

STORMWATER FAQ



VILLAGE OF WILMETTE STORMWATER ACTION PLAN

Q: What problem is the Village trying to solve?

A: The sewers west of Ridge Road routinely surcharge during moderate rain events, resulting in widespread street and overland flooding. This flooding occurs due to aging infrastructure and inadequate capacity of the current storm sewer system to handle rain water from even moderate storms.

The existing storm sewers west of Ridge Road are undersized such that a “2-year” storm event (a storm with a 50% chance of occurring in any given year), which is less than two inches of rain over a three hour period, will cause street flooding in some areas west of Ridge Road.

During intense storms, the street flooding can, in the worst cases, extend to the foundation of a home. An estimated 700 homes west of Ridge Road are susceptible to structure damage during the most intense rain events. In the worst of the more recent storms, some streets west of Ridge Road have experienced standing water as high as three feet.

Wilmette’s consulting engineer estimates that 20% of roadways west of Ridge Road experience standing water during a “10-year” storm event (a storm with a 10% chance of occurring in any given year), 30% of roadways west of Ridge Road experience standing water during a 25-year storm event (4% chance in any given year), and 42% of roadways west of Ridge Road experience standing water during a 100-year storm event (1% chance in any year).

Notwithstanding the historical, statistical definitions of these storm events, Wilmette has experienced nine 10-year storm events, four 25-year storm events, two 50-year storm events, two 70-year storm events, and five 100-year storm events over the past 35 years.

Q: What solution is proposed to solve these stormwater problems?

A: At this point in time, it appears that the most cost-effective option to reduce flooding west of Ridge Road is building eight miles of new storm sewer pipes (next to and connected to our existing sewer pipes), which would create greater capacity to hold stormwater and increase the rate at which stormwater flows out of west-side neighborhoods.

The current proposed project for the storm sewers west of Ridge Road is similar to the sewer improvement program that was implemented for the combined sewer system east of Ridge Road in the 1990’s.

Q: How many homes will benefit from this project?

A: All homeowners west of Ridge Road, even those not directly impacted by overland flooding, will benefit from the project. By increasing the capacity and rate at which stormwater flows out of west-side neighborhoods, many of the negative impacts of excess stormwater should be lessened.

The frequency, severity and duration of street and overland flooding will be reduced as a result of more capacity in the storm sewers and increased rate of flow to remove stormwater from west-side neighborhoods.

Hydrostatic pressure from water absorbed in the ground, which can cause foundation seepage, may be reduced as a result. This is of particular importance during long storms, or consecutive rain events that occur over a short period of time.

In addition, creating more storage for stormwater and removing stormwater more quickly may result in less inflow and infiltration into the sanitary side of the separate sewer system west of Ridge Road during major storm events.



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Q: How did the Village arrive at the current proposed solution?

A: In late 2013, the Village hired an engineering firm as a stormwater consultant to study flooding issues west of Ridge Road. The study began with public engagement to learn about residents' flooding experience and was followed by a comprehensive hydraulic and hydrologic modeling of the storm sewer system.

The goal of the engineer's storm sewer study was to determine the location of critical "bottlenecks" within the system and to identify projects that would eliminate flooding during a 10-year storm event (a storm with a 10% chance of occurring in any given year). This is the same design standard used today when building new residential subdivisions and the same standard used for the combined sewer system improvements east of Ridge Road which took place in the 1990's. The engineer's study included nine different variations of proposed solutions for the Village to consider.

Through the course of 2015 and 2016, the Village Board and its Municipal Services Committee held several public meetings to discuss the study and refine the nine alternatives. During this process, the Village heard testimony from many residents.

Ultimately, the conclusion reached by the engineers is that the existing storm sewer pipes are simply too small. At this point in time, it appears that the most cost-effective option to reduce flooding west of Ridge Road is building a new system of storm sewer pipes (next to and connected to our existing sewer pipes), which would create greater capacity to hold stormwater and increase the rate at which stormwater flows out of west-side neighborhoods.

Q: Will building the current proposed solution mean my street will never flood again?

A: Unfortunately, no. The project under consideration will only eliminate street flooding for a 10-year storm (a storm with a 10% chance of occurring in any given year). Larger rain events will still exceed the capacity of the storm sewers and may result in street and

overland flooding. However, there will be less flooding for shorter periods of time than currently experienced. The current proposed solution will result in a 66% reduction of the duration of street flooding in the worst storm events.

It is important to remember that every storm sewer system, no matter how big, has a finite capacity that is always capable of being exceeded by a storm. No one can predict how big a storm may strike in the future, so there can never be a "guarantee" that flooding will not occur.

Q: How much will the current proposed project cost and how will it be paid for?

A: The current proposed stormwater improvement project is estimated to cost \$77 million and would take up to five years to complete. Sewer construction is costly because it involves digging up the roads, relocating other utilities as needed, installing new pipes and restoring the street to existing conditions.

The Village would issue long-term bonds to pay for the engineering and construction costs, and the debt would be repaid over 30 years.

In Wilmette, we use a combination of both property taxes and user fees to pay for the costs of our services, including debt associated with these types of projects. If the Village elects to move forward with the project, there will be a public discussion of the appropriate funding method, which may include increasing the current sewer fee, increasing the property tax levy, or creating a new stormwater utility fee.

Q: Are there less costly alternatives?

A: The consulting engineer who performed the stormwater study presented an exhaustive review of options ranging in cost from \$40 million to \$150 million. They considered above-ground detention, below-ground detention, green infrastructure and even looked at connecting to Glenview's sewer system as a source of relief. All of the options considered had challenges associated with them, but most importantly, the lower cost options did not provide adequate flood relief.

