

North St. Joseph Creek Watershed

Appendix 3A: Detailed Problem Areas

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1.0 North St. Joseph Creek Watershed

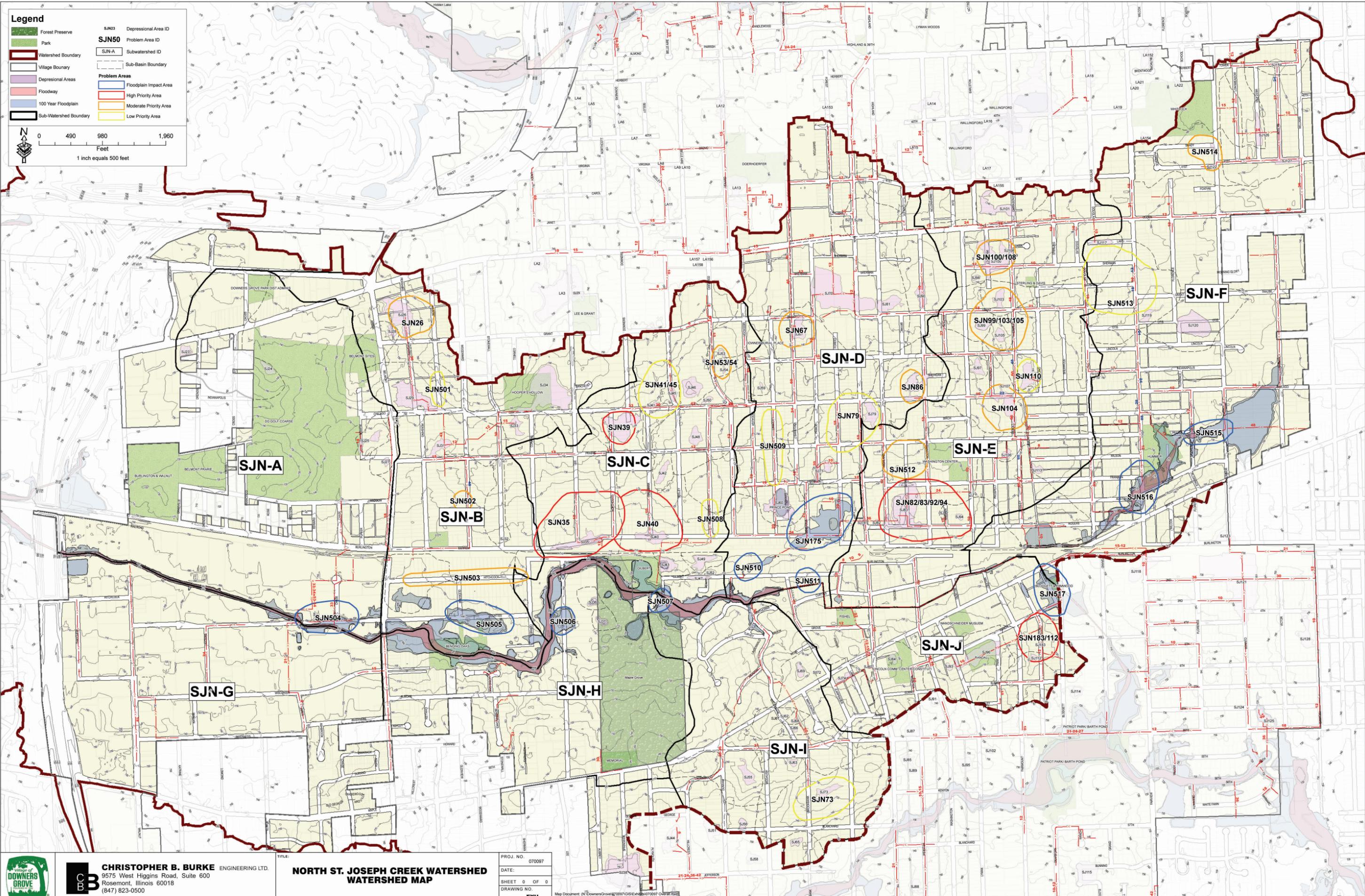
1.1 Watershed Map

The following Watershed Map shows the watershed and subwatershed boundaries, depressional areas, and problem areas within the North St. Joseph Creek Watershed.

Legend

- Forest Preserve
- Park
- Watershed Boundary
- Village Boundary
- Depressional Areas
- Floodway
- 100 Year Floodplain
- Sub-Watershed Boundary
- SJN23 Depressional Area ID
- SJN50 Problem Area ID
- SJN-A Subwatershed ID
- Sub-Basin Boundary
- Problem Areas
- Floodplain Impact Area
- High Priority Area
- Moderate Priority Area
- Low Priority Area

0 490 980 1,960
Feet
1 inch equals 500 feet



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TITLE: **NORTH ST. JOSEPH CREEK WATERSHED MAP**

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1.2 Subwatershed SJN-A

Subwatershed SJN-A is located in the northwest portion of the St. Joseph Creek Watershed, approximately west of Belmont Road and north of St. Joseph Creek. The terrain is gently sloping north to south toward St. Joseph Creek at a slope of approximately 1.5%. The Burlington Northern-Santa Fe (BNSF) Railroad is perpendicular to the flow of water toward St. Joseph Creek with flow passing through culverts under the BNSF Railroad at Drendel Road, Chase Avenue, and Belmont Road. A large portion of the subwatershed west of Belmont Road consists of the Downers Grove Golf Club which is mostly open space. Additionally there are four park district properties within the subwatershed. Belmont Prairie, the largest park, is located to the southwest and is bordered on the south by the BNSF Railroad and extends to the corporate limits on the west, north and east. Residential areas exist south and west of the Downers Grove Golf Club and a commercial area is located north of the Downers Grove Golf Club along Ogden Avenue. The area between the BNSF Railroad and St. Joseph Creek is mainly composed of industrial and commercial properties.

The four depressional areas located within this subwatershed were analyzed using XP-SWMM to determine their existing condition 10- and 100-year Base Flood Elevations (BFEs); however, due their categorization as nuisance flooding, SJN23, SJN24, and SJN25 were not further analyzed for future stormwater projects. Although SJN27 was also categorized as nuisance flooding, the depressional area was proposed to be regraded to provide addition storage volume and reshaped to reduce the impact on adjacent properties. Because the proposed stormwater projects associated with SJN27 are associated with stormwater projects in the subwatershed SJN-B, the proposed stormwater project cost estimate is included with the stormwater projects for subwatershed SJN-B.

Roadway flooding problems associated with the St. Joseph Creek floodplain along Curtiss Street at Chase Avenue are discussed in Section 1.12.2 of this Appendix.

1.2.1 Problem Area Description

No problem areas were evaluated within Subwatershed SJN-A.

1.2.2 Proposed Stormwater Projects

No stormwater projects were proposed within Subwatershed SJN-A.

1.2.2.1 SJN-A Subwatershed Exhibit

An exhibit showing existing storm sewer and proposed stormwater projects is included at the conclusion of Section 1.2. The general infrastructure improvements are not shown on the Subwatershed Exhibit, but are described in Section 1.2.2.3.

1.2.2.2 Description

Since this subwatershed does not have problem areas identified, the only stormwater system enhancements proposed are the general improvements described in Section 1.2.2.3.

1.2.2.3 Engineer's Estimate of Probable Cost for General Improvements

The Village of Downers Grove requested adequate stormwater systems through improved infrastructure; therefore, a general improvement cost for the upgrade of streets and additional storm sewer was estimated. This general improvement cost estimate included 12-inch storm sewer access within 200 feet of any property for purposes of future resident connection, reconstruction of rural streets and streets where storm sewer was added, and driveway culvert replacement. Additional items such as BMPs, design and construction engineering, and a general contingency were based on percentages of the subtotal construction cost established by the Project Team.

Table A1.2: Engineer's Estimate of Probable Cost for General Improvements
Subwatershed SJN-A

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	4800	\$432,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	16	\$45,600
Pavement Patching	SY	\$45	1800	\$81,000
Roadway Resurfacing	LF	\$220	2700	\$594,000
Driveway Culvert Replacement	EA	\$2,000	33	\$66,000
Roadway Reconstruction with Ditches	LF	\$500	2100	\$1,050,000
SUBTOTAL CONSTRUCTION COST				\$2,268,600
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$453,720
Contingency (water quality requirements) (10%)				\$226,860
Design and Construction Engineering (15%)				\$340,290
TOTAL ESTIMATED COST				\$3,289,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for General Improvements are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.3 Subwatershed SJN-B

This subwatershed is located north of St. Joseph Creek approximately west of Lee Avenue, south of Warrenville Road, and east of Belmont Road. The terrain is sloping north to south rather steeply in the northern portion of the subwatershed at a slope of approximately 6%. Throughout the rest of the subwatershed the terrain is gently sloping north to south toward St. Joseph Creek at a slope of approximately 1.5%. The BNSF Railroad is perpendicular the flow of water toward St. Joseph Creek with flow passing through culverts under the BNSF Railroad at Pershing Avenue and Warren Avenue. The landuse is mostly residential, with commercial areas located north of Ogden Avenue and west of Belmont Road.

There are three park district properties located within this subwatershed, along with nine depressional areas. Yard and road flooding is present along Pershing Avenue between Ogden Avenue and Grant Avenue. There is also road flooding along Curtiss Street between Glenview Avenue and Cornell Avenue associated with the St. Joseph Creek floodplain which is discussed in Section 1.12.2 of this Appendix.

1.3.1 Problem Area Description

1.3.1.1 SJN26

Problem area SJN26 is located in the northwest corner of Subwatershed SJN-B along Pershing Road between Ogden Avenue and Grant Avenue and has been classified as moderate priority. It has been determined that flooding in this area is due to a restrictive 36-inch/42-inch diameter storm sewer trunk line running north-south along Pershing Avenue. Residents have notified the Village of Downers Grove of basement, yard, and street flooding. The XP-SWMM hydraulic model noted yard and street flooding during the 100-year storm event under existing conditions at this location.

1.3.1.2 SJN501

Problem area SJN501 is located along Wilson Avenue immediately north of Chicago Avenue and has been classified as low priority. Flooding problems in this area have been determined to be caused by flow that is conveyed overland from the northeast to the southwest toward depressional area SJN29. The overland flow does not have a designated flow route and Wilson Avenue does not have storm sewers. Residents have

notified the Village of Downers Grove of basement, yard, and street flooding in this area.

1.3.1.3 SJN502

Problem area SJN502 is located immediately west of Woodward Avenue between Warren Avenue and Prairie Avenue and has been classified as moderate priority. Flooding in this area has been determined to be caused by an overland flow route which conveys flow from south of Prairie Avenue between Pershing and Woodward Avenues to the south and east towards Woodward Avenue. There is no dedicated overland flow route down the center of the block or storm sewer to capture the runoff that is flowing towards rear yards and homes. Residents have notified the Village of Downers Grove of house, basement, garage, and yard flooding.

1.3.1.4 SJN503

Problem area SJN503 is located along Hitchcock Avenue between Belmont Road and Cornell Avenue and has been classified as moderate priority. Flooding in this area has been determined to be caused by overland flow from the north and east and a lack of storm sewer infrastructure along Hitchcock Avenue to convey stormwater runoff. Residents have notified the Village of Downers Grove of basement, garage, yard, and street flooding.

1.3.2 Proposed Stormwater Projects

1.3.2.1 SJN-B Subwatershed Exhibit

An exhibit showing existing storm sewer and proposed stormwater projects is included at the conclusion of Section 1.3. The general infrastructure improvements are not shown on the Subwatershed Exhibit, but are described in Section 1.3.2.8.

1.3.2.2 Description

Proposed stormwater projects consist of increasing the size of the trunk line running north to south along Pershing Road and Woodward Avenue by replacing the existing 48-inch with a 54-inch diameter pipe. Loy Park at the northwest corner of Warren Avenue and Pershing Road is proposed to be regraded to gain stormwater storage volume. Also, depressional area SJN27 will

have an outlet added and will be regraded to provide additional stormwater storage volume.

1.3.2.3 Deviations from Typical Modeling Methods

There were no deviations from typical modeling methods for Subwatershed SJN-B.

1.3.2.4 Potential Challenges

The biggest challenge when evaluating potential improvements for this subwatershed is the lack of open space to dedicate to stormwater storage. Stormwater storage volume is critical to compensate for increasing flowrates at the downstream end of the stormwater system. Subwatershed SJN-B is tributary to an existing 48-inch culvert under the railroad tracks just west of Pershing. The 100-year peak flowrate will be increased approximately 70 cfs with the proposed stormwater projects in place; however, stormwater projects in Subwatershed SJN-C will decrease flowrates for a no net increase in flowrates between the two subwatersheds.

1.3.2.5 Wetland Potential

Based on the information provided in Appendix C of the October 2006 Village Stormwater Master Plan Update, wetlands were identified at SJN26. Field verification was not completed; however, field verification by a wetland specialist is strongly encouraged for any stormwater project that could impact or is adjacent to a depressional area. A wetland delineation and associated planning and permitting should be completed by a wetland specialist.

1.3.2.6 Required Permits

Approval to construct the proposed stormwater projects would need to be obtained from:

- The Village of Downers Grove;
- U.S. Army Corps of Engineers (if wetlands are determined to be jurisdictional or impacted, and based on proposed construction activities)

1.3.2.7 Engineer's Estimate of Probable Cost for Stormwater Projects

An engineer's estimate of probable cost was prepared for each subwatershed for the proposed stormwater projects and for general improvements. The estimate of probable cost for stormwater projects was comprised of roadway reconstruction and replacement, storm sewer replacement or addition, regrading, detention storage basins, outlet pipes and control structures, voluntary buy-out program, and the associated Best Management Practices (BMPs), design and construction engineering, and a 20 percent contingency.

Table A1.3: Engineer's Estimate of Probable Cost for Stormwater Projects
Subwatershed SJN-B

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	896	\$80,640
48-inch Storm Sewer, 6-10 ft deep	LF	\$190	1400	\$266,000
54-inch Storm Sewer, 6-10 ft deep	LF	\$200	5425	\$1,085,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	2	\$5,700
Precast Manhole, 6-ft diameter, 10-14 ft deep	EA	\$4,950	59	\$291,638
Pavement Patching	SY	\$45	20	\$900
Roadway Resurfacing	LF	\$220	30	\$6,600
Roadway Reconstruction with Ditches	LF	\$500	5425	\$2,712,500
Seeding and Surface Restoration	AC	\$3,000	1.1	\$3,428
Wetland Mitigation	AC	\$175,000	1.2	\$210,000
SUBTOTAL CONSTRUCTION COST				\$4,662,405
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$932,481
Contingency (water quality requirements) (10%)				\$466,241
Design and Construction Engineering (15%)				\$699,361
TOTAL ESTIMATED COST				\$6,760,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for Stormwater Projects are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.3.2.8 Engineer's Estimate of Probable Cost for General Improvements

The Village of Downers Grove requested adequate stormwater systems through improved infrastructure; therefore, a general improvement cost for the upgrade of streets and additional storm sewer was estimated. This estimated general improvement cost included storm sewer access within 200 feet of any property for purposes of future connection, reconstruction of rural streets and streets where storm sewer was added, and driveway culvert replacement, and the associated BMPs, design and construction engineering, and a 20 percent contingency.

Table A1.3.1: Engineer's Estimate of Probable Cost for General Improvements
Subwatershed SJN-B

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	10500	\$945,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	35	\$99,750
Driveway Culvert Replacement	EA	\$2,000	280	\$560,000
Roadway Reconstruction with Ditches	LF	\$500	10500	\$5,250,000
SUBTOTAL CONSTRUCTION COST				\$6,854,750
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,370,950
Contingency (water quality requirements) (10%)				\$685,475
Design and Construction Engineering (15%)				\$1,028,213
TOTAL ESTIMATED COST				\$9,939,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for General Improvements are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.3.2.9 Construction Timeline and Phasing for Stormwater Projects

The phasing for the stormwater projects in Subwatershed SJN-B should consist of providing stormwater storage volume at Loy Park and regrading of depressional area SJN-27 during Phase I. The storm sewer and associated roadway improvements can occur subsequent to Phase I work. The timeline including design, permitting, and construction, in accordance with the Project Team project schedule (provided in Tab 2 of Appendix B), would be approximately 24 months.

1.4 Subwatershed SJN-C

Located in the northern portion of the North St. Joseph Creek Watershed is subwatershed SJN-C generally west of Middaugh Avenue, south of Grant Street, east of Cornell Avenue and north of St. Joseph Creek. The terrain is gently sloping north to south toward St. Joseph Creek at a slope of approximately 2%. The BNSF Railroad is perpendicular to the flow of water toward St. Joseph Creek with flow passing through culverts under the BNSF Railroad at Northcott Avenue and Wallbank Avenue. The landuse is mostly residential, with commercial and industrial areas between the BNSF Railroad tracks and Warren Avenue. Gilbert Park is located just north of St. Joseph Creek and west of Jacqueline Drive. Eighteen depressional areas are located within this subwatershed. Roadway, house, and yard flooding are associated with two depressional areas along Warren Avenue between Cornell Avenue and Seeley Avenue. There is also flooding along Gilbert Avenue associated with the St. Joseph Creek floodplain.

1.4.1 Problem Area Description

1.4.1.1 SJN35

Problem area SJN35 is located in the southwest corner of Subwatershed SJN-C along Warren Avenue and has been classified as high priority. It has been determined that problems in this area are due to a restrictive 12" storm sewer to the 36" culvert under the BNSF Railroad and a lack of adequate stormwater storage volume. Residents have notified the Village of Downers Grove of house, basement, garage, yard, and street flooding.

1.4.1.2 SJN39

Problem area SJN39 is located at the southeast corner of Chicago Avenue and Northcott Avenue and has been classified as moderate priority. It has been determined that problems in this area are due to a restrictive 12" storm sewer along Northcott Avenue and a lack of adequate stormwater storage volume. A FEMA repetitive loss property is located in the area; however, few other resident complaints of flooding in this area have been received by the Village of Downers Grove for this area.

1.4.1.3 SJN40

Problem area SJN40 is located just east of SJN35 along Warren Avenue and has been classified as high priority. It has been

determined that problems in this area are due to restrictive 18” storm sewer outlets connecting to the 72” culvert under the BNSF Railroad and a lack of adequate stormwater storage volume. Residents have notified the Village of Downers Grove of house, basement, yard, and street flooding.

1.4.1.4 SJN41/45

Problem area SJN41/45 is located in the northern portion of Subwatershed SJN-C along Seeley Avenue and has been classified as low priority. It has been determined that problems in this area are due to a restrictive 12” storm sewer along Seeley Avenue. Residents have notified the Village of Downers Grove of basement, yard, and street flooding.

1.4.1.5 SJN53/54

Problem area SJN53/54 is located in the northeast corner of Subwatershed SJN-C and has been classified as moderate priority. It has been determined that problems in this area are due to the lack of a storm sewer outlet to provide proper drainage. Residents have notified the Village of Downers Grove of yard flooding.

1.4.1.6 SJN508

Problem area SJN508 is located in the southeast corner of Subwatershed SJN-C and has been classified as moderate priority. It has been determined that problems in this area are due to insufficient storm sewer inlets to provide proper drainage and the resulting overland flow. Residents have notified the Village of Downers Grove of house, basement, garage, yard, and street flooding.

1.4.2 Proposed Stormwater Projects

1.4.2.1 SJN-C Subwatershed Exhibit

An exhibit showing existing storm sewer and proposed stormwater projects is included at the conclusion of Section 1.4. The general infrastructure improvements are not shown on the Subwatershed Exhibit, but are described in Section 1.4.2.8.

1.4.2.2 Description

The proposed stormwater projects to Subwatershed SJN-C consist of a combination of replacing existing storm sewers with larger pipes, constructing additional storm sewer lines, and regrading areas to gain stormwater storage. Specifically, storm sewer lines at problem areas SJN35, SJN39, SJN40, SJN41/45, and SJN53/54 are proposed to be increased in size and storm sewer outlets are proposed to be added at problem area SJN53/54 and depression SJ42. Depressional areas SJ41, SJ46, SJ48, and SJ50 are proposed to be regraded to gain stormwater storage volume. Additionally, a stormwater storage basin is proposed just west of Cornell Avenue and north of St. Joseph Creek. A voluntary buy-out program for one structure is also recommended.

1.4.2.3 Deviations from Typical Modeling Methods

There were no deviations from typical modeling methods for Subwatershed SJN-C.

1.4.2.4 Potential Challenges

The biggest challenge when evaluating potential improvements for this subwatershed is the lack of open space to dedicate to stormwater storage. Stormwater storage volume is critical to compensate for increasing flowrates at the downstream end of the stormwater system. This subwatershed is tributary to a 36" culvert under the existing railroad tracks just west of Northcott Avenue and a 72" culvert just east of Wallbank Avenue. The 100-year peak flowrate will decrease approximately 82 cfs at the 36" culvert and will increase approximately 13 cfs at the 72" culvert with the proposed stormwater projects in place.

1.4.2.5 Wetland Potential

Based on the information provided in Appendix C of the October 2006 Village Stormwater Master Plan Update, no wetlands were identified. Field verification was not completed; however, field verification by a wetland specialist is strongly encouraged for any stormwater project that could impact or is adjacent to a depressional area. A wetland delineation and associated planning and permitting should be completed by a wetland specialist.

1.4.2.6 Required Permits

Approval to construct the proposed stormwater projects would need to be obtained from:

- The Village of Downers Grove;
- U.S. Army Corps of Engineers (if wetlands are located and are determined to be jurisdictional or impacted, and based on proposed construction)

1.4.2.7 Engineer's Estimate of Probable Cost for Stormwater Projects

An engineer's estimate of probable cost was prepared for each subwatershed for the proposed stormwater projects and for general improvements. The estimate of probable cost for stormwater projects was comprised of roadway reconstruction and replacement, storm sewer replacement or addition, regarding, detention storage basins, outlet pipes and control structures, voluntary buy-out program, and the associated Best Management Practices (BMPs), design and construction engineering, and a 20 percent contingency.

