



DRAFT

MAP, PLAN AND REPORT

TOWN OF GUILDERLAND

ALBANY COUNTY, NEW YORK

MCKOWNVILLE DRAINAGE DISTRICT

Prepared for:

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1.0 INTRODUCTION

McKownville is a hamlet in the Town of Guilderland, Albany County, New York. The boundaries of the hamlet are generally considered to be the New York State Thruway to the west, the Town of Bethlehem to the south, the East Branch of the Krumkill Creek and City of Albany to the east, and the City of Albany to the north.

Once a part of the Albany Pine Bush, the McKownville terrain is relatively flat or has very gently rolling hills. It has become a heavily developed suburb of Albany characterized by older residential neighborhoods, commercial development including retail strip malls and a major shopping center, and a portion of the University at Albany, SUNY.

McKownville has limited stormwater infrastructure and has historically experienced drainage and flooding problems that have severely impacted property owners and residents. Delaware Engineering prepared the *McKownville Drainage Analysis* for the Town of Guilderland in 2010 in order to evaluate the hydrologic conditions in the hamlet and recommend economical methods to control stormwater and mitigate drainage issues. The study recommended stormwater management improvements and flood mitigation methods for drainage areas within the hamlet.

2.0 PURPOSE

The McKownville Improvement Association has requested that the Town of Guilderland consider creating a drainage district in the hamlet. The Town would be responsible for repair of existing stormwater infrastructure in the district and construction of the long range drainage improvements recommended in the study.

The funds collected would be utilized to make repairs while the Town pursues long term funding for the district repairs.

The Guilderland Town Board has directed the preparation of this Map, Plan and Report in order to present the information necessary to adopt the McKownville Drainage District as required by Town Law Article 12-A of the New York State Consolidated Laws.

3.0 EXISTING TOPOGRAPHY

The project area is immediately adjacent to natural and manmade drainage features that ultimately discharge to the Krumkill. The existing topography of the District area is

relatively flat with some hilly areas with most grades approximately 5%. Drainage generally flows southeast across the sites on the north side of Route 20. Flow is conveyed via roadside swales and culverts to NYS Rte. 20. The Route 20 storm system splits east and west on Route 20 near Parkwood Street. Stormwater flow east crosses under Route 20 through a 36" culvert pipe at Hillcrest Avenue and outfalls to the East branch of the Krumkill. Storm water flow to the west of Parkwood Street on Route 20 is conveyed to a 3' X 4' box culvert under route 20 at the Stuyvesant Plaza entrance and outfalls to the West Branch of the Krumkill. Stormwater is generally in a southerly direction and ultimately discharges to the Krumkill via natural and manmade drainage features. An Existing Site Conditions map is presented in Figure 1.

Much of the McKownville Drainage District drains to a private storm sewer system in private alleyways. Clay pipes were installed in the alleyways in the 1920's to collect both storm water and sanitary sewage. Since that time separate public sanitary sewers were installed. The clay pipes have been used for storm sewers only. In many places the existing clay pipes have deteriorated and collapsed or tree roots have compromised their flow capabilities. In order to keep the drainage system working, the Town has repaired the clay pipes at the request of the McKownville residents. There has been no on-going maintenance of the privately owned storm sewers. The concrete foundations of several existing homes have deteriorated due to poor drainage conditions and the cost of their repair has been borne by the homeowners.

4.0 DESCRIPTION OF THE PROPOSED DISTRICT

A map showing the proposed McKownville Drainage District is included as Figure 2. A legal description of the Drainage District is attached as Appendix A and a list of tax parcels within the district is included as Appendix B.

5.0 PROPOSED STORMWATER IMPROVEMENTS

This section includes a summary of the long range stormwater improvements recommended in the *Drainage Analysis*. The improvements have been prioritized according to need and those offering the greatest potential to alleviate flooding are described below.

The proposed improvements generally include a network of catch basins, residential sump pump connections, underground conveyance piping and surface swales to redirect stormwater to a series of small downstream detention basins. Milling of various streets to lower their elevation to provide positive drainage to adjacent properties is also recommended.

