-Reservoir Analysis are available at the offices of P-MRNRD or can be downloaded at <http://www.papionrd.org/>

80. How do you figure the 100-year storm level in a stream? Is the level determined under native vegetation or in a developed state under concrete and roofs? There is a big difference.

A 100-year flood is a flood having a 1 percent chance of being equaled or exceeded in magnitudes in any given year. A 100-year storm may not necessarily cause a 100-year flood, depending on the location and size of the overall storm within the Watershed. The hydrology, that is, the runoff volume that actually reaches a stream from a storm depends on many factors; part of which includes considerations for land use and the relative percentages of areas having high-runoff (concrete, roof tops, pavement, etc.), versus vegetated areas, runoff detention areas, etc. The stream hydraulics, that is, the level (water surface elevation) in a stream depends on the flow rate, channel shape, and channel surface (vegetative or man-made). Given such factors, a standard computer model is prepared that incrementally calculates the water surface elevations along the channel. When determining the water surface

elevation for floodplain mapping, the existing surface condition of the channel is used. When a channel is concrete paved, the resistance to the flow is reduced, therefore the channel velocity will increase, but the water surface elevation to convey the same amount of water will generally decrease.

81. What steps are being taken to curtail the rampant urban sprawl, the control of which could help minimize flood events?

Communities and counties have developed comprehensive land use plans to assist them in guiding development. The development of public infrastructure is planned, so that new development is adjacent to existing development and “in-fill” is encouraged within existing development.

Land development strategies such as low-impact development and conservation subdivisions can reduce the volume and rate of storm water run-off, thereby reducing floods. In those types of development, the total amount of land used is usually not reduced (and sometimes may be increased) in comparison to standard development, due to the need for infiltration, retention, and buffer areas.

Higher intensity development, such as multi-family, can help to reduce the rate at which land is consumed. However, the trade-off is that a greater proportion of the development site is paved or built upon, resulting in more storm water run-off and an increase in the potential for flooding. A balance of development and mitigation strategies will need to be evaluated and pursued to meet water quality and flood reduction goals.

Watershed by Design – Summary/Update

Public Forum: June 16, 2005
Natural Resources Center at Chalco Hills Recreation Area

Questions Posed by Attendees

82. Will you list the technical and policy workgroup members on the website?

Available at one of the information stations is a list of the Policy and Technical Workgroups membership and their associated organization. This list will be published on the website at www.papiopartnership.org.

83. Will Commissions and Boards (appointed and elected) be involved in workshops?

No. The makeup of the workgroups does not include commissioners or board members. It will be the responsibility of each member of the PCWP to keep his or her elected officials abreast of the status of the policy development. When the policies are fully developed, the elected officials should be well informed of the policies.

84. Will the technical and policy workgroup sessions be open to the public?

Yes, the workgroup meetings will be open to the public. The meetings will not be placed on public notice.

85. Will a study be completed that compares flood protection by larger dams vs. flood protection provided by more controls on development?

The policy development will not focus on modeling, but will evaluate policies currently being implemented by other communities around the country.

86. How much combined sewer wastewater is flowing into the watershed. %?

Approximately one-third of the combined sewer overflow area is located within the Papillion Creek Watershed.

87. Give examples of BMP's not currently required that would provide additional sediment protection from new development. Do additional benefits justify additional cost?

The city of Omaha has an inspection team, which visits construction sites within its jurisdiction. A program is being developed that will extend construction inspection throughout the Papillion Creek Watershed. Sediment control devices such as sedimentation basins are end stopgaps. It is better to stop the source of the sediment and control the erosion.

88. a. In the Papio Watershed what is the primary source of bacterial pollution? Septic systems? Animal waste? Lack of sanitary sewer/stormwater separation?

There is currently no regulatory differentiation between human and animal waste in Nebraska. Potential sources of bacterial pollution are from cropland, pastures, livestock, wildlife, urban runoff, and human sewage to name a few. Past studies around the country having a mix of rural and urban land uses have found that up to 80% of the bacterial loading on a stream is from non-human waste. Bacterial pollution is derived from a wide variety of origins that make it difficult to locate and manage.

