



Legislation Details (With Text)

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Title: Review of Spring Creek Flood Mitigation.

Sponsors:

Indexes:

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Attachments: 1. 1 - Final Report Spring Creek Watershed Analysis_10_27_2015 Reduced

Date	Ver.	Action By	Action	Result
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City Council Meeting Date: February 14, 2017

To: Mayor and City Council
City Administrator

From: David E. Bennett, Public Works Director/City Engineer

Review of Spring Creek Flood Mitigation.

Action Requested:

The Northfield City Council discusses Spring Creek Watershed Study and additional information received.

Summary Report:

At the November 24, 2015 City Council work session, staff, along with a consultant, shared findings of the Spring Creek Watershed Study (Attachment 1). A comprehensive model of the watershed was created and the model was updated to reflect the most current statistical rainfall data for the 1% chance in the year or what is typically referred to as the 100-year storm.

The previous typical standard that was used is called TP-40 and had a 1% chance storm rainfall amount of 6 inches in 24-hours, the new data called Atlas 14 increases that chance to 7.3 inches in 24 hours. With the updated model, impacts to properties were reviewed along with consideration for some mitigation items. There are 6 properties that appear to be more prone to a risk of flooding. In 2016 the City surveyed the low openings on these properties and found that only one property, 1300 Parmeadow Drive, does not have any separation from the 1% chance storm or what is typically referred to as Freeboard.

Address	Low Opening Elevation	Atlas 14 - 1% Chance Elevation	Freeboard (Ft)
1300 Parmeadow Dr	937.4	937.4	0

1304 Parmeadow Dr	938.3	937.4	0.9'
1103 Fairhaven Ct	941.4	939.8	1.6'
1105 Fairhaven Ct	941.4	939.8	1.6
1400 Woodley St	946.6	944.3	2.3'
905 Superior Dr	963.5	961.7	1.8'

In the study, potential benefits from various improvement were quantified, they include:

1. Bridgewater Township Flood Hazard Mitigation Projects, these indicate a benefit of reducing the flood profile elevation on average 0.3 feet.
2. Future development of the undeveloped urban expansion area. Increase the storm water management requirement from the 100-year 1% runoff volume to the 50-year event presettlement conditions. This correlates to about a 20% runoff volume reduction. The impact on Spring Creek is negligible with reduction on average less than 0.05 feet.
3. Construct flood control ponds along the main channel east of TH 246 and south of Ford Street. This will on average reduce the flood profile elevation 0.5 feet.

If items 1 and 3 listed above were implemented, the flood profile elevation would be reduced on average 0.8 feet. The updated modeling from TP-40 to Atlas 14 indicates a rise in the flood profile elevation of 1 foot; hence, if improvement were incorporated we are back to the existing TP-40 elevations.

Recommendations moving forward include:

1. Support Bridgewater Flood Hazard Mitigation Improvement, with the exception of the Improvement identified in Northfield. Should the City implement a project, it could potentially be the larger flood control ponds along the main channel.
2. Establish a jurisdictional flow rate at the southern City limits to encourage both Bridgewater and Northfield Township to meet the flood insurance study discharge rates of 800 cfs.
3. The main channel along Spring Creek controls the flood profile; the City could consider pursuing grant opportunities to construct flood improvements along the main channel outside City limits and the City's future growth area.

Alternative Options:

1300 Parmeadow Drive could potentially be converted from a walkout basement to a lookout basement.