

Chapter 7

UPPER TYLER CREEK SUBWATERSHED

7.1.1 Subwatershed Location

The Upper Tyler Creek subwatershed is located in the northwestern portion of the Tyler Creek Watershed. This subwatershed has an area of 6,366 acres, or 9.9 square miles. The boundary of the Upper Tyler Creek Subwatershed is shown in Figure 7.1. The subwatershed is located within principally in southwestern Rutland Township, but extends somewhat into Hampshire Township and Plato Township. The subwatershed is roughly bordered by Big Timber Road on the north, Briar Hill Road on the west, Plank Road on the south, and Damisch Road on the east.

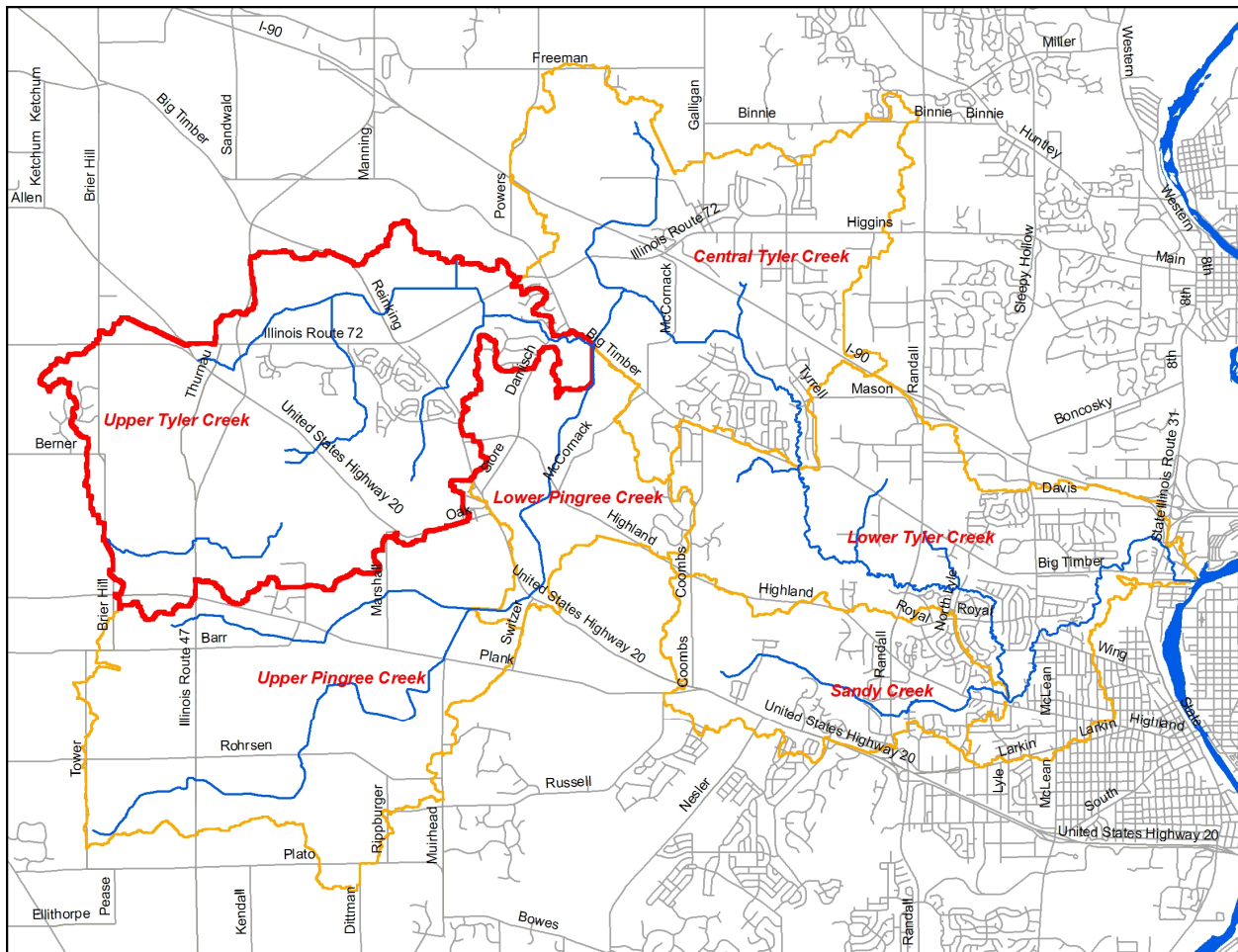


Figure 7.1. Subwatersheds in the Tyler Creek Watershed

7.1.2 Topography & Geology

The topography of the subwatershed varies from flat (< 1% slope) in the north and central regions to moderately steep in the western one-third of the subwatershed (3% - 5% slopes). The highest point in the subwatershed is located at the northwest corner and has a maximum elevation of 1,046 feet. The lowest elevation is if found where Tyler Creek meets Pingree Creek at Big Timber Road, where the elevation is only 886.

7.1.3 Soil Conditions

The glacial advances result in a wide variety of soil associations. The soils in the Upper Tyler subwatershed consist of mainly silty loams soil units on 0% - 2% slopes. Each major grouping of soil associations has potential impact on current and future land uses within the subwatershed. For example, hydric (wetland) soils constitute 2,601 acres, or 41% of the 6,366 acre subwatershed, and indicate those areas that contain functional wetlands, or former / degraded wetland areas that could be restored or enhanced.

