

**DRAFT**

**MAP, PLAN AND REPORT**

**TOWN OF GUILDERLAND**

ALBANY COUNTY, NEW YORK

**MCKOWNVILLE DRAINAGE DISTRICT**

Prepared for:

**TOWN OF GUILDERLAND**

5209 Western Turnpike  
Guilderland, NY 12084

Prepared by:

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Albany, New York 12203

**MARCH 18, 2013**

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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 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 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 sanitary sewers were installed. 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 many pipes at the request of the McKownville residents. 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.

| <b>Cost Estimate Summary</b> |                    |
|------------------------------|--------------------|
| Area 1                       | \$3,700,000        |
| Area 2                       | \$ 800,000         |
| Area 3                       | \$ 700,000         |
| Area 4                       | \$1,500,000        |
| <b>Total Cost</b>            | <b>\$6,700,000</b> |



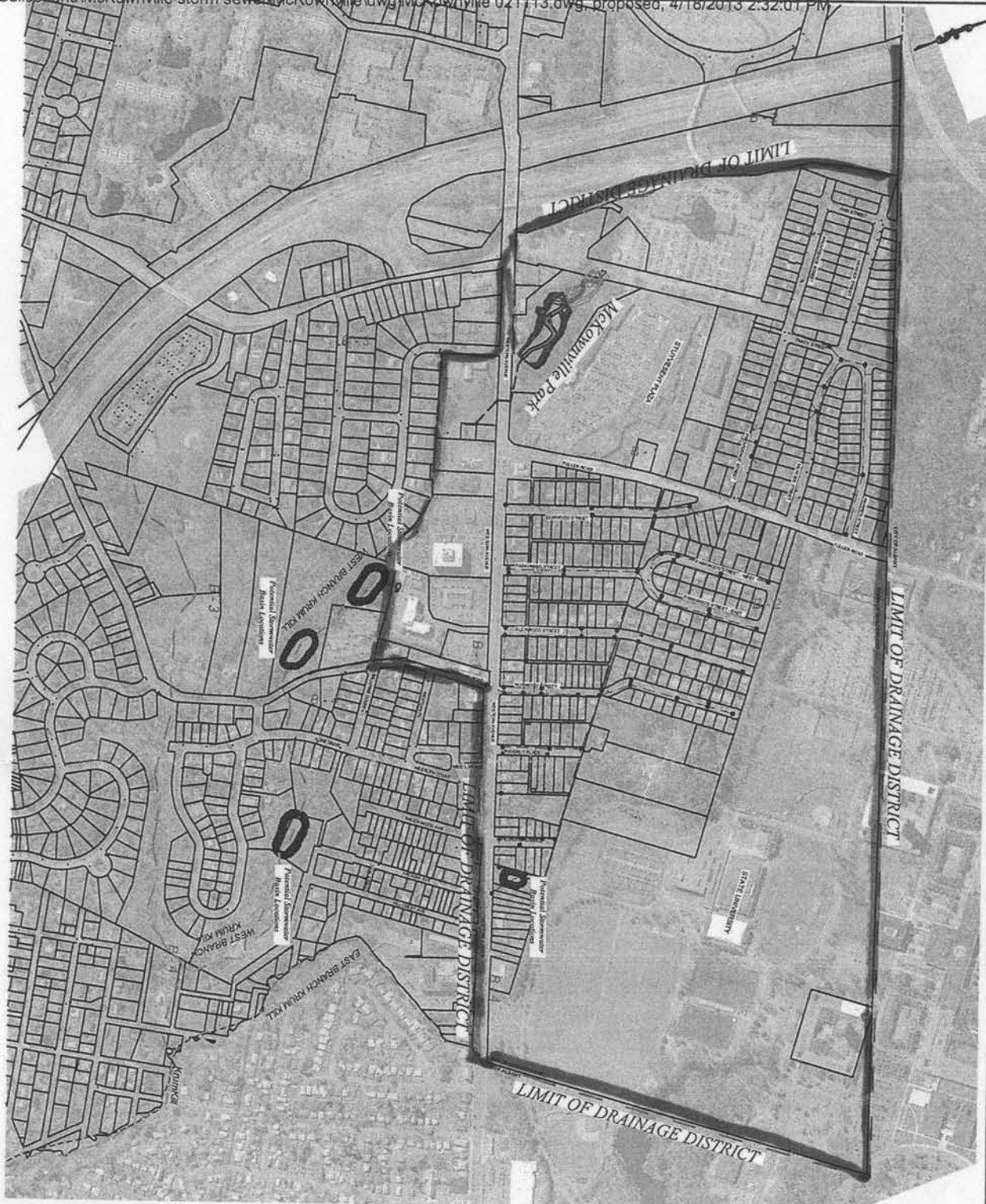
## **7.0 PROJECT FINANCING AND USER RATES**

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



**LEGEND**  
 PROPOSED STORM SEWERS  
 TAX MAP PARCELS (TOWN OF GULDERLAND)  
 PROPOSED CATCH BASINS

FIGURE  
**2**

**PROPOSED DRAINAGE DISTRICT**

MCKOWNVILLE DRAINAGE DISTRICT  
 TOWN OF GULDERLAND, NY

| REVISIONS |      |             |
|-----------|------|-------------|
| NO.       | DATE | DESCRIPTION |
|           |      |             |
|           |      |             |
|           |      |             |

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DATE: **JUL 2013**  
 DRAWN BY: **KS**  
 SCALE: **NTE**  
 REVIEWED BY: **TJG**  
 PROJECT NO.:  
 FILE:

## APPENDICES

## **APPENDIX A**

### **McKownville Drainage District Boundary Description**

## APPENDIX A

### DESCRIPTION OF McKOWNVILLE DRAINAGE DISTRICT

#### Town of Guilderland, Albany County, New York

The real estate hereinafter described is located in the Town of Guilderland, County of Albany and State of New York, outside of any incorporated village and wholly within the Town of Guilderland. The proposed McKownville Drainage District is described as follows:

