6.0 Nine Mile Creek—Central

6.1 General Description of Drainage Area

Figure 6.1 depicts the Nine Mile Creek- Central drainage basin. The Nine Mile Creek- Central drainage basin is located in the central portion of Edina and encompasses 1,243 acres that ultimately drain to the stretch of the North Fork of Nine Mile Creek between T.H. 62 and West 70th Street.

6.1.1 Drainage Patterns

The stormwater system within this drainage area is comprised of storm sewers, ponding basins, drainage ditches, and overland flow paths. The Nine Mile Creek- Central drainage basin has been divided into three major watersheds based on the drainage patterns. These major watersheds are depicted in Figure 6.2. Each major watershed has been further delineated into many subwatersheds. The naming convention for each subwatershed is based on the major watershed it is located within. Table 6.1 lists each major watershed and the associated subwatershed naming convention.

Table 6.1 Major Watersheds within the Nine Mile Creek—Central Drainage Basin

Major Watershed	Subwatershed Naming Convention	# of Subwatersheds	Drainage Area (acres)
Colonial Ponds	CO_##	13	114
Indian Pond	IP_##	4	24
Nine Mile Central	NMC_##	119	1105

6.1.1.1 Colonial Ponds

The Colonial Ponds watershed is located in central Edina and encompasses approximately 114 acres. The watershed is bordered by T.H. 62 to the south, Villa Lane on the west, extends northward to Benton Avenue and eastward slightly past Westridge Boulevard. Six stormwater detention ponds are located within the watershed. The most downstream detention basin is located just south of the Colonial Church (subwatershed CO_1) and outlets to the North Fork of Nine Mile Creek via a 48-inch culvert underneath T.H. 62. The land use within the watershed is primarily residential, with the exception of the Colonial Church property and adjacent Countryside Park.

6.1.1.2 Indian Pond

The Indian Pond watershed is located in central Edina, southwest of Creek Valley Elementary School. The 24-acre watershed is characterized by a single storm sewer system that drains to Indian Pond. Indian Pond is a land-locked basin. In the unlikely event of overflow from this pond, which would occur at an approximate Elevation 897 MSL, the overflow would discharge to the intersection of Indian Hills Pass and Cherokee Trail. It would then be picked up by the Gleason Road storm sewer system and eventually discharge into the North Fork of Nine Mile Creek, just northwest of the

Edina High School complex. The land use within the Indian Pond watershed is low-density residential.

6.1.1.3 Nine Mile Central

The Nine Mile Central watershed is also located in central Edina and spans approximately 1,105 acres. Stormwater within the watershed drains to the North Fork of Nine Mile Creek between T.H. 62 and West 70th Street via a network of ponding basins and storm sewer. The watershed extends north to the intersection of Hansen Road and West 56th Street and includes the area north of T.H. 62 that drains to the storm sewer system along the SOO Line railroad. The SOO Line storm sewer system flows beneath T.H. 62 and eventually discharges into the Creek near the intersection of Valley Lane and Limerick Lane. The watershed is bordered by West 70th Street on the south, Gleason Road on the west, and T.H. 100 on the east. There are five stormwater detention basins within the Nine Mile Central watershed. The watershed has been delineated into 118 subwatersheds, with land use characterized by residential areas, the Edina High School complex, freeway, several parks, the SOO Line Railroad, several ponding basins, and the floodplain of the North Fork of Nine Mile Creek.

6.2 Stormwater System Analysis and Results

6.2.1 Hydrologic/Hydraulic Modeling Results

The 10-year and 100-year frequency flood analyses were performed for the Nine Mile Creek- Central drainage basin. The 10-year analysis was based on a ½-hour storm of 1.65 inches of rain. The 100-year analysis was based on a 24-hour storm event of 6 inches of rain. Table 6.2 presents the watershed information and the results for the 10-year and 100-year hydrologic analyses for the Nine Mile Creek- Central basin.

The results of the 10-year and 100-year frequency hydraulic analyses for the Nine Mile Creek-Central drainage basin are summarized in Table 6.3 and Table 6.4. The column headings in Table 6.3 are defined as follows:

Node/Subwatershed ID—XP-SWMM node identification label. Each XP-SWMM node represents a manhole, catchbasin, pond, or other junction within the stormwater system.

Downstream Conduit—References the pipe downstream of the node in the storm sewer system.

Flood Elevation—The maximum water elevation reached in the given pond/manhole for each referenced storm event (mean sea level). In some cases, an additional flood elevation has been given in parenthesis. This flood elevation reflects the 100-year flood elevation of Nine Mile Creek, per the *Nine Mile Creek Watershed Management Plan*, May 1996.

Peak Outflow Rate—The peak discharge rate (cfs) from a given ponding basin for each referenced storm event. The peak outflow rates reflect the combined discharge from the pond through the outlet structure and any overflow.

NWL—The normal water level in the ponding basin (mean sea level). The normal water levels for the ponding basins were assumed to be at the outlet pipe invert or at the downstream control elevation.

Flood Bounce—The fluctuation of the water level within a given pond for each referenced storm event.

Volume Stored—The maximum volume (acre-ft) of water that was stored in the ponding basin during the storm event. The volume represents the live storage volume only.

Table 6.4 summarizes the conveyance system data used in the model and the model results for the storm sewer system within the Nine Mile Creek- Central drainage basin. The peak flow through each conveyance system for the 10-year and 100-year frequency storm event is listed in the table. The values presented represent the peak flow rate through each pipe system only and does not reflect the combined total flow from an upstream node to the downstream node when overflow from a manhole/pond occurs.

Figure 6.3 graphically represents the results of the 10-year and 100-year frequency hydraulic analyses. The figure depicts the Nine Mile Creek- Central drainage basin boundary, subwatershed boundaries, the modeled storm sewer network, surcharge conditions for the XP-SWMM nodes (typically manholes), and the flood prone areas identified in the modeling analyses.

One of the objectives of the hydraulic analyses was to evaluate the level of service provided by the current storm sewer system. The level of service of the system was examined by determining the surcharge conditions of the manholes and catch basins within the storm sewer system during the 10-year and 100-year frequency storm events. An XP-SWMM node was considered surcharged if the hydraulic grade line at that node breached the ground surface (rim elevation). Surcharging is typically the result of limited downstream capacity and tailwater impacts. The XP-SWMM nodes depicted on Figure 6.3 were color coded based on the resulting surcharge conditions. The green nodes signify no surcharging occurred during the 100-year or 10-year storm event, the yellow nodes indicate surcharging during the 100-year event, and the red nodes identify that surcharging is likely to occur during both a 100-year and 10-year frequency storm event. Figure 6.3 illustrates that several XP-SWMM nodes within the Nine Mile Creek- Central drainage basin are predicted to experience surcharged conditions during both the 10-year and 100-year frequency storm events. This indicates a probability greater than 10 percent *in any year* that the system will be overburdened and unable to meet the desired level of service at these locations. These manholes and catch basins are more likely to experience inundation during the smaller, more frequent storm events of various durations.

Another objective of the hydraulic analysis was to evaluate the level of protection offered by the current stormwater system. Level of protection is defined as the capacity provided by a municipal drainage system (in terms of pipe capacity and overland overflow capacity) to prevent property damage and assure a reasonable degree of public safety following a rainstorm. A 100-year frequency event is recommended as a standard for design of stormwater management basins. To evaluate the level of protection of the stormwater system within the Nine Mile Creek- Central drainage area, the 100-year frequency flood elevations for the ponding basins and depressed areas were compared to the low elevations of structures surrounding each basin. The low elevations were initially determined using 2-foot topographic information and aerial imagery in ArcView. Where 100-year flood levels of the ponding areas appeared to potentially threaten structures, detailed low house elevations were obtained through field surveys. The areas that were predicted to flood and threaten structures during the 100-year frequency storm event are highlighted in Figure 6.3. Discussion and recommended implementation considerations for these areas are included in Section 6.3.

6.2.2 Water Quality Modeling Results

The effectiveness of the stormwater system in removing stormwater pollutants such as phosphorus was analyzed using the P8 water quality model. The P8 model simulates the hydrology and phosphorus loads introduced from the watershed of each pond and the transport of phosphorus throughout the stormwater system. Since site-specific data on pollutant wash-off rates and sediment characteristics were not available, it was necessary to make assumptions based on national average values. Due to such assumptions and lack of in-lake water quality data for model calibration, the modeling results were analyzed based on the percent of phosphorus removal that occurred and not based on actual phosphorus concentrations.

Figure 6.4 depicts the results of the water quality modeling for the Nine Mile Creek- Central drainage basin. The figure shows the fraction of total phosphorus removal for each water body as well as the cumulative total phosphorus removal in the watershed. The individual water bodies are colored various shades of blue, indicating the percent of the total annual mass of phosphorus entering the water body that is removed (through settling). It is important to note that the percent of phosphorus removal is based on total phosphorus, including phosphorus in the soluble form. Therefore, the removal rates in downstream ponds will likely decrease due to the large soluble fraction of incoming phosphorus that was unsettleable in upstream ponds. The watersheds are depicted in various shades of gray, indicating the cumulative total phosphorus removal achieved. The cumulative percent removal represents the percent of the total annual mass of phosphorus entering the watershed that is removed in the pond and all upstream ponds.

Ponds that had an average annual total phosphorus removal rate of 60 percent or greater, under average climatic conditions, were considered to be performing well. For those ponds with total phosphorus removal below 60 percent, the permanent pool storage volume was analyzed to determine if additional capacity is necessary. Based on recommendations from the MPCA publication *Protecting Water Quality in Urban Areas*, March 2000, the permanent pool for detention ponds should be equal to or greater than the runoff from a 2.0-inch rainfall, in addition to the sediment storage for at least 25 years of sediment accumulation. For ponds with less than 60 percent total phosphorus removal, the recommended storage volume was calculated for each pond within the drainage basin and compared to the existing permanent pool storage volume.

6.3 Implementation Considerations

The XP-SWMM hydrologic and hydraulic modeling analyses and P8 water quality analysis helped to identify locations throughout the watershed where improvements to the City's stormwater management system may be warranted. The following sections discuss potential mitigation alternatives that were identified as part of the 2003 modeling analyses. As opportunities to address the identified flooding issues and water quality improvements arise, such as street reconstruction projects or public facilities improvements, the City will use a comprehensive approach to stormwater management. The comprehensive approach will include consideration of infiltration or volume retention practices to address flooding and/or water quality improvements, reduction of impervious surfaces, increased storm sewer capacity where necessary to alleviate flooding, construction and/or expansion of water quality basins, and implementation of other stormwater BMPs to reduce pollutant loading to downstream waterbodies.

6.3.1 Flood Protection Projects

The 2003 hydrologic and hydraulic modeling analysis identified several locations within the Nine Mile Creek- Central drainage basin where the 100-year level of protection is not provided by the current stormwater system. The problem areas identified in 2003 are discussed below.

As part of the 2003 modeling analysis, potential corrective measures were identified for the problem areas for purposes of developing planning-level cost estimates. These preliminary corrective measures are also discussed below. As the City evaluates the flooding issues and potential system modifications in these areas, consideration will be given to other potential system modifications, including implementation of stormwater infiltration or volume retention practices, where soils are conducive.