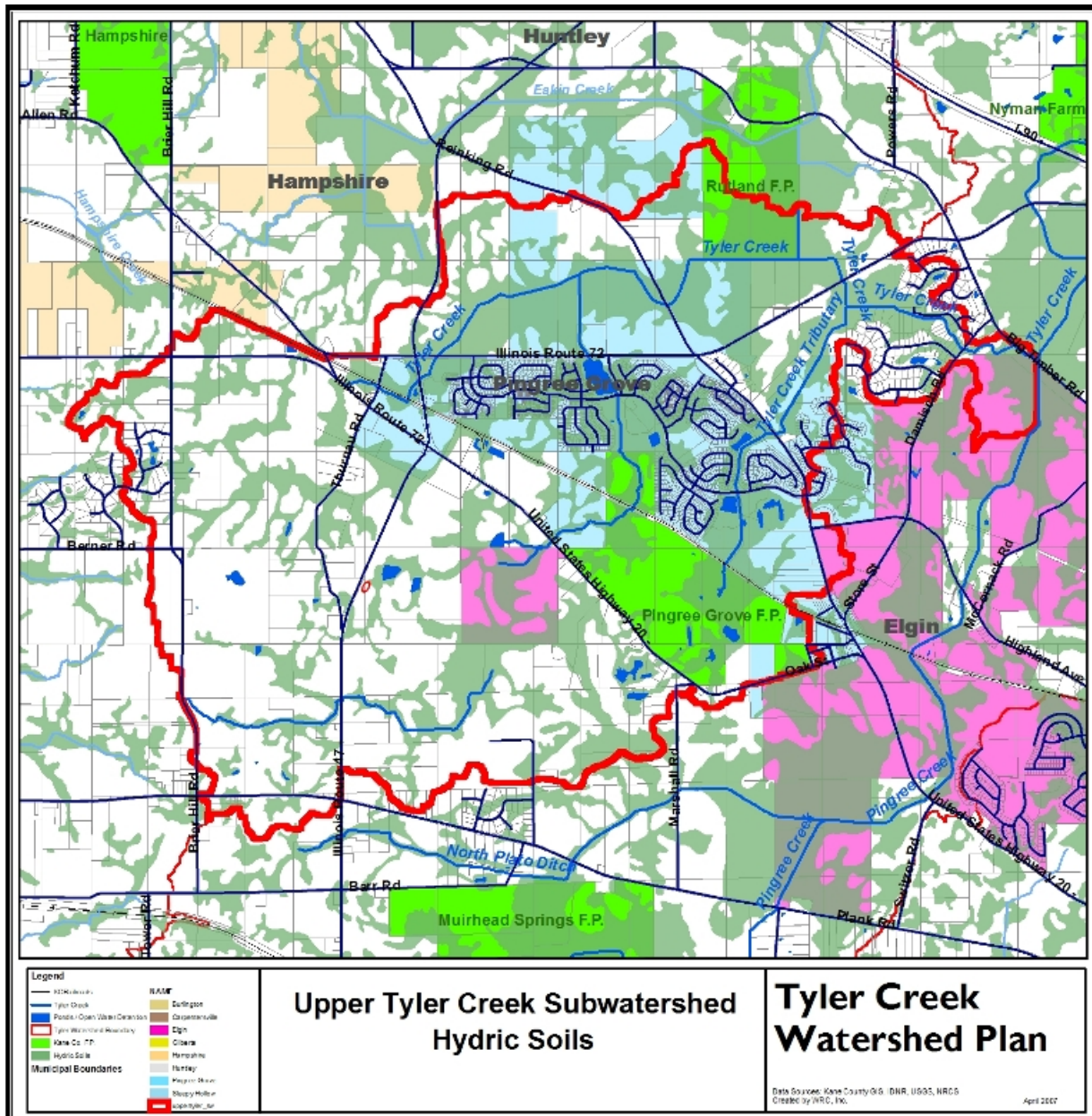


Figure 7.2: Hydric Soils

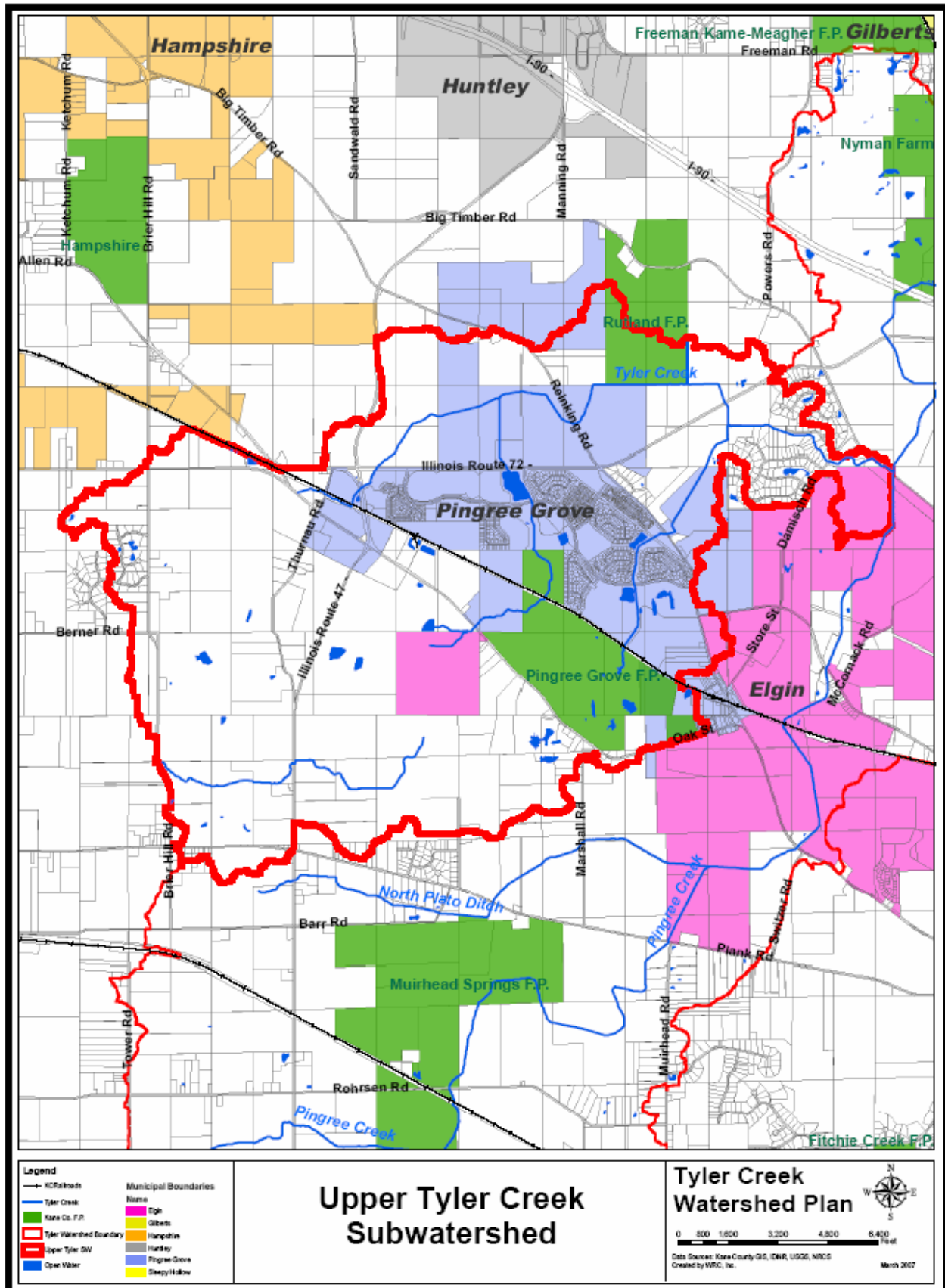


Figure 7.3. Subwatershed Map

7.1.4 Subwatershed Drainage

Streams

The principal stream in the Upper Tyler subwatershed is Tyler Creek. Within this subwatershed, Tyler Creek is a short, 4.6 mile long, low-gradient headwater stream. Tyler Creek's origin can be found in the field south of Illinois Route 72, about ½ mile west of Illinois Route 47. The first mile of Tyler Creek is heavily channelized and bordered by a thick deciduous tree canopy along its narrow stream corridor. Continuing downstream, the stream is 100% channelized for 2.3 miles and is contained within a very narrow, 50 foot wide incised stream corridor dominated by invasive herbaceous vegetation. The lower 1.3 miles of Tyler Creek in the subwatershed is channelized, but passes through a large wetland complex (ADID Wetland 466) and rural residential developments. Overall, the stream channel is very incised with a silty / sand substrate and banks dominated by Reed Canary Grass and Brome Grass.