BEGINNING at a point on the southern right-of-way of Western Avenue at its intersection with the Town of Guilderland/City of Albany boundary line;

Thence westerly along the Western Avenue right-of-way to its intersection with the eastern right-of-way of McKown Road;

Thence southerly along the McKown Road right-of-way to its intersection with the southern Williams Court right-of-way;

Thence westerly across McKown Road to the southeast corner of Tax Parcel 52.20-4-4;

Thence westerly along the southern property lines of Tax Parcels 52.20-4-4 and 52.20-4-3 to the southwest corner of Tax Parcel 52.20-4-3;

Thence southerly and northwesterly around the property line of Tax Parcel 52.20-4-1 to its intersection with the southeast corner of Tax Parcel 52.19-3-5;

Thence westerly, southerly and northerly along the southern property line of Tax Parcel 52.19-3-5 to its intersection with the southern boundary of Tax Parcel 52.19-3-4;

Thence westerly along the southern property line of Tax Parcel 52.19-3-4 to its intersection with the southeast corner of Tax Parcel 52.19-3-1;

Thence westerly and northerly around the property line of Tax Parcel 52.19-3-1 to the intersection of its northwest corner with the southern right-of-way of Western Avenue;

Thence northerly across Western Avenue to the edge of the northern right-of-way;

Thence westerly along the northern Western Avenue right-of-way to the southwest corner of Tax Parcel 52.04-2-3;

Thence northerly along the western property lines of Tax Parcels 52.04-2-3, 52.04-2-2, 52.04-2-1 and 52.15-2-49 to the Town of Guilderland/City of Albany boundary line;

Thence easterly along the Town of Guilderland/City of Albany boundary line to the northeast corner of Tax Parcel 52.04-3-1;

Thence southerly along the Town of Guilderland/City of Albany boundary line to its intersection with the northern right-of-way of Western Avenue;

Thence southerly across Western Avenue to the point of beginning.