6.3.1.1 6005 & 6009 Crescent Drive (manhole 457)

Stormwater runoff from subwatershed NMC_110 collects at a low area along Crescent Drive. Stormwater is collected at two catchbasins located on both sides of the street at 6013 Crescent Drive and flows eastward through an 18-inch storm sewer that connects with the trunk system that flows south along the SOO Line railroad tracks. During intense rainstorms, such as the 100-year frequency event, flow through the 18-inch system is restricted due to high flows entering the larger trunk system from the east. Due to the restricted flow, water pools in the street along Crescent Drive and eventually overtops the street and flows eastward between the homes toward a backyard depression area behind the homes of 6001, 6005, 6009, and 6013 Crescent Drive. As a result of the overland flow from Crescent Drive, this backyard depression area becomes inundated. The 100-year frequency flood elevation within this depression area is 903.0 MSL. This flood elevation is higher than the low house elevations at 6005 and 6009 Crescent Drive, which were surveyed at 902.2 MSL.

Based on the 2-foot topographic information, it appears that water in the backyard depression area will drain southward through a ditch along the west side of the railroad tracks, once it reaches elevation of 902.6 MSL. To alleviate the flooding potential, it is recommended that a gravity channel be constructed from the depression area to the ditch along the west side of the railroad tracks at an elevation lower than the low house elevation of 902.2 MSL. This will allow the depression area to drain and alleviate flooding at 6005 and 6009 Crescent Drive.

6.3.1.2 Cherokee Trail & Gleason Backyard Depression Area (IP_4)

A backyard depression area exists east of Cherokee Trail, just southwest of the intersection of Cherokee Trail and Gleason Road. This is currently a land-locked area. During the 100-year frequency storm event, the flood elevation in this backyard area reaches 887.8 MSL. This flood elevation is slightly higher than the low house elevation at 6529 Cherokee Trail, which was surveyed at 887.34 MSL. To alleviate this flooding problem, it is recommended that a low level outlet be constructed.

6.3.1.3 5339 West 64th Street (NMC_80)

A backyard depression area exists south of West 64th Street and west of Ridgeview Drive, just east of the SOO Line railroad tracks. Stormwater from the direct subwatershed (NMC_80) and overflow from West 64th Street collects in the depression area, where it enters an 18-inch storm sewer system through an intake structure. During the 100-year frequency storm event, the backyard depression is inundated with stormwater and the flood elevation rises to 875.7 MSL. This flood elevation is slightly higher than the low house elevation at 5339 West 64th Street, surveyed at 875.4 MSL.

To alleviate the flooding problem and provide a 100-year level of protection, it is recommended that the two 18-inch pipes (pipes 293 and 294) that connect the backyard depression area to the storm sewer system at the intersection of Ridgeview Drive and Valley Lane be upgraded to 24-inch pipes. This upgrade would result in a 100-year flood elevation of 875.3 MSL, thus lower than the low house elevation at 5339 West 64th Street.

6.3.1.4 Valley View Road & Hillside Road (NMC_86, NMC_120)

The streets and homes in the area around the intersection of Valley View Road and Hillside Road are situated in a low depression area. Storm sewer in this area collects the stormwater, which flows southward underneath T.H. 62, and eventually connects with the SOO Line railroad system and discharges into the North Fork of Nine Mile Creek. During large rain events, such as the 100-year frequency event, the capacity of the storm sewer system in this area is inadequate, and this area and the nearby ditch on the north side of T.H. 62 are inundated with stormwater. The 100-year flood elevation is 862.0 MSL for subwatersheds NMC_86 and NMC_120. Based on the 2-foot topographic information, these flood elevations will affect several structures in the area, including 6309 and 6313 Hillside Road and 6328 Valley View Road.

Flooding problems have historically been encountered in this area. Past analysis of the problem concluded that no solutions to the problem were feasible. However, the flood elevations in this area can be decreased by upgrading the 24-inch pipe that spans from Valley View Road to the north ditch of T.H. 62 (pipe 303p) to a 36-inch pipe. This would decrease the 100-year frequency flood elevations of NMC_86 and NMC_120 to 859.9 MSL and 860.2 MSL, respectively.

6.3.1.5 West 66th Street & Naomi Drive Area (NMC_71, NMC_103)

Flooding problems have historically been encountered during intense rainstorms at the low-lying intersection of West 66th Street and Naomi Drive, as well as the in the backyard depression area in the rear of the homes on the east side of Naomi Drive. Stormwater overflow from the 66th Street and Naomi Drive intersection flows into the adjacent Normandale Park storage area (ball field). The intersection and ball field are eventually drained by a 33-inch trunk storm sewer system that flows northwest to the low area along Warren Avenue and eventually westward to the North Fork of Nine Mile Creek. Based on the XP-SWMM analysis, the 100-year flood elevation at the West 66th Street and Naomi Drive intersection (subwatershed NMC_71) and the adjacent storage area in Normandale Park reaches 864.8 MSL.

The backyard depression area behind the Naomi Drive homes is drained by a 15-inch culvert that connects to the 15-inch storm sewer flowing north from Circle Drive Pond. During periods of intense rainfall, the flow in this system backs up, thus flowing southward into Circle Drive Pond. A flapgate has been installed on the culvert draining the backyard depression area to prevent backflow from inundating the area. However, with the flapgate closed, there is no outlet from this area and the backyard storage volume is not sufficient to prevent flooding of the structures along Naomi Drive. The 100-year frequency flood elevation for this depression area (subwatershed NMC_103) is 859.6 MSL. This flood elevation is over 2 feet higher than the low house elevation at 6605 Naomi Drive (857.7 MSL) and slightly less than 2 feet above the low house elevation at 6609 Naomi Drive (857.9 MSL).

This flooding problem has been analyzed in the past and recommendations to alleviate the flooding were made, in which case some were implemented. However, the recommendation to add additional outlet capacity to the backyard depression area, via a pumped outlet to the Normandale Park storage area or a separate gravity system flowing west to the North Fork of Nine Mile Creek, has not yet been implemented. To ensure a 100-year level of protection, it is recommended that additional outlet capacity be provided for this area. If a pumped outlet is installed to drain the backyard area, it will be necessary to add additional storage capacity in Normandale Park.

6.3.1.6 6712, 6716, 6720 Ridgeview Drive (NMC_106)

Subwatershed NMC_106 is a 3.3-acre drainage area, characterized by a drainage swale that extends for nearly 1,200 feet through numerous backyards between Ridgeview Drive and the SOO Line railroad tracts, flowing southward. The stormwater pools in a depression area behind 6712, 6716, and 6720 Ridgeview Drive. During large storm events such as the 100-year frequency rainstorm, this backyard area is inundated. The 100-year frequency flood elevation of this depression area is 845.9 MSL. Based on the 2-foot topographic data, this flood elevation will encroach upon the structures at 6712, 6716, and 6720 Ridgeview Drive. To alleviate this flooding problem, it is recommended that a gravity storm sewer system be installed that discharges stormwater from the backyard area to the North Fork of Nine Mile Creek.

6.3.1.7 6808, 6812, 6816, 6820 Ridgeview Drive (NMC_107)

A backyard depression area exists at the 6808, 6812, 6816, and 6820 Ridgeview Drive properties, just east of the SOO Line railroad tracks. The depression area is landlocked and thus becomes inundated with stormwater during large rainstorm events such as the 100-year frequency event. Flooding has historically occurred in this area. The 100-year frequency flood elevation in this backyard area is 843.6 MSL. Based on the 2-foot topographic data, this flood elevation will potentially affect structures at 6808, 6812, 6816, and 6820 Ridgeview Drive. To alleviate the flooding conditions in this backyard depression area, it is recommended that an outlet system be constructed to flow west and discharge to the floodplain of the North Fork of Nine Mile Creek.

6.3.2 Construction/Upgrade of Water Quality Basins

The 2003 P8 modeling analysis indicated that the annual removal of total phosphorus from several ponds in the Nine Mile Creek- Central drainage area was predicted to be below the desired 60 percent removal rate, under average year conditions. For those ponds with total phosphorus removal below 60 percent, the permanent pool storage volume was analyzed to determine if additional capacity is necessary. The ponds that exhibited deficiencies in total phosphorus removal and permanent pool volume are listed below, along with recommended pond upgrades.

Construction of new or expansion of existing water quality basins is one method to increase the pollutant removal achieved prior to stormwater reaching downstream waterbodies. Many additional techniques are available to reduce pollutant loading, including impervious surface reduction or disconnection, implementation of infiltration or volume retention BMPs, installation of underground stormwater treatment structures and sump manholes and other good housekeeping practices such as street sweeping. As opportunities arise, the City will consider all of these options to reduce the volume and improve the quality of stormwater runoff.

Table 6.2
Watershed Modeling Results for Subwatersheds in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006)

Watershed Information			100-Year Storm Results 24-Hour Event		10-Year Storm Results 1/2-Hour Event	
Watershed ID	Total Area (ac)	% Impervious Area	Peak Runoff Rate (cfs)	Total Volume Runoff (ac-ft)	Peak Runoff Rate[1] (cfs)	Total Volume Runoff (ac-ft)
CO_1	16.8	37	74.0	6.52	47.9	1.63
CO_2	5.9	34	26.6	2.49	18.2	0.61
CO_3	0.5	42	2.2	0.18	3.2	0.05
CO_4	8.2	4	22.0	2.17	6.1	0.38
CO_5	7.5	26	25.1	2.96	11.7	0.66
CO_6	13.7	19	54.2	4.27	26.7	0.97
CO_7	5.3	28	24.8	1.60	19.3	0.40
CO_8	8.5	20	37.7	2.38	20.5	0.53
CO_9	9.3	20	39.4	2.57	19.9	0.56
IP_1	5.8	29	26.3	1.75	17.9	0.42
IP_2	11.7	15	49.7	3.09	22.6	0.66
IP_3	4.2	20	19.4	1.18	11.8	0.28
IP_4	1.9	19	8.6	0.53	4.9	0.12
CO_10	4.9	19	21.4	1.39	11.4	0.32
CO_11	4.6	18	21.5	1.28	13.2	0.31
CO_12	6.6	7	28.7	2.28	13.7	0.54
CO_13	22.3	20	75.9	6.18	34.6	1.21
NMC_4	2.0	20	9.2	0.55	6.2	0.14
NMC_5	4.0	20	17.1	1.12	8.7	0.24
NMC_6	3.9	20	16.9	1.09	8.8	0.24
NMC_7	13.2	20	56.8	3.95	30.4	0.92
NMC_9	1.7	28	8.1	0.71	7.9	0.18
NMC_10	8.7	20	39.0	2.52	22.3	0.60
NMC_11	7.7	15	35.1	2.05	18.9	0.47
NMC_12	7.1	17	21.9	1.91	9.4	0.35
NMC_13	3.0	20	14.3	1.13	11.3	0.29
NMC_14	3.6	20	14.4	1.23	7.4	0.29
NMC_15	0.7	29	3.3	0.21	3.0	0.06
NMC_16	8.4	20	29.3	2.32	13.5	0.46
NMC_17	7.5	13	32.9	2.10	16.1	0.49
NMC_18	1.7	20	8.1	0.48	5.6	0.12
NMC_19	5.5	20	25.0	1.54	14.9	0.36
NMC_20	3.2	28	14.4	0.95	9.4	0.22
NMC_21	2.3	20	9.4	0.65	4.5	0.13
NMC_22	4.1	20	18.7	1.15	11.0	0.27
NMC_23	5.8	20	26.9	1.64	17.3	0.40
NMC_24	7.3	20	27.2	2.00	12.7	0.40
NMC_25	1.8	20	8.4	0.51	5.7	0.12
NMC_26	4.4	19	18.8	1.21	9.5	0.26
NMC_27	5.5	19	22.9	1.53	11.3	0.32
NMC_29	9.6	16	25.8	2.43	10.7	0.40
NMC_30	19.3	20	73.3	5.31	34.6	1.07
NMC_31	2.1	20	9.8	0.59	6.9	0.15
NMC_32	12.0	23	40.7	3.33	18.9	0.65
NMC_34	2.1	20	9.6	0.58	7.1	0.15
NMC_35	5.2	20	23.7	1.63	14.1	0.40
NMC_36	5.6	20	25.4	1.57	14.5	0.36