Table A1.4: Engineer's Estimate of Probable Cost for Stormwater Projects
Subwatershed SJN-C

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	1490	\$134,100
18-inch Storm Sewer	LF	\$110	950	\$104,500
36-inch Storm Sewer, 6-10 ft deep	LF	\$140	4770	\$667,800
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	24	\$68,400
Precast Manhole, 6-ft diameter, 4-10 ft deep	EA	\$4,000	48	\$192,000
Pavement Patching	SY	\$45	5400	\$243,000
Roadway Resurfacing	LF	\$220	6510	\$1,432,200
Seeding and Surface Restoration	AC	\$3,000	0.3	\$1,012
Above Ground Stormwater Storage Facility or Regrading	AC-FT	\$200,000	17.9	\$3,580,000
Tideflex Check Valve	EA	\$10,000	1	\$10,000
Voluntary Buyout Program	occurrence	\$500,000	1	\$500,000
SUBTOTAL CONSTRUCTION COST				\$6,933,012
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,386,602
Contingency (water quality requirements) (10%)				\$693,301
Design and Construction Engineering (15%)				\$1,039,952
TOTAL ESTIMATED COST				\$10,053,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for Stormwater Projects are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.4.2.8 Engineer's Estimate of Probable Cost for General Improvements

The Village of Downers Grove requested adequate stormwater systems through improved infrastructure; therefore, a general improvement cost for the upgrade of streets and additional storm sewer was estimated. This estimated general improvement cost included storm sewer access within 200 feet of any property for purposes of future connection, reconstruction of rural streets and streets where storm sewer was added, and driveway culvert replacement, and the associated BMPs, design and construction engineering, and a 20 percent contingency.

Table A1.4.1: Engineer's Estimate of Probable Cost for General Improvements
Subwatershed SJN-C

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	6500	\$585,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	22	\$61,750
Pavement Patching	SY	\$45	3700	\$166,500
Roadway Resurfacing	LF	\$220	5550	\$1,221,000
Driveway Culvert Replacement	EA	\$2,000	12	\$24,000
Roadway Reconstruction with Ditches	LF	\$500	950	\$475,000
SUBTOTAL CONSTRUCTION COST				\$2,533,250
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$506,650
Contingency (water quality requirements) (10%)				\$253,325
Design and Construction Engineering (15%)				\$379,988
TOTAL ESTIMATED COST				\$3,673,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for General Improvements are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.4.2.9 Construction Timeline and Phasing for Stormwater Projects

The phasing for the stormwater projects in Subwatershed SJN-C should consist of providing stormwater storage volume west of Cornell Avenue, north of St. Joseph Creek, and regrading of depressional areas during Phase I. The storm sewer and associated roadway improvements can occur subsequent to Phase I work. The timeline including design, permitting, and construction, in accordance with the Project Team project schedule (provided in Tab 2 of Appendix B), would be approximately 20 months.

1.5 Subwatershed SJN-D

This subwatershed is located in the northern portion of the watershed, approximately west of Washington Street, south of 40th Street, east of Middaugh Avenue and north of the Creek. The terrain is fairly flat and is sloping north to south toward the Creek at slopes generally less than 1%. The BNSF Railroad is perpendicular the flow of water toward St. Joseph Creek with flow passing through culverts under the railroad tracks at Saratoga Avenue. The landuse is mostly residential, with commercial areas located along Ogden Avenue and in the southeast portion of the subwatershed. Subwatershed SJN-D contains twenty depressional areas.

1.5.1 Problem Area Description

1.5.1.1 SJN 67

Problem area SJN67 is located in the in the middle area of Subwatershed SJN-D along Saratoga Avenue and has been classified as a moderate priority. Drainage problems in this area are due to a depressional area that has an undersized outlet. Residents have notified the Village of Downers Grove of house, basement, and street flooding.

1.5.1.2 SJN 79

Problem area SJN79 is located in the in the middle area along the east boundary of Subwatershed SJN-D at the southeast corner of Main and Chicago and has been classified as a low priority. Drainage problems in this area are due to a depressional area that does not have an outlet. Residents have notified the Village of Downers Grove of house, basement, garage, and yard flooding.

1.5.1.3 SJN 86

Problem area SJN86 is located in the in the middle area along the east boundary of Subwatershed SJN-D at the northwest corner of Washington and Chicago and has been classified as a moderate priority. Drainage problems in this area are due to a depressional area that has an undersized outlet. Residents have notified the Village of Downers Grove of house, basement, garage, and yard flooding.

1.5.1.4 SJN 509

Problem area SJN509 is located along Linscott Avenue north of Franklin in Subwatershed SJN-D and has been classified as a low priority. Drainage problems in this area are due to an undersized storm sewer and downstream storm sewer capacity. Residents have notified the Village of Downers Grove of house, basement and yard flooding.

1.5.2 Proposed Stormwater Projects

1.5.2.1 SJN-D Subwatershed Exhibit

An exhibit showing existing storm sewer and proposed stormwater projects is included at the conclusion of Section 1.5. The general infrastructure improvements are not shown on the Subwatershed Exhibit, but are described in Section 1.5.2.8.

1.5.2.2 Description

The proposed stormwater projects to Subwatershed SJN-D consist of a combination of adding outlets to depressional areas. Specifically, outlets are proposed to be increased or added to depressional areas SJN67, SJN79, and SJN86. Additional storm sewer enlargement in the area of Linscott could be considered in the future if downstream flow increases were evaluated with respect to St. Joseph Creek and no downstream impacts were created.

1.5.2.3 Deviations from Typical Modeling Methods

There were no deviations from typical modeling methods for Subwatershed SJN-D.

1.5.2.4 Potential Challenges

A challenge when evaluating potential improvements for this subwatershed was the lack of open space for new stormwater storage toward the downstream end of the stormwater system. The subwatershed also drains to a culvert under the BNSF Railroad at a point where there is also floodplain of St. Joseph Creek between Saratoga and Main Street. Stormwater storage volume is critical to compensate for increasing flowrates at the downstream end of the stormwater system. Analysis of the

floodplain of St. Joseph Creek at this location and increasing downstream capacity at this location could lead to improvements benefiting Linscott Street at the floodplain area between Saratoga and Main.

1.5.2.5 Wetland Potential

Based on the information provided in Appendix C of the October 2006 Village Stormwater Master Plan Update, no wetlands were identified. Field verification was not completed; however, field verification by a wetland specialist is strongly encouraged for any stormwater project that could impact or is adjacent to a depressional area. A wetland delineation and associated planning and permitting should be completed by a wetland specialist.

1.5.2.6 Required Permits

Approval to construct the proposed stormwater projects would need to be obtained from:

- The Village of Downers Grove;
- U.S. Army Corps of Engineers (if wetlands are located and are determined to be jurisdictional or impacted, and based on proposed construction)

1.5.2.7 Engineer's Estimate of Probable Cost for Stormwater Projects

An engineer's estimate of probable cost was prepared for each subwatershed for the proposed stormwater projects and for general improvements. The estimate of probable cost for stormwater projects was comprised of roadway reconstruction and replacement, storm sewer replacement or addition, regarding, detention storage basins, outlet pipes and control structures, voluntary buy-out program, and the associated Best Management Practices (BMPs), design and construction engineering, and a 20 percent contingency.

Table A1.5: Engineer's Estimate of Probable Cost for Stormwater Projects
Subwatershed SJN-D

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	105	\$9,450
15-inch Storm Sewer	LF	\$100	750	\$75,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	9	\$25,650
Pavement Patching	SY	\$45	3188	\$143,438
Roadway Resurfacing	LF	\$220	750	\$165,000
SUBTOTAL CONSTRUCTION COST				\$418,538
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$83,708
Contingency (water quality requirements) (10%)				\$41,854
Design and Construction Engineering (15%)				\$62,781
TOTAL ESTIMATED COST				\$607,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for Stormwater Projects are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.5.2.8 Engineer's Estimate of Probable Cost for General Improvements

The Village of Downers Grove requested adequate stormwater systems through improved infrastructure; therefore, a general improvement cost for the upgrade of streets and additional storm sewer was estimated. This estimated general improvement cost included storm sewer access within 200 feet of any property for purposes of future connection, reconstruction of rural streets and streets where storm sewer was added, and driveway culvert replacement, and the associated BMPs, design and construction engineering, and a 20 percent contingency.

Table A1.5.1: Engineer's Estimate of Probable Cost for General Improvements
Subwatershed SJN-D

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	15887	\$1,429,800
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	101	\$286,900
Pavement Patching	SY	\$45	10591	\$476,600
Roadway Resurfacing	LF	\$220	15000	\$3,300,000
Driveway Culvert Replacement	EA	\$2,000	20	\$40,000
Roadway Reconstruction with Ditches	LF	\$500	970	\$485,000
SUBTOTAL CONSTRUCTION COST				\$6,018,300
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,203,660
Contingency (water quality requirements) (10%)				\$601,830
Design and Construction Engineering (15%)				\$902,745
TOTAL ESTIMATED COST				\$8,727,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for General Improvements are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.5.2.9 Construction Timeline and Phasing for Stormwater Projects

The phasing for the stormwater projects in Subwatershed SJN-D could occur during one phase. Additional evaluation of the interaction of St. Joseph Creek between Main and Saratoga may lead to additional projects that are not included in this timeline estimate. The timeline including design, permitting, and construction, in accordance with the Project Team project schedule (provided in Tab 2 of Appendix B), would be approximately 12 months.

1.6 Subwatershed SJN-E

Subwatershed SJN-E is located in the northern portion of the watershed, approximately west of Douglas Road, south of 41st Street, east of Washington and north of Curtiss Street. The terrain is fairly flat throughout most of the subwatershed with average slopes in the range of 1%. St. Joseph Creek is contained in a large culvert through Downers Grove Central Business District (CBD) located at the south end of this subwatershed. The landuse is mostly residential, with commercial areas along Ogden Avenue and areas south of BNSF Railroad. There are two park district properties located within this subwatershed, along with nineteen depressional areas.

1.6.1 Problem Area Description

1.6.1.1 SJN82/83/92/94

Located between Highland and Washington, north of Rogers in Subwatershed SJN-E is problem area SJN82/83/92/94 which has been classified as a high priority. Drainage problems in this area are due to the flat topography of the roads and yards in the area of the depression which does not have a dedicated storage location or outlet. Residents have notified the Village of Downers Grove of house, basement, garage, yard, and street flooding.

1.6.1.2 SJN99/103/105

Problem area SJN99/103/105 is located west of Stanley at Grant in Subwatershed SJN-E and has been classified as a moderate priority. Drainage problems in this area are due to depressional areas that do not have dedicated outlets. Depressional area SJN103 received flow from SJN100/108 and overflows onto Grant and the south to SJN99. Depressional area SJN99 fills and overflows to SJN 105 which does not have an outlet. Residents have notified the Village of Downers Grove of house, basement, yard, and street flooding.

1.6.1.3 SJN100/108

Problem area SJN100/108 is located northeast of Sherman and Prospect and is classified as a moderate priority within Subwatershed SJN-E. Drainage problems in this area are due to depressional areas that do not have dedicated outlets and inadequate storm sewer. Depressional area SJN103 received flow from SJN100/108 and overflows onto Grant and south to

SJN99. Depressional area SJN99 fills and overflows to SJN 105 which does not have an outlet. Residents have notified the Village of Downers Grove of house, basement, yard, garage, and street flooding.

1.6.1.4 SJN104

Southwest of Debolt and Chicago is problem area SJN104 which is classified as a moderate priority within Subwatershed SJN-E. Drainage problems in this area are due to the depressional area with an inadequate outlet and downstream storm sewer system. Residents have notified the Village of Downers Grove of basement, yard, and street flooding.

1.6.1.5 SJN110

Problem area SJN110 is located northeast of Stanley and Chicago and is classified as a low priority within Subwatershed SJN-E. This depressional area has a several inlets to a 24-inch storm sewer; however, additional stormwater storage volume in excess of what is proposed, or analysis of an increase of flow downstream with respect to St. Joseph Creek, would be need to be analyzed before proposing increased outflow from this depressional area. Residents have notified the Village of Downers Grove of basement, yard, and street flooding.

1.6.2 Proposed Stormwater Projects

1.6.2.1 SJN-E Subwatershed Exhibit

An exhibit showing existing storm sewer and proposed stormwater projects is included at the conclusion of Section 1.6. The general infrastructure improvements are not shown on the Subwatershed Exhibit, but are described in Section 1.6.2.8.

1.6.2.2 Description

Proposed stormwater projects within Subwatershed SJN-E consist of increasing the size of the trunk line storm sewer along Stanley from Prairie to Franklin and adding outlets to upstream depressional areas SJN97, SJN99, SJN105, SJN103, SJN104, and SJN100/108. A control structure will be added at Stanley to divert flow to a 60-inch storm sewer along Franklin which would outlet into a stormwater storage area located on the southeast parcel of Washington Park. Additionally, the northwest parcel of

Washington Park would be utilized for stormwater storage from upstream flow from an enlarged 21-inch storm sewer along Washington Street.

Additional release of flow to the creek could be evaluated with respect to unsteady hydraulic modeling of St. Joseph Creek which could result in additional benefits to upstream areas. This would only be an option if there is downstream capacity without creating new or exacerbating existing problems.

1.6.2.3 Deviations from Typical Modeling Methods

There were no deviations from typical modeling methods for Subwatershed SJN-E.

1.6.2.4 Potential Challenges

The main challenge encountered when evaluating stormwater projects in this older residentially developed subwatershed was the lack of open space to dedicate to stormwater storage; therefore, utilization of park space was proposed. Regrading depressional areas SJN99, SJN103, SJN105, and SJN100/108 for additional storage did not provide more than 0.5 feet of reduction in the BFE at depressional area SJN100/108 and provided negligible benefit at SJN82/83/92/94. This is due to the upstream location of the depressional areas within the subwatershed and existing topography that would not provide the necessary additional stormwater storage volume.

1.6.2.5 Wetland Potential

Based on the information provided in Appendix C of the October 2006 Village of Downers Grove Stormwater Master Plan Update prepared, wetlands were not identified at locations of proposed stormwater projects. Field verification was not completed; however, field verification by wetland specialist is strongly encouraged for any stormwater project that could impact or is adjacent to a depressional area. If wetlands would be identified associated with the proposed stormwater projects, a wetland delineation and associated planning and permitting should be completed by a wetland specialist.

1.6.2.6 Required Permits

Approval to construct the proposed stormwater projects would need to be obtained from:

- The Village of Downers Grove;
- U.S. Army Corps of Engineers (if wetlands are located and are determined to be jurisdictional or impacted, and based on proposed construction)

1.6.2.7 Engineer's Estimate of Probable Cost for Stormwater Projects

An engineer's estimate of probable cost was prepared for each subwatershed for the proposed stormwater projects and for general improvements. The estimate of probable cost for stormwater projects was comprised of roadway reconstruction and replacement, storm sewer replacement or addition, regarding, detention storage basins, outlet pipes and control structures, voluntary buy-out program, and the associated Best Management Practices (BMPs), design and construction engineering, and a 20 percent contingency.

Table A1.6: Engineer's Estimate of Probable Cost for Stormwater Projects
Subwatershed SJN-E

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	1950	\$175,500
15-inch Storm Sewer	LF	\$100	770	\$77,000
18-inch Storm Sewer	LF	\$110	570	\$62,700
21-inch Storm Sewer	LF	\$115	1100	\$126,500
24-inch Storm Sewer	LF	\$120	2540	\$304,800
54-inch Storm Sewer, 6-10 ft deep	LF	\$200	650	\$130,000
60-inch Storm Sewer, 6-10 ft deep	LF	\$200	800	\$160,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	69	\$197,505
Precast Manhole, 6-ft diameter, 10-14 ft deep	EA	\$4,950	19	\$91,575
Outfall Repair or Replace	EA	\$2,000	2	\$4,000
Pavement Patching	SY	\$45	5047	\$227,113
Roadway Resurfacing	LF	\$220	6930	\$1,524,600
Roadway Reconstruction with Curb and Gutter	LF	\$1,000	1450	\$1,450,000
Above Ground Stormwater Storage Facility	AC-FT	\$200,000	9.5	\$1,900,000
SUBTOTAL CONSTRUCTION COST				\$6,431,293
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,286,259
Contingency (water quality requirements) (10%)				\$643,129
Design and Construction Engineering (15%)				\$964,694
TOTAL ESTIMATED COST				\$9,325,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for Stormwater Projects are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.6.2.8 Engineer's Estimate of Probable Cost for General Improvements

The Village of Downers Grove requested adequate stormwater systems through improved infrastructure; therefore, a general improvement cost for the upgrade of streets and additional storm sewer was estimated. This estimated general improvement cost included storm sewer access within 200 feet of any property for purposes of future connection, reconstruction of rural streets and streets where storm sewer was added, and driveway culvert replacement, and the associated BMPs, design and construction engineering, and a 20 percent contingency.

Table A1.6.1: Engineer's Estimate of Probable Cost for General Improvements
Subwatershed SJN-E

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	19429	\$1,748,565
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	84	\$238,450
Pavement Patching	SY	\$45	12952	\$582,855
Roadway Resurfacing	LF	\$220	19400	\$4,268,000
SUBTOTAL CONSTRUCTION COST				\$6,837,870
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,367,574
Contingency (water quality requirements) (10%)				\$683,787
Design and Construction Engineering (15%)				\$1,025,681
TOTAL ESTIMATED COST				\$9,915,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for General Improvements are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.6.2.9 Construction Timeline and Phasing for Stormwater Projects

The phasing for the stormwater projects in Subwatershed SJN-E should consist of providing stormwater storage basin at the southeast and northwest parcels of Washington Park and during Phase I. The depressional area outlets, storm sewer replacements, and associated roadway improvements for areas tributary to each stormwater storage basin can occur subsequent to Phase I work. The timeline including design, permitting, and construction, in accordance with the Project Team project schedule (provided in Tab 2 of Appendix B), would be approximately 24 months.

1.7 Subwatershed SJN-F

This subwatershed is located in the northeast portion of the watershed, approximately west of Roslyn Road, south of 39th Street, east of Douglas Road and north of Maple Avenue. An area east of Cumnor Road is located within the Westmont Surface Water Protection District. The terrain is fairly flat throughout most of the subwatershed with average slopes in the range of 1%. The BNSF Railroad is perpendicular the flow of water toward St. Joseph Creek passing through culverts under the railroad at Fairview Avenue and between Blodgett and Grand. The landuse is mostly residential, with commercial area along Ogden Avenue. There are two park district properties located within this subwatershed and eight depressional areas. Roadway flooding along Fairview Avenue between Maple Avenue and Franklin Street is associated with the St. Joseph Creek floodplain.

1.7.1 Problem Area Description

1.7.1.1 SJN513

Between Douglas and Fairview along Davis and Sherman is designated problem area SJN513 which is classified as a low priority within Subwatershed SJN-F. Residents notified the Village of Downers Grove of basement, yard, and street flooding; however, the existing condition XP-SWMM analysis showed minimal flooding in this area during the 100-year and October 2006 storm events. These results indicate that the reported flooding was due to blocked and undersized inlets.

1.7.1.2 SJN514

Problem area SJN514 is located at Cumnor and Shady Lane within Subwatershed SJN-F. Residents have notified the Village of Downers Grove of house, basement, yard, and street flooding.

1.7.2 Proposed Stormwater Projects

1.7.2.1 SJN-F Subwatershed Exhibit

An exhibit showing existing storm sewer and proposed stormwater projects is included at the conclusion of Section 1.7. The general infrastructure improvements are not shown on the Subwatershed Exhibit, but are described in Section 1.7.2.8.

1.7.2.2 Description

Proposed stormwater projects within Subwatershed SJN-F consist of replacing storm sewer inlets along Davis and Fairview and providing regular maintenance of these inlets. Additional inlets should be added to Cumnor Road at Shady Lane. Additional projects could be recommended in the area of Shady Lane and north of 41st street if release of flow to St. Joseph Creek was evaluated and could be increased, which would result in additional benefits to upstream areas.

1.7.2.3 Deviations from Typical Modeling Methods

There were no deviations from typical modeling methods for Subwatershed SJN-F.

1.7.2.4 Potential Challenges

Potential challenges in this subwatershed included finding stormwater storage locations to compensate for increase in flow. Hummer Park could be utilized for additional storage; however, a significant portion of the park is located within the floodplain of St. Joseph Creek. Compensatory storage would be required for fill in the floodplain associated with a stormwater storage area.

1.7.2.5 Wetland Potential

Based on the information provided in Appendix C of the October 2006 Village Stormwater Master Plan Update, no wetlands were identified. Field verification was not completed; however, field verification by a wetland specialist is strongly encouraged for any stormwater project that could impact or is adjacent to a depressional area. A wetland delineation and associated planning and permitting should be completed by a wetland specialist.

1.7.2.6 Required Permits

Approval to construct the proposed stormwater projects would need to be obtained from:

- The Village of Downers Grove;
- U.S. Army Corps of Engineers (if wetlands are located and are determined to be jurisdictional or impacted, and based on proposed construction)

1.7.2.7 Engineer's Estimate of Probable Cost for Stormwater Projects

An engineer's estimate of probable cost was prepared for each subwatershed for the proposed stormwater projects and for general improvements. The estimate of probable cost for stormwater projects was comprised of roadway reconstruction and replacement, storm sewer replacement or addition, regarding, detention storage basins, outlet pipes and control structures, voluntary buy-out program, and the associated Best Management Practices (BMPs), design and construction engineering, and a 20 percent contingency.

Table A1.7: Engineer's Estimate of Probable Cost for Stormwater Projects
Subwatershed SJN-F

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	1300	\$117,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	4	\$12,350
Storm Sewer Inlet Repair or Replace	EA	\$2,000	6	\$12,000
Pavement Patching	SY	\$45	867	\$39,000
Roadway Resurfacing	LF	\$220	1300	\$286,000
SUBTOTAL CONSTRUCTION COST				\$466,350
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$93,270
Contingency (water quality requirements) (10%)				\$46,635
Design and Construction Engineering (15%)				\$69,953
TOTAL ESTIMATED COST				\$676,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for Stormwater Projects are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.7.2.8 Engineer's Estimate of Probable Cost for General Improvements

The Village of Downers Grove requested adequate stormwater systems through improved infrastructure; therefore, a general improvement cost for the upgrade of streets and additional storm sewer was estimated. This estimated general improvement cost included storm sewer access within 200 feet of any property for purposes of future connection, reconstruction of rural streets and streets where storm sewer was added, and driveway culvert replacement, and the associated BMPs, design and construction engineering, and a 20 percent contingency.