## **APPENDIX B**

### **List of Tax Parcels in McKownville Drainage District**

MCKOWNVILLE DRAINAGE DISTRICT PARCELS

|    | TAXMAP      | PARCEL ADDRESS         | CLASS |  | TAXMAP | PARCEL ADDRESS | CLASS            |     | TAXMAP | PARCEL ADDRESS | CLASS      |                    | TAXMAP | PARCEL ADDRESS | CLASS |            |                  |     |
|----|-------------|------------------------|-------|--|--------|----------------|------------------|-----|--------|----------------|------------|--------------------|--------|----------------|-------|------------|------------------|-----|
| 1  | 52.04-2-1   | Executive Park Dr Rear | 464   |  | 101    | 52.16-1-39     | 17 Mercer St     | 210 |        | 201            | 52.16-3-49 | 33 Parkwood St     | 210    |                | 301   | 52.20-2-18 | 3 Glenwood St    | 210 |
| 2  | 52.04-2-3   | Western Ave            | 380   |  | 102    | 52.16-1-40     | 15 Mercer St     | 210 |        | 202            | 52.16-3-50 | 35 Parkwood St     | 210    |                | 302   | 52.20-2-19 | 1 Glenwood St    | 210 |
| 3  | 52.04-2-4   | 1515 Western Ave       | 822   |  | 103    | 52.16-1-41     | 13 Mercer St     | 210 |        | 203            | 52.16-3-51 | 37 Parkwood St     | 210    |                | 303   | 52.20-2-20 | 1443 Western Ave | 483 |
| 4  | 52.04-2-5   | 1535 Western Ave       | 464   |  | 104    | 52.16-1-42     | 11 Mercer St     | 210 |        | 204            | 52.16-3-52 | 39 Parkwood St     | 210    |                | 304   | 52.20-2-21 | 1441 Western Ave | 483 |
| 5  | 52.04-2-6   | 1529 Western Ave       | 464   |  | 105    | 52.16-1-43     | 9 Mercer St      | 210 |        | 205            | 52.16-3-53 | 41 Parkwood St     | 210    |                | 305   | 52.20-2-22 | 1439 Western Ave | 210 |
| 6  | 52.04-2-7   | 1525 Western Ave       | 464   |  | 106    | 52.16-1-44     | 7 Mercer St      | 210 |        | 206            | 52.16-3-54 | 43 Parkwood St     | 210    |                | 306   | 52.20-2-23 | 1 Norwood St     | 210 |
| 7  | 52.04-2-8   | 1475 Western Ave       | 451   |  | 107    | 52.16-1-45     | 5 Mercer St      | 210 |        | 207            | 52.16-3-55 | 47 Parkwood St     | 210    |                | 307   | 52.20-2-24 | 3 Norwood St     | 210 |
| 8  | 52.04-2-9   | 337 Fuller Rd          | 330   |  | 108    | 52.16-1-46     | 3 Mercer St      | 210 |        | 208            | 52.16-3-56 | 38 Glenwood St     | 210    |                | 308   | 52.20-2-25 | 5 Norwood St     | 210 |
| 9  | 52.04-2-10  | 333 Fuller Rd          | 330   |  | 109    | 52.16-1-47     | 1 Mercer St      | 210 |        | 209            | 52.16-3-57 | 36 Glenwood St     | 210    |                | 309   | 52.20-2-26 | 7 Norwood St     | 210 |
| 10 | 52.04-2-11  | 2 Executive Park Dr Pr | 464   |  | 110    | 52.16-2-1      | 28 Mercer St     | 210 |        | 210            | 52.16-3-58 | 34 Glenwood St     | 210    |                | 310   | 52.20-2-27 | 9 Norwood St     | 210 |
| 11 | 52.04-2-12  | 4 Executive Park Dr Pr | 464   |  | 111    | 52.16-2-2      | 26 Mercer St     | 210 |        | 211            | 52.16-3-59 | 32 Glenwood St     | 210    |                | 311   | 52.20-2-28 | 11 Norwood St    | 210 |
| 12 | 52.04-3-1   | Fuller Rd              | 613   |  | 112    | 52.16-2-3      | 24 Mercer St     | 210 |        | 212            | 52.16-3-60 | 30 Glenwood St     | 210    |                | 312   | 52.20-2-29 | 13 Norwood St    | 210 |
| 13 | 52.04-3-2   | Waverly Pl             | 620   |  | 113    | 52.16-2-4      | 22 Mercer St     | 210 |        | 213            | 52.16-3-61 | 28 Glenwood St     | 210    |                | 313   | 52.20-2-30 | 15 Norwood St    | 210 |
| 14 | 52.04-3-3   | 100-200 Nicholas Ln Pr | 210   |  | 114    | 52.16-2-5      | 20 Mercer St     | 210 |        | 214            | 52.16-3-62 | 26 Glenwood St     | 210    |                | 314   | 52.20-2-31 | 17 Norwood St    | 210 |
| 15 | 52.04-3-4.1 | 18 Waverly Pl          | 210   |  | 115    | 52.16-2-6      | 18 Mercer St     | 311 |        | 215            | 52.16-3-63 | 24 Glenwood St     | 210    |                | 315   | 52.20-2-32 | 19 Norwood St    | 210 |
| 16 | 52.04-3-4.2 | 16 Waverly Pl          | 210   |  | 116    | 52.16-2-7      | 16 Mercer St     | 210 |        | 216            | 52.16-3-64 | 22 Glenwood St     | 210    |                | 316   | 52.20-2-34 | 21 Norwood St    | 230 |
| 17 | 52.04-3-5   | 22 Waverly Pl          | 210   |  | 117    | 52.16-2-8      | 14 Mercer St     | 210 |        | 217            | 52.16-3-65 | 20 Glenwood St     | 210    |                | 317   | 52.20-2-35 | 23 Norwood St    | 210 |
| 18 | 52.15-2-1   | 55 Mercer St           | 210   |  | 118    | 52.16-2-9      | 12 Mercer St     | 210 |        | 218            | 52.19-3-1  | 1500 Western Ave   | 620    |                | 318   | 52.20-2-36 | 25 Norwood St    | 210 |
| 19 | 52.15-2-2   | 53 Mercer St           | 210   |  | 119    | 52.16-2-10     | 10 Mercer St     | 210 |        | 219            | 52.19-3-2  | 1484 Western Ave   | 484    |                | 319   | 52.20-2-37 | 27 Norwood St    | 210 |
| 20 | 52.15-2-3   | 51 Mercer St           | 210   |  | 120    | 52.16-2-11     | 8 Mercer St      | 210 |        | 220            | 52.19-3-4  | 1480 Western Ave   | 426    |                | 320   | 52.20-2-38 | 29 Norwood St    | 210 |
| 21 | 52.15-2-4   | 49 Mercer St           | 210   |  | 121    | 52.16-2-12     | 6 Mercer St      | 210 |        | 221            | 52.19-3-5  | 1470 Western Ave   | 421    |                | 321   | 52.20-2-39 | 31 Norwood St    | 210 |
| 22 | 52.15-2-5   | 47 Mercer St           | 210   |  | 122    | 52.16-2-13     | 4 Mercer St      | 210 |        | 222            | 52.20-1-2  | 10 Elmwood St Rear | 311    |                | 322   | 52.20-2-40 | 33 Norwood St    | 210 |
| 23 | 52.15-2-6   | 45 Mercer St           | 210   |  | 123    | 52.16-2-14     | 2 Mercer St      | 210 |        | 223            | 52.20-1-5  | 340-344 Fuller Rd  | 465    |                | 323   | 52.20-2-41 | 35 Norwood St    | 210 |