[1] In some cases, the 10-year peak runoff rate is higher than the 100-year peak runoff rate as a result of the differences in peak intensity of the rainfall hydrograph

Table 6.2
Watershed Modeling Results for Subwatersheds in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006)

Watershed Information			100-Year Storm Results 24-Hour Event		10-Year Storm Results 1/2-Hour Event	
Watershed ID	Total Area (ac)	% Impervious Area	Peak Runoff Rate (cfs)	Total Volume Runoff (ac-ft)	Peak Runoff Rate[1] (cfs)	Total Volume Runoff (ac-ft)
NMC_37	1.8	20	8.5	0.51	6.6	0.13
NMC_38	2.8	20	12.2	0.78	6.5	0.17
NMC_39	12.7	20	47.1	3.48	22.0	0.69
NMC_40	2.2	20	10.7	0.71	9.1	0.19
NMC_41	6.4	20	27.6	1.78	14.3	0.39
NMC_42	12.0	20	45.5	3.31	21.4	0.67
NMC_43	2.8	20	13.1	0.80	8.3	0.19
NMC_44	4.0	39	18.6	1.40	13.6	0.36
NMC_48	0.8	52	3.7	0.27	4.4	0.07
NMC_49	8.5	20	36.5	2.37	18.8	0.52
NMC_50	10.5	20	42.7	2.92	20.8	0.61
NMC_51	9.7	20	40.3	2.69	19.9	0.57
NMC_52	9.7	20	40.3	2.76	20.5	0.61
NMC_53	2.2	20	7.9	0.61	3.6	0.12
NMC_54	10.1	20	43.0	2.93	22.3	0.66
NMC_55	8.8	20	33.8	2.42	16.0	0.49
NMC_56	11.2	20	49.1	3.18	26.5	0.72
NMC_57	5.8	15	20.7	1.52	8.6	0.29
NMC_58	4.3	20	18.8	1.20	10.0	0.27
NMC_59	1.1	20	5.3	0.32	4.6	0.08
NMC_60	5.2	17	23.4	2.17	14.0	0.52
NMC_61	6.4	20	28.3	2.01	16.3	0.49
NMC_62	13.2	19	52.3	3.98	25.5	0.89
NMC_63	8.4	20	36.0	2.35	18.4	0.51
NMC_64	3.5	15	16.2	0.95	8.9	0.22
NMC_65	8.1	17	34.8	2.33	17.5	0.54
NMC_66	8.1	20	32.6	2.23	15.8	0.47
NMC_67	6.5	19	30.6	1.88	20.8	0.47
NMC_68	3.3	20	14.6	0.91	8.2	0.21
NMC_69	6.6	20	29.7	1.84	16.8	0.42
NMC_70	7.8	28	35.0	2.65	22.6	0.66
NMC_71	6.4	18	26.9	1.84	13.5	0.41
NMC_72	1.0	20	4.8	0.29	3.9	0.07
NMC_73	3.3	20	14.6	0.91	8.1	0.21
NMC_74	8.0	3	24.6	2.02	6.9	0.36
NMC_75	6.4	20	27.4	1.78	14.1	0.39
NMC_76	1.9	20	8.9	0.55	5.4	0.13
NMC_77	13.8	32	60.1	4.30	36.6	0.99
NMC_78	4.6	20	20.7	1.28	12.1	0.30
NMC_79	0.4	15	1.9	0.11	2.1	0.03
NMC_80	2.2	16	9.9	0.59	5.5	0.14
NMC_81	3.0	22	12.2	0.84	6.3	0.18
NMC_82	2.9	19	12.8	0.81	7.0	0.18
NMC_83	3.7	20	17.2	1.05	10.5	0.25
NMC_84	6.9	24	29.7	2.25	17.2	0.54
NMC_85	2.0	20	9.6	0.61	7.6	0.16
NMC_86	9.4	21	40.9	2.84	22.4	0.67

[1] In some cases, the 10-year peak runoff rate is higher than the 100-year peak runoff rate as a result of the differences in peak intensity of the rainfall hydrograph

Table 6.2
Watershed Modeling Results for Subwatersheds in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006)

Watershed Information			100-Year Storm Results 24-Hour Event		10-Year Storm Results 1/2-Hour Event	
Watershed ID	Total Area (ac)	% Impervious Area	Peak Runoff Rate (cfs)	Total Volume Runoff (ac-ft)	Peak Runoff Rate[1] (cfs)	Total Volume Runoff (ac-ft)
NMC_87	1.1	50	5.4	0.49	7.2	0.13
NMC_88	1.8	34	8.5	0.58	6.3	0.14
NMC_89	9.0	45	42.7	3.09	41.3	0.80
NMC_90	14.2	20	62.8	4.33	35.1	1.04
NMC_91	5.2	20	19.8	1.51	9.5	0.33
NMC_92	2.1	50	10.2	0.93	11.9	0.24
NMC_93	2.0	50	9.7	0.83	11.0	0.22
NMC_94	6.6	50	31.6	2.43	28.6	0.63
NMC_95	7.0	20	30.9	1.96	16.7	0.44
NMC_96	15.6	20	65.2	4.42	32.9	0.96
NMC_97	6.1	20	27.1	1.70	15.0	0.38
NMC_98	7.5	20	33.9	2.17	19.9	0.52
NMC_99	4.2	20	19.0	1.19	11.3	0.28
NMC_100	9.4	20	36.8	2.61	17.6	0.54
NMC_101	30.8	20	116.2	8.85	55.3	1.87
NMC_102	1.2	20	5.7	0.46	5.1	0.12
NMC_103	4.1	20	19.2	1.30	12.5	0.33
NMC_106	3.3	16	15.4	0.99	9.1	0.25
NMC_107	1.6	16	7.4	0.47	5.5	0.12
NMC_108	7.8	20	29.3	2.13	13.8	0.43
NMC_109	1.5	20	6.7	0.42	3.6	0.09
NMC_110	18.3	20	78.9	5.11	40.9	1.12
NMC_111	23.9	19	93.5	6.60	44.3	1.36
NMC_112	9.3	48	43.9	3.37	37.6	0.88
NMC_113	29.4	14	133.5	8.06	71.3	1.90
NMC_114	2.8	57	13.5	1.08	13.6	0.29
NMC_115	16.3	19	68.7	4.54	34.3	0.98
NMC_116	10.2	20	42.5	2.83	21.2	0.60
NMC_117	54.9	20	138.6	14.61	59.2	2.52
NMC_118	11.3	8	42.2	3.07	15.3	0.64
NMC_119	2.4	14	11.1	0.63	8.2	0.16
NMC_120	8.0	21	34.1	3.24	19.4	0.77
NMC_121	1.7	20	7.8	0.48	4.8	0.11
NMC_122	27.0	20	99.5	7.44	46.4	1.49

[1] In some cases, the 10-year peak runoff rate is higher than the 100-year peak runoff rate as a result of the differences in peak intensity of the rainfall hydrograph

Table 6.3
Hydraulic Modeling Results for XP-SWMM Subwatersheds/Nodes in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006).

Subwatershed or Node	Downstream Conduit	100-Year Storm Results				10-Year Storm Results		
		24-Hour Event				1/2-Hour Event		
		Flood Elevation[1] (ft)	Type of Storage[2]	NWL (ft)	Flood Bounce (ft)	Flood Elevation (ft)	NWL (ft)	Flood Bounce (ft)
100	1352	877.4				869.8		
301	186	883.0				882.6		
305	187	878.8				876.9		
307	189	865.9				865.4		
308	190	865.5				864.4		
310	192	857.3				856.1		
324	outfall	852.1				849.2		
327	201	855.8				855.6		
328	outfall	852.1				850.3		
329	202	859.1				858.2		
330	outfall	852.1				850.2		
332	204	866.1				864.8		
335	207	869.3				869.0		
336	208	870.5				870.1		
338	210	878.7				878.4		
340	212	884.8				882.5		
341	213	886.2				883.6		
343	215	887.2				884.5		
348	220	884.6				882.9		
349	221	891.0				890.9		
350	222	896.0				895.9		
351	223	910.0				909.9		
352	224	911.3				911.2		
354	226	913.2				913.1		
356	228	914.1				913.9		
357	229	915.3				915.2		
359	231	920.5				920.4		
366	outfall	847.7				844.2		
368	outfall	848.4				848.3		
369	239	856.7				856.4		
370	outfall	850.1				848.2		
371	240	863.4				863.3		
373	242	873.1				873.0		
374	243	888.8				888.6		
375	244	893.3				893.1		
378	247	876.7				872.3		
379	248	875.2				871.1		
380	249	875.0				870.6		
382	251	863.5				863.0		
384	253	863.4				861.9		
385	254	860.5				860.3		
386	255	860.0				859.4		
388	outfall	846.1				829.2		
392	260	851.6				851.0		
393	261	845.9				844.3		
394	outfall	845.6				842.8		
396	263	851.7				848.7		
397	264	853.7				850.8		
398	265	857.7				854.4		
399	266	861.2				857.5		
401	268	864.9				860.9		
402	269	864.9				861.6		
403	270	865.0				861.9		
405	271_p	865.1				862.4		
406	273	865.1				862.5		
409	276	865.0				862.9		
410	277	864.6				862.6		
411	278	864.3				862.2		
412	279	864.3				862.2		

[1] 100-year flood elevation based on 24-hour event. Flood elevation from a 10-day snowmelt event should also be evaluated prior to final design/determination.
[2] byd = backyard depression

Table 6.3
Hydraulic Modeling Results for XP-SWMM Subwatersheds/Nodes in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006).