There are two tributaries in the subwatershed; Tyler Creek Tributary #6, and Tyler Creek Tributary #7. Tyler Creek Tributary #6 originates in the partial forest savannah east of Brier Hill Road, about ½ mile north of Plank Road. This small stream, though historically channelized, passes through four high quality wetland complexes. The interesting feature of this tributary is that in two sections, this small stream actually flows underground through large agricultural field tiles.

Tyler Creek Tributary #7 originates near the Klehm Ornamentals property south of US Route 20, west of Pingree Forest Preserve. This stream has historically been channelized and tiled to the extent that across many parcels, the stream has been directed to flow underground via agricultural drain tile. This agricultural tile traverses the western portion of the Pingree Grove Forest Preserve before emptying into a series of stormwater ponds excavated out of the stream corridor in the Cambridge Lakes development. The last ½ mile of Tributary #7 exists as a channelized ditch through an agricultural field, with a narrow herbaceous buffer.

Analysis of aerial photography indicates that about 83% of the streams in the Upper Tyler Subwatershed have been channelized. This includes 100% of main stem of Tyler Creek.

Urban Drainage Systems

Analysis of land uses and aerial photography indicates that about 10% of the subwatershed is drained via storm sewer systems. The largest of these systems is the storm sewer system that services the Cambridge Lakes development in Pingree Grove. There are an estimated 18 open water stormwater detention basins in the subwatershed, and perhaps five or six dry-bottom detention facilities serving the rural residential developments of the subwatershed, as well as a few of the non-residential commercial / business parcels along US Route 20.