| 24 | 52.15-2-7   | 43 Mercer St           | 210   |  | 124    | 52.16-2-15     | 319 Fuller Rd    | 210 |        | 224            | 52.20-1-6  | 1465 Western Ave   | 465    |                | 324   | 52.20-2-42 | 37 Norwood St    | 210 |
| 25 | 52.15-2-8   | 41 Mercer St           | 210   |  | 125    | 52.16-2-16     | 321 Fuller Rd    | 210 |        | 225            | 52.20-1-7  | 1465 Western Ave   | 465    |                | 325   | 52.20-2-43 | 39 Norwood St    | 210 |
| 26 | 52.15-2-9   | 39 Mercer St           | 210   |  | 126    | 52.16-2-17     | 323 Fuller Rd    | 210 |        | 226            | 52.20-1-9  | 4 Elmwood St       | 210    |                | 326   | 52.20-2-44 | 41 Norwood St    | 210 |
| 27 | 52.15-2-10  | 37 Mercer St           | 210   |  | 127    | 52.16-2-18     | 325 Fuller Rd    | 210 |        | 227            | 52.20-1-10 | 6 Elmwood St       | 210    |                | 327   | 52.20-2-45 | 43 Norwood St    | 210 |
| 28 | 52.15-2-11  | 35 Mercer St           | 210   |  | 128    | 52.16-2-19     | 1 Providence St  | 210 |        | 228            | 52.20-1-11 | 8 Elmwood St       | 210    |                | 328   | 52.20-2-46 | 38 Norwood St    | 210 |
| 29 | 52.15-2-12  | 30 Mercer St           | 210   |  | 129    | 52.16-2-20     | 3 Providence St  | 210 |        | 229            | 52.20-1-12 | 10 Elmwood St      | 210    |                | 329   | 52.20-2-47 | 36 Norwood St    | 210 |
| 30 | 52.15-2-13  | 34 Mercer St           | 210   |  | 130    | 52.16-2-21     | 5 Providence St  | 210 |        | 230            | 52.20-1-13 | 12 Elmwood St      | 210    |                | 330   | 52.20-2-48 | 34 Norwood St    | 210 |
| 31 | 52.15-2-14  | 36 Mercer St           | 210   |  | 131    | 52.16-2-22     | 7 Providence St  | 210 |        | 231            | 52.20-1-14 | 14 Elmwood St      | 210    |                | 331   | 52.20-2-49 | 32 Norwood St    | 210 |
| 32 | 52.15-2-15  | 38 Mercer St           | 210   |  | 132    | 52.16-2-23     | 11 Providence St | 210 |        | 232            | 52.20-1-15 | 16 Elmwood St      | 210    |                | 332   | 52.20-2-50 | 30 Norwood St    | 210 |
| 33 | 52.15-2-16  | 40 Mercer St           | 210   |  | 133    | 52.16-2-24     | 15 Providence St | 210 |        | 233            | 52.20-1-16 | 18 Elmwood St      | 210    |                | 333   | 52.20-2-51 | 28 Norwood St    | 210 |
| 34 | 52.15-2-17  | 42 Mercer St           | 210   |  | 134    | 52.16-2-25     | 17 Providence St | 210 |        | 234            | 52.20-1-17 | 22 Elmwood St      | 210    |                | 334   | 52.20-2-52 | 26 Norwood St    | 210 |
| 35 | 52.15-2-18  | 44 Mercer St           | 210   |  | 135    | 52.16-2-26     | 19 Providence St | 210 |        | 235            | 52.20-1-18 | 21 Elmwood St      | 210    |                | 335   | 52.20-2-53 | 24 Norwood St    | 210 |
| 36 | 52.15-2-19  | 46 Mercer St           | 210   |  | 136    | 52.16-2-27     | 21 Providence St | 210 |        | 236            | 52.20-1-19 | 19 Elmwood St      | 210    |                | 336   | 52.20-2-54 | 22 Norwood St    | 210 |
| 37 | 52.15-2-20  | 48 Mercer St           | 210   |  | 137    | 52.16-2-28     | 23 Providence St | 210 |        | 237            | 52.20-1-20 | 17 Elmwood St      | 210    |                | 337   | 52.20-2-55 | 20 Norwood St    | 210 |
| 38 | 52.15-2-21  | 50 Mercer St           | 210   |  | 138    | 52.16-2-29     | 25 Providence St | 210 |        | 238            | 52.20-1-21 | 15 Elmwood St      | 210    |                | 338   | 52.20-2-56 | 18 Norwood St    | 210 |
| 39 | 52.15-2-22  | 52 Mercer St           | 210   |  | 139    | 52.16-2-30     | 29 Providence St | 210 |        | 239            | 52.20-1-22 | 13 Elmwood St      | 210    |                | 339   | 52.20-3-1  | 16 Norwood St    | 210 |
| 40 | 52.15-2-23  | Merger St              | 970   |  | 140    | 52.16-2-31     | 24 Providence St | 210 |        | 240            | 52.20-1-23 | 11 Elmwood St      | 210    |                | 340   | 52.20-3-2  | 14 Norwood St    | 210 |
| 41 | 52.15-2-25  | 53 Providence St       | 210   |  | 141    | 52.16-2-32     | 22 Providence St | 210 |        | 241            | 52.20-1-24 | 9 Elmwood St       | 210    |                | 341   | 52.20-3-3  | 12 Norwood St    | 210 |
| 42 | 52.15-2-26  | 51 Providence St       | 210   |  | 142    | 52.16-2-33     | 20 Providence St | 210 |        | 242            | 52.20-1-25 | 7 Elmwood St       | 210    |                | 342   | 52.20-3-4  | 10 Norwood St    | 210 |
| 43 | 52.15-2-27  | 49 Providence St       | 210   |  | 143    | 52.16-2-34     | 18 Providence St | 210 |        | 243            | 52.20-1-26 | 5 Elmwood St       | 210    |                | 343   | 52.20-3-5  | 8 Norwood St     | 210 |
| 44 | 52.15-2-28  | 47 Providence St       | 210   |  | 144    | 52.16-2-35     | 16 Providence St | 210 |        | 244            | 52.20-1-27 | 3 Elmwood St       | 210    |                | 344   | 52.20-3-6  | 6 Norwood St     | 210 |
| 45 | 52.15-2-29  | 45 Providence St       | 210   |  | 145    | 52.16-2-36     | 14 Providence St | 210 |        | 245            | 52.20-1-28 | 1 Elmwood St       | 210    |                | 345   | 52.20-3-7  | 4 Norwood St     | 210 |
| 46 | 52.15-2-30  | 43 Providence St       | 210   |  | 146    | 52.16-2-37     | 12 Providence St | 210 |        | 246            | 52.20-1-29 | 1461 Western Ave   | 210    |                | 346   | 52.20-3-8  | 2 Norwood St     | 210 |
| 47 | 52.15-2-31  | 41 Providence St       | 210   |  | 147    | 52.16-2-38     | 10 Providence St | 210 |        | 247            | 52.20-1-30 | 1459 Western Ave   | 210    |                | 347   | 52.20-3-9  | 1437 Western Ave | 210 |
| 48 | 52.15-2-32  | 39 Providence St       | 210   |  | 148    | 52.16-2-39     | 8 Providence St  | 210 |        | 248            | 52.20-1-31 | 1457 Western Ave   | 614    |                | 348   | 52.20-3-10 | 1435 Western Ave | 210 |