Subwatershed or Node	Downstream Conduit	100-Year Storm Results 24-Hour Event				10-Year Storm Results 1/2-Hour Event		
		Flood Elevation[1] (ft)	Type of Storage[2]	NWL (ft)	Flood Bounce (ft)	Flood Elevation (ft)	NWL (ft)	Flood Bounce (ft)
416	283	890.9				881.7		
417	1640	860.0				858.2		
418	285	852.3				845.5		
419	outfall	844.1				838.8		
420	286	894.1				894.0		
421	287	903.5				902.4		
424	outfall	847.7				845.4		
425	290	866.8				863.3		
426	291	870.8				865.5		
427	292	873.2				866.8		
428	293	874.0				868.4		
430	295	878.0				878.0		
431	296	880.0				879.9		
433	298	885.9				885.8		
435	300	850.7				848.8		
436	outfall	847.7				844.1		
438	302p	853.9				852.6		
440	304p	862.0				858.7		
443	307p	862.8				862.5		
445	309	906.3				906.0		
454	2513	903.8				901.4		
455	320	903.0				900.9		
457	318	903.0	byd	896.9	6.2	901.6	896.9	4.7
458	319	903.0				901.2		
459	321	902.5				898.5		
460	3000	899.3				895.7		
463	ditch	919.6				919.2		
466	326p	941.2				940.8		
468	328p	936.8				935.9		
472	332p	922.0				921.3		
475	334	918.3				917.3		
476	336p	917.5				915.8		
477	337	916.4				914.3		
479	339	908.7				908.0		
480	340p	895.3				894.6		
482	341p	896.1				895.8		
483	342	905.0				904.9		
486	outfall	837.2				833.9		
488	346	837.2				831.3		
489	outfall	837.2				829.8		
492	349p	873.0				864.6		
493	350p	869.7				862.9		
494	351p	866.9				854.0		
496	353p	853.7				844.2		
497	outfall	839.3				838.5		
499	355	843.0				842.8		
501	357p	838.7				838.3		
503	outfall	832.5				829.8		
505	outfall	832.4				831.5		
526	376	890.9				889.8		
527	377	890.4				889.1		
528	378p	890.2				889.0		
1609	1276	873.8				867.5		
1826	1481	885.8				885.7		
1827	1482	895.3				894.7		
1828	1483	905.4				902.8		
1915	1546	867.7				861.5		
1918	1547	921.8				919.6		
1919	1548	921.6				919.9		

[1] 100-year flood elevation based on 24-hour event. Flood elevation from a 10-day snowmelt event should also be evaluated prior to final design/determination.

[2] byd = backyard depression

Table 6.3
Hydraulic Modeling Results for XP-SWMM Subwatersheds/Nodes in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006).

Subwatershed or Node	Downstream Conduit	100-Year Storm Results 24-Hour Event				10-Year Storm Results 1/2-Hour Event		
		Flood Elevation[1] (ft)	Type of Storage[2]	NWL (ft)	Flood Bounce (ft)	Flood Elevation (ft)	NWL (ft)	Flood Bounce (ft)
1921	1609p	906.1				905.9		
1923	1550	913.1				910.8		
1926	1551	941.1				940.8		
1927	1552	941.1				940.9		
1929	1554	926.9				923.7		
1930	1555	940.0				938.9		
1935	1558	888.4				887.1		
1936	1559	888.4				887.9		
1941	1563	846.7				846.5		
2072	1643	871.4				871.2		
2086	1653	919.6				916.7		
2088	1655	946.8				946.4		
2271	1818	883.6				883.5		
2272	1819	896.6				893.2		
2429	1971	849.4				847.0		
2430	outfall	847.7				845.6		
2431	1972	864.8				862.8		
2432	1973	878.2				873.4		
2433	1974	885.7				882.4		
2434	1975	885.8				884.8		
2484	outfall	852.1				847.6		
2556	3001	894.9				893.0		
2557	3002	891.6				891.9		
2560	3005	884.1				884.0		
2561	3007	877.3				877.0		
2563	3008	861.4				861.1		
2565	3010	852.1				850.4		
2566	3012	851.4				850.1		
2567	outfall	847.7				844.3		
2569	3016	854.5				853.8		
2570	3017	854.5	parking lot			853.8		
2579	312	904.0				901.9		
2580	2510	903.9				901.7		
2583	outfall	940.9				940.6		
2921	3269p	856.5				853.5		
2922	3273p	856.5				853.5		
2923	3272p	856.5				853.7		
2924	3271p	856.6				855.2		
CO_1	2020	852.1	pond	845.7	6.4	849.1	845.7	3.4
CO_2	ditch	852.1	pond	849.3	2.8	849.9	849.3	0.6
CO_3	197	852.1	pond	848.5	3.6	850.1	848.5	1.6
CO_4	194	852.1	pond	849.0	3.1	850.1	849.0	1.1
CO_5	overflow to CO_2	853.3	pond	847.7	5.6	850.4	847.7	2.7
CO_6	191	865.5	street			861.9		
CO_7	3270p	856.9	pond	855.0	1.9	855.8	855.0	0.8
CO_8	182	891.0				890.8		
CO_9	188	868.9				868.4		
IP_1	no outlet	885.7	pond	880.3	5.4	882.1	880.3	1.8
IP_2	375p	891.6	street			890.2		
IP_3	379p	890.1				888.9		
IP_4	no outlet	887.8	byd	882.0	5.8	885.5	882.0	3.5
CO_10	1465	854.2	parking lot			853.2		
CO_11	1466	856.5				853.5		
CO_12	193	854.5				853.8		
CO_13	181	892.6				892.3		
NMC_4	225	912.0				911.9		
NMC_5	1556	945.1				945.1		

[1] 100-year flood elevation based on 24-hour event. Flood elevation from a 10-day snowmelt event should also be evaluated prior to final design/determination.

[2] byd = backyard depression

Table 6.3
Hydraulic Modeling Results for XP-SWMM Subwatersheds/Nodes in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006).

Subwatershed or Node	Downstream Conduit	100-Year Storm Results 24-Hour Event				10-Year Storm Results 1/2-Hour Event		
		Flood Elevation[1] (ft)	Type of Storage[2]	NWL (ft)	Flood Bounce (ft)	Flood Elevation (ft)	NWL (ft)	Flood Bounce (ft)
NMC_6	230	920.4				920.3		
NMC_7	203	866.0				863.7		
NMC_9	301p	852.7	byd	843.9	8.8	851.4	843.9	7.5
NMC_10	206	859.2				859.1		
NMC_11	1560	890.9				890.8		
NMC_12	216	888.2				885.7		
NMC_13	218	887.5	field/school	880.3	7.2	886.1	880.3	5.8
NMC_14	1642	871.2				870.9		
NMC_15	1611	878.1				875.3		
NMC_16	1644	878.2				876.5		
NMC_17	217	888.2	street			886.2		
NMC_18	227	913.4				913.3		
NMC_19	211	884.5				882.2		
NMC_20	3009	852.9				851.4		
NMC_21	232	924.9				923.5		
NMC_22	1553	941.1				941.0		
NMC_23	199	857.3				857.5		
NMC_24	1610	913.9				912.5		
NMC_25	327p	940.9				940.5		
NMC_26	330p	929.6				929.1		
NMC_27	333	921.8				919.6		
NMC_29	331	925.1				924.5		
NMC_30	325p	942.7				942.4		
NMC_31	343p	912.0				909.7		
NMC_32	1351	880.4				871.3		
NMC_34	1654	935.3				932.4		
NMC_35	241	871.0				870.8		
NMC_36	245	908.4				908.3		
NMC_37	329p	936.2				935.3		
NMC_38	1656	971.3				967.6		
NMC_39	338p	915.7				913.3		
NMC_40	344	837.6				837.6		
NMC_41	324p	943.2	byd	939.5	3.7	942.9	939.5	3.4
NMC_42	1645	948.3	street			948.0		
NMC_43	1278	944.2	street			942.5		
NMC_44	2520	943.8	pond	940.8	3.0	941.7	940.8	0.9
NMC_48	345	855.3				855.1		
NMC_49	1549	921.1				921.0		
NMC_50	1976	904.6				899.6		
NMC_51	1612	872.6				872.0		
NMC_52	1657	849.4				849.5		
NMC_53	1565	868.2				864.4		
NMC_54	256	856.2	street			854.5		
NMC_55	250	873.3				869.0		
NMC_56	252	863.5				862.9		
NMC_57	352p	866.6				852.9		
NMC_58	288	905.5				905.3		
NMC_59	1658	884.1				883.1		
NMC_60	237	850.1				849.6		
NMC_61	262	855.6				855.4		
NMC_62	238	854.3				852.8		
NMC_63	267	864.9	street			860.7		
NMC_64	266	864.6	byd	863.2	1.4	863.7	863.2	0.5
NMC_65	259	853.6				853.4		
NMC_66	289	857.2				857.0		
NMC_67	271p	872.5	street			872.4		
NMC_68	297	885.5				885.5		
NMC_69	299	906.0				905.9		
NMC_70	269	863.5	pond	861.6	1.9	862.0	861.6	0.4

[1] 100-year flood elevation based on 24-hour event. Flood elevation from a 10-day snowmelt event should also be evaluated prior to final design/determination.

[2] byd = backyard depression

Table 6.3
Hydraulic Modeling Results for XP-SWMM Subwatersheds/Nodes in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006).

Subwatershed or Node	Downstream Conduit	100-Year Storm Results				10-Year Storm Results		
		24-Hour Event				1/2-Hour Event		
		Flood Elevation[1] (ft)	Type of Storage[2]	NWL (ft)	Flood Bounce (ft)	Flood Elevation (ft)	NWL (ft)	Flood Bounce (ft)
NMC_71	274	864.8	street			862.8		
NMC_72	1277	917.6				917.6		
NMC_73	1484	909.0				908.9		
NMC_74	1972_p	864.8	park	860.2	4.6	862.8	860.2	2.6
NMC_75	1665	896.7				896.4		
NMC_76	280	866.4				863.4		
NMC_77	281	859.8	pond	857.5	2.3	858.1	857.5	0.7
NMC_78	1662	898.8				897.9		
NMC_79	275	865.1				863.0		
NMC_80	294	875.7	byd	866.8	8.9	870.8	866.8	4.1
NMC_81	3006	883.6				882.9		
NMC_82	295_p	877.3	street			875.6		
NMC_83	3011	918.4				918.2		
NMC_84	overflow to NMC_86	862.2	hwy ditch	850.7	11.5	856.2	850.7	5.5
NMC_85	209	871.8				871.5		
NMC_86	303p	862.0	street/yard			858.6		
NMC_87	no outlet	856.5	hwy ditch	852.7	3.8	855.1	852.7	2.4
NMC_88	3004	886.8				886.6		
NMC_89	1820	917.3				914.2		
NMC_90	308p	871.5				871.3		
NMC_91	205	869.2				868.5		
NMC_92	no outlet	856.5	hwy ditch	852.8	3.7	855.0	852.8	2.2
NMC_93	no outlet	857.4	hwy ditch	853.8	3.6	856.2	853.8	2.4
NMC_94	no outlet	854.4	hwy ditch	851.0	3.4	853.4	851.0	2.4
NMC_95	358	836.6				836.1		
NMC_96	354p	846.4				846.1		
NMC_97	359p	837.6				837.4		
NMC_98	356p	840.0				839.6		
NMC_99	246	877.8				873.3		
NMC_100	1564	847.2				846.9		
NMC_101	1561	844.6				844.4		
NMC_102	1970	851.6				848.1		
NMC_103	3290_p	859.6	byd	855.6	4.1	858.2	855.6	2.7
NMC_106	no outlet	845.9	byd	844.7	1.3	845.4	844.7	0.7
NMC_107	no outlet	843.6	byd	841.0	2.6	842.2	841.0	1.2
NMC_108	335p	918.3				917.0		
NMC_109	214	886.9				884.2		
NMC_110	317p	905.5	street			904.9		
NMC_111	1661	906.4				906.1		
NMC_112	311p	904.0	pond	901.0	3.0	902.1	901.0	1.1
NMC_113	3003	890.1				889.8		
NMC_114	2512 (inlet/outlet)	903.8	pond	900.0	3.8	901.6	900.0	1.6
NMC_115	2512	903.6				901.6		
NMC_116	323	922.5	byd	919.3	3.2	922.4	919.3	3.1
NMC_117	1724	905.2				904.7		
NMC_118	273	871.2	park	868.2	3.0	869.5	868.2	1.3
NMC_119	no outlet	921.0	byd	914.0	7.0	919.0	914.0	5.0
NMC_120	305p	862.0	street/yd			859.5		
NMC_121	2511	903.9				901.7		
NMC_122	NMC_114	904.0				903.3		

[1] 100-year flood elevation based on 24-hour event. Flood elevation from a 10-day snowmelt event should also be evaluated prior to final design/determination.