Each of the five areas described below have a contributing stormwater impact to either the East or West Branch of the Krumkill. The proposed stormwater improvements are intended to minimize the impact on the existing NYS Route 20 structures as well as downstream properties and structures within the Krumkill and Norman's Kill watershed. The drainage improvements proposed for each area should be accomplished in a phased progression and are discussed in detail below. A map of the drainage areas is included as Figure 3.

5.1 Area 1

Area 1 is located on the north side of Route 20 and includes Norwood Street, a portion of Glenwood Street and Parkwood Street East and West. Currently, stormwater from this area sheet flows across properties and streets, where some is captured by the existing catch basins. Flow then enters the existing NYSDOT stormwater management system near the intersection of Norwood Street and Route 20 and flows east along Route 20 where it ultimately discharges to the East Branch of the Krumkill.

Proposed Improvements

Proposed improvements for this area include a stormwater system comprised of a series of small detention basins located on the south side of Route 20 that will serve to provide additional storage, maintain current discharge rates to the Krumkill and alleviate flow to the existing NYSDOT system. Specifically, these improvements include three detention basins along the Krumkill as well as new conveyance piping on McKown Road to carry flow from Area 1 under Route 20 to the West Branch of the Krumkill.

Improvements in the residential portion of Area 1 on the north side of Route 20 include a stormwater sewer system that will utilize the low points in the existing roads for catch basins and provide sump pump laterals or gravity discharge for foundation drainage. Flow from this area will be re-directed away from the existing NYSDOT system to the proposed system on the south side of Route 20. Milling the top surface of portions of

the streets within Area 1 is recommended to provide positive drainage away from the adjacent properties to the new and existing catch basins.

Proposed improvements within Area 1 must be constructed first to facilitate additional drainage from adjacent areas. Costs associated with this area are the highest because proposed improvements in this area include the construction of three new detention basins. These basins will be constructed along the West Branch of the Krumkill. Two of the basins will provide detention from Fuller Road (Area 3) and one of the basins would provide detention from stormwater improvements in Area 1. A new trunk storm sewer will be installed from the West Branch of the Krumkill on McKown Road to Norwood Street. Area 1 would no longer contribute flow to State Route 20.

5.2 Area 2

Area 2 is located on the north side of Route 20 and includes Waverly Place and Knowles Terrace. Currently, stormwater from this area sheet flows across the properties and streets, where some is captured by the existing catch basins. Flow then enters the existing NYSDOT stormwater system and flows east along Route 20 under route 20 through a 36" culvert where it ultimately discharges to the East Branch of the Krumkill.

Proposed Improvements

Proposed improvements for Area 2 include a stormwater system comprised of a small detention basin that will serve to provide additional storage, maintain current discharge rates to the Krumkill and alleviate flow to the existing NYSDOT system. Improvements also include sump pump laterals or gravity discharge for foundation drainage. Milling the top surface of portions of the streets is recommended to provide positive drainage away from the adjacent properties to the new and existing catch basins.

After improvements are completed in Area 1, work in Area 2 can be initiated. Existing maps, documentation and the general history of Areas 1, 2, 3 and 4 indicate a large portion of each area drained at one time to the East Branch of the Krumkill. In order to facilitate drainage improvements in Area 2, stormwater flows from Area 1 will be redirected to the West Branch of the Krumkill.

Area 2 improvements will require a stormwater detention basin on Town owned property near the State University entrance. The detention basin is intended to minimize the impact to downstream structures on Western Avenue, Arcadia and

Hillcrest. This work would be completed prior to initiating the proposed drainage improvements. Drainage improvements include milling, re-grading, paving, installation of new catch basins, storm piping, and storm laterals to the properties for property owner sump pump connections.

5.3 Area 3

Area 3 is located on the north side of Route 20 and north of Stuyvesant Plaza, including Providence, Mercer, Warren, Ann and Tracy Streets. A large portion of Area 3 stormwater sheet flows across properties and streets, where some is captured by the existing catch basins. Flow then enters a drainage system along Fuller Road and flows south under Route 20 via a 3 'x 4' box culvert before ultimately discharging to the West Branch of the Krumkill. The remaining Area 3 stormwater is routed to the McKownville Park detention basin via a system of catch basins and conveyance pipes.