|     |            |                  |     |     |            |                 |     |     |            |                  |     |     |             |                   |     |
|-----|------------|------------------|-----|-----|------------|-----------------|-----|-----|------------|------------------|-----|-----|-------------|-------------------|-----|
| 49  | 52.15-2-33 | 37 Providence St | 210 | 149 | 52.16-2-40 | 6 Providence St | 210 | 249 | 52.20-1-31 | 1457 Western Ave | 210 | 348 | 52.20-3-10  | 1433 Western Ave  | 210 |
| 50  | 52.15-2-34 | 35 Providence St | 210 | 150 | 52.16-2-41 | 4 Providence St | 210 | 250 | 52.20-1-32 | Parkwood St      | 311 | 350 | 52.20-3-11  | 1431 Western Ave  | 210 |
| 51  | 52.15-2-35 | 33 Providence St | 210 | 151 | 52.16-2-42 | 2 Providence St | 210 | 251 | 52.20-1-34 | 4 Parkwood St    | 210 | 351 | 52.20-3-13  | 1429 Western Ave  | 210 |
| 52  | 52.15-2-36 | 31 Providence St | 210 | 152 | 52.16-2-43 | 329 Fuller Rd   | 210 | 252 | 52.20-1-35 | 6 Parkwood St    | 210 | 352 | 52.20-3-15  | 4 Waverly Pl      | 210 |
| 53  | 52.15-2-37 | 26 Providence St | 210 | 153 | 52.16-2-44 | 331 Fuller Rd   | 210 | 253 | 52.20-1-36 | 8 Parkwood St    | 210 | 353 | 52.20-3-16  | 8 Waverly Pl      | 210 |
| 54  | 52.15-2-38 | 30 Providence St | 210 | 154 | 52.16-3-1  | 28 Elmwood St   | 210 | 254 | 52.20-1-37 | 10 Parkwood St   | 210 | 354 | 52.20-3-17  | 10 Waverly Pl     | 210 |
| 55  | 52.15-2-39 | 32 Providence St | 210 | 155 | 52.16-3-2  | 26 Elmwood St   | 210 | 255 | 52.20-1-38 | 14 Parkwood St   | 210 | 355 | 52.20-3-18  | 12 Waverly Pl     | 210 |
| 56  | 52.15-2-40 | 34 Providence St | 210 | 156 | 52.16-3-3  | 25 Elmwood St   | 210 | 256 | 52.20-1-39 | 16 Parkwood St   | 210 | 356 | 52.20-3-19  | 14 Waverly Pl     | 311 |
| 57  | 52.15-2-41 | 36 Providence St | 210 | 157 | 52.16-3-4  | 27 Elmwood St   | 210 | 257 | 52.20-1-40 | 20 Parkwood St   | 210 | 357 | 52.20-3-20  | 13 Waverly Pl     | 210 |
| 58  | 52.15-2-42 | 38 Providence St | 210 | 158 | 52.16-3-5  | 29 Elmwood St   | 210 | 258 | 52.20-1-41 | 22 Parkwood St   | 210 | 358 | 52.20-3-21  | 9 Waverly Pl      | 210 |
| 59  | 52.15-2-43 | 40 Providence St | 210 | 159 | 52.16-3-6  | 31 Elmwood St   | 210 | 259 | 52.20-1-42 | 24 Parkwood St   | 210 | 359 | 52.20-3-22  | 7 Waverly Pl      | 210 |
| 60  | 52.15-2-44 | 42 Providence St | 210 | 160 | 52.16-3-7  | 33 Elmwood St   | 210 | 260 | 52.20-1-43 | Parkwood St      | 311 | 360 | 52.20-3-23  | 5 Waverly Pl      | 210 |
| 61  | 52.15-2-45 | 44 Providence St | 210 | 161 | 52.16-3-8  | 35 Elmwood St   | 210 | 261 | 52.20-1-44 | 25 Parkwood St   | 210 | 361 | 52.20-3-24  | 3 Waverly Pl      | 210 |
| 62  | 52.15-2-46 | 46 Providence St | 210 | 162 | 52.16-3-9  | 328 Fuller Rd   | 210 | 262 | 52.20-1-45 | 23 Parkwood St   | 210 | 362 | 52.20-3-26  | 1 Waverly Pl      | 210 |
| 63  | 52.15-2-47 | 48 Providence St | 210 | 163 | 52.16-3-10 | 326 Fuller Rd   | 210 | 263 | 52.20-1-46 | 21 Parkwood St   | 210 | 363 | 52.20-3-27  | 1427 Western Ave  | 210 |
| 64  | 52.15-2-48 | 52 Providence St | 210 | 164 | 52.16-3-11 | 324 Fuller Rd   | 210 | 264 | 52.20-1-47 | 15 Parkwood St   | 210 | 364 | 52.20-3-28  | 1425 Western Ave  | 210 |
| 65  | 52.15-2-49 | 54 Mercer        | 210 | 165 | 52.16-3-12 | 322 Fuller Rd   | 210 | 265 | 52.20-1-48 | 13 Parkwood St   | 210 | 365 | 52.20-3-29  | 1423 Western Ave  | 210 |
| 66  | 52.16-1-1  | 27 Warren St     | 210 | 166 | 52.16-3-14 | 320 Fuller Rd   | 620 | 266 | 52.20-1-49 | 11 Parkwood St   | 210 | 366 | 52.20-3-30  | 1419-1421 Western | 281 |
| 67  | 52.16-1-2  | 25 Warren St     | 210 | 167 | 52.16-3-15 | 318 Fuller Rd   | 210 | 267 | 52.20-1-50 | 9 Parkwood St    | 210 | 367 | 52.20-3-31  | 1417 Western Ave  | 210 |
| 68  | 52.16-1-3  | 23 Warren St     | 210 | 168 | 52.16-3-16 | 316 Fuller Rd   | 620 | 268 | 52.20-1-51 | 7 Parkwood St    | 210 | 368 | 52.20-3-32  | 1415 Western Ave  | 210 |
| 69  | 52.16-1-4  | 21 Warren St     | 210 | 169 | 52.16-3-17 | 46 Parkwood St  | 210 | 269 | 52.20-1-52 | 3 Parkwood St    | 210 | 369 | 52.20-3-33  | 3 Knowles Ter     | 210 |
| 70  | 52.16-1-5  | 19 Warren St     | 210 | 170 | 52.16-3-18 | 44 Parkwood St  | 210 | 270 | 52.20-1-53 | 1 Parkwood St    | 210 | 370 | 52.20-3-34  | 13 Knowles Ter    | 210 |
| 71  | 52.16-1-6  | 17 Warren St     | 210 | 171 | 52.16-3-19 | 42 Parkwood St  | 210 | 271 | 52.20-1-54 | 1451 Western Ave | 210 | 371 | 52.20-3-35  | 15 Knowles Ter    | 210 |
| 72  | 52.16-1-7  | 15 Warren St     | 210 | 172 | 52.16-3-20 | 40 Parkwood St  | 210 | 272 | 52.20-1-55 | 1449 Western Ave | 210 | 372 | 52.20-3-36  | 17 Knowles Ter    | 210 |
| 73  | 52.16-1-8  | 13 Warren St     | 210 | 173 | 52.16-3-21 | 38 Parkwood St  | 210 | 273 | 52.20-1-56 | 1447 Western Ave | 210 | 373 | 52.20-3-37  | 19 Knowles Ter    | 210 |