[2] byd = backyard depression

Table 6.4
Conduit Modeling Results for Subwatersheds in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006)

Conduit ID	Upstream Node	Downstream Node	Conduit Shape	Conduit Dimensions* (ft)	Roughness Coefficient	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Conduit Length (ft)	Slope	100Y Peak Flow through Conduit (cfs)	10Y Peak Flow through Conduit (cfs)
191	CO_6	310	Circular	3	0.013	856.60	853.76	355	0.80	96.0	78.6
192	310	CO_1	Circular	3.5	0.013	853.26	847.70	490	1.14	96.1	78.5
194	CO_4	CO_1	Circular	3	0.013	849.00	848.00	96	1.04	26.2	9.0
197	CO_3	CO_4	Circular	2	0.013	848.50	848.50	91	0.00	-5.2	-5.1
199	NMC_23	324	Circular	1.25	0.013	851.00	847.90	207	1.50	11.6	11.7
201	327	328	Circular	1	0.024	850.96	849.50	146.5	1.00	3.6	3.5
202	329	330	Circular	3.5	0.013	855.00	848.12	310	2.22	113.1	102.4
203	NMC_7	329	Circular	3	0.013	858.56	855.00	178	2.00	113.2	102.2
208	336	335	Circular	3	0.013	866.64	865.15	265.5	0.56	42.8	43.9
212	340	NMC_19	Circular	2.75	0.013	871.85	871.40	54	0.83	31.4	29.7
213	341	340	Circular	2.5	0.013	875.34	874.65	143.7	0.48	31.5	29.8
214	NMC_109	341	Circular	2.5	0.013	875.87	875.34	110.3	0.48	31.6	29.8
215	343	NMC_109	Circular	2.5	0.013	876.17	875.87	61	0.49	29.7	26.3
216	NMC_12	343	Circular	2.5	0.013	877.65	876.17	308.1	0.48	29.7	26.3
217	NMC_17	NMC_12	Circular	2.5	0.013	878.80	877.65	235.7	0.49	27.1	25.2
232	NMC_21	359	Circular	1.25	0.013	917.23	915.46	210	0.84	9.3	6.0
237	NMC_60	366	Circular	1.25	0.013	844.35	842.90	100	1.45	9.3	12.4
238	NMC_62	368	Circular	1.75	0.013	847.82	846.62	150	0.80	25.6	22.7
239	369	370	Circular	1.25	0.013	853.59	847.20	225	2.84	11.2	11.1
240	371	369	Circular	1.25	0.013	859.98	853.59	225	2.84	11.1	11.1
241	NMC_35	371	Circular	1.25	0.013	864.73	859.98	250	1.90	12.1	12.7
249	380	NMC_55	Circular	2.5	0.013	868.59	866.77	35	5.20	55.4	46.5
256	NMC_54	388	Circular	3	0.013	852.67	828.00	180	13.71	119.6	89.3
259	NMC_65	392	Circular	1	0.013	848.79	848.23	92	0.61	6.1	6.2
260	392	393	Circular	1.25	0.024	848.23	842.20	327.7	1.84	5.0	5.3
261	393	394	Circular	4.5	0.024	840.11	840.00	26	0.42	99.3	88.3
264	397	396	Circular	3.5	0.013	841.98	841.33	201.5	0.32	80.5	74.8
265	398	397	Circular	3	0.013	843.18	842.48	174	0.40	79.0	74.7
266	399	398	Circular	3	0.013	843.89	843.18	69	1.03	88.7	82.2
268	401	NMC_63	Circular	3	0.013	847.61	847.26	44	0.80	55.3	47.3
269	402	401	Circular	3	0.013	848.59	847.61	245.6	0.40	55.3	47.6
270	403	402	Circular	3	0.013	849.03	848.59	107.9	0.41	45.7	40.8
273	406	405	Circular	3	0.013	850.43	850.21	59	0.37	44.7	38.6
274	NMC_71	406	Circular	2.75	0.013	852.70	851.13	713.8	0.22	33.5	29.4
276	409	NMC_79	Circular	1.25	0.013	854.40	853.56	28	3.00	9.2	7.8
277	410	409	Circular	1.25	0.013	855.25	854.40	100	0.85	9.2	7.8
278	411	410	Circular	1.25	0.013	856.56	855.25	312	0.42	4.6	4.8
280	NMC_76	412	Circular	1	0.013	860.63	856.65	166	2.40	4.7	5.4
281	NMC_77	412	Circular	1	0.013	857.45	856.65	210	0.38	-5.3	-4.5
283	416	417	Circular	1	0.013	879.80	859.00	94	22.13	17.5	11.8
285	418	419	Circular	1.5	0.013	840.80	837.60	75	4.27	32.6	21.8
286	420	380	Circular	2	0.013	892.98	871.50	320	6.71	33.7	24.1
287	421	420	Circular	2	0.013	896.43	894.30	400	0.53	28.8	24.3
289	NMC_66	424	Circular	1	0.013	852.51	844.35	175	4.66	7.9	8.4
292	427	426	Circular	2.25	0.013	859.95	859.52	106.4	0.40	43.2	31.4
293	428	427	Circular	1.5	0.013	864.25	861.50	85.8	3.21	17.7	12.8
294	NMC_80	428	Circular	1.5	0.013	866.78	865.50	159.5	0.80	17.7	12.7
300	435	436	Circular	3.5	0.013	843.25	841.50	670	0.26	61.4	69.5
312	2579	2580	Circular	2	0.013	900.60	899.27	236	0.56	9.5	5.6
318	457	458	Circular	1.5	0.013	896.85	895.87	66	1.49	10.1	11.4
333	NMC_27	475	Circular	1.75	0.013	913.80	912.10	423	0.40	15.7	17.3
337	477	NMC_39	Circular	3.5	0.013	909.00	907.50	71	2.11	79.9	77.1

Table 6.4
Conduit Modeling Results for Subwatersheds in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006)

Conduit ID	Upstream Node	Downstream Node	Conduit Shape	Conduit Dimensions* (ft)	Roughness Coefficient	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Conduit Length (ft)	Slope	100Y Peak Flow through Conduit (cfs)	10Y Peak Flow through Conduit (cfs)
339	479	480	Circular	3.5	0.013	906.50	892.66	209	6.62	142.0	94.1
342	483	482	Circular	1.25	0.013	904.27	894.60	194.4	4.97	9.0	6.6
344	NMC_40	486	Circular	1	0.013	835.20	833.00	110	2.00	5.7	5.7
345	NMC_48	488	Circular	2	0.024	854.66	829.89	154	16.08	22.7	4.4
346	488	489	Circular	2	0.024	830.57	829.22	37	3.65	22.7	4.4
358	NMC_95	503	Circular	1.75	0.013	830.39	828.06	170	1.37	25.7	25.4
376	526	527	Circular	2	0.013	887.77	886.89	350	0.25	14.1	11.4
377	527	528	Circular	2	0.013	886.89	886.58	110	0.28	14.1	11.5
1277	NMC_72	1609	Circular	1	0.024	917.19	866.97	155	32.40	4.8	3.9
1351	NMC_32	100	Circular	4	0.013	867.03	866.25	126	0.62	170.7	111.1
1352	100	492	Circular	4	0.013	866.25	864.39	274.8	0.68	169.5	111.4
1466	CO_11	CO_4	Circular	2	0.024	851.20	850.00	120	1.00	22.2	13.0
1483	1828	1827	Circular	1.25	0.013	901.88	894.17	103	7.49	14.6	8.2
1547	1918	NMC_27	Circular	1.75	0.013	913.95	913.80	37	0.41	7.7	8.0
1548	1919	1918	Circular	1.75	0.013	915.00	914.20	196	0.41	8.4	9.6
1549	NMC_49	1919	Circular	1.25	0.013	916.05	915.25	202	0.40	9.5	9.9
1550	1923	1921	Circular	1.5	0.013	907.15	900.91	415	1.50	13.6	11.3
1551	1926	466	Circular	1.25	0.013	933.99	933.74	50	0.50	5.4	5.9
1552	1927	1926	Circular	1.25	0.013	934.80	933.99	162	0.50	5.2	6.3
1555	1930	1929	Circular	1	0.013	937.96	919.87	302	5.99	8.2	8.2
1556	NMC_5	1930	Circular	1	0.013	939.57	937.96	82.5	1.95	8.3	8.3
1640	417	NMC_77	Circular	2	0.013	856.00	856.00	90	0.00	17.6	11.8
1642	NMC_14	336	Circular	1	0.013	865.51	865.00	32	1.59	7.4	7.9
1653	2086	NMC_39	Circular	2	0.013	915.84	908.00	448	1.75	21.4	15.1
1655	2088	NMC_34	Circular	1.25	0.013	945.76	931.36	335	4.30	11.9	6.5
1656	NMC_38	2088	Circular	1	0.013	967.00	946.00	237	8.86	11.4	6.5
1657	NMC_52	418	Circular	1.25	0.013	843.25	843.00	50	0.50	14.4	14.9
1658	NMC_59	NMC_81	Circular	1.25	0.013	882.16	874.50	63	12.16	5.3	4.6
1662	NMC_78	416	Circular	1.25	0.013	897.20	880.50	90	18.56	17.6	12.9
1665	NMC_75	NMC_79	Circular	1.5	0.013	895.77	853.56	317	13.32	27.4	18.8
1820	NMC_89	2272	Circular	1.5	0.013	901.35	892.45	105	8.48	42.2	41.2
1970	NMC_102	2429	Circular	2.5	0.013	847.37	846.50	92	0.95	46.4	5.1
1971	2429	2430	Arch	36" eq	0.013	846.50	845.22	147	0.87	46.4	5.1
1973	2432	NMC_99	Circular	2.25	0.013	870.90	871.06	32.5	-0.49	25.4	17.4
1974	2433	2432	Circular	2	0.013	881.36	872.00	170	5.51	40.7	21.2
1975	2434	2433	Circular	1.75	0.013	883.61	881.61	40	5.00	43.2	20.8
2020	CO_1	2484	Circular	4	0.013	845.68	845.48	210	0.10	88.3	50.7
2510	2580	NMC_121	Circular	2	0.013	899.27	899.22	8	0.63	9.5	5.6
2511	NMC_121	NMC_114	Circular	2	0.013	899.22	899.00	40	0.55	10.7	5.6
2512	NMC_115	NMC_114	Arch	36" eq	0.013	899.30	899.00	29	1.04	32.1	28.2
2513	454	NMC_115	Arch	24" eq	0.013	900.00	899.30	28.9	2.42	-22.1	-10.1
2520	NMC_44	2583	Circular	1	0.013	940.80	940.00	100	0.80	5.1	2.1
3001	2556	2557	Circular	2	0.013	885.59	881.61	350	1.14	23.5	19.5
3005	2560	NMC_81	Circular	2	0.013	876.06	874.50	140	1.11	32.8	31.5
3006	NMC_81	2561	Circular	2	0.013	874.50	869.64	150	3.24	47.5	48.6
3009	NMC_20	2565	Circular	2.5	0.013	844.72	844.50	35	0.63	28.2	39.0
3011	NMC_83	NMC_113	Circular	1	0.024	913.25	881.00	95	33.95	10.9	10.3
3012	2566	2567	Circular	2.5	0.013	844.00	842.41	670	0.24	27.9	31.1
3017	2570	2569	Circular	1	0.013	850.54	850.29	15	1.67	-3.5	-4.4
301p	NMC_9	435	Circular	3	0.013	843.88	843.50	75	0.51	61.3	69.5
302p	438	NMC_9	Circular	3	0.013	845.33	843.88	290	0.50	41.4	37.0
303p	NMC_86	438	Circular	2	0.013	852.19	846.08	197	3.10	41.4	38.1