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Q: How much will the project cost me as a homeowner?

A: The median water/sewer bill in Wilmette is projected to increase by \$98 per quarterly billing cycle. The Village's website includes a water/sewer bill calculator which you can use to estimate the cost to you based on your actual water/sewer bill.

The calculator can be found on the Village website at <http://tinyurl.com/jyjbwdo>.

Q: Is the cost estimate of \$77 million accurate?

A: Given the scope and cost of the proposed project, the Village has hired a second consulting engineer to complete a technical review and value-engineering study of the project. The second firm will also evaluate whether there are other alternatives which the Village could consider. This step is needed to ensure that the Village is building the most cost-effective project that will achieve the best results, and to verify that cost estimates are reliable. As a steward of your tax dollars, it is critical that the Village complete this study before a decision whether or not to proceed with any project is made.

During the first half of 2017, the consulting engineer will review the current proposed solution, determine whether it is the most appropriate solution, and confirm that the cost estimates are accurate. The initial results of this study will be reported to the Village Board in late spring/early summer.

Q: Why can't the Village just use rain barrels or other green infrastructure throughout the Village to solve the problem?

A: Green infrastructure, such as rain barrels and bioswales, will be an important component of any future project, especially as it relates to addressing localized flooding issues in specific blocks or neighborhoods. With the support of grant funds, the Village has already constructed permeable alleys and rain gardens in cul de sac circles as demonstration projects to evaluate their performance. Unfortunately, the magnitude of the Village's stormwater problem is such that green infrastructure alone cannot mitigate the issue.

For example, estimates show it would take hundreds of rain barrels on every individual property throughout the Village to reduce street flooding and capture the rain water generated by intense storm events.

Q: I frequently have basement sewer backups during heavy rain events. Will this project help with this problem?

A: Building the current proposed stormwater project will not solve the sanitary basement backup problems many homes in our community experience.

The sewer system west of Ridge Road is separated, meaning there is one set of sewer pipes for sanitary flows (wastewater) and a second set of pipes for stormwater. The proposed project will add capacity to the storm sewer system west of Ridge Road, so street and overland flooding will be reduced during moderate and heavy rain events.

However, a secondary benefit of building larger storm sewers is less inflow and infiltration of stormwater into the sanitary system. During dry days, there is plenty of capacity in the existing sanitary sewer system. During rain events, however, stormwater can enter the sanitary sewers through a number of different sources including private services which are the sewer pipes that connect homes to the Village's main sewers. This excess stormwater puts pressure on the sanitary system by exceeding its capacity and causing it to surcharge. Surcharged sanitary sewers can lead to basement backups.



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Q: How do I prevent basement backups in my home?

A: The only way to prevent basement backups is by installing an overhead sewer system (recommended) or flood control system.

To assist residents in identifying how and why their homes flood, the Village has identified engineering firms that will conduct independent flood assessments for a fixed price. The cost for this assessment ranges from \$300 to \$625. For a list of engineers, visit the Village website's Stormwater Management page at <http://tinyurl.com/h9ydm8h>.

Q: Can't homeowners who are experiencing street and overland flooding make investments in their homes to protect themselves?

A: The overland flooding that is addressed by this project is street flooding that extends across yards and in some cases enters into homes. There is little that can be done by a homeowner to protect their property from this type of overland flooding, which results from sewers that were mostly built in the 1950's and 1960's. It is a different problem from basement backups from the sanitary sewer system, which may be addressed by installation of an overhead sewer in a home.

Q: I don't live west of Ridge Road. Can't this be done as a Special Service Area or by Special Assessment so I don't have to pay for a project that will not directly benefit me?

A: In 1991, the Village Board elected to proceed with a \$37 million sewer improvement program for the combined sewers east of Ridge Road, an expenditure equivalent to \$66 million in today's dollars. As this project progressed, the improvements were sufficient enough that the program was scaled back, and the investment in the east side combined sewer system was \$28 million, or \$43 million in today's dollars.

All of the many sewer improvements completed in the Village, both east of Ridge Road and west of

Ridge Road, have always been funded by all taxpayers even though each sewer project provided direct benefits to only a part of the Village. Localized, neighborhood funding is possible, but would represent a significant policy change in how major infrastructure projects are funded in Wilmette.

General infrastructure improvements, whether they be sewers, road repairs, sidewalks, or alleys, always benefit one group of residents more than others. For example, the residents living on a recently repaved street directly benefit from the improvements, while those living throughout the community indirectly benefit through increased property values and the ability to access the improved street while commuting through Wilmette. While almost every infrastructure project is local in nature, the Village has always funded such projects across all taxpayers in the community.

Q: Has the Village already decided to proceed with this project and what are the next steps?

A: No decision has been made on whether to proceed with the current proposed stormwater improvement project at this time.

In January of 2017, the Village hired a second engineering firm to review the original stormwater study, and to confirm that the alternatives presented and the associated costs were accurate and reliable. This study is ongoing, and initial results will be presented in late spring/early summer of 2017. A series of public meetings will be held to review the value engineering report and continue deliberations. All of these meetings will be open to the public and advertised in the Village's weekly e-news email. To sign-up for e-news, visit the Village website or simply text 'WILMETTE' to 22828.

Residents are encouraged to email their comments on the current proposed project to sewers@wilmette.com. All comments are provided to the Village Board and posted on the Village website.