

ST. JOSEPH, MISSOURI WATER PROTECTION PROGRAM



WHITEHEAD DETENTION BASIN PUBLIC MEETING NO. 2

Tuesday, February 23, 2010

6:00 P.M.

Spring Garden Middle School, Library
St. Joseph, Missouri 64503

MEETING NOTES

I WELCOME & INTRODUCTIONS

Bruce Woody welcomed participants and introduced City staff and the project team. He explained the purpose of this meeting. This meeting is the second meeting regarding this subject. The first meeting was held on October 7, 2009. The purpose of the meeting is to inform residents of the results of the recently completed Whitehead Detention Basin siting study; discuss the viability of a flood control detention basin in the Whitehead Basin; and receive feedback from residents. The feedback received from this meeting will be given to the City Council for their consideration. The City Council will make the final decision on what improvements, if any, should be made in the Whitehead Creek Basin.

II WHITEHEAD DETENTION BASIN OVERVIEW

Andrew Smith, Black & Veatch, gave a presentation regarding detention basins and their potential use in the Whitehead Basin. He explained that the project goals were to determine the general feasibility of a detention basin in the Whitehead Basin; to reduce overall combined sewer overflow (CSO) improvement costs; to investigate solutions for flood control; and to look at buy-up opportunities in the watershed.

Mr. Smith explained the project team investigated three tributaries (sub-basins) in the Whitehead Creek Basin. Each of the three sub-basins was considered separately. The north sub-basin is densely populated and has extensive infrastructure. There is also a golf course

located in this area. The south sub-basin has infrastructure issues and is only a small portion of the overall Whitehead Creek Basin. This tributary also parallels I-229 and is located very close to the Interstate, so there would be little room for a detention basin. Opportunities did exist, however, in the middle sub-basin. The potential opportunities included solutions for combined sewer overflow improvement and flood control. Multiple sites were investigated and one preferred location was identified.

This location was investigated more closely for the different types of alternative improvements that could be made. All of the alternatives considered include the installation of a combined sewer overflow pipe located at the downstream end of the middle sub-basin to take stormwater flow directly to the stream. Currently there is one pipe that takes the stream directly into the combined sewer system. A combined sewer system uses pipes that carry both stormwater and wastewater.

The three alternatives include:

- 1. Build a detention basin for combined sewer overflow control.** This alternative greatly reduces the runoff entering the combined sewer system from a small rain storm. It would improve water quality and stream habitat, but this alternative does not provide flood control for large rain storms. This would reduce the total volume and frequency of combined sewer overflows. The facility would be a pond with a 12-foot dam and a one-foot pipe at the bottom slowly discharging the water retained during a rainfall event. The design rain event for this facility would occur, on average, once every three months.
- 2. Build a detention basin for a 25-year flood event¹.** This alternative would reduce downstream flooding and protect the watershed from increased flows due to upstream development. It would also provide community amenities (fishing, trails, etc.) and would improve water quality and stream habitat. This alternative does not offer very much control for combined sewer overflow events, however.
- 3. Build a detention basin for a 100-year flood event².** This alternative would reduce downstream flooding and protect the watershed from increased flows due to upstream development. It would also provide community amenities (fishing, trails, etc.) and would improve water quality and stream habitat. This alternative does not offer very much control for combined sewer overflow events, however. The main difference between this detention basin and that designed for the 25-year flood event would be the size of the dam and outlet works.

¹ 25-year flood event: A 25-year flood event has a 4% chance of occurring in a given year..

² 100-year flood event: A 100-year flood event has a 1% chance of occurring in a given year.

The costs of the three alternatives are:

Alternative	Estimated Project Cost
1. Detention basin for combined sewer overflow control	\$19.4 million
2. Detention basin for a 25-year flood event	\$44.8 million
3. Detention basin for a 100-year flood event	\$53.0 million

The project team conducted cost/benefit analyses of all three alternatives. The project team also looked at existing storage in the basin. The detention basins would need to have about 1,200 acre-feet of storage for flood control and the existing farm ponds in the watershed only offer about 130 acre-feet of storage.

The first alternative was considered to determine if building the detention basin for combined sewer overflow control would allow the City to reduce the size of the pipe that needs to be installed. It was determined that there is not enough cost savings in building the combined sewer overflow control facility (alternative 1) for the purpose of reducing the pipe size. The City would be spending \$19.4 million on the detention basin in order to save \$7 million on pipe costs.

The second and third alternatives were considered to determine if building a flood control detention basin (for a 25-year or 100-year storm event) would provide downstream flood protection. It was determined that the detention basin does not provide enough to flood protection to justify the cost of building the facilities.

These cost/benefit analyses did not include water quality, habitat, or recreational benefits of construction of the detention basins. If the City wants to include other factors in the cost/benefit analysis such as multiple benefits and community amenities, the cost/ benefit analyses can be re-evaluated to determine if the construction of a detention basin would be worth the cost.

III QUESTIONS AND COMMENTS

City staff and Program Team members encouraged participants to ask questions about the information that was presented.

Participant Question: Where would the facility be built?

Response: We cannot comment on the location at this time to be sensitive to land acquisition needs.

IV ADJOURNMENT

The public meeting for the Whitehead Detention Basin adjourned at 6:45 p.m.

MEETING ATTENDEES

NAME	ORGANIZATION
Brooke, Deron	Citizen
Gann, L. Scott	Land Owner
Gullick, Ralph W.	Land Owner
Higdon, Galen	Citizen
Massengale, Michael W.	Land Owner
Moylan, Theresa	Citizen, Community Advisory Panel Member
Patton, Casey	Bartlett & West
Slawson, Tom	Resident