Table 6.4
Conduit Modeling Results for Subwatersheds in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006)

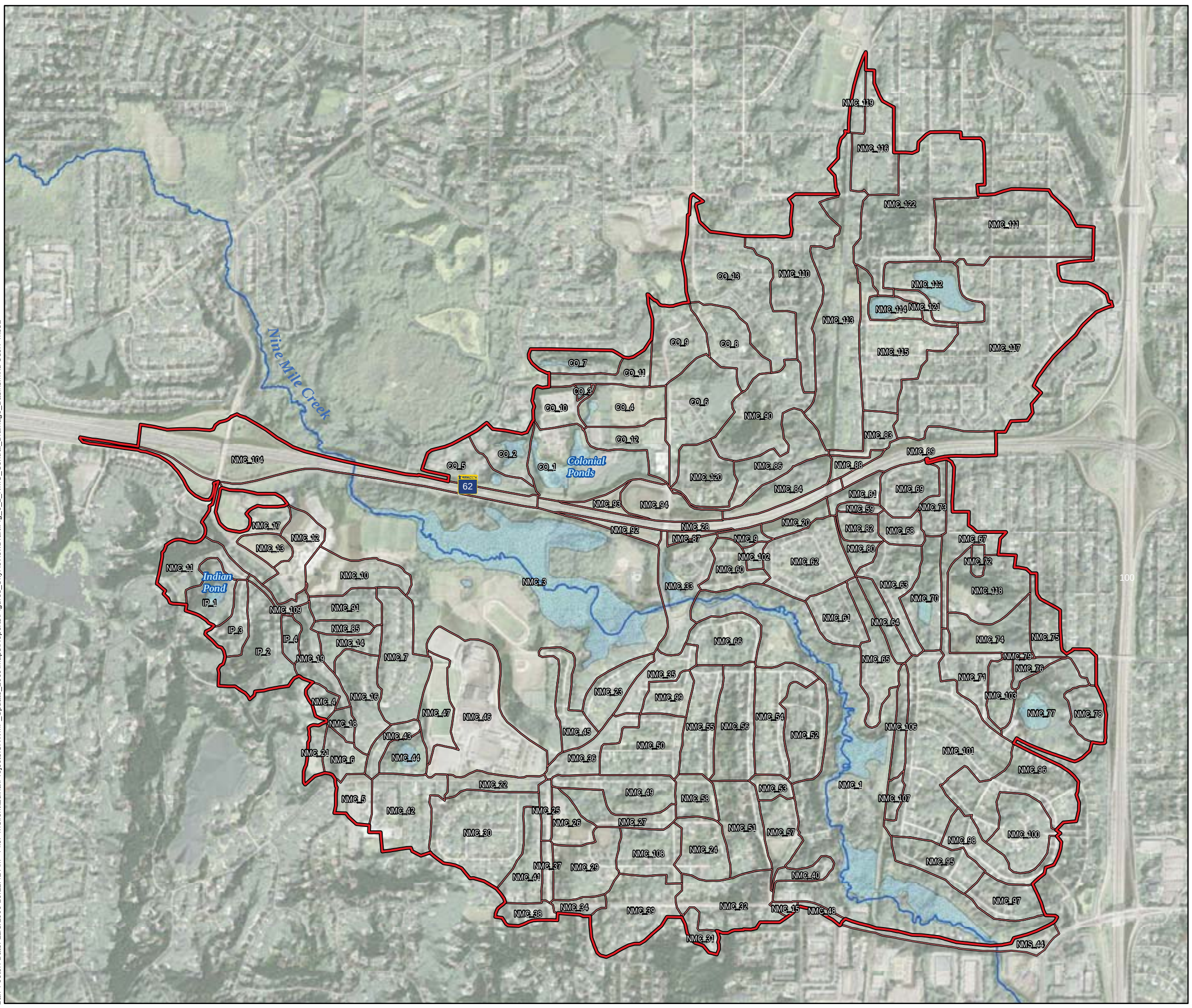
Conduit ID	Upstream Node	Downstream Node	Conduit Shape	Conduit Dimensions* (ft)	Roughness Coefficient	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Conduit Length (ft)	Slope	100Y Peak Flow through Conduit (cfs)	10Y Peak Flow through Conduit (cfs)
307p	443	NMC_120	Circular	1.75	0.013	858.48	854.34	188	2.20	22.7	24.4
311p	NMC_112	2579	Circular	2	0.013	901.00	900.60	67	0.60	9.5	5.6
327p	NMC_25	468	Circular	2.25	0.013	932.71	930.85	413	0.45	34.4	35.8
328p	468	NMC_37	Circular	2.25	0.013	930.60	930.20	43	0.93	34.6	36.1
329p	NMC_37	NMC_26	Circular	2.25	0.013	930.20	923.40	403	1.69	38.5	38.7
335p	NMC_108	476	Circular	3.5	0.013	910.11	909.54	187	0.31	79.9	78.2
336p	476	477	Circular	3.5	0.013	909.54	909.00	183	0.30	79.9	79.8
338p	NMC_39	479	Circular	4	0.013	907.50	906.50	463	0.22	130.6	94.2
340p	480	NMC_32	Circular	3.5	0.013	892.66	873.96	190	9.84	164.5	97.1
341p	482	480	Circular	1.75	0.013	894.60	894.16	63	0.70	9.0	6.6
343p	NMC_31	483	Circular	1.25	0.013	907.98	904.27	219.3	1.69	9.0	6.6
349p	492	493	Circular	4	0.013	857.99	857.25	193.5	0.38	169.3	111.4
353p	496	497	Circular	4	0.013	836.00	835.00	240	0.42	253.0	141.2
359p	NMC_97	505	Circular	1	0.013	833.00	830.50	162	1.54	6.3	6.3
375p	IP_2	526	Circular	2	0.013	888.09	887.77	106	0.30	14.1	11.3
378p	528	IP_3	Circular	2	0.013	886.58	886.43	28	0.54	14.1	11.5
379p	IP_3	IP_1	Circular	2.25	0.013	886.43	886.09	130	0.26	28.1	18.9
181	CO_13	CO_8	Circular	2	0.013	884.26	883.00	96	1.31	24.3	24.4
182	CO_8	301	Circular	2	0.013	883.00	875.63	350.1	2.11	38.8	40.6
186	301	305	Circular	2	0.013	875.63	869.23	246	2.60	37.6	37.3
187	305	CO_9	Circular	2	0.013	869.03	861.43	274.1	2.77	41.3	38.2
188	CO_9	307	Circular	2.5	0.013	860.84	859.20	195	0.84	53.1	54.1
189	307	308	Circular	2.5	0.013	859.10	858.65	52	0.87	52.8	54.0
190	308	CO_6	Circular	2.75	0.013	858.28	856.88	193.7	0.72	53.3	53.9
193	CO_12	CO_1	Circular	1	0.013	850.00	848.03	44	4.48	8.9	8.7
204	332	NMC_7	Circular	3	0.013	859.10	858.56	18	3.00	89.9	80.2
205	NMC_91	332	Circular	3	0.013	861.25	859.10	267	0.81	77.6	80.1
206	NMC_10	327	Circular	1	0.024	853.45	850.96	222.9	1.12	2.9	3.4
207	335	NMC_91	Circular	3	0.013	865.15	861.25	57.5	6.78	44.5	45.9
209	NMC_85	336	Circular	2.25	0.013	866.74	866.64	56	0.18	36.6	36.8
210	338	NMC_85	Circular	2.25	0.013	870.04	866.74	395	0.84	38.3	38.2
211	NMC_19	338	Circular	2.75	0.013	875.95	870.04	289.2	2.04	71.4	57.6
218	NMC_13	NMC_17	Circular	2.5	0.013	880.29	878.80	205	0.73	-27.4	19.4
220	348	NMC_19	Circular	2.5	0.013	878.08	871.40	69	9.68	28.4	28.8
221	349	348	Circular	1.25	0.013	884.00	878.40	254.8	2.20	13.4	13.5
222	350	349	Circular	1.25	0.013	889.79	884.00	102.7	5.64	13.6	13.7
223	351	350	Circular	1.25	0.013	903.96	889.79	238.2	5.95	15.3	15.5
224	352	351	Circular	1.25	0.013	904.80	903.96	58	1.45	15.5	17.1
225	NMC_4	352	Circular	1	0.013	905.34	904.80	103.5	0.52	7.6	7.5
226	354	NMC_4	Circular	1	0.013	906.20	905.34	224.5	0.38	5.0	5.1
227	NMC_18	354	Circular	1	0.013	906.20	906.20	5	0.00	4.7	4.7
228	356	NMC_18	Circular	1	0.013	907.45	906.20	57.5	2.17	4.1	3.7
229	357	356	Circular	1	0.013	908.71	907.45	57.5	2.19	4.9	5.5
230	NMC_6	357	Circular	1	0.013	915.04	908.71	172	3.68	6.0	6.0
231	359	NMC_6	Circular	1.25	0.013	915.46	915.26	20	1.00	2.6	-3.7
242	373	NMC_35	Circular	1.25	0.013	866.00	864.73	67	1.90	10.9	11.0
243	374	373	Circular	1.25	0.013	882.24	866.00	328	4.95	14.5	14.4
244	375	374	Circular	1.25	0.013	885.77	882.24	82	4.31	14.8	14.6
245	NMC_36	375	Circular	1.25	0.013	899.23	885.77	313	4.30	15.4	15.1
246	NMC_99	378	Circular	2.25	0.013	871.06	869.98	160	0.68	26.8	22.5
247	378	379	Circular	2.25	0.013	869.98	869.35	150	0.42	28.0	22.5
248	379	380	Circular	2.5	0.013	869.35	868.59	10	7.60	29.1	22.5

Table 6.4
Conduit Modeling Results for Subwatersheds in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006)