- b. What's being done by the NRD to reduce bacterial contamination?

The P-MRNRD and others have been encouraging the construction of vegetative buffer strips and detention to remove pollutants. There are many other types of candidate "best management practices." Large reservoirs within a watershed are also effective at removing bacteria (typically on the order of 97% removal or more). A large water body will cause the bacteria that are adhered to the sediment to settle to the bottom and essentially be prevented from further downstream migration.

89. What is no net increase based on? 5-yr, 10-yr, 100-yr or all? Is first flush storm (typically 1 – 2yr) considered for water quality purposes?

The criteria for the "no net increase" in stormwater volume have not been established within the Papillion Creek Watershed. The design storm event will be defined by the Policy and Technical Workgroups.

Typically "first flush" portion of any storm producing surface runoff contains the highest concentration of pollutants and should ideally be included as a part of comprehensive storm-event based water quality characterization efforts for a watershed.

90. Please elaborate on the floodplain re-mapping you mentioned. Will this affect existing projects or land use? Will it affect future projects only? Where is the re-mapping occurring? Basinwide? or particular portions of the watershed?

Currently a flood plain remapping project is being conducted on 52-miles of the West Papillion Creek and its tributaries. The remapping will define the floodplain for existing and fully developed land use conditions. As development continues to increase, the volume of stormwater entering the creek system will increase. Properties that were once near a mapped floodplain may now be located in a FEMA designated floodplain. Old insurance rates will be upheld ("grandfathered"), and there are provisions and guidelines for purchasing flood insurance for newly designated properties.

The P-MRNRD intends to remap the Big Papillion and Little Papillion Creeks in the near future.

- 91. Please explain Phase II stormwater requirements in the Papillion Creek Watershed pursuant to the one permit for the nine (9) cities and (2) counties. P.S. what happens if these requirements aren't met?**

Phase II NPDES requirements are covered under “six minimum controls” and include: public outreach, public education, illicit discharge elimination, construction BMPs, post-construction BMPs and municipal good housekeeping practices. In addition, the Nebraska Dept. of Environmental Quality (NDEQ) requires water quality monitoring of major stormwater outfalls (36” and larger). A common stormwater management plan was prepared and each affected community and county within the Papillion Creek Watershed Partnership submitted the plan that addresses each of the required minimum controls.

If the NPDES requirements are not met, NDEQ has the authority to issue a Notice of Violation (NOV), which outline the violation(s) involved and places the permittee on notice for potential enforcement actions. Typically NDEQ would attempt to reach voluntary compliance without litigation and may file a Consent Decree, which establishes negotiated enforceable milestones for compliance that may differ somewhat from the original permit conditions. An alternate, more direct way of forcing compliance is through an Administrative Order from the Director of NDEQ, in which case conditions would be strictly non-negotiable. Failing corrective actions on the part of the permittee could lead to formal litigation with significant fines ranging up to approximately \$35,000 per day per violation, plus any coincident damages that may have occurred, and even possibly a moratorium on certain city or county functions.

Watershed by Design – Finale

Public Forum: March 2, 2006

Natural Resources Center at Chalco Hills Recreation Area

Questions Posed by Attendees

92. What is your policy concerning build-up of land next to streams for building on?
Does this involve the 3:1 set-pack plus 50:?

There are two policies which will impact development along a watercourse: filling of the floodway fringe and creek setback. Before we talk about the floodway fringe we need to define floodway, floodplain and floodway fringe. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of obstructions so that the 100-year flood can be carried without substantial increases in flood heights. The 100-year floodplain is the area reserved for the 100-year flood. The area between the floodway and the 100-year floodplain boundaries is the floodway fringe. Figure 1 illustrates these floodplain terms.