| 74  | 52.16-1-9  | 11 Warren St     | 210 | 174 | 52.16-3-22 | 36 Parkwood St  | 210 | 274 | 52.20-1-57 | 1445 Western Ave | 210 | 374 | 52.20-3-38  | 14-16 Knowles Ter | 281 |
| 75  | 52.16-1-10 | 9 Warren St      | 210 | 175 | 52.16-3-23 | 34 Parkwood St  | 210 | 275 | 52.20-1-58 | 2 Glenwood St    | 210 | 375 | 52.20-3-39  | 12 Knowles Ter    | 210 |
| 76  | 52.16-1-11 | 7 Warren St      | 220 | 176 | 52.16-3-24 | 32 Parkwood St  | 210 | 276 | 52.20-1-59 | 4 Glenwood St    | 210 | 376 | 52.20-3-40  | 10 Knowles Ter    | 210 |
| 77  | 52.16-1-12 | 5 Warren St      | 210 | 177 | 52.16-3-25 | 30 Parkwood St  | 210 | 277 | 52.20-1-60 | 6 Glenwood St    | 210 | 377 | 52.20-3-41  | 2 Knowles Ter     | 210 |
| 78  | 52.16-1-13 | 3 Warren St      | 210 | 178 | 52.16-3-26 | 28 Parkwood St  | 210 | 278 | 52.20-1-61 | 8 Glenwood St    | 210 | 378 | 52.20-3-42  | 1261 Western Ave  | 220 |
| 79  | 52.16-1-14 | 1 Warren St      | 210 | 179 | 52.16-3-27 | 26 Parkwood St  | 210 | 279 | 52.20-1-62 | 10 Glenwood St   | 210 | 379 | 52.20-3-43  | 1259 Western Ave  | 220 |
| 80  | 52.16-1-17 | 303 Fuller Rd    | 210 | 180 | 52.16-3-28 | 27 Parkwood St  | 210 | 280 | 52.20-1-63 | 12 Glenwood St   | 210 | 380 | 52.20-3-44  | 1257 Western Ave  | 311 |
| 81  | 52.16-1-18 | 305 Fuller Rd    | 220 | 181 | 52.16-3-29 | 29 Parkwood St  | 210 | 281 | 52.20-1-64 | 14 Glenwood St   | 210 | 381 | 52.20-3-45  | 1255 Western Ave  | 220 |
| 82  | 52.16-1-19 | 309 Fuller Rd    | 210 | 182 | 52.16-3-30 | 31 Parkwood St  | 210 | 282 | 52.20-1-65 | 16 Glenwood St   | 210 | 382 | 52.20-3-46  | 1253 Western Ave  | 220 |
| 83  | 52.16-1-20 | 311 Fuller Rd    | 210 | 183 | 52.16-3-31 | 33 Parkwood St  | 210 | 283 | 52.20-1-66 | 18 Glenwood St   | 210 | 383 | 52.20-3-47  | 1251 Western Ave  | 220 |
| 84  | 52.16-1-21 | 313 Fuller Rd    | 210 | 184 | 52.16-3-32 | 35 Parkwood St  | 210 | 284 | 52.20-2-1  | 39 Glenwood St   | 210 | 384 | 52.20-3-48  | 1249 Western Ave  | 614 |
| 85  | 52.16-1-22 | 315 Fuller Rd    | 210 | 185 | 52.16-3-33 | 37 Parkwood St  | 210 | 285 | 52.20-2-2  | 37 Glenwood St   | 210 | 385 | 52.20-3-49  | 1247 Western Ave  | 210 |
| 86  | 52.16-1-23 | 2 Warren St      | 210 | 186 | 52.16-3-34 | 39 Parkwood St  | 210 | 286 | 52.20-2-3  | 35 Glenwood St   | 210 | 386 | 52.20-3-50  | 1245 Western Ave  | 411 |
| 87  | 52.16-1-24 | 4 Warren St      | 210 | 187 | 52.16-3-35 | 41 Parkwood St  | 210 | 287 | 52.20-2-4  | 33 Glenwood St   | 210 | 387 | 52.20-3-51  | 1243 Western Ave  | 210 |
| 88  | 52.16-1-25 | 6 Warren St      | 210 | 188 | 52.16-3-36 | 43 Parkwood St  | 210 | 288 | 52.20-2-5  | 31 Glenwood St   | 210 | 388 | 52.20-3-52  | 1241 Western Ave  | 220 |
| 89  | 52.16-1-26 | 8 Warren St      | 210 | 189 | 52.16-3-37 | 42 Parkwood St  | 210 | 289 | 52.20-2-6  | 29 Glenwood St   | 210 | 389 | 52.20-3-53  | 1239 Western Ave  | 220 |
| 90  | 52.16-1-27 | 10 Warren St     | 210 | 190 | 52.16-3-38 | 40 Parkwood St  | 220 | 290 | 52.20-2-7  | 27 Glenwood St   | 210 | 390 | 52.20-3-54  | 1237 Western Ave  | 484 |
| 91  | 52.16-1-28 | 12 Warren St     | 210 | 191 | 52.16-3-39 | 38 Parkwood St  | 210 | 291 | 52.20-2-8  | 25 Glenwood St   | 210 | 391 | 52.20-3-55  | 1229 Western Ave  | 432 |
| 92  | 52.16-1-29 | 14 Warren St     | 210 | 192 | 52.16-3-40 | 36 Parkwood St  | 210 | 292 | 52.20-2-9  | 23 Glenwood St   | 210 | 392 | 52.20-4-1   | 1450 Western Ave  | 464 |
| 93  | 52.16-1-30 | 16 Warren St     | 210 | 193 | 52.16-3-41 | 34 Parkwood St  | 210 | 293 | 52.20-2-10 | 21 Glenwood St   | 210 | 393 | 52.20-4-2.1 | 1440 Western Ave  | 465 |
| 94  | 52.16-1-31 | 18 Warren St     | 210 | 194 | 52.16-3-42 | 32 Parkwood St  | 210 | 294 | 52.20-2-11 | 17 Glenwood St   | 210 | 394 | 52.20-4-2.2 | 1444 Western Ave  | 465 |
| 95  | 52.16-1-32 | 20 Warren St     | 210 | 195 | 52.16-3-43 | 30 Parkwood St  | 210 | 295 | 52.20-2-12 | 15 Glenwood St   | 210 | 395 | 52.20-4-3   | 1442 Western Ave  | 415 |
| 96  | 52.16-1-33 | 22 Warren St     | 210 | 196 | 52.16-3-44 | 28 Parkwood St  | 210 | 296 | 52.20-2-13 | 13 Glenwood St   | 210 | 396 | 52.20-4-4   | 8 McKown Rd       | 210 |
| 97  | 52.16-1-35 | 24 Warren St     | 210 | 197 | 52.16-3-45 | 26 Parkwood St  | 210 | 297 | 52.20-2-14 | 11 Glenwood St   | 210 | 397 | 52.20-4-5   | 1438 Western Ave  | 484 |
| 98  | 52.16-1-36 | 23 Mercer St     | 210 | 198 | 52.16-3-46 | 27 Parkwood St  | 210 | 298 | 52.20-2-15 | 9 Glenwood St    | 210 |     |             |                   |     |
| 99  | 52.16-1-37 | 21 Mercer St     | 210 | 199 | 52.16-3-47 | 29 Parkwood St  | 210 | 299 | 52.20-2-16 | 7 Glenwood St    | 210 |     |             |                   |     |
| 100 | 52.16-1-38 | 19 Mercer St     | 210 | 200 | 52.16-3-48 | 31 Parkwood St  | 210 | 300 | 52.20-2-17 | 5 Glenwood St    | 210 |     |             |                   |     |