Conduit ID	Upstream Node	Downstream Node	Conduit Shape	Conduit Dimensions* (ft)	Roughness Coefficient	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Conduit Length (ft)	Slope	100Y Peak Flow through Conduit (cfs)	10Y Peak Flow through Conduit (cfs)
250	NMC_55	382	Circular	2.5	0.013	866.77	857.92	292	3.03	72.7	56.9
251	382	NMC_56	Circular	2.5	0.013	857.92	856.38	37	4.16	34.0	46.6
252	NMC_56	384	Circular	3	0.013	856.38	854.94	282	0.51	52.1	55.7
253	384	385	Circular	3	0.013	854.93	854.43	30	1.67	100.8	74.6
254	385	386	Circular	3	0.013	854.43	853.23	185	0.65	61.9	61.4
255	386	NMC_54	Circular	3	0.013	853.23	852.67	85	0.66	95.4	75.3
262	NMC_61	393	Circular	3.5	0.013	840.76	840.11	331.9	0.20	94.7	83.4
263	396	NMC_61	Circular	3.5	0.013	841.42	840.76	176.3	0.37	82.7	74.8
267	NMC_63	399	Circular	3	0.013	847.26	845.52	174	1.00	81.4	75.9
271_p	405	403	Circular	3	0.013	850.21	849.03	222	0.53	45.7	40.5
275	NMC_79	NMC_71	Circular	3	0.013	853.56	853.07	187	0.26	24.4	21.6
279	412	411	Circular	1.25	0.013	856.65	856.56	36	0.25	4.0	4.1
288	NMC_58	421	Circular	2	0.013	899.66	896.70	381	0.78	26.8	27.4
290	425	NMC_63	Circular	2.25	0.013	856.73	855.44	155.5	0.83	37.2	31.1
291	426	425	Circular	2.25	0.013	859.52	857.00	210	1.20	40.9	31.2
295	430	NMC_80	Circular	1.25	0.013	869.53	866.78	171.7	1.60	10.7	13.1
296	431	427	Circular	1.25	0.013	873.33	868.00	156.8	3.40	15.5	15.3
297	NMC_68	431	Circular	1.25	0.013	879.89	873.33	164.4	3.99	13.6	13.7
298	433	NMC_68	Circular	1.25	0.013	883.25	879.89	60	5.60	10.4	8.2
299	NMC_69	433	Circular	1.25	0.013	898.00	883.25	269.3	5.48	8.0	7.8
309	445	NMC_117	Circular	1.25	0.013	902.00	900.82	295	0.40	4.3	4.5
316	454	455	Circular	2	0.013	895.46	894.87	240	0.25	15.7	11.4
319	458	455	Circular	1.5	0.013	895.87	894.87	92	1.09	10.1	11.4
320	455	459	Circular	2	0.013	894.87	892.55	404	0.57	22.4	20.2
321	459	460	Circular	2	0.013	892.55	890.15	400	0.60	22.4	19.8
323	NMC_116	463	Circular	1.5	0.013	919.30	918.60	81	0.86	12.9	9.4
3269p	2921	CO_11	Circular	2	0.013	852.34	852.10	24	1.00	3.8	1.2
3270p	CO_7	2924	Circular	1.25	0.024	855.00	854.65	139.2	0.25	3.2	1.2
3271p	2924	2923	Circular	1.25	0.024	854.65	853.29	136	1.00	3.2	1.2
3272p	2923	2922	Circular	1.25	0.013	853.29	852.68	60.7	1.01	3.5	1.2
3273p	2922	2921	Circular	1.25	0.013	852.68	852.34	34	1.00	3.7	1.2
331	NMC_29	472	Circular	2.75	0.013	917.35	914.46	310	0.93	51.0	59.3
334	475	NMC_108	Circular	2	0.013	911.80	911.60	37	0.54	15.6	16.9
352p	NMC_57	496	Circular	4	0.013	846.02	844.83	174	0.68	253.1	141.2
354p	NMC_96	499	Circular	1.25	0.013	840.16	837.70	176	1.40	9.9	9.4
355	499	NMC_98	Circular	1.25	0.013	837.70	835.69	171	1.18	8.5	8.5
1276	1609	406	Circular	1	0.024	866.97	850.45	155	10.66	4.8	4.3
1278	NMC_43	NMC_44	Circular	1.25	0.013	940.01	939.35	76	0.87	8.7	7.3
1465	CO_10	CO_4	Circular	1	0.013	849.99	849.00	95	1.04	5.7	5.9
1481	1826	NMC_68	Circular	1.25	0.013	881.66	878.62	45	6.76	6.6	5.3
1482	1827	1826	Circular	1.25	0.013	894.17	880.49	311	4.40	11.6	6.7
1484	NMC_73	1828	Circular	1	0.013	902.29	897.44	45	10.78	4.6	4.5
1546	1915	494	Circular	1.75	0.013	860.82	845.49	110	13.94	44.1	25.2
1553	NMC_22	1927	Circular	1.25	0.013	936.40	934.80	260	0.62	5.8	7.2
1554	1929	NMC_6	Circular	1	0.013	919.87	915.04	127	3.80	7.9	5.6
1558	1935	NMC_17	Circular	2.25	0.013	880.04	878.80	253.7	0.49	19.8	18.7
1559	1936	1935	Circular	2.25	0.013	880.50	880.04	95.8	0.48	19.9	18.7
1560	NMC_11	1936	Circular	1.25	0.013	886.30	880.50	112.7	5.15	15.3	15.3
1561	NMC_101	NMC_98	Circular	1.25	0.013	838.30	836.64	255	0.65	9.4	9.7
1563	1941	NMC_96	Circular	1	0.013	838.85	840.20	103	-1.31	3.7	3.7
1564	NMC_100	1941	Circular	1	0.013	842.94	838.95	230	1.74	3.0	3.2
1565	NMC_53	418	Circular	1	0.013	863.30	843.90	310	6.26	9.5	8.9

Table 6.4
Conduit Modeling Results for Subwatersheds in the Nine Mile Creek- Central Drainage Basin (Revised 12/2006)

Conduit ID	Upstream Node	Downstream Node	Conduit Shape	Conduit Dimensions* (ft)	Roughness Coefficient	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Conduit Length (ft)	Slope	100Y Peak Flow through Conduit (cfs)	10Y Peak Flow through Conduit (cfs)
1609p	1921	NMC_58	Circular	1	0.013	900.91	899.66	37	3.38	11.1	11.0
1610	NMC_24	1923	Circular	1.25	0.013	907.82	907.15	30	2.23	14.1	11.6
1611	NMC_15	NMC_32	Circular	1	0.013	873.00	872.00	295	0.34	4.2	2.9
1612	NMC_51	1915	Circular	1.75	0.013	863.37	860.82	175	1.46	35.0	23.9
1643	2072	NMC_14	Circular	1	0.013	866.06	865.51	54.5	1.01	4.5	5.1
1644	NMC_16	2072	Circular	1	0.013	872.78	866.06	179.5	3.74	6.8	5.9
1645	NMC_42	NMC_44	Circular	1.5	0.024	943.00	941.00	200	1.00	9.5	9.1
1654	NMC_34	2086	Circular	1.25	0.013	931.36	916.60	300	4.92	15.6	13.5
1661	NMC_111	445	Circular	1	0.013	902.14	902.00	30	0.47	4.8	6.2
1724	NMC_117	NMC_112	Circular	1.25	0.013	900.82	900.66	40	0.40	11.6	11.2
1818	2271	NMC_81	Circular	2	0.013	878.90	874.50	70	6.29	22.7	21.5
1819	2272	2271	Circular	1.5	0.013	885.14	878.90	70.9	8.80	37.2	32.0
1972	2431	NMC_71	Circular	1.5	0.013	855.70	853.07	24	10.96	11.3	12.5
1976	NMC_50	2434	Circular	1.75	0.013	898.61	883.61	300	5.00	40.2	20.8
3000	460	2556	Circular	2	0.013	890.15	885.59	400	1.14	23.7	19.8
3002	2557	NMC_113	Circular	2	0.013	881.61	880.13	130	1.14	23.5	26.0
3003	NMC_113	NMC_88	Circular	2	0.013	880.13	877.62	220	1.14	32.7	31.4
3004	NMC_88	2560	Circular	2	0.013	877.62	876.06	137	1.14	32.8	31.4
3007	2561	2563	Circular	2	0.013	869.64	857.90	300	3.91	50.1	49.5
3008	2563	NMC_20	Circular	2	0.013	857.90	844.72	359	3.67	33.9	34.5
3010	2565	2566	Circular	2.5	0.013	844.50	844.00	66	0.76	27.7	38.2
3016	2569	CO_12	Circular	1	0.013	850.29	850.00	29	1.00	-3.6	-4.5
304p	440	NMC_86	Circular	2.5	0.013	852.58	852.19	42	0.93	25.3	27.4
305p	NMC_120	440	Circular	2.25	0.013	853.54	852.58	127	0.76	25.4	28.7
308p	NMC_90	443	Circular	1.5	0.013	865.68	858.68	152	4.61	23.0	24.1
317p	NMC_110	457	Circular	1.5	0.013	897.62	896.85	192.6	0.40	15.0	16.3
324p	NMC_41	NMC_30	Circular	1	0.024	939.45	938.52	200	0.47	2.5	2.5
325p	NMC_30	466	Circular	2	0.013	933.38	933.10	144	0.19	23.8	25.9
326p	466	NMC_25	Circular	2.25	0.013	932.80	932.71	20	0.45	27.2	31.3
3290_p	NMC_103	410	Circular	1.25	0.013	855.56	855.50	41	0.15	7.1	6.3
330p	NMC_26	NMC_29	Circular	2.5	0.013	923.00	917.80	454	1.15	43.6	45.6
332p	472	NMC_108	Circular	2.75	0.013	914.46	912.00	308	0.80	54.6	59.3
350p	493	494	Circular	4	0.013	857.25	857.52	200.5	-0.14	169.2	111.7
351p	494	NMC_57	Circular	4	0.013	845.49	845.07	30	1.40	223.0	132.6
356p	NMC_98	501	Circular	1.75	0.013	835.98	833.24	141	1.94	17.9	21.5
357p	501	NMC_95	Circular	1.75	0.013	833.24	830.39	235	1.21	18.4	20.2



City of Edina Boundary

Roads/Highways

Creek/Stream

Lake/Wetland

Nine Mile Creek - Central Drainage Basin

Subwatershed

Imagery Source: Aerials Express, 2008

Feet

1,000 0 1,000

Meters

300 0 300

Figure 6.1

NINE MILE CREEK CENTRAL DRAINAGE BASIN
Comprehensive Water Resource Management Plan
City of Edina, Minnesota