Table A1.7.1: Engineer’s Estimate of Probable Cost for General Improvements
Subwatershed SJN-F

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	21988	\$1,978,950
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	92	\$260,775
Pavement Patching	SY	\$45	8926	\$401,650
Roadway Resurfacing	LF	\$220	13050	\$2,871,000
Driveway Culvert Replacement	EA	\$2,000	86	\$172,000
Roadway Reconstruction with Ditches	LF	\$500	8600	\$4,300,000
SUBTOTAL CONSTRUCTION COST				\$9,984,375
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,996,875
Contingency (water quality requirements) (10%)				\$998,438
Design and Construction Engineering (15%)				\$1,497,656
TOTAL ESTIMATED COST				\$14,477,000

Note: The general notes associated with the Engineer’s Estimate of Probable Cost for General Improvements are provided with the copies of the cost estimates in Tab 1 of Appendix B.

Table A6.1: Engineer’s Estimate of Probable Cost for Stormwater Projects

1.7.2.9 Construction Timeline and Phasing for Stormwater Projects

The stormwater projects in Subwatershed SJN-F currently proposed are small and could be constructed during one phase or as part of the Village of Downers Grove general roadway maintenance and inlet replacement plan. The timeline including design, permitting, and construction, in accordance with the Project Team project schedule (provided in Tab 2 of Appendix B), would be approximately 6 months.

1.8 Subwatershed SJN-G

Located in the southwestern portion of the watershed, approximately west of Belmont Road, north of Maple Avenue, east of I-355 and south of St. Joseph Creek is Subwatershed SJN-G. The terrain is sloping south to north moderately at a slope of approximately 2%. The landuse is mostly industrial, with residential area south of Inverness Avenue. There are no depressional areas located within this subwatershed; however, reports of roadway flooding at the intersection of Walnut Avenue and Wisconsin Street were received by the Village of Downers Grove. The floodplain of St. Joseph Creek is discussed in Section 1.12.2 of this Appendix.

1.8.1 Problem Area Description

No problem areas were evaluated within Subwatershed SJN-G.

1.8.2 Proposed Stormwater Projects

No stormwater projects were proposed within Subwatershed SJN-G.

1.8.2.1 SJN-G Subwatershed Exhibit

An exhibit showing existing storm sewer and proposed stormwater projects is included at the conclusion of Section 1.8. The general infrastructure improvements are not shown on the Subwatershed Exhibit, but are described in Section 1.8.2.3.

1.8.2.2 Description

Since this subwatershed does not have problem areas identified, the only stormwater system enhancements proposed are the general improvements described in Section 1.8.2.3.

1.8.2.3 Engineer's Estimate of Probable Cost for General Improvements

The Village of Downers Grove requested adequate stormwater systems through improved infrastructure; therefore, a general improvement cost for the upgrade of streets and additional storm sewer was estimated. This general improvement cost included 12-inch storm sewer access within 200 feet of any property for purposes of future resident connection, reconstruction of rural streets and streets where storm sewer was added, and driveway culvert replacement. Additional items such as BMPs, design and construction engineering, and a

general contingency were based on percentages of the subtotal construction cost established by the Project Team.

Table A1.8: Engineer's Estimate of Probable Cost for General Improvements Subwatershed SJN-G

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	1450	\$130,500
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	5	\$13,775
Pavement Patching	SY	\$45	967	\$43,500
Roadway Resurfacing	LF	\$220	1450	\$319,000
SUBTOTAL CONSTRUCTION COST				\$506,775
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$101,355
Contingency (water quality requirements) (10%)				\$50,678
Design and Construction Engineering (15%)				\$76,016
TOTAL ESTIMATED COST				\$735,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for General Improvements are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.9 Subwatershed SJN-H

Subwatershed SJN-H is located in the southern portion of the watershed, approximately east of Belmont Road, north of Maple Avenue, west of the Maple Grove Forest Preserve and south of St. Joseph Creek. The terrain in the western portion is moderately sloping south to north with a slope of approximately 4%. The terrain gradually flattens to roughly 2% slopes toward the eastern portion of the subwatershed. The Maple Grove Forest Preserve is in the eastern portion of the subwatershed and residential area comprises the remainder of the subwatershed. There are also two park district properties, one located along the creek north of Bending Oaks Court and the other located in the southwest corner of the Maple Grove Forest Preserve. There are five depressional areas located within this subwatershed. Flooding associated with the St. Joseph Creek floodplain occurs on Lee Avenue just south of Gilbert Avenue which is discussed in Section 1.12.2 of this Appendix.

1.9.1 Problem Area Description

No problem areas were evaluated within Subwatershed SJN-H.

1.9.2 Proposed Stormwater Projects

No stormwater projects were evaluated within Subwatershed SJN-H.

1.9.2.1 SJN-H Subwatershed Exhibit

An exhibit showing existing storm sewer and proposed stormwater projects is included at the conclusion of Section 1.9. The general infrastructure improvements are not shown on the Subwatershed Exhibit, but are described in Section 1.9.2.3.

1.9.2.2 Description

Since this subwatershed does not have problem areas identified, the only stormwater system enhancements proposed are the general improvements described in Section 1.9.2.3.

1.9.2.3 Engineer's Estimate of Probable Cost for General Improvements

The Village of Downers Grove requested adequate stormwater systems through improved infrastructure; therefore, a general improvement cost for the upgrade of streets and additional storm sewer was estimated. This general improvement cost included 12-inch storm sewer access within 200 feet of any property for purposes of future resident connection,

reconstruction of rural streets and streets where storm sewer was added, and driveway culvert replacement. Additional items such as BMPs, design and construction engineering, and a general contingency were based on percentages of the subtotal construction cost established by the Project Team.

Table A1.9: Engineer’s Estimate of Probable Cost for General Improvements
Subwatershed SJN-H

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	3850	\$346,500
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	13	\$36,575
Pavement Patching	SY	\$45	400	\$18,000
Roadway Resurfacing	LF	\$220	400	\$88,000
Driveway Culvert Replacement	EA	\$2,000	48	\$96,000
Roadway Reconstruction with Ditches	LF	\$500	3450	\$1,725,000
SUBTOTAL CONSTRUCTION COST				\$2,310,075
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$462,015
Contingency (water quality requirements) (10%)				\$231,008
Design and Construction Engineering (15%)				\$346,511
TOTAL ESTIMATED COST				\$3,350,000

Note: The general notes associated with the Engineer’s Estimate of Probable Cost for General Improvements are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.10 Subwatershed SJN-I

This subwatershed is located in the southern portion of the watershed, generally east of the Maple Grove Forest Preserve, north of Blanchard Street, west of Carpenter Street and south of St. Joseph Creek. The terrain is fairly flat and slopes south to north at a slope of approximately 1%. The majority of landuse is residential, with a small area of the Maple Grove Forest Preserve located at the northwest corner. There are twelve depressional areas located within this subwatershed. There is residential flooding near two depressions; one located southeast of the intersection of 55th Street and Dunham Road, and the other located west of the intersection of Carpenter Road and Maple Avenue. Roadway flooding occurs on Hillcrest Road and Thornwood Drive between George Street and Dunham Road.

1.10.1 Problem Area Description

1.10.1.2 SJN73

Problem area SJN73 is located north of Blanchard between Dunham and Middaugh and has been classified as low priority. Drainage problems in this area are due to a depressional area that does not have an outlet. Water ponds in rear yards since water only drains through infiltration. Residents have notified the Village of Downers Grove of basement and yard flooding.

1.10.2 Proposed Stormwater Projects

1.10.2.1 SJN-I Subwatershed Exhibit

An exhibit showing existing storm sewer and proposed stormwater projects is included at the conclusion of Section 1.10. The general infrastructure improvements are not shown on the Subwatershed Exhibit, but are described in Section 1.10.2.8.

1.10.2.2 Description

The proposed stormwater projects to Subwatershed SJN-I consist of a combination of adding outlets to depressional areas and regrading a depressional area to gain stormwater storage. Specifically, outlets are proposed to be added to depressional areas SJN55 and SJN73. Depressional area SJN73 is proposed to be regraded to gain stormwater storage volume.

1.10.2.3 Deviations from Typical Modeling Methods

There were no deviations from typical modeling methods for Subwatershed SJN-I.

1.10.2.4 Potential Challenges

The biggest challenge when evaluating potential improvements for this subwatershed is the lack of open space to dedicate to stormwater storage. Stormwater storage volume is critical to compensate for increasing flowrates at the downstream end of the stormwater system.

1.10.2.5 Wetland Potential

Based on the information provided in Appendix C of the October 2006 Village Stormwater Master Plan Update, no wetlands were identified. Field verification was not completed; however, field verification by a wetland specialist is strongly encouraged for any stormwater project that could impact or is adjacent to a depressional area. A wetland delineation and associated planning and permitting should be completed by a wetland specialist.

1.10.2.6 Required Permits

Approval to construct the proposed stormwater projects would need to be obtained from:

- The Village of Downers Grove;
- U.S. Army Corps of Engineers (if wetlands are located and are determined to be jurisdictional or impacted, and based on proposed construction)

1.10.2.7 Engineer's Estimate of Probable Cost

An engineer's estimate of probable cost was prepared for each subwatershed for the proposed stormwater projects and for general improvements. The estimate of probable cost for stormwater projects was comprised of roadway reconstruction and replacement, storm sewer replacement or addition, regarding, detention storage basins, outlet pipes and control structures, voluntary buy-out program, and the associated Best Management Practices (BMPs), design and construction engineering, and a 20 percent contingency.

Table A1.10: Engineer's Estimate of Probable Cost for Stormwater Projects
Subwatershed SJN-I

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	135	\$12,150
48-inch Storm Sewer, 10-14 ft deep	LF	\$195	300	\$58,500
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	3	\$8,550
Precast Manhole, 6-ft diameter, 4-10 ft deep	EA	\$4,000	3	\$12,000
Seeding and Surface Restoration	AC	\$3,000	0.5	\$1,612
Above Ground Stormwater Storage Facility	AC-FT	\$200,000	3.5	\$700,000
SUBTOTAL CONSTRUCTION COST				\$792,812
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$158,562
Contingency (water quality requirements) (10%)				\$79,281
Design and Construction Engineering (15%)				\$118,922
TOTAL ESTIMATED COST				\$1,150,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for Stormwater Projects are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.10.2.8 Engineer's Estimate of Probable Cost for General Improvements

The Village of Downers Grove requested adequate stormwater systems through improved infrastructure; therefore, a general improvement cost for the upgrade of streets and additional storm sewer was estimated. This general improvement cost included storm sewer access within 200 feet of any property for purposes of future connection, reconstruction of rural streets and streets where storm sewer was added, and driveway culvert replacement, and the associated BMPs, design and construction engineering, and a 20 percent contingency.

Table A1.10.1: Engineer's Estimate of Probable Cost for Stormwater Projects
Subwatershed SJN-I

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	8150	\$733,500
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	27	\$77,425
Pavement Patching	SY	\$45	5433	\$244,500
Roadway Resurfacing	LF	\$220	8150	\$1,793,000
SUBTOTAL CONSTRUCTION COST				\$2,848,425
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$569,685
Contingency (water quality requirements) (10%)				\$284,843
Design and Construction Engineering (15%)				\$427,264
TOTAL ESTIMATED COST				\$4,130,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for General Improvements are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.10.2.9 Construction Timeline and Phasing for Stormwater Projects

The phasing for the stormwater projects in Subwatershed SJN-I should consist of regrading depressional area SJN73 for additional storage volume during Phase I. Adding outlets for depressional areas SJN55 and SJN73 can occur subsequent to Phase I work. The timeline including design, permitting, and construction, in accordance with the Project Team project schedule (provided in Tab 2 of Appendix B), would be approximately 16 months.

1.11 Subwatershed SJN-J

This subwatershed is located in the southeast portion of the watershed, approximately east of Carpenter Road, north of Summit Street, west of Blodgett Avenue and south of the Curtiss Street. The terrain is fairly flat in most areas; however, the southern portion of the subwatershed slopes south to north with a slope of approximately 3%. The landuse is a combination of residential and commercial, with the commercial area being located north of Maple Avenue and along Main Street. There are four park district properties and eight depressional areas located within this subwatershed. Flooding occurs repetitively along Benton Avenue between Randall Street and Summit Street and Randall Park is the site of a large depressional area.

1.11.1 Problem Area Descriptions

1.11.1.2 SJN 183/112

Problem area SJN 183/112 is located south of Randall between Blodgett and Fairmount and has been classified as high priority. Drainage problems in this area are due to a depressional area in the street that has an undersized outlet. The depressional area drains through 18-inch and 12-inch storm sewers in parallel. These storm sewer then connect to one 18-inch storm sewer which outlets into a 30-inch pipe into St. Joseph Creek. Residents have notified the Village of Downers Grove of house, yard, and street flooding.

1.11.2 Proposed Stormwater Projects

1.11.2.1 SJN-J Subwatershed Exhibit

An exhibit showing existing storm sewer and proposed stormwater projects is included at the conclusion of Section 1.11. The general infrastructure improvements are not shown on the Subwatershed Exhibit, but are described in Section 1.11.2.8.

1.11.2.2 Description

The proposed stormwater projects within Subwatershed SJN-J include creating a new stormwater storage basin on land designated for a voluntary buy-out program. Through utilizing land obtained through a voluntary buy-out program, the flooding problems can be significantly reduced at SJN183/112.

Other stormwater projects were explored, such as regrading and restricting the outlet of the depressional area within Randall Park (SJN93/96) to detain flow upstream of SJN183/112, did not reduce the flooding significantly.

1.11.2.3 Deviations from Typical Modeling Methods

There were no deviations from typical modeling methods for Subwatershed SJN-J.

1.11.2.4 Potential Challenges

The biggest challenge when evaluating potential improvements for this subwatershed is the lack of open space to dedicate to stormwater storage. A park at the southwest corner of Randall Road and Park Avenue was studied in order to assess suitability for increased storage. Due to its higher elevation within the Subwatershed, no additional area is able to be routed to this storage area. The only option available to reduce flooding related to SJN 183/112 was to create a stormwater storage basin through land obtained through a voluntary buy-out program.

1.11.2.5 Wetland Potential

Based on the information provided in Appendix C of the October 2006 Village Stormwater Master Plan Update, no wetlands were identified. Field verification was not completed; however, field verification by a wetland specialist is strongly encouraged for any stormwater project that could impact or is adjacent to a depressional area. A wetland delineation and associated planning and permitting should be completed by a wetland specialist.

1.11.2.6 Required Permits

Approval to construct the proposed stormwater projects would need to be obtained from:

- The Village of Downers Grove;
- U.S. Army Corps of Engineers (if wetlands are located and are determined to be jurisdictional or impacted, and based on proposed construction)

1.11.2.7 Engineer's Estimate of Probable Cost for Stormwater Projects

An engineer's estimate of probable cost was prepared for each subwatershed for the proposed stormwater projects and for general improvements. The estimate of probable cost for stormwater projects was comprised of roadway reconstruction and replacement, storm sewer replacement or addition, regarding, detention storage basins, outlet pipes and control structures, voluntary buy-out program, and the associated Best Management Practices (BMPs), design and construction engineering, and a 20 percent contingency.

Table A1.11: Engineer's Estimate of Probable Cost for Stormwater Projects
Subwatershed SJN-J

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	50	\$4,500
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	4	\$11,400
Above Ground Stormwater Storage Facility	AC-FT	\$200,000	2.3	\$460,000
Voluntary Buyout Program	occurrence	\$500,000	6	\$3,000,000
SUBTOTAL CONSTRUCTION COST				\$3,475,900
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$695,180
Contingency (water quality requirements) (10%)				\$347,590
Design and Construction Engineering (15%)				\$521,385
TOTAL ESTIMATED COST				\$5,040,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for Stormwater Projects are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.11.2.8 Engineer's Estimate of Probable Cost for General Improvements

The Village of Downers Grove requested adequate stormwater systems through improved infrastructure; therefore, a general improvement cost for the upgrade of streets and additional storm sewer was estimated. This general improvement cost included storm sewer access within 200 feet of any property for purposes of future connection, reconstruction of rural streets and streets where storm sewer was added, and driveway culvert replacement, and the associated BMPs, design and construction engineering, and a 20 percent contingency.

Table A1.11.1: Engineer's Estimate of Probable Cost for General Improvements
Subwatershed SJN-J

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	5500	\$495,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	18	\$52,250
Pavement Patching	SY	\$45	3667	\$165,000
Roadway Resurfacing	LF	\$220	5500	\$1,210,000
SUBTOTAL CONSTRUCTION COST				\$1,922,250
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$384,450
Contingency (water quality requirements) (10%)				\$192,225
Design and Construction Engineering (15%)				\$288,338
TOTAL ESTIMATED COST				\$2,787,000

Note: The general notes associated with the Engineer's Estimate of Probable Cost for General Improvements are provided with the copies of the cost estimates in Tab 1 of Appendix B.

1.11.2.9 Construction Timeline and Phasing for Stormwater Projects

The phasing for the stormwater projects in Subwatershed SJN-J should consist of obtaining land through a voluntary buy-out program so that a stormwater storage basin could be constructed during Phase I. Subsequent work could be completed after Phase I work. The timeline including design, permitting, and construction, in accordance with the Project Team project schedule (provided in Tab 2 of Appendix B), would be approximately 20 months.

1.12 St. Joseph Creek Mainstem and North Branch

The Mainstem and North Branch of St. Joseph Creek are located within the North St. Joseph Creek Watershed. Although detailed analysis and field visits were not included in the scope of this study, problem areas have been identified and proposed improvements have been summarized.

1.12.1 Problem Area Descriptions

1.12.1.2 SJN175

Problem area SJN175 is located mainly north of Burlington Avenue between Saratoga Avenue and Forest Avenue. This area is located within the 100-year floodplain boundary of St. Joseph Creek. Residents have notified the Village of Downers Grove of roadway flooding.

1.2.2.4 SJN504

Problem area SJN504 is located on Curtis Street, east and west of Chase Avenue. This area is located within the 100-year floodplain boundary of St. Joseph Creek. Street closures have occurred due to the 100-year floodplain of the Creek.

1.2.2.5 SJN505

Problem area SJN505 is located along Curtiss Street between Glenview Avenue and Cornell Avenue. This area is located within the 100-year floodplain boundary of St. Joseph Creek. Street closures have occurred along Curtiss Street due to the 100-year floodplain of the creek.

1.2.2.6 SJN506

Problem area SJN506 is located on Lee Avenue approximately 500 feet north of Elmore Avenue. This area is located within the 100-year floodplain boundary of St. Joseph Creek. Residents have notified the Village of Downers Grove of roadway and yard flooding.

1.2.2.7 SJN507

Problem area SJN507 is located on Jacqueline Drive at St. Joseph Creek. This area is located within the 100-year floodplain boundary of St. Joseph Creek. Residents have

notified the Village of Downers Grove of basement and yard flooding.

1.2.2.8SJN510

Problem area SJN510 is located on Gilbert Avenue just west of Carpenter Avenue. This area is located within the 100-year floodplain boundary of St. Joseph Creek. Residents have notified the Village of Downers Grove of basement and house flooding.

1.2.2.9SJN515

Problem area SJN515 is located along the North Branch of St. Joseph Creek between Florence Avenue and Cumnor Road. This area is located within the 100-year floodplain boundary of St. Joseph Creek. Residents have notified the Village of Downers Grove of roadway flooding.

1.2.2.10 SJN516

Problem area SJN516 is located at the intersection of Sheldon Avenue and Fairfield Avenue. This area is located within the 100-year floodplain boundary of St. Joseph Creek. Residents have notified the Village of Downers Grove of roadway and house flooding.

1.2.2.11 SJN517

Problem area SJN517 is located at Blodgett Ave and Randall Street adjacent to St. Joseph Creek. This area is located within the 100-year floodplain boundary of St. Joseph Creek. Residents have notified the Village of Downers Grove of roadway flooding.

1.12.2 Problem Area Discussion

1.12.2.1 Description

The proposed improvements to the Mainstem and North Branch of St. Joseph Creek include streambank maintenance and stabilization for the entire length of the creek. In addition to these improvements, there are areas which may be excavated along the Creek to provide additional storage, specifically along the southern edge of the Creek near

problem area SJN504 and northwest of the intersection of Austin Avenue and Fairview Avenue near problem area SJN516. Near problem area SJN517 there is a vacant parcel that is within the 100-year floodplain which may be excavated to reduce some of the flooding along Elmwood Avenue. These project ideas would likely require hydraulic modeling analysis as described in Section 1.12.2.2, which was not covered under the scope of this study.

1.12.2.2 Discussion of Modeling Required

The Mainstem and North Branch of St. Joseph Creek are Zone AE floodplain and floodway according to the Federal Emergency Management Agency Flood Insurance Study and the DuPage County Regional Flood Maps. Review of the HEC-2 hydraulic modeling and unsteady FEQ analysis for St. Joseph Creek were not included in the scope of this project; however, could be required for maintenance and streambank stabilization projects. Modeling and permitting requirements should be discussed with DuPage County for Floodway Construction Permit guidance.

1.12.2.3 Potential Challenges

The biggest challenge when evaluating potential improvements for the Creek is the lack of open space to dedicate to stormwater storage. Stormwater storage volume is critical due to no allowable increase in downstream flowrates in accordance with the Village of Downers Grove Stormwater and Flood Ordinance.

1.12.2.4 Wetland Potential

Maintenance and streambank stabilization projects within St. Joseph Creek should be coordinated with the U.S. Army Corps of Engineers and DuPage County due to the high likelihood of wetlands and riparian environments being affected or adjacent to such projects.

1.12.2.5 Required Permits

Approval of DuPage County, the Village of Downers Grove, and the U.S. Army Corps of Engineers would likely be required for work within St. Joseph Creek floodplain. It is possible that future project scopes for the Mainstem and North Branch of St. Joseph Creek may require a Conditional Letter of Map Revision,

requiring concurrence from the Illinois Department of Natural Resources – Office of Water Resources (who delegates review authority to DuPage County) and approval from the Federal Emergency Management Agency, followed by a Letter of Map Revision with the same concurrence and approval once as-built plans are completed.