## **APPENDIX C**

### **Detailed Cost Estimates of Proposed Improvements**

## Mckownville –Drainage Analysis Cost Estimate

| <b>Area 1</b>                        | <u>Qty</u> | <u>Unit</u> | <u>Unit Cost</u>           | <u>Total Cost</u>  |
|--------------------------------------|------------|-------------|----------------------------|--------------------|
| <b><i>Parkwood Street-West</i></b>   |            |             |                            |                    |
| 15" pipe                             | 300        | LF          | \$80                       | \$24,000           |
| 18" pipe                             | 300        | LF          | \$125                      | \$37,500           |
| sump pump connections                | 1          | LS          | \$20,000                   | \$20,000           |
| Paving                               | 450        | ton         | \$100                      | \$45,000           |
| <b><i>Parkwood Street-East</i></b>   |            |             |                            |                    |
| 15" pipe                             | 400        | LF          | \$80                       | \$32,000           |
| 18" pipe                             | 400        | LF          | \$125                      | \$50,000           |
| sump pump connections                | 1          | LS          | \$20,000                   | \$20,000           |
| Paving                               | 600        | ton         | \$100                      | \$60,000           |
| <b><i>Glenwood Street</i></b>        |            |             |                            |                    |
| 15" pipe                             | 350        | LF          | \$80                       | \$28,000           |
| 18" pipe                             | 350        | LF          | \$125                      | \$43,750           |
| sump pump connections                | 1          | LS          | \$20,000                   | \$20,000           |
| Paving                               | 525        | ton         | \$100                      | \$52,500           |
| <b><i>Norwood Street</i></b>         |            |             |                            |                    |
| 15" pipe                             | 400        | LF          | \$80                       | \$32,000           |
| 18" pipe                             | 400        | LF          | \$125                      | \$50,000           |
| 24" pipe                             | 630        | LF          | \$200                      | \$126,000          |
| sump pump connections                | 1          | LS          | \$20,000                   | \$20,000           |
| Paving                               | 2,123      | ton         | \$100                      | \$212,300          |
| jack-bore under Western Avenue       | 100        | LF          | \$800                      | \$80,000           |
| 36" pipe Mckown Road                 | 400        | LF          | \$200                      | \$80,000           |
| 48" pipe Mckown Road                 | 1000       | LF          | \$250                      | \$250,000          |
| Stormwater management system and E&S | 1          | LS          | \$500,000                  | \$500,000          |
| Land acquisition                     | 1          | LS          | \$500,000                  | \$500,000          |
|                                      |            |             | Construction Sub-Total     | <u>\$2,283,050</u> |
|                                      |            |             | Engineering 15%            | \$342,458          |
|                                      |            |             | Contingency 10%            | <u>\$228,305</u>   |
|                                      |            |             | <b>Total Cost Estimate</b> | <b>\$2,853,813</b> |