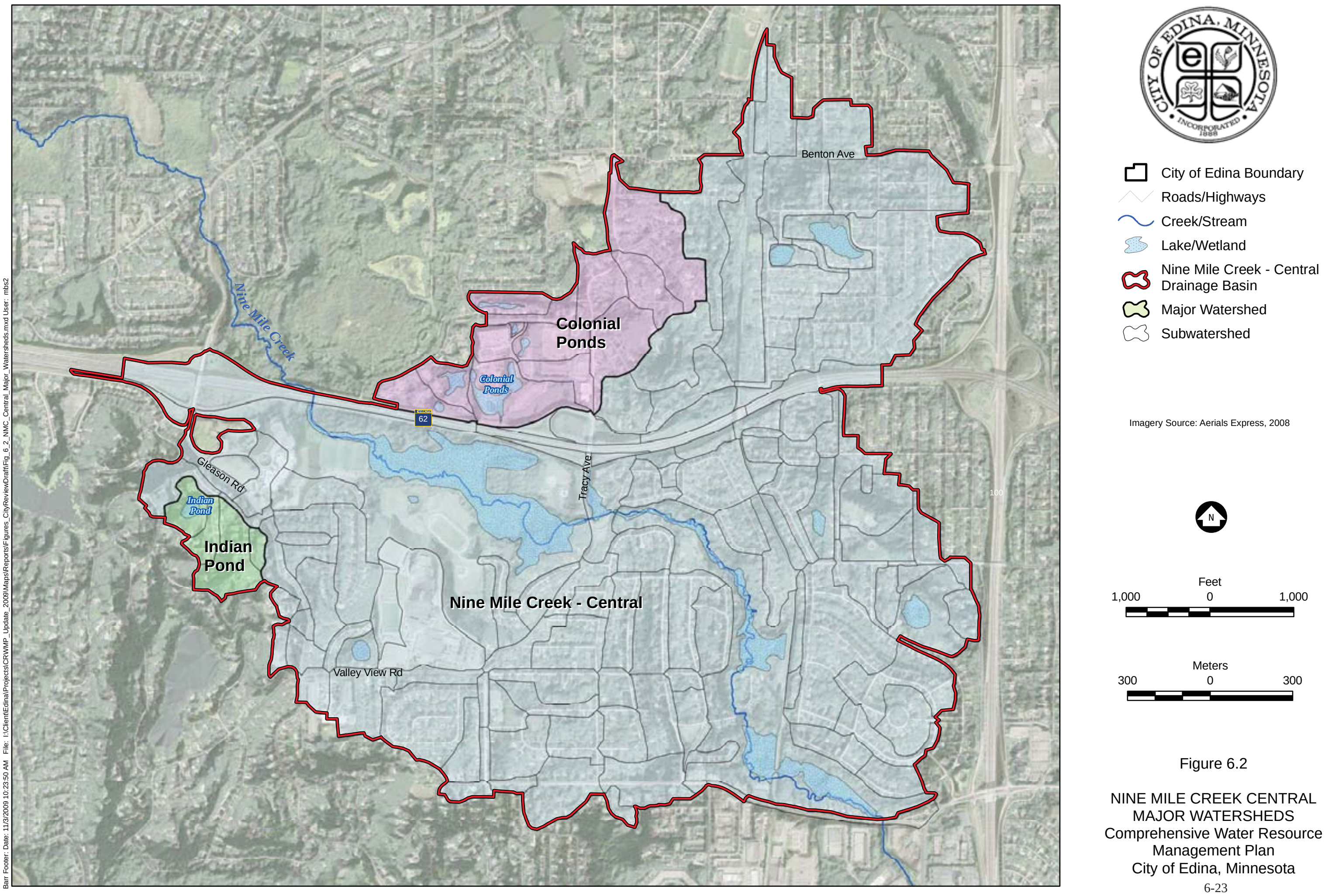


Figure 6.2

NINE MILE CREEK CENTRAL
MAJOR WATERSHEDS
Comprehensive Water Resource
Management Plan
City of Edina, Minnesota

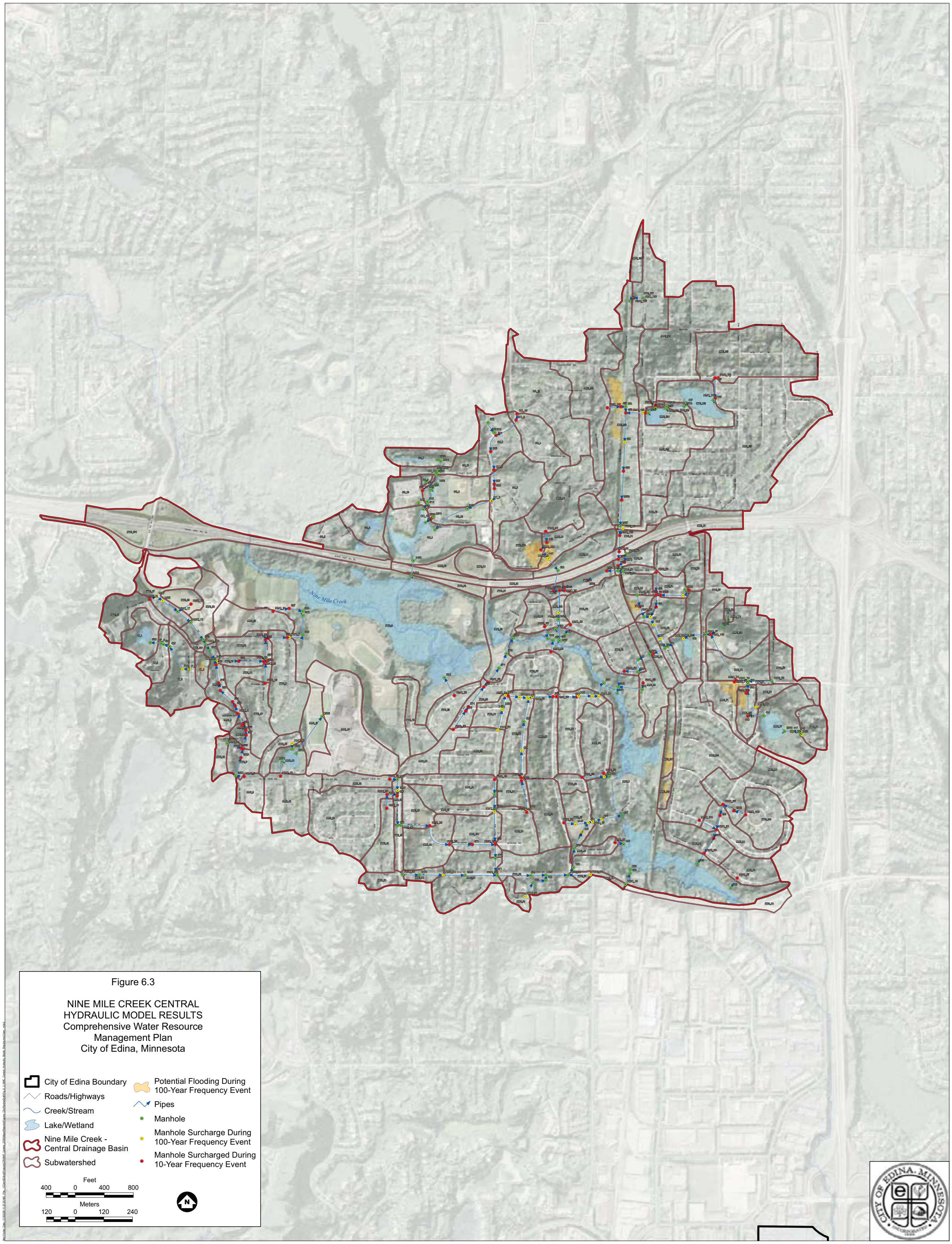


Figure 6.3
NINE MILE CREEK CENTRAL
HYDRAULIC MODEL RESULTS
Comprehensive Water Resource
Management Plan
City of Edina, Minnesota
City of Edina Boundary
Roads/Highways
Creek/Stream
Lake/Wetland
Nine Mile Creek -
Central Drainage Basin
Subwatershed
Potential Flooding During
100-Year Frequency Event
Pipes
Manhole
Manhole Surcharge During
100-Year Frequency Event
Manhole Surcharged During
10-Year Frequency Event
Feet
400 0 400 800
Meters
120 0 120 240
N
Nine Mile Creek
CITY OF EDINA, MINNESOTA

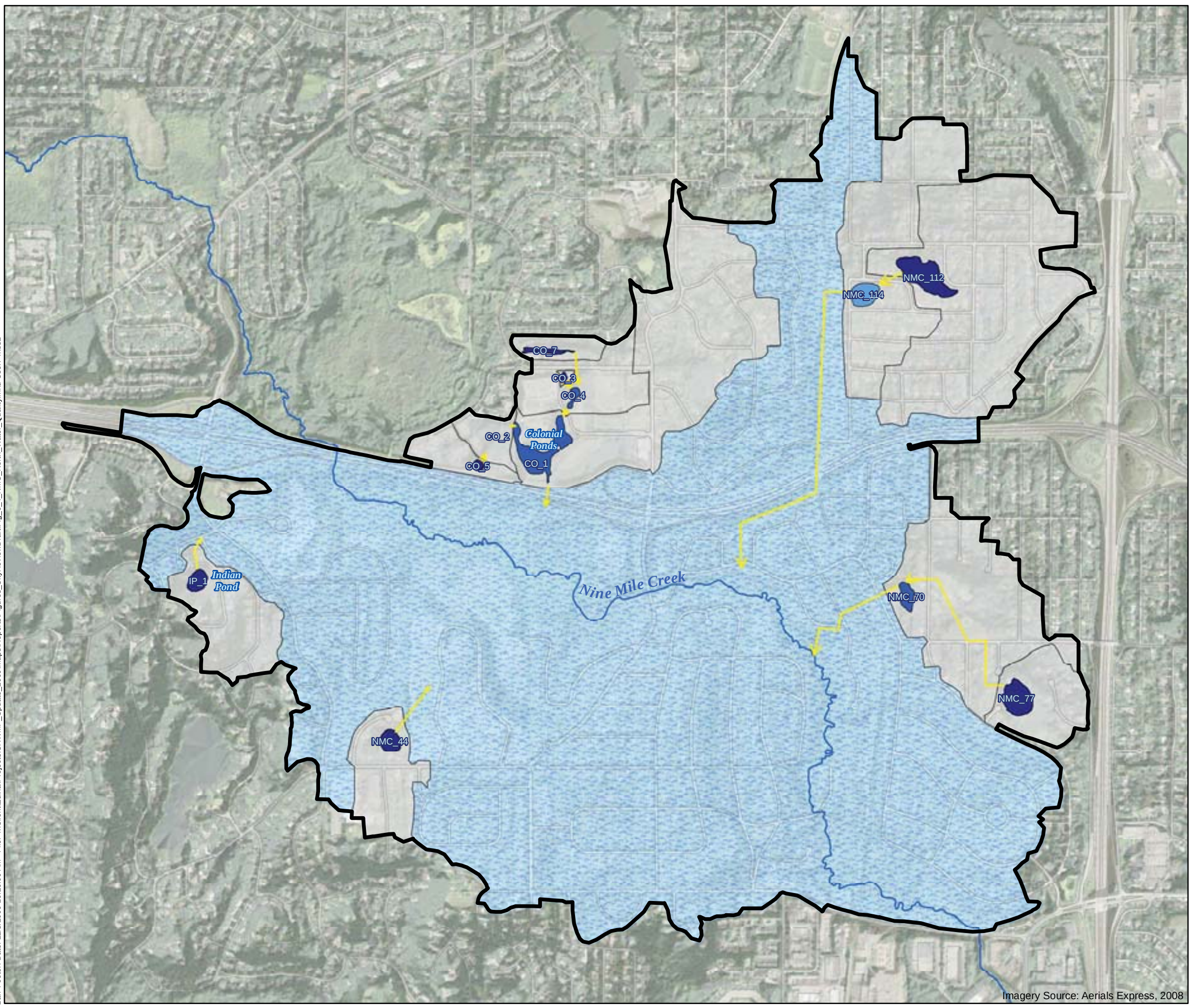


Figure 6.4

NINE MILE CREEK CENTRAL
WATER QUALITY
MODELING RESULTS
Comprehensive Water Resource
Management Plan
City of Edina, Minnesota

Barr Footer: Date: 11/3/2009 10:26:00 AM File: I:\Client\Edina\Projects\CRWMP_Update_2009\Maps\Reports\Figures_CityReviewDraft\Fig_6_4_NMC_North_Water_Quality.mxd User: mbs2