1.12.2.6 Engineer's Estimate of Probable Cost

An engineer's estimate of probable cost was prepared for each subwatershed for the proposed stormwater projects and for general improvements; however, the estimates did not include work associated with the floodplain of the Mainstem or North Branch of St. Joseph Creek. For estimation of St. Joseph Creek maintenance and stabilization projects, the following can be utilized:

- CBBEL 2005 Downtown Area Watershed Plan for St. Joseph Creek Improvements between Carpenter and Lee: \$954,000;
- Village of Downers Grove Capital Improvement Project, maintenance between Carpenter and Belmont: \$850,000;
- Village of Downers Grove Capital Improvement Project, maintenance of St. Joseph Creek culvert from Carpenter to Mackie: \$100,000.

1.12.2.7 Construction Timeline and Phasing for Stormwater Projects

The phasing for the stormwater projects associated with the floodplain of St. Joseph Creek should be addressed after further evaluation of the streambank needs of St. Joseph Creek and adjacent properties. The timeline including design, permitting, and construction, in accordance with the Project Team project schedule (provided in Tab 2 of Appendix B), is estimated to be over 24 months.

1.13 North St. Joseph Creek Watershed Problem Area Master List

A master list of reported problem areas in the North St. Joseph Creek Watershed, included as Table A.1, has been compiled from the following sources:

- Village of Dowers Grove drainage survey dated October 2005.
- Public meeting comment forms completed by residents in April 2007.
- Village of Downers Grove Drainage Problem Master List updated June 2007.
- October 2, 2006 storm comments and notes compiled by Village of Downers Grove.

Table A.1 follows.

Table A.1: Complete List of Reported Drainage Problems in North St. Joseph Creek Watershed

Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
	Village Records, 1996 Flood Records, 2006 Flood Records, 2006 Resident Questionnaire, Drainage Master List, Other							Critical, Chronic or Nuisance	
0 35TH ST	October 2, 2006 Storm Comments					x			
111 41ST ST	2006 Resident Questionnaire					x			3-12" at corner of 41st and West End Rd
120 41ST ST	2006 Resident Questionnaire		x					Nuisance	
135 41ST ST	2006 Resident Questionnaire					x		Chronic	
208 41ST ST	2006 Resident Questionnaire		x					Nuisance	
232 41ST ST	2006 Resident Questionnaire		x					Nuisance	
233 41ST ST	2006 Resident Questionnaire		x					Nuisance	
0 4TH & CUMNOR	October 2, 2006 Storm Comments					x			
1031 55TH ST	2006 Resident Questionnaire		x					Nuisance	
1040 55TH ST	2006 Resident Questionnaire		x						
1115 55TH ST	Drainage Master List				x			Nuisance	
1209 55TH ST	2006 Resident Questionnaire		x	x	x			Nuisance	
1250 55TH ST	2006 Resident Questionnaire		x					Nuisance	
1325 55TH ST	2006 Resident Questionnaire				x			Nuisance	
1936 55TH PL	2006 Resident Questionnaire		x					Nuisance	
0 59th ST	October 2, 2006 Storm Comments					x			
2416 59TH ST	2006 Resident Questionnaire		x					Nuisance	
2504 59TH ST	2006 Resident Questionnaire		x					Nuisance	
400 67TH COURT	October 2, 2006 Storm Comments					x			
5532 AUBREY TER	2006 Resident Questionnaire		x					Nuisance	
405 AUSTIN ST	2006 Resident Questionnaire	x				x		Chronic, Critical	
407 AUSTIN ST	October 2, 2006 Storm Comments, Drainage Master List	x				x			
414 AUSTIN ST	October 2, 2006 Storm Comments, Drainage Master List	x			x				
417 AUSTIN ST	2006 Resident Questionnaire		x			x		Nuisance, Critical	
510 AUSTIN ST	2006 Resident Questionnaire		x					Nuisance	
511 AUSTIN ST	2006 Resident Questionnaire		x					Nuisance	from 510 Austin
516 AUSTIN ST	2006 Resident Questionnaire		x					Nuisance	
606 AUSTIN ST	2006 Resident Questionnaire		x					Nuisance	
4600 BELMONT RD	2006 Resident Questionnaire					x			notes ice on rd after rec center built
4724 BELMONT RD	2006 Resident Questionnaire				x			Nuisance	
4729 BELMONT RD	2006 Resident Questionnaire		x					Nuisance	
4740 BELMONT RD	2006 Resident Questionnaire		x		x			Nuisance	
4940 BELMONT RD	2006 Resident Questionnaire		x					Nuisance	
5002 BELMONT RD	October 2, 2006 Storm Comments, Drainage Master List					x			
5217 BELMONT RD	2006 Resident Questionnaire		x					Nuisance, Critical	
5655 BELMONT RD	2006 Resident Questionnaire		x					Nuisance	
1927 BENDING OAKS CT	2006 Resident Questionnaire		x					Nuisance	
5311 BENDING OAKS CT	2006 Resident Questionnaire		x					Nuisance	
5417 BENDING OAKS PL	2006 Resident Questionnaire		x					Nuisance	Due to power outage
5448 BENDING OAKS PL	2006 Resident Questionnaire				x			Nuisance	Due to power outage
5465 BENDING OAKS PL	October 2, 2006 Storm Comments								Due to power outage
5465 BENDING OAKS PL	2006 Resident Questionnaire				x			Chronic	Due to power outage
5472 BENDING OAKS PL	2006 Resident Questionnaire			x				Nuisance	Due to power outage
5128 BENTON AVE	2006 Resident Questionnaire		x					Nuisance	
5144 BENTON AVE	2006 Resident Questionnaire		x		x			Nuisance	
5152 BENTON AVE	2006 Resident Questionnaire		x					Nuisance	
5226 BENTON AVE	2006 Resident Questionnaire		x					Nuisance	
5236 BENTON AVE	2006 Resident Questionnaire		x					Nuisance	
5244 BENTON AVE	2006 Resident Questionnaire				x			Nuisance	
5245 BENTON AVE	October 2, 2006 Storm Comments	x							
5248 BENTON AVE	2006 Resident Questionnaire				x	x		Nuisance, Critical	
5252 BENTON AVE	2006 Resident Questionnaire					x		Critical	
5304 BENTON AVE	2006 Resident Questionnaire		x					Nuisance	
5320 BENTON AVE	2006 Resident Questionnaire		x					Nuisance	
5324 BENTON AVE	2006 Resident Questionnaire		x					Nuisance	
5333 BENTON AVE	October 2, 2006 Storm Comments, Drainage Master List	x							
5401 BENTON AVE	2006 Resident Questionnaire		x					Nuisance	
5404 BENTON AVE	2006 Resident Questionnaire		x					Nuisance	
5408 BENTON AVE	2006 Resident Questionnaire		x					Nuisance	
818 BIRCH AVE	2006 Resident Questionnaire		x					Nuisance	
839 BIRCH AVE	2006 Resident Questionnaire		x					Nuisance	
1120 BLANCHARD ST	2006 Resident Questionnaire		x					Nuisance	
1208 BLANCHARD ST	2006 Resident Questionnaire		x					Nuisance	
1221 BLANCHARD ST	2006 Resident Questionnaire		x		x			Nuisance	
1227 BLANCHARD ST	2006 Resident Questionnaire		x					Nuisance	
1236 BLANCHARD ST	2006 Resident Questionnaire		x		x	x		Nuisance	
1332 BLANCHARD ST	2006 Resident Questionnaire		x		x			Nuisance	standing water, lower culvert under Blanchard
1339 BLANCHARD ST	2006 Resident Questionnaire		x					Nuisance	
400 BLOCK SHERMAN	2006 Resident Questionnaire				x				
4500 BLOCK STANLEY	2006 Resident Questionnaire						x		berm needs culvert
5218 BLODGETT AVE	2006 Resident Questionnaire		x					Nuisance	
5312 BLODGETT AVE	2006 Resident Questionnaire		x					Nuisance	
5316 BLODGETT AVE	2006 Resident Questionnaire		x					Nuisance	
6138 BOUNDARY RD	2006 Resident Questionnaire		x					Chronic	
6138 BOUNDARY RD	2006 Resident Questionnaire		x					Nuisance	
0 BROOK DR	October 2, 2006 Storm Comments					x			
1224 BROOK LN	2006 Resident Questionnaire		x					Nuisance	
1230 BROOK LN	2006 Resident Questionnaire		x					Nuisance	
5231 BROOKBANK RD	2006 Resident Questionnaire				x			Nuisance	
5243 BROOKBANK RD	2006 Resident Questionnaire		x					Nuisance	
5417 BROOKBANK RD	2006 Resident Questionnaire		x					Nuisance	
5417 BROOKBANK RD	2006 Resident Questionnaire					x		Nuisance	
5420 BROOKBANK RD	2006 Resident Questionnaire		x					Nuisance	
5423 BROOKBANK RD	2006 Resident Questionnaire				x			Nuisance	
5443 BROOKBANK RD	2006 Resident Questionnaire		x		x			Nuisance	
5449 BROOKBANK RD	2006 Resident Questionnaire		x					Nuisance	
5532 BROOKBANK RD	2006 Resident Questionnaire		x					Nuisance	
5542 BROOKBANK RD	October 2, 2006 Storm Comments								

Table A.1: Complete List of Reported Drainage Problems in North St. Joseph Creek Watershed

Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
5605 BROOKBANK RD	October 2, 2006 Storm Comments, Drainage Master List				x				
5611 BROOKBANK RD	2006 Resident Questionnaire		x					Nuisance	
5615 BROOKBANK RD	2006 Resident Questionnaire		x					Nuisance	
5624 BROOKBANK RD	2006 Resident Questionnaire				x			Nuisance	
5624 BROOKBANK RD	October 2, 2006 Storm Comments, Drainage Master List				x				
5631 BROOKBANK RD	2006 Resident Questionnaire		x				x	Nuisance	Sewer backups 1-4"
0 BRYAN PL	October 2, 2006 Storm Comments, Drainage Master List					x			
4504 BRYAN PL	2006 Resident Questionnaire				x			Nuisance	
4812 BRYAN PL	2006 Resident Questionnaire		x					Nuisance	
4823 BRYAN PL	2006 Resident Questionnaire		x					Nuisance	
4839 BRYAN PL	2006 Resident Questionnaire		x					Nuisance	
4922 BRYAN PL	October 2, 2006 Storm Comments, Drainage Master List	x			x	x			interior house flooding
4925 BRYAN PL	2006 Resident Questionnaire			x				Chronic	
4925 BRYAN PL	2006 Resident Questionnaire				x			Nuisance	
4934 BRYAN PL	2006 Resident Questionnaire					x		Chronic	
0 BURLINGTON AVE	October 2, 2006 Storm Comments					x			
2604 BURLINGTON AVE	2006 Resident Questionnaire		x					Nuisance	
5201 CARPENTER ST	2006 Resident Questionnaire		x					Nuisance	
5232 CARPENTER ST	2006 Resident Questionnaire		x					Nuisance	
5255 CARPENTER ST	2006 Resident Questionnaire	x				x		Chronic	House flooding nuisance
5256 CARPENTER ST	October 2, 2006 Storm Comments								
5302 CARPENTER ST	October 2, 2006 Storm Comments, Drainage Master List	x				x			interior house flooding
5306 CARPENTER ST	2006 Resident Questionnaire					x		Critical	roadway overtopped
5344 CARPENTER ST	2006 Resident Questionnaire		x					Nuisance	
5402 CARPENTER ST	2006 Resident Questionnaire		x					Nuisance	
5405 CARPENTER ST	2006 Resident Questionnaire					x			driveway, street, sidewalk flooding 3-5"
5410 CARPENTER ST	2006 Resident Questionnaire		x					Nuisance	
5415 CARPENTER ST	2006 Resident Questionnaire		x					Nuisance	
5429 CARPENTER ST	2006 Resident Questionnaire		x					Nuisance	
5439 CARPENTER ST	2006 Resident Questionnaire		x					Nuisance	
5600 CARPENTER ST	October 2, 2006 Storm Comments, Drainage Master List					x			
5601 CARPENTER ST	2006 Resident Questionnaire		x					Nuisance	
5607 CARPENTER ST	2006 Resident Questionnaire			x	x			Nuisance	
5608 CARPENTER ST	Drainage Master List				x				long standing drainage complaint
5617 CARPENTER ST	2006 Resident Questionnaire		x					Nuisance	
4909 CHASE AVE	2006 Resident Questionnaire				x			Nuisance	
5805 CHASE AVE	2006 Resident Questionnaire				x			Nuisance	
313 CHICAGO AVE	Drainage Master List				x				ponding yard flooding
321 CHICAGO AVE	Drainage Master List				x				ponding yard flooding
327 CHICAGO AVE	Drainage Master List				x				ponding yard flooding
400 CHICAGO AVE	2006 Resident Questionnaire		x					Nuisance	
405 CHICAGO AVE	2006 Resident Questionnaire			x				Nuisance	
427 CHICAGO AVE	2006 Resident Questionnaire		x	x				Chronic	basement flooding nuisance
442 CHICAGO AVE	2006 Resident Questionnaire		x					Nuisance	
513 CHICAGO AVE	Drainage Master List				x				long standing drainage complaint
516 CHICAGO AVE	2006 Resident Questionnaire				x			Nuisance	
527 CHICAGO AVE	Drainage Master List				x				standing water, rear yard
545 CHICAGO AVE	2006 Resident Questionnaire		x					Critical	
601 CHICAGO AVE	Drainage Master List				x				standing water, rear yard
615 CHICAGO AVE	2006 Resident Questionnaire					x		Nuisance	
615 CHICAGO AVE	2006 Resident Questionnaire				x			Nuisance	
632 CHICAGO AVE	2006 Resident Questionnaire		x					Nuisance	
716 CHICAGO AVE	2006 Resident Questionnaire		x		x			Nuisance	
717 CHICAGO AVE	2006 Resident Questionnaire					x		Critical	
740 CHICAGO AVE	2006 Resident Questionnaire				x			Nuisance	
745 CHICAGO AVE	2006 Resident Questionnaire		x					Nuisance	
752 CHICAGO AVE	2006 Resident Questionnaire				x	x		Nuisance	
820 CHICAGO AVE	2006 Resident Questionnaire		x					Nuisance	
839 CHICAGO AVE	2006 Resident Questionnaire		x					Nuisance	
839 CHICAGO AVE	2006 Resident Questionnaire				x			Nuisance	
917 CHICAGO AVE	October 2, 2006 Storm Comments, Drainage Master List					x			
918 CHICAGO AVE	Drainage Master List					x			standing water at Washington
1520 CHICAGO AVE	October 2, 2006 Storm Comments, Drainage Master List				x				
1528 CHICAGO AVE	2006 Resident Questionnaire		x		x			Nuisance	
1801 CHICAGO AVE	2006 Resident Questionnaire		x					Nuisance	
1804 CHICAGO AVE	2006 Resident Questionnaire		x					Nuisance	
1825 CHICAGO AVE									Swale along western property line conveys runoff to an inlet at 4707 Stonewall Ave does not have positive drainage. Low spots exist within the swale that have standing water.
2015 CHICAGO AVE	2006 Resident Questionnaire		x					Nuisance	
2515 COLLEGE RD	2006 Resident Questionnaire		x					Nuisance	
2525 COLLEGE RD	2006 Resident Questionnaire		x					Nuisance	
0 CORNELL AVE	October 2, 2006 Storm Comments					x			
4709 CORNELL AVE	2006 Resident Questionnaire				x			Nuisance	
4722 CORNELL AVE	2006 Resident Questionnaire		x					Nuisance	
4728 CORNELL AVE	2006 Resident Questionnaire		x	x				Nuisance	
4819 CORNELL AVE	2006 Resident Questionnaire				x			Chronic	
4834 CORNELL AVE	2006 Resident Questionnaire				x				
4909 CORNELL AVE	2006 Resident Questionnaire		x					Chronic	basement, yard flooding nuisance
4916 CORNELL AVE	2006 Resident Questionnaire		x	x	x	x		Nuisance	
4920 CORNELL AVE	2006 Resident Questionnaire		x					Nuisance	yard flooding chronic, remaining nuisance

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Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
4922 CORNELL AVE	2006 Resident Questionnaire				x			Nuisance	
4944 CORNELL AVE	2006 Resident Questionnaire		x		x			Nuisance	
4507 CROSS ST	2006 Resident Questionnaire					x		Nuisance	
3943 CUMNOR RD	2006 Resident Questionnaire		x					Nuisance	
4043 CUMNOR RD	2006 Resident Questionnaire					x		Critical	
4053 CUMNOR RD	2006 Resident Questionnaire		x					Nuisance	
4400 CUMNOR RD	2006 Resident Questionnaire				x			Nuisance	
4410 CUMNOR RD	Drainage Master List				x		x	Nuisance	Residents at 4404, 4410, and 4418 Cumnor Rd have standing water in the parkway. Area reportedly not ditched and/or graded correctly and ices in the winter.
4418 CUMNOR RD	2006 Resident Questionnaire		x			x	x	Nuisance	
4426 CUMNOR RD	2006 Resident Questionnaire		x		x	x		Nuisance	
4504 CUMNOR RD	2006 Resident Questionnaire		x					Nuisance	
4539 CUMNOR RD	2006 Resident Questionnaire				x			Nuisance	
4709 CUMNOR RD	2006 Resident Questionnaire		x					Nuisance	
4813 CUMNOR RD	2006 Resident Questionnaire		x	x	x			Nuisance	
CUMNOR @ BRIDGE	October 2, 2006 Storm Comments					x			
0 CURTISS ST	October 2, 2006 Storm Comments					x			
1900 CURTISS ST	October 2, 2006 Storm Comments					x	x		floodplain of St. Joseph Creek
1902 CURTISS ST	October 2, 2006 Storm Comments, Drainage Master List					x	x		floodplain of St. Joseph Creek
1904 CURTISS ST	2006 Resident Questionnaire				x		x	Nuisance	floodplain of St. Joseph Creek
1911 CURTISS ST	2006 Resident Questionnaire		x				x	Nuisance	floodplain of St. Joseph Creek
1913 CURTISS ST	2006 Resident Questionnaire		x				x	Nuisance	floodplain of St. Joseph Creek
1916 CURTISS ST	2006 Resident Questionnaire		x				x	Nuisance	floodplain of St. Joseph Creek
1926 CURTISS ST	Drainage Master List					x	x	Nuisance	sidewalk and street flooding reported, floodplain of St. Joseph Creek
1933 CURTISS ST	October 2, 2006 Storm Comments					x	x		floodplain of St. Joseph Creek
1947 CURTISS ST	2006 Resident Questionnaire		x		x		x	Nuisance	basement flooding nuisance, floodplain of St. Joseph Creek
1952 CURTISS ST	2006 Resident Questionnaire		x				x	Nuisance	floodplain of St. Joseph Creek
1953 CURTISS ST	2006 Resident Questionnaire				x		x	Chronic	floodplain of St. Joseph Creek
1955 CURTISS ST	2006 Resident Questionnaire				x		x	Chronic	floodplain of St. Joseph Creek
2250 CURTISS ST	2006 Resident Questionnaire				x			Nuisance	
1922 A CURTISS ST	2006 Resident Questionnaire		x					Nuisance	
0 CURTIS & GLENVIEW	October 2, 2006 Storm Comments, Drainage Master List				x				
442 DAVIS ST	2006 Resident Questionnaire		x					Nuisance	
532 DAVIS ST	2006 Resident Questionnaire				x			Nuisance	
604 DAVIS ST	2006 Resident Questionnaire		x					Nuisance	
610 DAVIS ST	2006 Resident Questionnaire			x	x	x			driveway, sidewalk, street, yard, no curb and gutter, excess to park
4133 DOUGLAS RD	Drainage Master List				x				Wetland area to east ponding higher than normal (north of CVS pharmacy).
4422 DOUGLAS RD	2006 Resident Questionnaire		x					Nuisance	
4600 DOUGLAS RD	2006 Resident Questionnaire				x			Nuisance	
4605 DOUGLAS RD	2006 Resident Questionnaire				x			Nuisance	
4606 DOUGLAS RD	2006 Resident Questionnaire		x		x			Nuisance	
4714 DOUGLAS RD	Drainage Master List				x			Nuisance	natural low spot in rear yard, no existing storm sewer nearby
DOUGLAS RD and BRYAN	2006 Resident Questionnaire					x			need more inlets
0 DOWNERS DR	October 2, 2006 Storm Comments					x			
4517 DOWNERS DR	2006 Resident Questionnaire				x				2-3" March, April heavy rain
4525 DOWNERS DR	Drainage Master List				x				buried culverts, area has a history of flooding, now near s.w.
4540 DOWNERS DR	2006 Resident Questionnaire				x				surrounding properties drain to this one
4618 DOWNERS DR	2006 Resident Questionnaire		x					Nuisance	
5505 DUNHAM RD	October 2, 2006 Storm Comments, Drainage Master List	x							interior house flooding
5513 DUNHAM RD	2006 Resident Questionnaire		x					Nuisance	
5529 DUNHAM RD	2006 Resident Questionnaire	x	x		x			Chronic	House, yard flooding nuisance
5617 DUNHAM RD	2006 Resident Questionnaire		x					Nuisance	
5627 DUNHAM RD	2006 Resident Questionnaire				x				adjacent yards have been elevated
5629 DUNHAM RD	2006 Resident Questionnaire				x				driveway, sidewalk, yard flooding
5632 DUNHAM RD	2006 Resident Questionnaire		x					Nuisance	
5633 DUNHAM RD	2006 Resident Questionnaire				x				adjacent yards have been elevated on Blanchard
5709 DUNHAM RD	2006 Resident Questionnaire		x					Nuisance	
4224 EARLSTON RD	October 2, 2006 Storm Comments, Drainage Master List				x			Nuisance	
4228 EARLSTON RD	October 2, 2006 Storm Comments, Drainage Master List				x			Nuisance	
4232 EARLSTON RD	October 2, 2006 Storm Comments, Drainage Master List, 2006 Resident Questionnaire				x	x			no storm sewers
5446 ELINOR	2006 Resident Questionnaire				x			Chronic	

