Melvin Avenue Storm Sewer 2010 Reconstruction



Public Information Meeting

December 14, 2009 5:30 p.m. – 7:00 p.m. Webster Stanley Elementary School Gymnasium

Melvin Avenue Storm Sewer 2010 Reconstruction

Purpose of Meeting

The purpose of tonight's meeting is to provide you with information about the options explored to manage the storm water runoff within the Melvin Avenue Watershed, and to ask for your input in selecting a course of action to reduce the impact of flooding within the watershed. The input received from the neighborhood will be utilized to develop a recommended approach to managing the storm water within the watershed, which will then be reported to the City of Oshkosh Common Council.

There will be a formal presentation beginning at 6:00 p.m. The remainder of the meeting will be conducted in an "open house" format. You are invited to inspect the display boards and review the information included with this handout. Please feel free to ask questions or share your comments with any of the City staff present.

There is a public input form attached to this handout for your use as well. We appreciate your input and ask that you take a few moments to complete the form and deposit it in one of the two boxes provided, or mail it to the Department of Public Works. A Public Input box is located in the in the hallway outside of the room.

A copy of the presentation is available online at: http://www.ci.oshkosh.wi.us/Public Works/Storm Water Utility.htm

Background Information

The City of Oshkosh frequently experiences flooding during rain events. Some of these flooding incidents are severe, as were the June, 2008; June, 2004 and June, 1993 flood events. Other events are not as severe, as were experienced in 1996, 1999 (twice), and 2000. The main cause of the flooding during storm events is the inability of the storm sewer system to effectively convey the runoff.

As development takes place, pervious surfaces (grass and fields for example) are replaced with impervious surfaces (roofs and driveways for example). The higher percentage of impervious surfaces present in a watershed, the greater the amount of runoff generated. From the beginning of development in the City of Oshkosh until 1990, there was no ordinance in place to control the effect of storm water runoff from development.

In addition to the increased amount of runoff generated, design requirements have changed dramatically over the past two decades. Previously, storm sewer systems were designed to convey only very small rainfall events (2-year design storms and less), and the larger events were left to flood streets. The current design standard for storm sewers is to convey the runoff from larger storm events (10-year design storm at a minimum) before flooding takes place on streets.

Also of great impact to the storm sewer systems is the water surface elevation of Lake Winnebago. The United States Army Corps of Engineers regulates the water level in Lake Winnebago through control of the dams in Neenah and Menasha. Over the years, as recreational boating and fishing have grown to become a major part of the local economies, the Lake Winnebago Regulation Strategy has been revised to incorporate the needs of those industries. In order to support the increased usage, and size of watercraft used on the Lake Winnebago system (which includes the Fox River, Lake Butte des Mortes, Lake Winneconne, and Lake Poygan), the water surface elevation has been raised to allow the safe

passage of watercraft. This increase in water surface elevation in Lake Winnebago reduces the ability of the storm sewer systems to convey runoff to the lake.

The combination of lower design standards, increased impervious area, a lack of storm water management regulations prior to 1990, and the changes in the Lake Winnebago Regulation Strategy have caused the piping systems that were installed prior to the 1990's to be incapable of conveying the amount of runoff that is generated.

Proposal Information

The City of Oshkosh design standard for storm sewer is to be able to convey the runoff for a 10-year design storm with no flooding occurring on the streets. As a part of the storm sewer modeling that was conducted, a sensitivity analysis was performed to see which duration design storm event proved to be critical for the storm sewer capacity. In the case of the Melvin Avenue watershed, this was found to be a 30 minute duration storm event. Therefore, the storm sewer needs to be able to convey the runoff from a 10-year, 30 minute design storm, which equates to 1.3 inches of rain in 30 minutes.

The critical intersection within the Melvin Avenue watershed is the intersection of Melvin Avenue and Evans Street. The elevation of this intersection is only approximately 10 inches above the current summer target water surface elevation for Lake Winnebago. Therefore, if the water level in the storm sewer rises approximately 10 inches, the street will start to experience flooding.

There were a number of options that were analyzed to provide a storm sewer design that would meet the minimum storm sewer design standards. In addition there were several variations of each of the options analyzed. A brief summer of the options analyzed is shown below.

- 1. Provide new storm sewer with roughly the same depth as the existing storm sewer. This option created a sub-standard pavement design. In addition to having a sub-standard pavement design, this option was not able to meet the design standard for storm sewer.
- 2. Provide new storm sewer with roughly the same depth as the existing storm sewer, and a storm water pump station. This option still created a sub-standard pavement design, while meeting the storm sewer design standard.
- 3. Provide new storm sewer that is deeper than the existing storm sewer. This option provided a pavement design that met pavement design standards, however, the storm sewer design standards still could not be met.
- 4. Provide new storm sewer that is deeper than the existing storm sewer, and a storm water pump station. This option met the pavement design standards, and the storm sewer design standards. The size of the pump station structure (including backup power generator) was estimated using Hydraulic Institute general guidelines, and was estimated to be approximately 60 feet by 60 feet.
- 5. Provide new storm sewer that is deeper than the existing storm sewer, a storm water pump station, and a detention basin upstream in the watershed. This option met the pavement design standards, and the storm sewer design standards. The size of the pump station structure (including backup power generator) was estimated using Hydraulic Institute general guidelines, and was estimated to be approximately 35 feet by 35 feet.

6. Provide new storm sewer that is deeper than the existing storm sewer, a storm water pump station, and a larger detention basin upstream in the watershed. This option met the pavement design standards, and the storm sewer design standards. The size of the pump station structure (including back up power generator) was the same size as the previous option.

Since the first three options could not meet the pavement and the storm sewer design standards, these three options were ruled out of consideration. The sixth option did not function any better than the fourth and fifth options, and would involve acquiring more properties and relocating more residents, so this option was ruled out.

With the options narrowed down to two, the storm sewer system (under both options) was then analyzed for larger design storm events, and the actual storm event from June 12, 2008. The two options (4 and 5) performed virtually the same for a 25-year design storm (1.65 inches of rainfall in 30 minutes). The two options also performed virtually the same when modeled with the June 12, 2008 actual rainfall data (as obtained from the Wittman Regional Airport weather reporting station). Neither completely eliminated street flooding under these two more severe storm events, but when compared to the existing conditions, greatly reduced the amount of street flooding that occurred.

To summarize the two options:

Option 4	Option 5
 Meets storm sewer and pavement design criteria 	• Meets storm sewer and pavement design criteria
 Pump station footprint of approximately 65'x65' 	 Pump station footprint of approximately 35'x35'
No property acquisition	• Acquisition and relocation of 6 properties
• Approximate cost: \$4 million	• Approximate cost: \$3 million

As previously stated, the purpose of this meeting is to provide you with information regarding the options, and obtain input as to which option the neighborhood would prefer to proceed with. This input will be utilized to provide a recommended course of action to the Common Council.

Public Comments

We encourage you to talk with the staff members that are present tonight and ask any questions you may have. We also encourage you to complete the Public Input form attached to this handout and drop it in the boxes provided, or return to the Department of Public Works by December 21, 2009.

For more information, please contact:

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Website: http://www.ci.oshkosh.wi.us/Public_Works/Storm_Water_Utility.htm

Melvin Avenue Storm Sewer 2010 Reconstruction Public Information Meeting Comments/Questions Please return comments by December 21, 2009

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