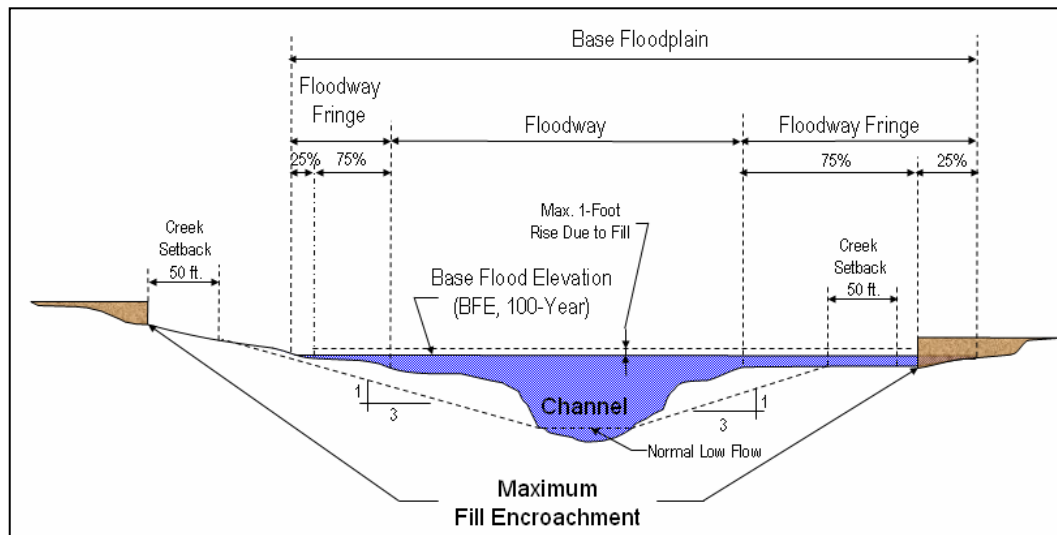


Figure 1 – Floodway Fringe Encroachment and Creek Setback Schematic

Filling of the floodway fringe associated with new development is to be limited to 25% of the plan area located directly adjacent to the full-build out, base flood limits. This means that development can only occur within the outer 25% of the floodplain.

The creek setback area is equal to three (3) times the channel depth plus fifty (50) feet (3:1 plus 50 feet) from the edge of low water on both sides of channel. If the creek is defined on the Watershed Drainage Plan (generally the named creeks within the Watershed) then the Creek Setback of 3:1 plus 50 feet is applicable. Any other watercourse would require a minimum creek setback of 3:1 plus 20 feet.

93. Is the 3:1 + 50 applicable to areas with levees?

Yes, the Creek Setback definition is applicable to the areas with levee, as these areas are noted on the Watershed Drainage Plan as a part of the main drainage system. Levees are located along the Papillion Creek from the confluence with the Missouri River to L Street, on the Little Papillion Creek from its confluence with Big Papillion Creek to L Street and on the West Papillion Creek from approximately 44th to 86th Streets.

94. 3:1 + 20 will be applied to what level. How many acres?

The 3:1 plus 20 applies to any definable bed and bank. No acre threshold is defined.

95. Can grassed sports fields occupy 3:1 + 20 and 3:1 + 50 areas?

Yes. The intent of the policy is to not place permanent structures or place fill materials within the limits of the Creek Setback. Using this area for sporting activities is an excellent use of the land.

96. "If" and when dams and lakes are constructed will floodplain and floodway boundaries change?

Yes. Once a floodplain designation has been established, a letter of map revision must be submitted and approved to change the limits of the floodplain. For example, the areas upstream of Cunningham, Standing Bear, Zorinsky, Walnut Creek and Wehrspann Lakes are considered to contribute reduced flow rates downstream and the floodplain limits reflect this. The greatest reduction in the floodplain is in the area just downstream of a lake, but the reduction can be seen further downstream. As the creeks within the Papillion Creek Watershed are updated to reflect the most current land use and full build-out conditions, the floodplain limits will more accurately reflect the flooding potential.

97. What percent of build out currently exists in floodway, fringe, and Creek Set Back?

This information is not available. Currently, encroachment is not allowed to increase flood levels more than 1 foot based on 1970 hydrology. Flood hazard updates would use full build-out land use conditions to estimate flows to establish this encroachable floodplain area.