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Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
4225 ELM ST	October 2, 2006 Storm Comments, Drainage Master List	x						Nuisance	interior house flooding. their one year old home did not have adequate design for window well.
4229 ELM ST	October 2, 2006 Storm Comments, Drainage Master List	x							interior house flooding
4327 ELM ST	2006 Resident Questionnaire		x					Nuisance	
4411 ELM ST	2006 Resident Questionnaire		x		x			Nuisance	
4521 ELM ST	Drainage Master List				x				standing water in 2005 and 2006; no curb or ditch in front of house
4609 ELM ST	2006 Resident Questionnaire		x					Chronic	basement flooding nuisance
4625 ELM ST	2006 Resident Questionnaire			x	x	x		Nuisance	
4633 ELM ST	2006 Resident Questionnaire		x					Nuisance	
4712 ELM ST	2006 Resident Questionnaire		x					Nuisance	
4731 ELM ST	2006 Resident Questionnaire		x					Nuisance	
4800 ELM ST	2006 Resident Questionnaire		x					Nuisance	
4831 ELM ST	2006 Resident Questionnaire			x	x			Nuisance	
4917 ELM ST	2006 Resident Questionnaire		x					Nuisance	
4940 ELM ST	October 2, 2006 Storm Comments, Drainage Master List	x						Chronic	interior house flooding
4942 ELM ST	October 2, 2006 Storm Comments, Drainage Master List				x				
1811 ELMORE AVE	2006 Resident Questionnaire				x			Chronic	
1835 ELMORE AVE	October 2, 2006 Storm Comments, Drainage Master List	x							interior house flooding
1961 ELMORE AVE	2006 Resident Questionnaire		x					Nuisance	
5118 ELMWOOD AVE	October 2, 2006 Storm Comments, Drainage Master List					x		Nuisance	
5201 FAIRMOUNT AVE	2006 Resident Questionnaire		x					Nuisance	
5205 FAIRMOUNT AVE	2006 Resident Questionnaire		x					Nuisance	
5209 FAIRMOUNT AVE	2006 Resident Questionnaire		x					Nuisance	
5217 FAIRMOUNT AVE	2006 Resident Questionnaire		x					Nuisance	
5225 FAIRMOUNT AVE	2006 Resident Questionnaire			x				Nuisance	
5236 FAIRMOUNT AVE	2006 Resident Questionnaire		x					Nuisance	
5321 FAIRMOUNT AVE	2006 Resident Questionnaire		x		x			Nuisance	
4108 FAIRVIEW AVE	2006 Resident Questionnaire				x	x		Nuisance	
4126 FAIRVIEW AVE	2006 Resident Questionnaire		x					Chronic	basement, yard flooding nuisance
4128 FAIRVIEW AVE	Drainage Master List					x			Water stagnant north of CVS pharmacy. Water higher than normal. Standing water from August 2006 until present (3-28-07).
4325 FAIRVIEW AVE	Drainage Master List				x				Wet rear yard for long time. No storm sewer exists in the rear yards of nearby homes.
4329 FAIRVIEW AVE	2006 Resident Questionnaire		x					Nuisance	
4332 FAIRVIEW AVE	2006 Resident Questionnaire		x					Nuisance	
4401 FAIRVIEW AVE	Drainage Master List					x			
4419 FAIRVIEW AVE	October 2, 2006 Storm Comments, Drainage Master List					x			
4431 FAIRVIEW AVE	Drainage Master List					x			
4507 FAIRVIEW AVE	2006 Resident Questionnaire		x					Nuisance	
4523 FAIRVIEW AVE	Drainage Master List				x				water pouring in from street down driveway, eventually ponds in yard
4540 FAIRVIEW AVE	2006 Resident Questionnaire				x			Nuisance	
4543 FAIRVIEW AVE	2006 Resident Questionnaire		x					Nuisance	
4643 FAIRVIEW AVE	2006 Resident Questionnaire		x					Nuisance	
4700 FAIRVIEW AVE	2006 Resident Questionnaire		x			x		Nuisance	basement flooding nuisance
4731 FAIRVIEW AVE	Drainage Master List	x							Front and north side yards frequently fill with water. Basement flooded 10/2/06 via yard / window wells and sanitary back-up.
4816 FAIRVIEW AVE	2006 Resident Questionnaire		x					Nuisance	
4833 FAIRVIEW AVE	October 2, 2006 Storm Comments					x			
0 FAIRVIEW & DAVIS	October 2, 2006 Storm Comments, Drainage Master List					x			
748 FARLEY PL	2006 Resident Questionnaire		x					Nuisance	
0 FLORENCE AVE	October 2, 2006 Storm Comments, Drainage Master List				x				
4227 FLORENCE AVE	Drainage Master List	x							street culvert was blocked
4322 FLORENCE AVE	2006 Resident Questionnaire		x					Nuisance	
4512 FLORENCE AVE	2006 Resident Questionnaire		x					Nuisance	
4516 FLORENCE AVE	2006 Resident Questionnaire				x				sanitary sewer backup, enlarge grates
4823 FLORENCE AVE	2006 Resident Questionnaire		x					Nuisance	
4832 FLORENCE AVE	2006 Resident Questionnaire		x					Nuisance	
FLORENCE AVE / PRAIRIEAVE	October 2, 2006 Storm Comments					x			
0 FOREST AVE	October 2, 2006 Storm Comments					x			
4103 FOREST AVE	2006 Resident Questionnaire		x					Nuisance	
4104 FOREST AVE	2006 Resident Questionnaire		x					Nuisance	
4116 FOREST AVE	2006 Resident Questionnaire		x					Nuisance	
4120 FOREST AVE	2006 Resident Questionnaire				x			Nuisance	
4132 FOREST AVE	Drainage Master List				x				The resident has had ponding water in rear yard for quite a while. Underdrain could be connected to existing inlet.
4221 FOREST AVE	2006 Resident Questionnaire		x		x			Nuisance	
4601 FOREST AVE	2006 Resident Questionnaire		x					Nuisance	
4633 FOREST AVE	2006 Resident Questionnaire				x			Nuisance	
4712 FOREST AVE	2006 Resident Questionnaire		x					Nuisance	
4736 FOREST AVE	2006 Resident Questionnaire		x		x			Nuisance	
4815 FOREST AVE	2006 Resident Questionnaire		x					Nuisance	
4826 FOREST AVE	2006 Resident Questionnaire		x					Nuisance	

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Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
4835 FOREST AVE	2006 Resident Questionnaire		x					Nuisance	
219 FOXFIRE CT	2006 Resident Questionnaire				x			Nuisance	
424 FRANKLIN ST	2006 Resident Questionnaire	x						Nuisance	
436 FRANKLIN ST	2006 Resident Questionnaire				x			Nuisance	
437 FRANKLIN ST	2006 Resident Questionnaire		x					Nuisance	
525 FRANKLIN ST	2006 Resident Questionnaire					x		Nuisance	
610 FRANKLIN ST	2006 Resident Questionnaire			x	x			Nuisance	
622 FRANKLIN ST	2006 Resident Questionnaire				x			Nuisance	
627 FRANKLIN ST	Drainage Master List					x			Franklin/Stanley Intersection always under water
735 FRANKLIN ST	2006 Resident Questionnaire		x		x			Nuisance	
819 FRANKLIN ST	2006 Resident Questionnaire		x		x			Nuisance	
839 FRANKLIN ST	2006 Resident Questionnaire				x			Chronic	
1122 FRANKLIN ST	2006 Resident Questionnaire		x					Nuisance	
1130 FRANKLIN ST	2006 Resident Questionnaire		x					Nuisance	
315 GIERZ ST	2006 Resident Questionnaire		x	x				Nuisance	
416 GIERZ ST	2006 Resident Questionnaire		x			x		Nuisance	water coming down hill
420 GIERZ ST	2006 Resident Questionnaire		x					Nuisance	
424 GIERZ ST	2006 Resident Questionnaire		x		x			Nuisance	
540 GIERZ ST	2006 Resident Questionnaire		x					Nuisance	
0 GILBERT AVE	October 2, 2006 Storm Comments					x	x		floodplain of St. Joseph Creek
1127 GILBERT AVE	October 2, 2006 Storm Comments, Drainage Master List				x	x	x		floodplain of St. Joseph Creek
1133 GILBERT AVE	October 2, 2006 Storm Comments, Drainage Master List				x	x	x		floodplain of St. Joseph Creek
1139 GILBERT AVE	October 2, 2006 Storm Comments, Drainage Master List				x	x	x		floodplain of St. Joseph Creek
1204 GILBERT AVE	2006 Resident Questionnaire		x				x	Nuisance	floodplain of St. Joseph Creek
1216 GILBERT AVE	2006 Resident Questionnaire		x				x	Nuisance	floodplain of St. Joseph Creek
1217 GILBERT AVE	2006 Resident Questionnaire		x				x	Nuisance	floodplain of St. Joseph Creek
1228 GILBERT AVE	2006 Resident Questionnaire				x		x	Chronic	floodplain of St. Joseph Creek
1232 GILBERT AVE	2006 Resident Questionnaire		x		x		x	Nuisance	floodplain of St. Joseph Creek
1240 GILBERT AVE	2006 Resident Questionnaire				x		x	Chronic	floodplain of St. Joseph Creek
1308 GILBERT AVE	October 2, 2006 Storm Comments, Drainage Master List					x	x		floodplain of St. Joseph Creek
1310 GILBERT AVE	October 2, 2006 Storm Comments, Drainage Master List, Questionnaire	x			x	x	x	Chronic	interior house flooding, floodplain of St. Joseph Creek
1325 GILBERT AVE	2006 Resident Questionnaire		x				x	Nuisance	floodplain of St. Joseph Creek
1340 GILBERT AVE	2006 Resident Questionnaire				x		x	Nuisance	floodplain of St. Joseph Creek
1421 GILBERT AVE	October 2, 2006 Storm Comments, Drainage Master List					x	x		floodplain of St. Joseph Creek
1431 GILBERT AVE	2006 Resident Questionnaire		x		x		x	Nuisance	floodplain of St. Joseph Creek
1437 GILBERT AVE	2006 Resident Questionnaire		x				x	Nuisance	floodplain of St. Joseph Creek
1505 GILBERT AVE	2006 Resident Questionnaire		x		x		x	Chronic	basement flooding nuisance, floodplain of St. Joseph Creek
5510 GLENVIEW AVE	2006 Resident Questionnaire		x	x				Nuisance	
5511 GLENVIEW AVE	2006 Resident Questionnaire		x					Nuisance	
5515 GLENVIEW AVE	2006 Resident Questionnaire		x					Nuisance	
212 GRANT ST	2006 Resident Questionnaire		x					Nuisance	
213 GRANT ST	2006 Resident Questionnaire				x			Chronic	
217 GRANT ST	2006 Resident Questionnaire		x					Nuisance	
312 GRANT ST	2006 Resident Questionnaire				x				basement seepage
313 GRANT ST	2006 Resident Questionnaire				x				front ditch not draining, standing water
315 GRANT ST	2006 Resident Questionnaire		x			x		Nuisance	
316 GRANT ST	2006 Resident Questionnaire, Drainage Master List		x		x			Nuisance	interior house flooding
320 GRANT ST	October 2, 2006 Storm Comments, Drainage Master List	x							interior house flooding
324 GRANT ST	2006 Resident Questionnaire				x			Nuisance	runoff from rear properties
534 GRANT ST	2006 Resident Questionnaire		x		x			Nuisance	
606 GRANT ST	2006 Resident Questionnaire				x			Nuisance	
608 GRANT ST	2006 Resident Questionnaire		x		x			Nuisance	
620 GRANT ST	2006 Resident Questionnaire		x					Nuisance	
621 GRANT ST	2006 Resident Questionnaire		x					Nuisance	
700 GRANT ST	October 2, 2006 Storm Comments, Drainage Master List				x				
708 GRANT ST	2006 Resident Questionnaire				x				
712 GRANT ST	October 2, 2006 Storm Comments, Drainage Master List, willage wide drainage survey				x			Nuisance	Standing water in rear yard (LPDA). Garage flooding.
715 GRANT ST	October 2, 2006 Storm Comments, Drainage Master List, 2006 Resident Questionnaire				x				adjacent ditch should be maintained
719 GRANT ST	October 2, 2006 Storm Comments, Drainage Master List	x							interior house flooding
744 GRANT ST	2006 Resident Questionnaire		x					Nuisance	
903 GRANT ST	October 2, 2006 Storm Comments, Drainage Master List					x			
916 GRANT ST	2006 Resident Questionnaire		x					Nuisance	
924 GRANT ST	2006 Resident Questionnaire				x			Nuisance	
1230 GRANT ST	2006 Resident Questionnaire		x					Nuisance	
1244 GRANT ST	2006 Resident Questionnaire		x					Nuisance	
1323 GRANT ST	2006 Resident Questionnaire				x			Nuisance	
1433 GRANT ST	2006 Resident Questionnaire		x					Nuisance	
2501 HADDOW AVE	2006 Resident Questionnaire		x					Chronic	
2501 HADDOW AVE	2006 Resident Questionnaire	x						Nuisance	

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Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
1256 HAWTHORNE LN	2006 Resident Questionnaire			x				Chronic	Garage flooding nuisance
3499 HIGHLAND AVE	October 2, 2006 Storm Comments					x			
4204 HIGHLAND AVE	October 2, 2006 Storm Comments, Drainage Master List					x			
4209 HIGHLAND AVE	2006 Resident Questionnaire		x		x	x		Nuisance	
4225 HIGHLAND AVE	2006 Resident Questionnaire				x			Chronic	
4230 HIGHLAND AVE	2006 Resident Questionnaire		x					Chronic	basement flooding nuisance
4326 HIGHLAND AVE	October 2, 2006 Storm Comments, Drainage Master List					x			
4330 HIGHLAND AVE	2006 Resident Questionnaire					x		Nuisance	
4333 HIGHLAND AVE	2006 Resident Questionnaire		x					Nuisance	
4345 HIGHLAND AVE	2006 Resident Questionnaire					x		Chronic	
4429 HIGHLAND AVE	2006 Resident Questionnaire				x			Nuisance	
4703 HIGHLAND AVE	2006 Resident Questionnaire		x					Nuisance	
4804 HIGHLAND AVE	2006 Resident Questionnaire					x		Nuisance	
4807 HIGHLAND AVE	October 2, 2006 Storm Comments, Drainage Master List, 2006 Resident Questionnaire				x	x		Nuisance	
4809 HIGHLAND AVE	October 2, 2006 Storm Comments, Drainage Master List					x			
4811 HIGHLAND AVE	October 2, 2006 Storm Comments, Drainage Master List					x			
4917 HIGHLAND AVE	2006 Resident Questionnaire		x					Nuisance	
4924 HIGHLAND AVE	2006 Resident Questionnaire		x					Nuisance	
4931 HIGHLAND AVE	October 2, 2006 Storm Comments, Drainage Master List, 2006 Resident Questionnaire	x	x		x	x			Water in backyard, entered through seepage
4943 HIGHLAND AVE	2006 Resident Questionnaire		x					Nuisance	
5502 HILLCREST RD	2006 Resident Questionnaire		x					Nuisance	
5513 HILLCREST RD	2006 Resident Questionnaire			x	x			Nuisance	
5605 HILLCREST RD	2006 Resident Questionnaire		x					Nuisance	
1903 HITCHCOCK AVE	October 2, 2006 Storm Comments				x				
1905 HITCHCOCK AVE	October 2, 2006 Storm Comments, Drainage Master List, 2006 Resident Questionnaire		x		x			Nuisance	
1909 HITCHCOCK AVE	2006 Resident Questionnaire			x	x			Chronic	Yard flooding nuisance
1912 HITCHCOCK AVE	2006 Resident Questionnaire				x			Nuisance	
1916 HITCHCOCK AVE	2006 Resident Questionnaire				x			Nuisance	
1918 HITCHCOCK AVE	2006 Resident Questionnaire		x		x				along railroad embankment
1920 HITCHCOCK AVE	2006 Resident Questionnaire		x					Chronic	basement flooding nuisance
1926 HITCHCOCK AVE	2006 Resident Questionnaire		x					Nuisance	
1928 HITCHCOCK AVE	2006 Resident Questionnaire		x		x			Nuisance	
1934 HITCHCOCK AVE	Drainage Master List				x				new house drainage, holding bond
1958 HITCHCOCK AVE	October 2, 2006 Storm Comments, Drainage Master List					x			
1962 HITCHCOCK AVE	2006 Resident Questionnaire		x					Nuisance	
1962 HITCHCOCK AVE	2006 Resident Questionnaire				x			Nuisance	
2138 HOWARD AVE	2006 Resident Questionnaire		x					Nuisance	
233 INDIANAPOLIS ST	2006 Resident Questionnaire			x				Nuisance	
315 INDIANAPOLIS ST	2006 Resident Questionnaire		x	x	x			Nuisance	
321 INDIANAPOLIS ST	2006 Resident Questionnaire		x		x			Chronic	basement flooding nuisance
2407 INVERNESS AVE	2006 Resident Questionnaire		x					Nuisance	
1 JACQUELINE DR	2006 Resident Questionnaire				x		x		St. Joseph Creek floodplain
5 JACQUELINE DR	2006 Resident Questionnaire					x	x	Critical	St. Joseph Creek floodplain
5705 JANES AVE	2006 Resident Questionnaire		x					Nuisance	
5836 JANES AVE	2006 Resident Questionnaire		x					Nuisance	
5969 JANES AVE	2006 Resident Questionnaire				x	x		Chronic	Street flooding nuisance
0 JANET ST	October 2, 2006 Storm Comments				x				
5525 KATRINE AVE	2006 Resident Questionnaire		x					Nuisance	
5844 KATRINE AVE	2006 Resident Questionnaire				x			Chronic	
408 LAKE AVE	2006 Resident Questionnaire		x					Nuisance	
415 LAKE AVE	2006 Resident Questionnaire		x					Nuisance	
503 LAKE AVE	2006 Resident Questionnaire				x			Nuisance	
5313 LANE PL	2006 Resident Questionnaire		x			x		Critical	basement flooding nuisance
5317 LANE PL	2006 Resident Questionnaire		x			x		Nuisance	
5340 LANE PL	2006 Resident Questionnaire		x	x	x	x		Critical	only street critical
5409 LANE PL	2006 Resident Questionnaire				x			Nuisance	
0 LEE AVE	October 2, 2006 Storm Comments					x			
4526 LEE AVE	2006 Resident Questionnaire		x	x				Nuisance	
4624 LEE AVE	Drainage Master List				x				Banchory Woods concentrated to his property, also creek behind him may need dredging
4716 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
4717 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
4806 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
4817 LEE AVE	2006 Resident Questionnaire		x		x			Nuisance	
4820 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
4834 LEE AVE	2006 Resident Questionnaire				x			Nuisance	
4837 LEE AVE	2006 Resident Questionnaire, Drainage Master List		x		x			Nuisance	Rear yard drainage to property. Water seepage to basement. Side yard swale issue.
4900 LEE AVE	October 2, 2006 Storm Comments, Drainage Master List				x				
4904 LEE AVE	2006 Resident Questionnaire		x		x			Nuisance	
4907 LEE AVE	October 2, 2006 Storm Comments, Drainage Master List	x			x				Private Draitile collapse fixed by Strm Crews. Previously had to be pumped
4911 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
4918 LEE AVE	2006 Resident Questionnaire	x	x					Chronic	
4920 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
4945 LEE AVE	October 2, 2006 Storm Comments					x			
5104 LEE AVE	October 2, 2006 Storm Comments, Drainage Master List				x				
5117 LEE AVE	2006 Resident Questionnaire					x		Critical	
5138 LEE AVE	2006 Resident Questionnaire					x		Chronic	
5138 LEE AVE	2006 Resident Questionnaire				x			Chronic	

Table A.1: Complete List of Reported Drainage Problems in North St. Joseph Creek Watershed

Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
5209 LEE AVE	2006 Resident Questionnaire					x		Critical	Yard flooding chronic
5416 LEE AVE	2006 Resident Questionnaire					x		Chronic	Street flooding nuisance
5417 LEE AVE	2006 Resident Questionnaire		x			x		Chronic	basement flooding nuisance
5427 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
5435 LEE AVE	2006 Resident Questionnaire		x		x			Nuisance	
5904 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
5909 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
5910 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
5919 LEE AVE	2006 Resident Questionnaire		x					Nuisance	
5900 LEONARD AVE	Drainage Master List				x				
5915 LEONARD AVE	2006 Resident Questionnaire		x					Nuisance	
5924 LEONARD AVE	2006 Resident Questionnaire		x					Nuisance	
5996 LEONARD AVE	2006 Resident Questionnaire		x					Nuisance	
314 LINCOLN AVE	2006 Resident Questionnaire		x					Nuisance	
334 LINCOLN AVE	2006 Resident Questionnaire			x				Nuisance	
406 LINCOLN AVE	2006 Resident Questionnaire				x			Nuisance	
426 LINCOLN AVE	2006 Resident Questionnaire				x	x		Nuisance	
716 LINCOLN AVE	Drainage Master List				x				
4720 LINDEN PL	2006 Resident Questionnaire		x					Nuisance	
4216 LINDLEY ST	2006 Resident Questionnaire				x			Nuisance	
4230 LINDLEY ST	2006 Resident Questionnaire				x			Nuisance	
4236 LINDLEY ST	2006 Resident Questionnaire		x					Nuisance	
4339 LINSKOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4505 LINSKOTT AVE	2006 Resident Questionnaire	x						Nuisance	
4605 LINSKOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4628 LINSKOTT AVE	Drainage Master List				x				Sump pump installed in dry well several years ago to drain rear yard. Pump cannot always keep up.
4701 LINSKOTT AVE	2006 Resident Questionnaire		x		x			Nuisance	
4712 LINSKOTT AVE	2006 Resident Questionnaire				x			Nuisance	
4716 LINSKOTT AVE	2006 Resident Questionnaire				x			Nuisance	sidewalk flooding
4717 LINSKOTT AVE	2006 Resident Questionnaire		x		x			Nuisance	
4736 LINSKOTT AVE	2006 Resident Questionnaire				x			Nuisance	
4744 LINSKOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4800 LINSKOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4811 LINSKOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4833 LINSKOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4908 LINSKOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4912 LINSKOTT AVE	2006 Resident Questionnaire		x			x		Chronic	basement flooding nuisance
4924 LINSKOTT AVE	2006 Resident Questionnaire								no flooding in 1996 or 2006, LPDA should be removed
4936 LINSKOTT AVE	2006 Resident Questionnaire				x			Nuisance	
4956 LINSKOTT AVE	2006 Resident Questionnaire		x					Nuisance	
5500 LOMOND AVE	2006 Resident Questionnaire		x		x	x		Chronic	basement, yard flooding nuisance
5501 LOMOND AVE	2006 Resident Questionnaire				x			Nuisance	
5556 LOMOND AVE	2006 Resident Questionnaire		x					Nuisance	
5605 LOMOND AVE	2006 Resident Questionnaire		x					Nuisance	
5618 LOMOND AVE	2006 Resident Questionnaire		x					Nuisance	
5711 LOMOND AVE	2006 Resident Questionnaire				x			Nuisance	
5718 LOMOND AVE	2006 Resident Questionnaire					x		Nuisance	
5723 LOMOND AVE	2006 Resident Questionnaire		x					Nuisance	
3931 LONGMEADOW RD	2006 Resident Questionnaire		x					Nuisance	
3941 LONGMEADOW RD	2006 Resident Questionnaire				x	x		Chronic	Yard flooding nuisance
3942 LONGMEADOW RD	2006 Resident Questionnaire		x					Nuisance	
4012 LONGMEADOW RD	2006 Resident Questionnaire		x					Nuisance	
4062 LONGMEADOW RD	2006 Resident Questionnaire		x		x	x		Chronic	basement, yard flooding nuisance
4102 LONGMEADOW RD	2006 Resident Questionnaire		x					Nuisance	
4112 LONGMEADOW RD	2006 Resident Questionnaire		x					Chronic	Yard flooding nuisance
4122 LONGMEADOW RD	2006 Resident Questionnaire				x			Nuisance	
4152 LONGMEADOW RD	2006 Resident Questionnaire				x			Nuisance	
5244 LYMAN AVE	2006 Resident Questionnaire		x					Nuisance	
5248 LYMAN AVE	2006 Resident Questionnaire		x					Nuisance	
5313 LYMAN AVE	2006 Resident Questionnaire		x				x	Nuisance	unspecified but had to file insurance claim
5336 LYMAN AVE	Drainage Master List				x				
5340 LYMAN AVE	2006 Resident Questionnaire				x			Nuisance	
5344 LYMAN AVE	2006 Resident Questionnaire		x					Nuisance	
5400 LYMAN AVE	October 2, 2006 Storm Comments								
4117 MAIN ST	2006 Resident Questionnaire		x					Nuisance	
4200 MAIN ST	2006 Resident Questionnaire				x			Nuisance	
4208 MAIN ST	2006 Resident Questionnaire				x			Nuisance	
4540 MAIN ST	2006 Resident Questionnaire		x					Nuisance	
4601 MAIN ST	2006 Resident Questionnaire		x					Nuisance	
4608 MAIN ST	2006 Resident Questionnaire			x	x			Nuisance	
4609 MAIN ST	2006 Resident Questionnaire		x					Nuisance	
4707 MAIN ST	2006 Resident Questionnaire		x		x			Nuisance	
4734 MAIN ST	2006 Resident Questionnaire		x					Nuisance	
5400 MAIN ST	2006 Resident Questionnaire		x					Nuisance	
5422 MAIN ST	2006 Resident Questionnaire		x					Nuisance	
5512 MAIN ST	Drainage Master List				x			Nuisance	no outlet
5620 MAIN ST	2006 Resident Questionnaire		x					Nuisance	
5620 MAIN ST	Drainage Master List				x				
237 MAPLE AVE	2006 Resident Questionnaire				x			Nuisance	
621 MAPLE AVE	2006 Resident Questionnaire		x					Nuisance	
624 MAPLE AVE	2006 Resident Questionnaire					x		Nuisance	
624 MAPLE AVE	2006 Resident Questionnaire					x		Nuisance	
635 MAPLE AVE	2006 Resident Questionnaire		x		x			Chronic	basement flooding nuisance
648 MAPLE AVE	2006 Resident Questionnaire		x					Chronic	
648 MAPLE AVE	2006 Resident Questionnaire	x						Nuisance	
731 MAPLE AVE	2006 Resident Questionnaire		x		x				up driveway, Fairmount flooded
735 MAPLE AVE	2006 Resident Questionnaire		x					Nuisance	
825 MAPLE AVE	October 2, 2006 Storm Comments, Drainage Master List					x			
843 MAPLE AVE	2006 Resident Questionnaire		x					Nuisance	
853 MAPLE AVE	2006 Resident Questionnaire		x					Nuisance	
1035 MAPLE AVE	2006 Resident Questionnaire		x					Nuisance	

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Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
1100 MAPLE AVE	October 2, 2006 Storm Comments, Drainage Master List, 2006 Resident Questionnaire		x			x		Nuisance	
1101 MAPLE AVE	2006 Resident Questionnaire				x	x		Chronic	Yard flooding nuisance
1128 MAPLE AVE	2006 Resident Questionnaire				x			Nuisance	
1214 MAPLE AVE	2006 Resident Questionnaire		x					Nuisance	
1218 MAPLE AVE	Drainage Master List				x				
1413 MAPLE AVE	Drainage Master List				x				may be due to severed drain tile
1910 MAPLE AVE	2006 Resident Questionnaire		x					Nuisance	
2000 MAPLE AVE	2006 Resident Questionnaire		x					Nuisance	
2425 MAPLE AVE	2006 Resident Questionnaire				x			Nuisance	
2510 MAPLE AVE	2006 Resident Questionnaire		x					Nuisance	
5345 MAPLEWOOD PL	2006 Resident Questionnaire		x					Nuisance	
5401 MAPLEWOOD PL	2006 Resident Questionnaire		x					Nuisance	
5416 MAPLEWOOD PL	2006 Resident Questionnaire		x					Nuisance	
0 MIDDAUGH AVE	October 2, 2006 Storm Comments					x			
4541 MIDDAUGH AVE	2006 Resident Questionnaire		x					Nuisance	
4609 MIDDAUGH AVE	2006 Resident Questionnaire				x			Nuisance	
4624 MIDDAUGH AVE	2006 Resident Questionnaire				x	x		Nuisance	
4712 MIDDAUGH AVE	2006 Resident Questionnaire		x					Nuisance	
4713 MIDDAUGH AVE	2006 Resident Questionnaire		x					Nuisance	
4721 MIDDAUGH AVE	2006 Resident Questionnaire			x	x			Nuisance	
4736 MIDDAUGH AVE	2006 Resident Questionnaire		x	x	x			Nuisance	
4908 MIDDAUGH AVE	2006 Resident Questionnaire		x		x			Nuisance	
4916 MIDDAUGH AVE	2006 Resident Questionnaire		x					Nuisance	
5525 MIDDAUGH AVE	2006 Resident Questionnaire				x			Nuisance	
5528 MIDDAUGH AVE	2006 Resident Questionnaire				x			Nuisance	
5707 MIDDAUGH AVE	2006 Resident Questionnaire		x					Nuisance	
4700 MONTGOMERY AVE	2006 Resident Questionnaire				x			Nuisance	
4728 MONTGOMERY AVE	2006 Resident Questionnaire				x			Nuisance	
4732 MONTGOMERY AVE	2006 Resident Questionnaire		x		x			Nuisance	
4737 MONTGOMERY AVE	2006 Resident Questionnaire		x					Nuisance	
4905 MONTGOMERY AVE	2006 Resident Questionnaire		x					Nuisance	
4913 MONTGOMERY AVE	2006 Resident Questionnaire		x			x		Nuisance	
4917 MONTGOMERY AVE	2006 Resident Questionnaire			x				Nuisance	
4921 MONTGOMERY AVE	October 2, 2006 Storm Comments, Drainage Master List	x							interior house flooding
4924 MONTGOMERY AVE	Drainage Master List					x			Street and sidewalk flooding
4926 MONTGOMERY AVE	2006 Resident Questionnaire				x			Nuisance	
4932 MONTGOMERY AVE	2006 Resident Questionnaire				x			Nuisance	
4938 MONTGOMERY AVE	2006 Resident Questionnaire				x			Nuisance	
4942 MONTGOMERY AVE	2006 Resident Questionnaire		x					Nuisance	
4725 NORTHCOTT AVE	2006 Resident Questionnaire				x			Nuisance	
4733 NORTHCOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4804 NORTHCOTT AVE	October 2, 2006 Storm Comments, Drainage Master List, 2006 Resident Questionnaire		x	x	x	x		Nuisance	
4833 NORTHCOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4915 NORTHCOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4931 NORTHCOTT AVE	2006 Resident Questionnaire			x	x	x		Nuisance	
4935 NORTHCOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4941 NORTHCOTT AVE	2006 Resident Questionnaire		x					Nuisance	
4411 OAKWOOD AVE	2006 Resident Questionnaire		x		x			Nuisance	
4500 OAKWOOD AVE	2006 Resident Questionnaire				x			Nuisance	
4510 OAKWOOD AVE	2006 Resident Questionnaire			x	x	x		Nuisance	
4513 OAKWOOD AVE	October 2, 2006 Storm Comments, Drainage Master List	x							House flooded on side adjacent to new home, 4517 Oakwood under const. (no gutters)
4522 OAKWOOD AVE	2006 Resident Questionnaire				x			Nuisance	
4526 OAKWOOD AVE	2006 Resident Questionnaire		x					Nuisance	
4541 OAKWOOD AVE	2006 Resident Questionnaire		x					Chronic	
4545 OAKWOOD AVE	2006 Resident Questionnaire				x				
4604 OAKWOOD AVE	2006 Resident Questionnaire				x			Nuisance	
4605 OAKWOOD AVE	2006 Resident Questionnaire				x			Chronic	feet of standing water
4732 OAKWOOD AVE	2006 Resident Questionnaire		x					Nuisance	
4825 OAKWOOD AVE	2006 Resident Questionnaire		x					Nuisance	
4825 OAKWOOD AVE	2006 Resident Questionnaire				x			Nuisance	
4913 OAKWOOD AVE	2006 Resident Questionnaire		x					Nuisance	
120 OGDEN	October 2, 2006 Storm Comments								
122 OGDEN	October 2, 2006 Storm Comments								
310 OTIS AVE	2006 Resident Questionnaire	x	x	x	x				sanitary sewer backup
315 OTIS AVE	2006 Resident Questionnaire		x					Nuisance	
418 OTIS AVE	2006 Resident Questionnaire		x					Nuisance	
422 OTIS AVE	2006 Resident Questionnaire		x	x				Nuisance	
429 OTIS AVE	2006 Resident Questionnaire		x					Nuisance	
439 OTIS AVE	2006 Resident Questionnaire		x					Nuisance	
5245 PARK AVE	2006 Resident Questionnaire		x	x	x			Nuisance	
5249 PARK AVE	2006 Resident Questionnaire					x		Chronic	
5249 PARK AVE	2006 Resident Questionnaire				x			Nuisance	
5253 PARK AVE	2006 Resident Questionnaire		x					Nuisance	
5325 PARK AVE	2006 Resident Questionnaire		x					Nuisance	
5340 PARK AVE	2006 Resident Questionnaire			x	x			Nuisance	
4929 PARKWAY ST	2006 Resident Questionnaire				x	x		Nuisance	
4933 PARKWAY ST	2006 Resident Questionnaire		x					Nuisance	
4419 PERSHING AVE	October 2, 2006 Storm Comments, Drainage Master List				x				maintenance issue
4423 PERSHING AVE	2006 Resident Questionnaire, Drainage Master List		x			x		Nuisance	
4423 PERSHING AVE	Drainage Master List					x			
4431 PERSHING AVE	October 2, 2006 Storm Comments					x			
4438 PERSHING AVE	Drainage Master List					x			drainage ditch in front of wetland area on Pershing Ave is not graded properly and water stands there year round
4439 PERSHING AVE	October 2, 2006 Storm Comments, Drainage Master List					x			

Table A.1: Complete List of Reported Drainage Problems in North St. Joseph Creek Watershed

Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
4442 PERSHING AVE	2006 Resident Questionnaire				x			Nuisance	
4508 PERSHING RD	2006 Resident Questionnaire		x	x	x	x		Chronic	Basement flooding chronic, undersized storm sewer
4516 PERSHING AVE	2006 Resident Questionnaire				x			Nuisance	undersized storm sewer
4521 PERSHING AVE	2006 Resident Questionnaire		x		x			Nuisance	undersized storm sewer
4532 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	undersized storm sewer
4613 PERSHING AVE	2006 Resident Questionnaire				x			Chronic	
4617 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	
4708 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	
4709 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	
4825 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	overland flow
4909 PERSHING AVE	October 2, 2006 Storm Comments, Drainage Master List, 2006 Resident Questionnaire		x			x		Nuisance	overland flow
4915 PERSHING AVE	2006 Resident Questionnaire				x			Nuisance	overland flow
4919 PERSHING AVE	2006 Resident Questionnaire				x				overland flow
4922 PERSHING AVE	Drainage Master List	x							interior house flooding, power outage, overland flow
5716 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	outside DG Limits
5720 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	outside DG Limits
5798 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	outside DG Limits
5917 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	outside DG Limits
6029 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	outside DG Limits
6145 PERSHING AVE	2006 Resident Questionnaire		x		x			Nuisance	outside DG Limits
6150 PERSHING AVE	2006 Resident Questionnaire		x					Nuisance	outside DG Limits
6157 PERSHING AVE	2006 Resident Questionnaire		x		x			Nuisance	outside DG Limits
6210 PERSHING RD	2006 Resident Questionnaire		x					Nuisance	outside DG Limits
5530 PLYMOUTH ST	2006 Resident Questionnaire		x					Nuisance	
608 PRAIRIE AVE	2006 Resident Questionnaire		x		x			Nuisance	
700 PRAIRIE AVE	2006 Resident Questionnaire		x					Nuisance	
832 PRAIRIE AVE	2006 Resident Questionnaire		x					Nuisance	
840 PRAIRIE AVE	2006 Resident Questionnaire				x			Nuisance	
907 PRAIRIE AVE	2006 Resident Questionnaire		x					Nuisance	
911 PRAIRIE AVE	2006 Resident Questionnaire		x					Nuisance	
1115 PRAIRIE AVE	2006 Resident Questionnaire		x					Nuisance	
1400 PRAIRIE AVE	2006 Resident Questionnaire		x			x		Chronic	basement flooding nuisance
1513 PRAIRIE AVE	2006 Resident Questionnaire		x					Nuisance	
1741 PRAIRIE AVE	2006 Resident Questionnaire		x					Nuisance	
1825 PRAIRIE AVE	October 2, 2006 Storm Comments, Drainage Master List					x			
2045 PRAIRIE AVE	2006 Resident Questionnaire, Drainage Master List				x			Nuisance	storm water is entering rear yard via side yard swale, storm sewer could be added
4605 PRINCE ST	2006 Resident Questionnaire		x					Nuisance	
4631 PRINCE ST	2006 Resident Questionnaire				x			Nuisance	
4816 PRINCE ST	2006 Resident Questionnaire		x			x		Chronic	basement flooding nuisance
4823 PRINCE ST	2006 Resident Questionnaire		x	x	x			Chronic	basement, yard flooding nuisance
4322 PROSPECT AVE	2006 Resident Questionnaire	x		x		x		Chronic	Garage flooding chronic, house flooding nuisance
4330 PROSPECT AVE	2006 Resident Questionnaire		x					Nuisance	
4338 PROSPECT AVE	2006 Resident Questionnaire		x					Nuisance	
4409 PROSPECT AVE	2006 Resident Questionnaire		x					Nuisance	
4628 PROSPECT AVE	2006 Resident Questionnaire		x					Nuisance	
4822 PROSPECT AVE	2006 Resident Questionnaire		x					Nuisance	
4831 PROSPECT AVE	2006 Resident Questionnaire				x			Nuisance	
4832 PROSPECT AVE	2006 Resident Questionnaire				x			Nuisance	
4835 PROSPECT AVE	2006 Resident Questionnaire		x		x			Nuisance	
4840 PROSPECT AVE	2006 Resident Questionnaire		x					Nuisance	
4605 PUFFER RD	2006 Resident Questionnaire		x		x			Nuisance	
4930 PUFFER RD	2006 Resident Questionnaire		x					Nuisance	
823 RANDALL ST	2006 Resident Questionnaire		x					Nuisance	
918 RANDALL ST	2006 Resident Questionnaire		x	x				Nuisance	
0 RIDGEWOOD CIRCLE	October 2, 2006 Storm Comments					x			
430 ROGERS ST	2006 Resident Questionnaire		x					Nuisance	
604 ROGERS ST	2006 Resident Questionnaire		x					Nuisance	
813 ROGERS ST	2006 Resident Questionnaire		x	x		x		Nuisance	
826 ROGERS ST	October 2, 2006 Storm Comments, Drainage Master List					x			
840 ROGERS ST	2006 Resident Questionnaire		x					Nuisance	
846 ROGERS ST	2006 Resident Questionnaire		x					Nuisance	
702-710 ROGERS ST	2006 Resident Questionnaire		x					Nuisance	
3931 ROSLYN RD	2006 Resident Questionnaire		x					Nuisance	
3941 ROSLYN RD	2006 Resident Questionnaire		x					Chronic	
4012 ROSLYN RD	2006 Resident Questionnaire		x					Nuisance	
4022 ROSLYN RD	2006 Resident Questionnaire		x					Nuisance	
4131 ROSLYN RD	October 2, 2006 Storm Comments, Drainage Master List					x			
4132 ROSLYN RD	2006 Resident Questionnaire		x					Nuisance	
4338 ROSLYN RD	2006 Resident Questionnaire			x				Chronic	Yard, street flooding nuisance
4400 ROSLYN RD	2006 Resident Questionnaire		x					Nuisance	
4526 ROSLYN RD	2006 Resident Questionnaire		x					Nuisance	
4526 ROSLYN RD	2006 Resident Questionnaire				x			Nuisance	
1211 ROSS CT	October 2, 2006 Storm Comments								
4336 SARATOGA AVE	2006 Resident Questionnaire					x		Chronic	
4338 SARATOGA AVE	2006 Resident Questionnaire		x					Nuisance	
4512 SARATOGA AVE	October 2, 2006 Storm Comments, Drainage Master List	x				x			storm-sewer/ redirect of sump downspouts
4521 SARATOGA AVE	2006 Resident Questionnaire					x		Chronic	
4536 SARATOGA AVE	2006 Resident Questionnaire		x					Nuisance	
4640 SARATOGA AVE	2006 Resident Questionnaire		x					Nuisance	
4710 SARATOGA AVE	2006 Resident Questionnaire		x		x			Chronic	Basement flooding nuisance
4739 SARATOGA AVE	2006 Resident Questionnaire			x				Nuisance	
4810 SARATOGA AVE	2006 Resident Questionnaire		x					Nuisance	
4827 SARATOGA AVE	2006 Resident Questionnaire				x			Nuisance	
4916 SARATOGA AVE	2006 Resident Questionnaire			x				Nuisance	

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Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
4922 SARATOGA AVE	2006 Resident Questionnaire		x					Nuisance	
4600 SEELEY AVE	October 2, 2006 Storm Comments, Drainage Master List					x			
4601 SEELEY AVE	Drainage Master List				x			Nuisance	sump pumps need to be redirected
4609 SEELEY AVE	2006 Resident Questionnaire		x		x			Nuisance	
4632 SEELEY AVE	2006 Resident Questionnaire					x		Chronic	
4721 SEELEY AVE	2006 Resident Questionnaire		x					Nuisance	
4724 SEELEY AVE	2006 Resident Questionnaire				x			Nuisance	
4810 SEELEY AVE	2006 Resident Questionnaire			x	x	x		Nuisance	
4837 SEELEY AVE	2006 Resident Questionnaire			x	x			Nuisance	
4907 SEELEY AVE	2006 Resident Questionnaire, Drainage Master List				x			Nuisance	
4927 SEELEY AVE	2006 Resident Questionnaire		x					Nuisance	
4939 SEELEY AVE	2006 Resident Questionnaire		x					Nuisance	
201 SHADY LN	October 2, 2006 Storm Comments	x			x	x			
208 SHADY LN	Drainage Master List				x				
232 SHADY LN	2006 Resident Questionnaire		x		x			Nuisance	
233 SHADY LN	2006 Resident Questionnaire				x			Chronic	
225 SHELDON AVE	2006 Resident Questionnaire				x			Nuisance	
229 SHELDON AVE	2006 Resident Questionnaire				x			Nuisance	
230 SHELDON AVE	2006 Resident Questionnaire		x					Nuisance	
240 SHELDON AVE	2006 Resident Questionnaire				x			Nuisance	
246 SHELDON AVE	2006 Resident Questionnaire		x					Nuisance	
300 SHELDON AVE	2006 Resident Questionnaire		x					Nuisance	
310 SHELDON AVE	2006 Resident Questionnaire		x		x			Nuisance	
320 SHELDON AVE	2006 Resident Questionnaire		x					Nuisance	
321 SHELDON AVE	2006 Resident Questionnaire		x					Nuisance	
329 SHELDON AVE	2006 Resident Questionnaire		x					Nuisance	
408 SHERMAN ST	2006 Resident Questionnaire		x					Nuisance	
422 SHERMAN ST	Drainage Master List					x		Nuisance	
426 SHERMAN ST	Drainage Master List	x			x	x		Critical	Water Seeped into basement, from ponding outside in parkway
429 SHERMAN ST	October 2, 2006 Storm Comments, Drainage Master List	x				x			
434 SHERMAN ST	2006 Resident Questionnaire				x			Nuisance	
435 SHERMAN ST	2006 Resident Questionnaire				x				
627 SHERMAN ST	October 2, 2006 Storm Comments, Drainage Master List, 2006 Resident Questionnaire		x		x			Nuisance	
5725 SHERMAN ST	2006 Resident Questionnaire		x					Nuisance	
5904 SHERMAN ST	2006 Resident Questionnaire		x					Nuisance	
5906 SHERMAN ST	2006 Resident Questionnaire		x					Nuisance	
6100 SHERMAN ST	2006 Resident Questionnaire					x		Chronic	
6125 SHERMAN ST	2006 Resident Questionnaire		x					Nuisance	
6132 SHERMAN ST	2006 Resident Questionnaire		x					Nuisance	
4512 SHERWOOD AVE	2006 Resident Questionnaire		x					Nuisance	
4524 SHERWOOD AVE	2006 Resident Questionnaire				x			Nuisance	
4528 SHERWOOD AVE	2006 Resident Questionnaire				x			Nuisance	
4541 SHERWOOD AVE	2006 Resident Questionnaire		x	x				Nuisance	
4545 SHERWOOD AVE	2006 Resident Questionnaire		x	x	x	x		Nuisance	
4601 SHERWOOD AVE	2006 Resident Questionnaire				x			Nuisance	
4613 SHERWOOD AVE	2006 Resident Questionnaire			x		x		Chronic	Garage flooding nuisance
4617 SHERWOOD AVE	2006 Resident Questionnaire				x			Nuisance	
4620 SHERWOOD AVE	2006 Resident Questionnaire				x	x		Nuisance	
4633 SHERWOOD AVE	2006 Resident Questionnaire				x			Nuisance	
5539 SPRINGSIDE AVE	2006 Resident Questionnaire		x					Nuisance	
5600 SPRINGSIDE AVE	2006 Resident Questionnaire		x		x			Nuisance	
5906 SPRINGSIDE AVE	2006 Resident Questionnaire		x					Nuisance	
5915 SPRINGSIDE AVE	2006 Resident Questionnaire		x					Nuisance	
6006 SPRINGSIDE AVE	2006 Resident Questionnaire		x					Nuisance	
6009 SPRINGSIDE AVE	2006 Resident Questionnaire		x					Nuisance	
4322 STANLEY AVE	2006 Resident Questionnaire, Drainage Master List		x		x			Nuisance	
4326 STANLEY AVE	2006 Resident Questionnaire		x		x			Nuisance	
4334 STANLEY AVE	2006 Resident Questionnaire				x			Nuisance	
4338 STANLEY AVE	2006 Resident Questionnaire			x				Nuisance	
4408 STANLEY AVE	Drainage Master List				x				
4412 STANLEY AVE	Drainage Master List	x							interior house flooding, garage flooding due to rear yard backup
4426 STANLEY AVE	Drainage Master List				x				
4430 STANLEY AVE	October 2, 2006 Storm Comments, Drainage Master List				x				
4433 STANLEY AVE	Drainage Master List				x				Persistent flooding of parkway, street. Seepage into basement.
4511 STANLEY AVE	October 2, 2006 Storm Comments					x			
4512 STANLEY AVE	2006 Resident Questionnaire, Drainage Master List				x			Nuisance	rear yard
4515 STANLEY AVE	2006 Resident Questionnaire		x		x	x			parkway flooding
4520 STANLEY AVE	October 2, 2006 Storm Comments, village wide drainage study				x				8 homes affected
4524 STANLEY AVE	October 2, 2006 Storm Comments, Drainage Master List, 2005 Questionnaire	x							interior house flooding, yard drain replacement needed
4528 STANLEY AVE	October 2, 2006 Storm Comments, Drainage Master List				x				
4532 STANLEY AVE	2006 Resident Questionnaire				x			Chronic	
4536 STANLEY AVE	2006 Resident Questionnaire				x			Nuisance	
4540 STANLEY AVE	2006 Resident Questionnaire				x			Nuisance	
4607 STANLEY AVE	2006 Resident Questionnaire				x	x		Nuisance	add curb and gutter, adjacent sump pump problem
4615 STANLEY AVE	2006 Resident Questionnaire				x			Nuisance	
4629 STANLEY AVE	2006 Resident Questionnaire		x					Nuisance	
4636 STANLEY AVE	2006 Resident Questionnaire		x					Nuisance	
4822 STANLEY AVE	2006 Resident Questionnaire				x				at perimeter of rear yard