Proposed Improvements

Proposed improvements include sump pump laterals or gravity discharge for foundation drainage. Milling the top surface of streets is recommended to provide positive drainage away from the adjacent properties to the new and existing catch basins.

Stormwater in Area 3 currently flows in three directions. Sub-basin 3-1 (Power line east to Fuller Road) flows to the Fuller Road collection system continues to Route 20 and through the box culvert at the Stuyvesant Plaza. Sub-basin 3-2 (Power line west to Ann street flows through Stuyvesant Plaza collection system, McKown Park and to the same box culvert under Western Avenue. Sub-basin 3-3 (West of Stuyvesant Plaza) is a large watershed including Crossgates Mall, a portion of the Northway and 850 acres north & west of the Town of Guilderland.

Area 1 improvements must be completed prior to initiating Area 3 work. Stormwater improvements in Area 3 are similar to drainage improvements in the other areas. Improvements include milling, re-grading, and paving roads, additional catch basins, storm piping and lateral connections to the property lines for sump pump connections by the property owners.

5.4 Area 4

Area 4 is located on the north side of Route 20 and includes Elmwood, Parkwood and Glenwood Streets. Currently, stormwater from this area sheet flows across the properties and streets, where some is captured by the existing catch basins. Flow enters a drainage system along Route 20 and flows west to the 3' x 4' box culvert under route 20. Area 4 storm water flow outfalls to the West Branch of the Krumkill.

Proposed Improvements

Proposed improvements for Area 4 include sump pump laterals or gravity discharge for foundation drainage. Milling the top surface of portions of the streets within Area 4 is recommended to provide positive drainage away from the adjacent properties to the new and existing catch basins.

Improvements would be similar to those proposed for Area 3 and include milling, re-grading, and paving roads, additional catch basins, storm piping and lateral connections to the property lines for sump pump connections by the home owners. These improvements would be initiated after the completion of work in Area 3.

5.5 Area 5

Area 5 encompasses the Lands of the State University system, outside of Area 1 and north of Route 20. This area was not studied in the 2010 McKownville Drainage Analysis but much of the land, based on USGS and Google Maps topography, slopes toward Areas 1 and 2 and Route 20.

6.0 COST ESTIMATE

Preliminary Cost estimates were prepared for the proposed drainage improvements in the *McKownville Drainage Analysis*. The total cost estimates are summarized below and detailed estimates are included in Appendix C.

Cost Estimate Summary	
Area 1	\$3,700,000
Area 2	\$ 800,000
Area 3	\$ 700,000
Area 4	\$1,500,000
Total Cost	\$6,700,000

7.0 PROJECT FINANCING AND USER RATES

The Town of Guilderland received a \$500,000 grant from the NYS Department of Transportation Multi-Modal Program in 2010 that will be used towards implementing the first stage of the drainage improvements. The Town will continue to actively pursue other grants and low interest loans to fund the total \$6.7 million project.

The Town has determined that property owners within the McKownville Drainage District will pay a fee of \$0.26/thousand of Assessed Value. This revenue will be placed into an escrow account used to fund maintenance of existing drainage infrastructure and construction of future stormwater improvements. The Total Assessed Value of the 397 parcels within the proposed district is currently \$207,644,363, which will generate approximately \$54,000 in revenue annually.

The cost to the typical property owner and typical one or two-family home will be \$28.57 in the first year, based on the mode of \$109,900 of the assessed values with the district. (Town Law Section 209-A defines typical properties as those have an assessed value that approximates the assessed value of the mode, or most frequently occurring assessed value on the latest completed final assessment roll.)

FIGURES

APPENDICES

APPENDIX A

McKownville Drainage District Boundary Description

APPENDIX B

List of Tax Parcels in McKownville Drainage District

APPENDIX C

Detailed Cost Estimates of Proposed Improvements