## Mckownville –Drainage Analysis Cost Estimate

### Area 2

|                               | <u>Qty</u> | <u>Unit</u> | <u>Unit Cost</u> | <u>Total Cost</u> |
|-------------------------------|------------|-------------|------------------|-------------------|
| <b><i>Knowles Terrace</i></b> |            |             |                  |                   |
| 15" pipe                      | 700        | LF          | \$80             | \$56,000          |
| 15" pipe                      | 225        | LF          | \$80             | \$18,000          |
| 18" pipe                      | 175        | LF          | \$125            | \$21,875          |
| sump pump connections         | 1          | LS          | \$10,000         | \$10,000          |
| Paving                        | 300        | ton         | \$100            | \$30,000          |

### ***Waverly Place***

|                       |     |     |          |          |
|-----------------------|-----|-----|----------|----------|
| 15" pipe              | 300 | LF  | \$80     | \$24,000 |
| 18" pipe              | 225 | LF  | \$125    | \$28,125 |
| 18" pipe              | 550 | LF  | \$125    | \$68,750 |
| sump pump connections | 1   | LS  | \$10,000 | \$10,000 |
| Paving                | 394 | ton | \$100    | \$39,400 |

|                                      |   |    |           |           |
|--------------------------------------|---|----|-----------|-----------|
| Stormwater management system and E&S | 1 | LS | \$300,000 | \$300,000 |
|--------------------------------------|---|----|-----------|-----------|

|                        |     |                  |
|------------------------|-----|------------------|
| Construction Sub-Total |     | <u>\$606,150</u> |
| Engineering            | 15% | \$90,923         |
| Contingency            | 10% | <u>\$60,615</u>  |

**Total Cost Estimate                    \$757,688**

## Mckownville –Drainage Analysis Cost Estimate

### **Area 3**

|                                 | <u>Qty</u> | <u>Unit</u> | <u>Unit Cost</u> | <u>Total Cost</u> |
|---------------------------------|------------|-------------|------------------|-------------------|
| <b><i>Providence Street</i></b> |            |             |                  |                   |
| 15" pipe                        | 250        | LF          | \$80             | \$20,000          |
| 18" pipe                        | 1,000      | LF          | \$125            | \$125,000         |
| sump pump connections           | 1          | LS          | \$40,000         | \$40,000          |
| Paving                          | 938        | ton         | \$100            | \$93,800          |
| <b><i>Mercer Street</i></b>     |            |             |                  |                   |
| 15" pipe                        | 250        | LF          | \$80             | \$20,000          |
| 18" pipe                        | 250        | LF          | \$125            | \$31,250          |
| sump pump connections           | 1          | LS          | \$20,000         | \$20,000          |
| Paving                          | 375        | ton         | \$100            | \$37,500          |
| <b><i>Warren Street</i></b>     |            |             |                  |                   |
| 15" pipe                        | 300        | LF          | \$80             | \$24,000          |
| 18" pipe                        | 225        | LF          | \$125            | \$28,125          |
| sump pump connections           | 1          | LS          | \$40,000         | \$40,000          |
| Paving                          | 400        | ton         | \$100            | \$40,000          |

|                        |     |                  |
|------------------------|-----|------------------|
| Construction Sub-Total |     | <u>\$519,675</u> |
| Engineering            | 15% | \$77,951         |
| Contingency            | 10% | <u>\$51,968</u>  |

**Total Cost Estimate**                      **\$649,594**

## Mckownville –Drainage Analysis Cost Estimate

### Area 4

|                              | <u>Qty</u> | <u>Unit</u> | <u>Unit Cost</u> | <u>Total Cost</u> |
|------------------------------|------------|-------------|------------------|-------------------|
| <b><i>Elmwood Street</i></b> |            |             |                  |                   |
| 15" pipe                     | 500        | LF          | \$80             | \$40,000          |
| 18" pipe                     | 450        | LF          | \$125            | \$56,250          |
| 24" pipe                     | 300        | LF          | \$175            | \$52,500          |
| 36" pipe                     | 400        | LF          | \$200            | \$80,000          |
| 48" pipe                     | 525        | LF          | \$250            | \$131,250         |
| sump pump connections        | 1          | LS          | \$30,000         | \$30,000          |
| Paving                       | 975        | ton         | \$100            | \$97,500          |

### ***Parkwood Street***

|                       |       |     |          |           |
|-----------------------|-------|-----|----------|-----------|
| 15" pipe              | 600   | LF  | \$80     | \$48,000  |
| 18" pipe              | 1,125 | LF  | \$125    | \$140,625 |
| sump pump connections | 1     | LS  | \$25,000 | \$25,000  |
| Paving                | 1,294 | ton | \$100    | \$129,400 |

### ***Glenwood Street***

|                       |       |     |          |           |
|-----------------------|-------|-----|----------|-----------|
| 15" pipe              | 600   | LF  | \$80     | \$48,000  |
| 18" pipe              | 1,125 | LF  | \$125    | \$140,625 |
| sump pump connections | 1     | LS  | \$25,000 | \$25,000  |
| Paving                | 1,294 | ton | \$100    | \$129,400 |

|                        |     |                    |
|------------------------|-----|--------------------|
| Construction Sub-Total |     | <u>\$1,173,550</u> |
| Engineering            | 15% | \$176,033          |
| Contingency            | 10% | <u>\$117,355</u>   |

**Total Cost Estimate                    \$1,466,938**



**EXISTING CONDITIONS MAP**

DATE: JAN. 2013  
 DRAWN BY:  
 SCALE:  
 REVIEWED BY:  
 PROJECT NO.:  
 FILE:

**DELAWARE ENGINEERING, P.C.**  
 CIVIL AND ENVIRONMENTAL ENGINEERING

8-12 DIETZ STREET, SUITE 303, ONEONTA, NY 13820 - 607.432.8073  
 28 MADISON AVENUE EXTENSION, ALBANY, NY 12203 - 518.452.1290  
 6 TOWNSEND STREET, WALTON, NY 13858 - 607.885.9254

| NO. | DATE | REVISIONS DESCRIPTION |
|-----|------|-----------------------|
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McKOWNVILLE DRAINAGE DISTRICT  
 TOWN OF GUILDERLAND, NY

**EXISTING CONDITIONS MAP**