98. What would remaining partners likely do if any partner fails to adopt the recommendations?

It is hoped that all Papillion Creek Watershed Partnership (Partnership) members will adopt these important policies without any modifications. Doing nothing is not practical or good public policy. When the Partnership communities (9 communities, 2 counties and 1 NRD) were formed, they agreed to be a work as one entity to address stormwater. The mission of the Partnership is to “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.”

99. How do you intend to implement policies in Washington County as they are not a part of this group?

We do not intent to implement the proposed stormwater policies in Washington County. Washington County and the communities of Kennard and Washington have not yet joined the Partnership. At this time, these policies would not be adopted in the upper portion of the Watershed. The Partnership continues to encourage participation of the three entities and we remain optimistic that they will join the Partnership in the future.

100. Why are Washington County groups not part of this partnership?

The communities of Washington, Kennard and Washington County have been asked to join the Partnership on numerous occasions. They have elected not to participate at this time. One of the main purposes of the Partnership in 2001 was for NPDES, Phase II compliance. None of the Washington County entities were included under Phase II requirements.

101. What is the definition of “big” for 7 reservoirs?

“Big” refers to the drainage area size upstream of the reservoir and its ability to reduce peak flow rates. All proposed detention sites and reservoirs would drain more than 500 acres and reduce the peak flow rate of the 500-year flood event.

102. Do regional detention reservoirs need to have permanent pools?

No, but they offer greater benefits when they have a permanent pool. Regional detention reservoirs are used to reduce peak flow rates and to improve water quality. Studies have shown that “wet” detention structures are more efficient in removing pollutants than “dry” detention structures.

103. If building is being developed adjacent to (and including some of the pool area) when would the NRD have to purchase the land? Cash flow problem for NRD if multiple reservoir sites develop in the near future.

The timing of the construction of reservoirs would need to be based on a priority schedule, set by development potential and flood control needs. Similar to sewers, development may need to be slowed down.

104. What is “full build-out condition”? Does that include all storage structures?

Full build-out condition refers to land use planning. The comprehensive land use plans, which are updated every 5-years and reflect growth for various land use such as residential, commercial/industrial or parks. FEMA does not allow for the mapping of planned stormwater facilities. It is only when the structures are completed are they integrated into the stormwater system.

105. Are peak flows controlled for large rivers or developments?

With the construction of regional detention sites, it is intended to control the peak flow at the confluence of the creek with the main creek channel. Each development would not be required to reduce or maintain the peak flow, unless regional detention was not available.

106. Have you studied how much the combined sewers in Omaha (Sanitary to storm) affect water quality?

Yes. The city of Omaha and Nebraska Department of Environmental Quality (NDEQ) continues to monitor stream water quality at several locations in the Papillion Creek Watershed. Combined sewer overflows are being addressed under a permit from NDEQ and the city of Omaha is determining the impacts from CSO's and developing a Long Term Control Plan to reduce those impacts.

107. What consideration to new sewage treatment plants with storm water capacity?

Treating stormwater is costly. Wastewater treatment plants are currently not designed to handle stormwater flows. The Environmental Protection Agency (EPA) does not have quantitative limits on stormwater at this time.

108. LB 552, a bill to seek general obligation authority was DEFEATED this session. What makes you think it or a similar bill will be enacted into law in the future? The bill didn't even make it out of committee!!

In order to implement a holistic watershed drainage plan, monies are necessary to plan, build and operate stormwater management projects. With 11 jurisdictions located within the Papillion Creek Watershed, the P-MRNRD is the only entity which covers the entire Watershed.

109. With general obligation bonds are you asking existing property owner to pay a tax to pay off the bonds? Is a vote required?

It is currently anticipated that existing NRD tax revenues and the proposed fee system would be used to pay off the bonds. No vote will be required.

110. What is the status of the storm water fee bill in the unicameral? Also what is the status of the general obligation authority bill?

LB ____, the enabling legislation for a stormwater utility remains in the Natural Resources Committee. LB 552, the legislation that would allow the P-MRNRD general bonding authority remains in the Finance Committee.

111. Were revenue bonds considered for the ongoing maintenance?

Revenue bonds can only be used for revenue generating projects, such as rural water. General obligation bonds could be used for on-going maintenance activities.