Table A.1: Complete List of Reported Drainage Problems in North St. Joseph Creek Watershed

Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
4827 STANLEY AVE	2006 Resident Questionnaire		x		x			Nuisance	
4833 STANLEY AVE	2006 Resident Questionnaire				x			Nuisance	
4925 STANLEY AVE	2006 Resident Questionnaire	x	x					Nuisance, Chronic	
4937 STANLEY AVE	2006 Resident Questionnaire				x			Nuisance	
4504 STATTON ST	Drainage Master List				x				adjacent sump pump
4509 STATTON ST	2006 Resident Questionnaire		x					Nuisance	
4512 STATTON ST	2006 Resident Questionnaire		x					Nuisance	
4519 STATTON ST	2006 Resident Questionnaire		x					Nuisance	
4528 STATTON ST	2006 Resident Questionnaire		x		x			Nuisance	
4324 STERLING RD	2006 Resident Questionnaire		x					Nuisance	
4517 STERLING RD	2006 Resident Questionnaire		x					Nuisance	
4524 STERLING RD	2006 Resident Questionnaire		x	x				Nuisance	
4537 STERLING RD	2006 Resident Questionnaire		x					Nuisance	
4605 STERLING RD	2006 Resident Questionnaire		x					Nuisance	
4617 STERLING RD	2006 Resident Questionnaire				x			Nuisance	
4624 STERLING RD	2006 Resident Questionnaire		x					Nuisance	
4703 STONEWALL AVE	2006 Resident Questionnaire				x			Nuisance	
4716 STONEWALL AVE	2006 Resident Questionnaire				x			Nuisance	
4717 STONEWALL AVE	2006 Resident Questionnaire				x			Nuisance	
4725 STONEWALL AVE	2006 Resident Questionnaire		x					Nuisance	
4825 STONEWALL AVE	2006 Resident Questionnaire		x					Nuisance	
4905 STONEWALL AVE	2006 Resident Questionnaire			x	x			Nuisance	
4922 STONEWALL AVE	2006 Resident Questionnaire		x					Nuisance	
4941 STONEWALL AVE	2006 Resident Questionnaire, Drainage Master List				x			Nuisance	
5516 STONEWALL AVE	2006 Resident Questionnaire		x					Nuisance	
610 SUMMIT ST	2006 Resident Questionnaire		x					Nuisance	
941 SUMMIT ST	2006 Resident Questionnaire		x					Nuisance	
1424 THORNWOOD DR	2006 Resident Questionnaire		x					Nuisance	
1524 THORNWOOD DR	2006 Resident Questionnaire		x					Nuisance	
1528 THORNWOOD DR	2006 Resident Questionnaire		x					Nuisance	
0 THORNWOOD & HILLCREST	October 2, 2006 Storm Comments					x			
32 TOWER RD	2006 Resident Questionnaire		x					Nuisance	
42 TOWER RD	2006 Resident Questionnaire		x			x		Critical	Basement flooding nuisance, yard flooding chronic
52 TOWER RD	2006 Resident Questionnaire		x					Nuisance	Basement flooding nuisance
102 TOWER RD	2006 Resident Questionnaire		x					Nuisance	
1313 TURVEY RD	2006 Resident Questionnaire				x			Nuisance	
1352 TURVEY RD	2006 Resident Questionnaire		x					Nuisance	
131 W CHICAGO AVE	2006 Resident Questionnaire		x					Nuisance	
1617 W 59TH ST	2006 Resident Questionnaire		x					Nuisance	
4821 WALLBANK AVE	2006 Resident Questionnaire			x	x			Nuisance	
4824 WALLBANK AVE	2006 Resident Questionnaire		x					Nuisance	
4829 WALLBANK AVE	2006 Resident Questionnaire		x		x			Nuisance	
4903 WALLBANK AVE	2006 Resident Questionnaire		x					Nuisance	
4907 WALLBANK AVE	2006 Resident Questionnaire		x					Nuisance	
4934 WALLBANK AVE	Drainage Master List				x				Persistent soggy rear yard. Water flowing in crawl space. Don't know where it is coming from. Full basement side OK.
4940 WALLBANK AVE	Drainage Master List	x							Interior house flooding. Storm sewer at intersection has insufficient capacity, water ponded up to elevation of window well
4941 WALLBANK AVE	October 2, 2006 Storm Comments, Drainage Master List					x		Critical	front yard flooding
5625 WALNUT AVE	Drainage Master List					x			
5626 WALNUT AVE	Drainage Master List	x							10" Water in basement, has happened often in past, sump not keeping up
0 WARREN AVE	October 2, 2006 Storm Comments								
1350 WARREN AVE	October 2, 2006 Storm Comments, Drainage Master List	x							interior house flooding
1508 WARREN AVE	October 2, 2006 Storm Comments, Drainage Master List	x						Critical	interior house flooding
1530 WARREN AVE	October 2, 2006 Storm Comments, Drainage Master List, 2005 Questionnaire	x			x	x		Critical	interior house flooding
1640 WARREN AVE	2006 Resident Questionnaire		x					Nuisance	
1738 WARREN AVE	October 2, 2006 Storm Comments				x				
1845 WARREN AVE	2006 Resident Questionnaire				x			Nuisance	
4330 WASHINGTON ST	2006 Resident Questionnaire				x			Nuisance	
4337 WASHINGTON ST	2006 Resident Questionnaire		x					Nuisance	
4412 WASHINGTON ST	2006 Resident Questionnaire	x				x		Chronic, Critical	
4433 WASHINGTON ST	Drainage Master List				x				Standing water causes yard to be unusable for weeks at a time. Sump pump runs frequently.
4440 WASHINGTON ST	Drainage Master List				x				be unusable for weeks at a
4620 WASHINGTON ST	2006 Resident Questionnaire	x	x	x	x			Chronic	Basement, garage flooding nuisance
4624 WASHINGTON ST	2006 Resident Questionnaire		x		x			Nuisance	
4628 WASHINGTON ST	October 2, 2006 Storm Comments, Drainage Master List				x				
4632 WASHINGTON ST	Drainage Master List				x				
4702 WASHINGTON ST	2006 Resident Questionnaire					x		Nuisance	
4740 WASHINGTON ST	2006 Resident Questionnaire	x	x	x	x	x		Nuisance, Chronic, Critical	
4822 WASHINGTON ST	2006 Resident Questionnaire				x			Nuisance	
4826 WASHINGTON ST	2006 Resident Questionnaire		x					Nuisance	
4836 WASHINGTON ST	2006 Resident Questionnaire		x					Nuisance	
4911 WASHINGTON ST	2006 Resident Questionnaire, Drainage Master List		x		x			Nuisance	
4925 WASHINGTON ST	2006 Resident Questionnaire		x		x			Nuisance	
4929 WASHINGTON ST	2006 Resident Questionnaire		x					Nuisance	
4936 WASHINGTON ST	2006 Resident Questionnaire		x		x			Nuisance	

Table A.1: Complete List of Reported Drainage Problems in North St. Joseph Creek Watershed

Address	Comment Data Source	Drainage Problem Description						Severity	Description/Comments
		House	Base-ment	Garage	Yard	Street	Other		
5007 WASHINGTON ST	2006 Resident Questionnaire			x				Chronic	
5247 WASHINGTON ST	2006 Resident Questionnaire		x		x				alley raised 2006 made things worse
0 WEBSTER ST	October 2, 2006 Storm Comments					x			
5317 WEBSTER ST	2006 Resident Questionnaire		x					Nuisance	
3940 WEST END RD	2006 Resident Questionnaire				x			Nuisance	
4063 WEST END RD	October 2, 2006 Storm Comments, Drainage Master List, 2006 Resident Questionnaire		x			x		Nuisance	inlet was clogged
4133 WEST END RD	2006 Resident Questionnaire		x		x	x		Nuisance, Chronic	
4928 WESTERN AVE	2006 Resident Questionnaire		x					Nuisance	
4900 WHIFFEN PLACE	October 2, 2006 Storm Comments, Drainage Master List					x			
4915 WHIFFIN PL	2006 Resident Questionnaire		x					Nuisance	
4919 WHIFFIN PL	2006 Resident Questionnaire		x					Nuisance	
5007 WILCOX AVE	2006 Resident Questionnaire		x					Nuisance	
3910 WILLIAMS ST	2006 Resident Questionnaire		x					Nuisance	
4022 WILLIAMS ST	2006 Resident Questionnaire		x					Nuisance	
4119 WILLIAMS ST	October 2, 2006 Storm Comments, Drainage Master List					x			
433 WILSON ST	2006 Resident Questionnaire		x					Nuisance	
511 WILSON ST	2006 Resident Questionnaire		x					Nuisance	
531 WILSON ST	2006 Resident Questionnaire				x	x		Critical	Yard flooding nuisance
535 WILSON ST	2006 Resident Questionnaire		x		x	x		Nuisance, Chronic	
600 WILSON ST	October 2, 2006 Storm Comments, Drainage Master List					x			
601 WILSON ST	2006 Resident Questionnaire		x		x			Chronic	Basement flooding nuisance
607 WILSON ST	Drainage Master List				x				
611 WILSON ST	2006 Resident Questionnaire				x			Nuisance	
622 WILSON ST	2006 Resident Questionnaire				x	x		Critical	Yard flooding chronic
4420 WILSON AVE	2006 Resident Questionnaire		x					Nuisance	
4422 WILSON AVE	2006 Resident Questionnaire		x		x			Nuisance	storm sewer flows into yard and neighbors
4424 WILSON AVE	2006 Resident Questionnaire				x			Nuisance	
4444 WILSON AVE	2006 Resident Questionnaire		x					Nuisance	
4501 WILSON AVE	2006 Resident Questionnaire		x					Nuisance	
4508 WILSON AVE	2006 Resident Questionnaire		x					Nuisance	
4601 WILSON AVE	2006 Resident Questionnaire		x					Nuisance	
4605 WILSON AVE	2006 Resident Questionnaire		x		x			Nuisance	
4608 WILSON AVE	2006 Resident Questionnaire		x					Nuisance	
4613 WILSON AVE	2006 Resident Questionnaire		x					Nuisance	
4620 WILSON AVE	2006 Resident Questionnaire		x					Nuisance	
4627 WILSON AVE	2006 Resident Questionnaire		x					Nuisance	
4632 WILSON AVE	2006 Resident Questionnaire				x			Nuisance	
4633 WILSON AVE	2006 Resident Questionnaire				x			Nuisance	
1954 WISCONSIN AVE	2006 Resident Questionnaire		x					Nuisance	
1957 WISCONSIN AVE	2006 Resident Questionnaire		x					Nuisance	
2400 WISCONSIN AVE	October 2, 2006 Storm Comments					x			
4721 WOODWARD AVE	2006 Resident Questionnaire				x			Nuisance	
4732 WOODWARD AVE	2006 Resident Questionnaire			x	x			Nuisance	
4815 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	overland flow
4823 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	overland flow
4840 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	overland flow
4912 WOODWARD AVE	2006 Resident Questionnaire	x	x	x	x			Nuisance, Chronic, Critical	overland flow
4921 WOODWARD AVE	Drainage Master List				x				adjacent sump pump, overland flow
4930 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	
4933 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	
5606 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	outside village limit
5607 WOODWARD AVE	2006 Resident Questionnaire		x				x	Nuisance	standing water in drainage ditch, outside village limit
5699 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	outside village limit
5717 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	outside village limit
5734 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	outside village limit
5737 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	outside village limit
5807 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	outside village limit
5815 WOODWARD AVE	2006 Resident Questionnaire		x					Nuisance	outside village limit

North St. Joseph Creek Watershed

Proposed Stormwater Projects and General Improvements Summary

Subwatershed ID	Subwatershed Area (acres)	Subwatershed Priority	Conceptual Estimate of Probable Cost		
			Proposed Stormwater Projects	General Improvements	
A	385	Low	<i>no improvements proposed</i>	\$3,289,000	
B	315	Moderate	\$6,760,000	\$9,939,000	
C	270	High #1	\$10,053,000	\$3,673,000	
D	375	Low	\$607,000	\$8,727,000	
E	375	High #3	\$9,325,000	\$9,915,000	
F	520	Moderate	\$676,000	\$14,477,000	
G	345	Low	<i>no improvements proposed</i>	\$735,000	
H	225	Low	<i>no improvements proposed</i>	\$3,350,000	
I	245	Moderate	\$1,150,000	\$4,130,000	
J	175	High #2	\$5,040,000	\$2,787,000	
TOTALS	3230		\$33,611,000	\$61,022,000	\$94,633,000

Note: St. Joseph Creek maintenance and stabilization cost estimates not included in the above.

For estimation of St. Joseph Creek maintenance and stabilization projects, the following can be utilized:

- a. CBBEL 2005 Downtown Area Watershed Plan for St. Joseph Creek Improvements between Carpenter and Lee: \$954,000;
- b. Village of Downers Grove Capital Improvement Project, maintenance between Carpenter and Belmont: \$850,000;
- c. Village of Downers Grove Capital Improvement Project, maintenance of St. Joseph Creek culvert from Carpenter to Mackie: \$100,000.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-A

General Improvements

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	4800	\$432,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	16	\$45,600
Pavement Patching	SY	\$45	1800	\$81,000
Roadway Resurfacing	LF	\$220	2700	\$594,000
Driveway Culvert Replacement	EA	\$2,000	33	\$66,000
Roadway Reconstruction with Ditches	LF	\$500	2100	\$1,050,000
SUBTOTAL CONSTRUCTION COST				\$2,268,600
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$453,720
Contingency (water quality requirements) (10%)				\$226,860
Design and Construction Engineering (15%)				\$340,290
TOTAL ESTIMATED COST				\$3,289,000

NOTES:

1. Uniform unit costs for each watershed used by Project Team for consistency.
2. Cost opinion does not include any utilities except storm sewer.
3. Cost opinion does not include tree removal, tree replacement, or landscaping.
4. Cost opinion does not include annual maintenance or monitoring costs that may be required.
5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes one manhole for every 300 feet of 12-inch additional sewer.
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.
18. Does not include area outside of Village limit west and southwest of golf course.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-B

Proposed Stormwater Projects

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	896	\$80,640
48-inch Storm Sewer, 6-10 ft deep	LF	\$190	1400	\$266,000
54-inch Storm Sewer, 6-10 ft deep	LF	\$200	5425	\$1,085,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	2	\$5,700
Precast Manhole, 6-ft diameter, 10-14 ft deep	EA	\$4,950	59	\$291,638
Pavement Patching	SY	\$45	20	\$900
Roadway Resurfacing	LF	\$220	30	\$6,600
Roadway Reconstruction with Ditches	LF	\$500	5425	\$2,712,500
Seeding and Surface Restoration	AC	\$3,000	1.1	\$3,428
Wetland Mitigation	AC	\$175,000	1.2	\$210,000
SUBTOTAL CONSTRUCTION COST				\$4,662,405
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$932,481
Contingency (water quality requirements) (10%)				\$466,241
Design and Construction Engineering (15%)				\$699,361
TOTAL ESTIMATED COST				\$6,760,000

NOTES:

- Uniform unit costs for each watershed used by Project Team for consistency.
- Cost opinion does not include any utilities except storm sewer.
- Cost opinion does not include tree removal, tree replacement, or landscaping.
- Cost opinion does not include annual maintenance or monitoring costs that may be required.
- Cost opinion does not include purchase of easements.
- Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
- Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
- Cost opinion assumes three manholes and 35 feet of 12-inch storm sewer for every 300 feet of mainline sewer, to represent laterals every 300 feet (with a mainline manhole in the ROW and a catch basin and inlet on each side of the road.)
- Cost opinion uses unit cost of manhole for inlets and catch basins.
- Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
- Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
- Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
- Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
- Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
- Cost opinion does not include parkway restoration.
- Cost opinion does not include cost to obtain easements.
- Cost opinion does not include work in floodplain areas of St. Joseph Creek.
- Wetland mitigation area was assumed to be 1/2 of area of HWL of existing depressional area.
- Seeding and restoration for 48-inch pipe through yards assumes 15' on each side of pipe.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-B

General Improvements

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	10500	\$945,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	35	\$99,750
Driveway Culvert Replacement	EA	\$2,000	280	\$560,000
Roadway Reconstruction with Ditches	LF	\$500	10500	\$5,250,000
SUBTOTAL CONSTRUCTION COST				\$6,854,750
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,370,950
Contingency (water quality requirements) (10%)				\$685,475
Design and Construction Engineering (15%)				\$1,028,213
TOTAL ESTIMATED COST				\$9,939,000

NOTES:

1. Uniform unit costs for each watershed used by Project Team for consistency.
2. Cost opinion does not include any utilities except storm sewer.
3. Cost opinion does not include tree removal, tree replacement, or landscaping.
4. Cost opinion does not include annual maintenance or monitoring costs that may be required.
5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes one manhole for every 300 feet of 12-inch additional sewer.
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-C

Proposed Stormwater Projects

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	1490	\$134,100
18-inch Storm Sewer	LF	\$110	950	\$104,500
36-inch Storm Sewer, 6-10 ft deep	LF	\$140	4770	\$667,800
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	24	\$68,400
Precast Manhole, 6-ft diameter, 4-10 ft deep	EA	\$4,000	48	\$192,000
Pavement Patching	SY	\$45	5400	\$243,000
Roadway Resurfacing	LF	\$220	6510	\$1,432,200
Seeding and Surface Restoration	AC	\$3,000	0.3	\$1,012
Above Ground Stormwater Storage Facility or Regrading	AC-FT	\$200,000	17.9	\$3,580,000
Tideflex Check Valve	EA	\$10,000	1	\$10,000
Voluntary Buyout Program	occurrence	\$500,000	1	\$500,000
SUBTOTAL CONSTRUCTION COST				\$6,933,012
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,386,602
Contingency (water quality requirements) (10%)				\$693,301
Design and Construction Engineering (15%)				\$1,039,952
TOTAL ESTIMATED COST				\$10,053,000

NOTES:

1. Uniform unit costs for each watershed used by Project Team for consistency.
2. Cost opinion does not include any utilities except storm sewer.
3. Cost opinion does not include tree removal, tree replacement, or landscaping.
4. Cost opinion does not include annual maintenance or monitoring costs that may be required.
5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes three manholes and 35 feet of 12-inch storm sewer for every 300 feet of mainline sewer, to represent laterals every 300 feet (with a mainline manhole in the ROW and a catch basin and inlet on each side of the road.)
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-C

General Improvements

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	6500	\$585,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	22	\$61,750
Pavement Patching	SY	\$45	3700	\$166,500
Roadway Resurfacing	LF	\$220	5550	\$1,221,000
Driveway Culvert Replacement	EA	\$2,000	12	\$24,000
Roadway Reconstruction with Ditches	LF	\$500	950	\$475,000
SUBTOTAL CONSTRUCTION COST				\$2,533,250
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$506,650
Contingency (water quality requirements) (10%)				\$253,325
Design and Construction Engineering (15%)				\$379,988
TOTAL ESTIMATED COST				\$3,673,000

NOTES:

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4. Cost opinion does not include annual maintenance or monitoring costs that may be required.
5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes one manhole for every 300 feet of 12-inch additional sewer.
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-D

Proposed Stormwater Projects

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	105	\$9,450
15-inch Storm Sewer	LF	\$100	750	\$75,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	9	\$25,650
Pavement Patching	SY	\$45	3188	\$143,438
Roadway Resurfacing	LF	\$220	750	\$165,000
SUBTOTAL CONSTRUCTION COST				\$418,538
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$83,708
Contingency (water quality requirements) (10%)				\$41,854
Design and Construction Engineering (15%)				\$62,781
TOTAL ESTIMATED COST				\$607,000

NOTES:

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5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes three manholes and 35 feet of 12-inch storm sewer for every 300 feet of mainline sewer, to represent laterals every 300 feet (with a mainline manhole in the ROW and a catch basin and inlet on each side of the road.)
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-D

General Improvements

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	15887	\$1,429,800
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	101	\$286,900
Pavement Patching	SY	\$45	10591	\$476,600
Roadway Resurfacing	LF	\$220	15000	\$3,300,000
Driveway Culvert Replacement	EA	\$2,000	20	\$40,000
Roadway Reconstruction with Ditches	LF	\$500	970	\$485,000
SUBTOTAL CONSTRUCTION COST				\$6,018,300
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,203,660
Contingency (water quality requirements) (10%)				\$601,830
Design and Construction Engineering (15%)				\$902,745
TOTAL ESTIMATED COST				\$8,727,000

NOTES:

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5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes one manhole for every 300 feet of 12-inch additional sewer.
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-E

Proposed Stormwater Projects

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	1950	\$175,500
15-inch Storm Sewer	LF	\$100	770	\$77,000
18-inch Storm Sewer	LF	\$110	570	\$62,700
21-inch Storm Sewer	LF	\$115	1100	\$126,500
24-inch Storm Sewer	LF	\$120	2540	\$304,800
54-inch Storm Sewer, 6-10 ft deep	LF	\$200	650	\$130,000
60-inch Storm Sewer, 6-10 ft deep	LF	\$200	800	\$160,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	69	\$197,505
Precast Manhole, 6-ft diameter, 10-14 ft deep	EA	\$4,950	19	\$91,575
Outfall Repair or Replace	EA	\$2,000	2	\$4,000
Pavement Patching	SY	\$45	5047	\$227,113
Roadway Resurfacing	LF	\$220	6930	\$1,524,600
Roadway Reconstruction with Curb and Gutter	LF	\$1,000	1450	\$1,450,000
Above Ground Stormwater Storage Facility	AC-FT	\$200,000	9.5	\$1,900,000
SUBTOTAL CONSTRUCTION COST				\$6,431,293
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,286,259
Contingency (water quality requirements) (10%)				\$643,129
Design and Construction Engineering (15%)				\$964,694
TOTAL ESTIMATED COST				\$9,325,000

NOTES:

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5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes three manholes and 35 feet of 12-inch storm sewer for every 300 feet of mainline sewer, to represent laterals every 300 feet (with a mainline manhole in the ROW and a catch basin and inlet on each side of the road.)
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-E

General Improvements

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	19429	\$1,748,565
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	84	\$238,450
Pavement Patching	SY	\$45	12952	\$582,855
Roadway Resurfacing	LF	\$220	19400	\$4,268,000
SUBTOTAL CONSTRUCTION COST				\$6,837,870
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,367,574
Contingency (water quality requirements) (10%)				\$683,787
Design and Construction Engineering (15%)				\$1,025,681
TOTAL ESTIMATED COST				\$9,915,000

NOTES:

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5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes one manhole for every 300 feet of 12-inch additional sewer.
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-F

Proposed Stormwater Projects

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	1300	\$117,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	4	\$12,350
Storm Sewer Inlet Repair or Replace	EA	\$2,000	6	\$12,000
Pavement Patching	SY	\$45	867	\$39,000
Roadway Resurfacing	LF	\$220	1300	\$286,000
SUBTOTAL CONSTRUCTION COST				\$466,350
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$93,270
Contingency (water quality requirements) (10%)				\$46,635
Design and Construction Engineering (15%)				\$69,953
TOTAL ESTIMATED COST				\$676,000

NOTES:

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5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes three manholes and 35 feet of 12-inch storm sewer for every 300 feet of mainline sewer, to represent laterals every 300 feet (with a mainline manhole in the ROW and a catch basin and inlet on each side of the road.)
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
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13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
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Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-F

General Improvements

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	21988	\$1,978,950
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	92	\$260,775
Pavement Patching	SY	\$45	8926	\$401,650
Roadway Resurfacing	LF	\$220	13050	\$2,871,000
Driveway Culvert Replacement	EA	\$2,000	86	\$172,000
Roadway Reconstruction with Ditches	LF	\$500	8600	\$4,300,000
SUBTOTAL CONSTRUCTION COST				\$9,984,375
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$1,996,875
Contingency (water quality requirements) (10%)				\$998,438
Design and Construction Engineering (15%)				\$1,497,656
TOTAL ESTIMATED COST				\$14,477,000

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5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes one manhole for every 300 feet of 12-inch additional sewer.
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
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13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-G

General Improvements

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	1450	\$130,500
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	5	\$13,775
Pavement Patching	SY	\$45	967	\$43,500
Roadway Resurfacing	LF	\$220	1450	\$319,000
SUBTOTAL CONSTRUCTION COST				\$506,775
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$101,355
Contingency (water quality requirements) (10%)				\$50,678
Design and Construction Engineering (15%)				\$76,016
TOTAL ESTIMATED COST				\$735,000

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5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes one manhole for every 300 feet of 12-inch additional sewer.
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-H

General Improvements

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	3850	\$346,500
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	13	\$36,575
Pavement Patching	SY	\$45	400	\$18,000
Roadway Resurfacing	LF	\$220	400	\$88,000
Driveway Culvert Replacement	EA	\$2,000	48	\$96,000
Roadway Reconstruction with Ditches	LF	\$500	3450	\$1,725,000
SUBTOTAL CONSTRUCTION COST				\$2,310,075
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$462,015
Contingency (water quality requirements) (10%)				\$231,008
Design and Construction Engineering (15%)				\$346,511
TOTAL ESTIMATED COST				\$3,350,000

NOTES:

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5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes one manhole for every 300 feet of 12-inch additional sewer.
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-I

Proposed Stormwater Projects

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	135	\$12,150
48-inch Storm Sewer, 10-14 ft deep	LF	\$195	300	\$58,500
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	3	\$8,550
Precast Manhole, 6-ft diameter, 4-10 ft deep	EA	\$4,000	3	\$12,000
Seeding and Surface Restoration	AC	\$3,000	0.5	\$1,612
Above Ground Stormwater Storage Facility	AC-FT	\$200,000	3.5	\$700,000
SUBTOTAL CONSTRUCTION COST				\$792,812
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$158,562
Contingency (water quality requirements) (10%)				\$79,281
Design and Construction Engineering (15%)				\$118,922
TOTAL ESTIMATED COST				\$1,150,000

NOTES:

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5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes three manholes and 35 feet of 12-inch storm sewer for every 300 feet of mainline sewer, to represent laterals every 300 feet (with a mainline manhole in the ROW and a catch basin and inlet on each side of the road.)
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
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11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes
 North St. Joseph Creek Watershed
 Subwatershed SJN-I
 General Improvements

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	8150	\$733,500
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	27	\$77,425
Pavement Patching	SY	\$45	5433	\$244,500
Roadway Resurfacing	LF	\$220	8150	\$1,793,000
SUBTOTAL CONSTRUCTION COST				\$2,848,425
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$569,685
Contingency (water quality requirements) (10%)				\$284,843
Design and Construction Engineering (15%)				\$427,264
TOTAL ESTIMATED COST				\$4,130,000

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5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes one manhole for every 300 feet of 12-inch additional sewer.
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
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17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes
 North St. Joseph Creek Watershed
 Subwatershed SJN-J
 Proposed Stormwater Projects

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	50	\$4,500
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	4	\$11,400
Above Ground Stormwater Storage Facility	AC-FT	\$200,000	2.3	\$460,000
Voluntary Buyout Program	occurrence	\$500,000	6	\$3,000,000
SUBTOTAL CONSTRUCTION COST				\$3,475,900
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$695,180
Contingency (water quality requirements) (10%)				\$347,590
Design and Construction Engineering (15%)				\$521,385
TOTAL ESTIMATED COST				\$5,040,000

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6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
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9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
11. Cost opinion assumes detention facility outlet structure is incidental to basin cost for purpose of this opinion.
12. Cost opinion assumes seeding and surface restoration for a 10-ft along each side of pipe for length of pipe where pipe alignment follows a grassed area for a significant length.
13. Cost opinion does not include driveway rehabilitation for replacement of driveway culverts.
14. Cost opinion uses "above ground stormwater storage facility" cost per acre-foot for regraded volume provided.
15. Cost opinion does not include parkway restoration.
16. Cost opinion does not include cost to obtain easements.
17. Cost opinion does not include work in floodplain areas of St. Joseph Creek.

Conceptual Engineer's Estimated Opinion of Probable Construction Cost for Planning Purposes

North St. Joseph Creek Watershed

Subwatershed SJN-J

General Improvements

ITEM	Unit	Unit Cost	Quantity	Cost
12-inch Storm Sewer	LF	\$90	5500	\$495,000
Precast Manhole, 4-ft diameter, 4-10 ft deep	EA	\$2,850	18	\$52,250
Pavement Patching	SY	\$45	3667	\$165,000
Roadway Resurfacing	LF	\$220	5500	\$1,210,000
SUBTOTAL CONSTRUCTION COST				\$1,922,250
Contingency (mobilization, maintenance of traffic, etc.) (20%)				\$384,450
Contingency (water quality requirements) (10%)				\$192,225
Design and Construction Engineering (15%)				\$288,338
TOTAL ESTIMATED COST				\$2,787,000

NOTES:

1. Uniform unit costs for each watershed used by Project Team for consistency.
2. Cost opinion does not include any utilities except storm sewer.
3. Cost opinion does not include tree removal, tree replacement, or landscaping.
4. Cost opinion does not include annual maintenance or monitoring costs that may be required.
5. Cost opinion does not include purchase of easements.
6. Cost opinion assumes the roadway will be replaced with a cross section shown in Appendix B of the report.
7. Roadway reconstruction cost includes demolition, sidewalk, and seed/surface restoration.
8. Cost opinion assumes one manhole for every 300 feet of 12-inch additional sewer.
9. Cost opinion uses unit cost of manhole for inlets and catch basins.
10. Cost opinion assumes 4-ft dia manholes for 24" dia pipe and smaller, and 6-ft dia manholes for 30" dia pipe and larger.
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Village of Downers Grove, IL

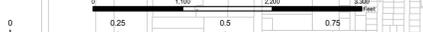
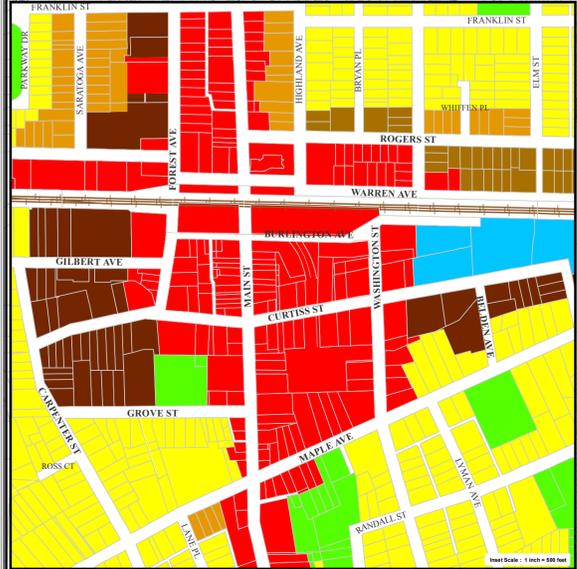
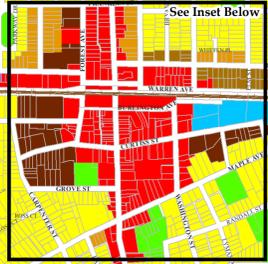
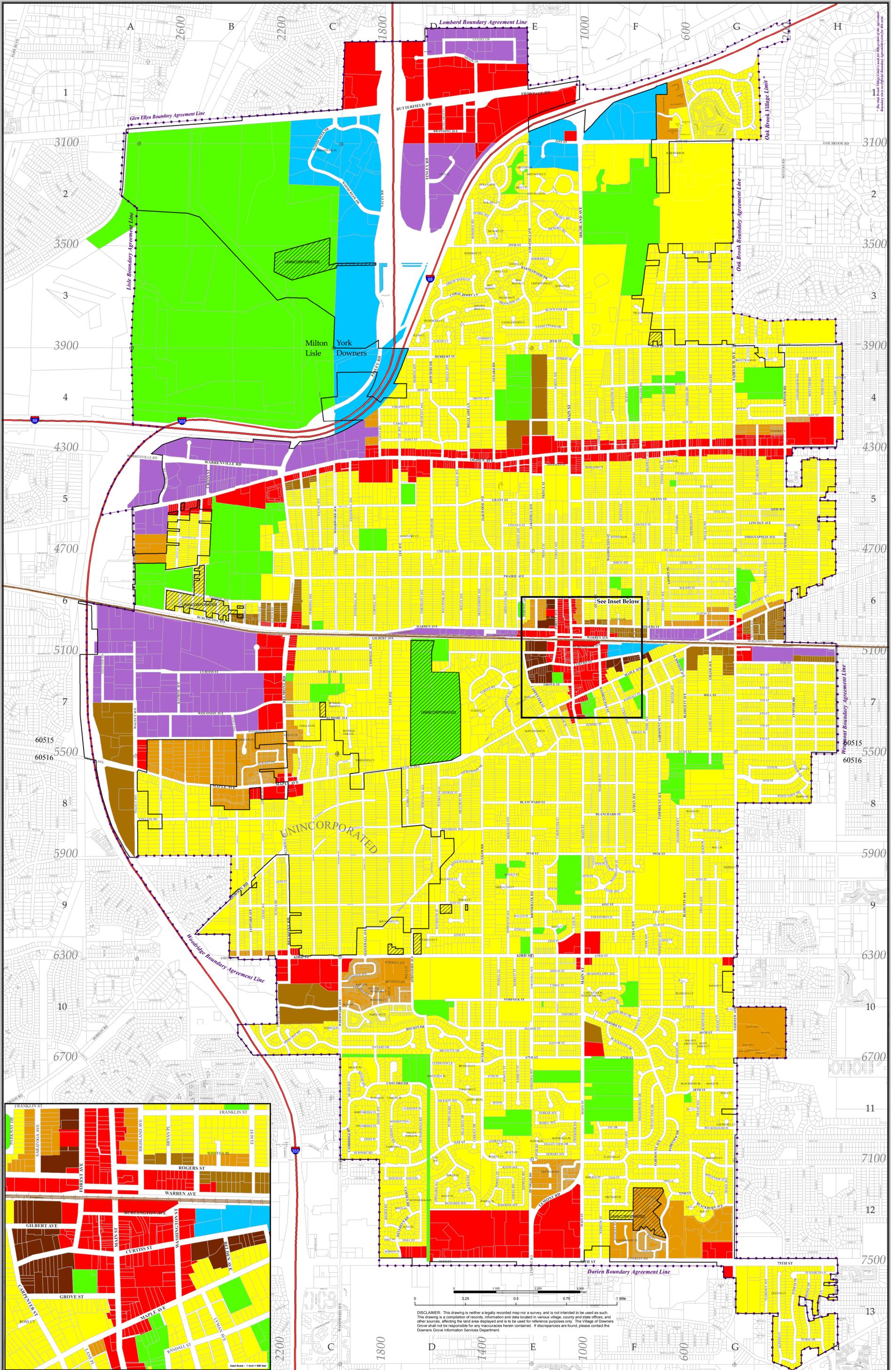
FUTURE LAND USE MAP

Corrected to 12/19/2006

Population as of 04/01/2000 Census: 48,724
 Estimated Population as of 12/31/2005: 50,988



- Section Corner
- Agreement Boundary
- Unincorporated
- Downers Grove
- Commercial
- Office Research
- Office Research & Manufacturing
- Open Space
- Residential 0-6 DU/Acre
- Residential 6-11 DU/Acre
- Residential 11-25 DU/Acre
- Residential 25-60 DU/Acre



DISCLAIMER: This drawing is neither a legally recorded map nor a survey, and is not intended to be used as such. This drawing is a compilation of records, information and data located in various village, county and state offices, and other sources, affecting the land area displayed and is to be used for reference purposes only. The Village of Downers Grove shall not be responsible for any inaccuracies herein contained. If discrepancies are found, please contact the Downers Grove Information Services Department.

The Oak Brook Village Limit is used for reference purposes only. The Village of Downers Grove shall not be responsible for any inaccuracies herein contained. If discrepancies are found, please contact the Downers Grove Information Services Department.

Project Schedule

A basic project schedule was developed to estimate length of time to implement a project from notice-to-proceed with design, through permitting and construction.

Typical design times are assumed as follows, estimated from Notice to Proceed:

Small Project: Survey, Preliminary and Final Engineering, Construction Documents	2-3 months
Large Project: Data Collection (incl. Survey) and Preliminary Engineering	3-6 months
Large Project: Final Engineering and Construction Documents, Permit Submittal Documents	3-6 months

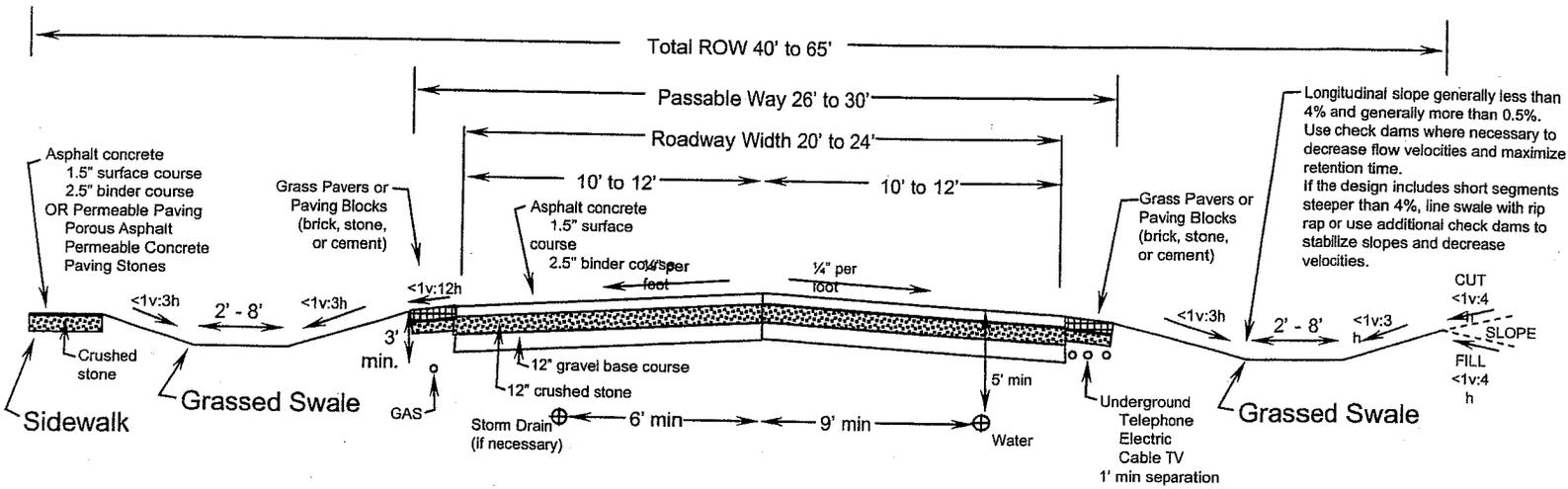
Typical permitting times are assumed as follows:

Village of Downers Grove Stormwater Permit	6 – 12 months
IDNR Floodway Permit	6 – 9 months (concurrent with Stormwater Permit)
IEPA Water Quality Permits	6 – 9 months (concurrent with Stormwater Permit)
U.S. Army Corps of Engineers Permit	9-12 months (concurrent with Stormwater Permit, if not delegated to DG)
Kane/DuPage Soil and Water Conservation District	1-3 months (concurrent with Army Corps Permit)
IDOT/DuDOT Approvals	3-6 months (concurrent with Stormwater Permit)
FEMA CLOMR	6-12 months (after sign-off by Community).

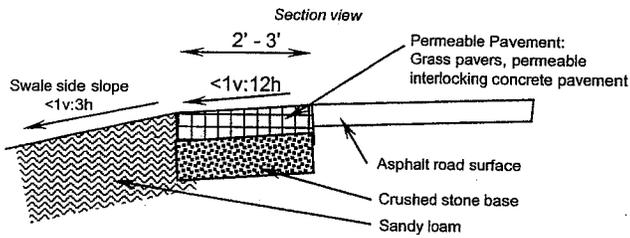
Typical construction time estimates for larger projects are shown below, assuming an early spring start. Add 2 months for bidding and contract award process.

Full Road Reconstruction	2 residential blocks per month
Streambank Stabilization (Major)	1000 linear feet per month
Detention Basin Construction	1 acre-foot per two weeks
Bridge Replacement (Cast-in-Place)	1 structure per two months
Bridge Replacement (Pre-Cast)	1 structure per month

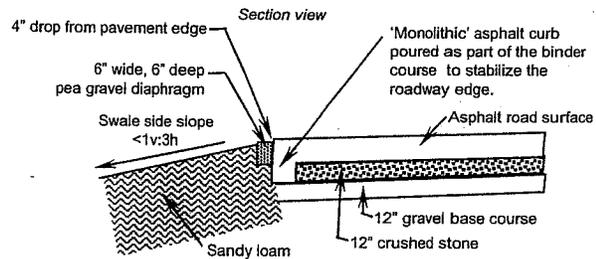
TYPICAL CROSS SECTION



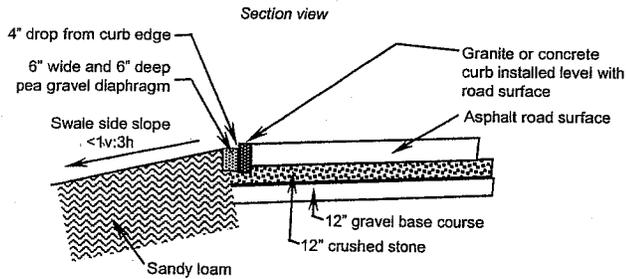
Permeable Shoulder



Invisible 'Monolithic' Curb



Invisible Curb



Perforated Curb