Agricultural Tile Systems

Given the soils and gentle slopes of the agricultural land that dominates the western half of the subwatershed, it is estimated that about 70% (4,456 acres) of the Upper Tyler subwatershed has been modified with the installation of agricultural drain tile systems. Identifying agricultural drain tile networks is important in watershed planning because current local flooding and drainage problems can often be linked to damage or age-related failure of drain tile systems. From a watershed preservation / restoration perspective, it is important to identify functional drain tile systems to determine opportunities for their removal or reconfiguration for the purposes of restoring valuable wetland habitat. It is probable that many of the depressional and low lying areas in the subwatershed that are now drained by tile systems were once wetland and wet prairie ecosystems that supported very diverse habitats.

7.1.5 Population

The use and analysis of population data in watershed planning is critical because there is a direct correlation between the number of people residing in a watershed and the degree of impacts to the quality and quantity of the watershed's natural resources.

According to the 2000 US Census, the population in the subwatershed was about 759 people, or only 76 persons per square mile. However, it is apparent to even the casual visitor to the subwatershed that there has been a substantial population increase in the last five years with the Cambridge Lakes development in Pingree Grove; adding perhaps as many as 500 new residents, or more than a 60% increase in population since 2000 (increase estimated from Kane GIS data, 2007).

7.1.6 Landuse / Landcover

Land cover data for the Tyler Creek Watershed is available from the Illinois Department of Natural Resources using LANDSAT data collected between 1998 and 1999. The dominant land cover, according to this data, was row crop agriculture, which accounted for roughly 60% of the subwatershed area. Rural grasslands accounted for another 24%, while wooded areas and wetlands account for an additional 9% of the subwatershed. Urban land cover, including urban grassland comprised the remaining 7% of the subwatershed.

Land Cover Description	Total Acres	Percent of SW
Barren & Exposed Land	6.5	0.10%
Corn, Soybeans, Other Small Grains & Hay (row crop agriculture)	3,839.2	60.30%
Winter Wheat	0	0.00%
Rural Grassland	1,535.9	24.13%
Low Density Urban	171.2	2.69%
Medium Density Urban	116.8	1.83%
High Density Urban	7.5	0.12%
Urban Grassland	140.6	2.21%
Shallow Marsh – Emergent Wetland	66.6	1.05%
Shallow Water Wetland	0	0.00%
Partial Forest /Savannah Upland	116.7	1.83%
Upland Forest	302.3	4.75%
Floodplain Forest	7.1	0.11%
Coniferous Forest	0	0.00%
Deep Marsh / Emergent Wetland	43.5	0.68%
Open Water	12.5	0.20%
TOTAL	6,366.4	100%

Table 7.1

7.1.7 Existing Watershed Development

Historically, the Upper Tyler Creek subwatershed was an agricultural area, with a very small amount of rural / estate residential development and the rural villages of Pingree Grove and Starks, which occupied less than 150 acres. Non-agricultural, unincorporated residential development in the subwatershed is currently around 180 dwellings on 256 acres (mean lot size = 1.4 acres). There are about 23 additional rural residential (1+ acre) lots planned (but yet to be

developed) in the Maplehurst subdivision at Damisch and Big Timber Road that will drain into the Upper Tyler subwatershed.

The Village of Pingree Grove has annexed significant portions of the Upper Tyler subwatershed and now has jurisdiction over 1,690 acres, or 27% of the overall Upper Tyler subwatershed. Elgin has annexed to the confluence of Tyler and Pingree Creeks, and has jurisdiction over about 274 acres of the subwatershed. None of the land annexed to the City of Elgin is currently developed and only 50% of the land annexed to Pingree Grove is currently developed.

Municipality	Area (acres)	Percent of SW
Village of Hampshire	0.2	< 0.1%
Elgin	274.1	4.3%
Village of Pingree Grove	1,690.8	26.6%
Unincorporated	4,401.5	69.1%

Table 7.2

There are 29.2 miles of roads in the subwatershed, which equates to about 99 acres of impervious cover (roadway pavement only – excludes parking lots, sidewalks, and driveways).

Point Source Discharges

There are no permitted point source discharges in the subwatershed. The Village of Pingree Grove operates a wastewater treatment facility that serves its growing population, however the plant utilizes a land application system and therefore no wastewater effluent is discharged directly into Tyler Creek or its tributaries.

7.1.8 Natural Resources

Kane County Forest Preserve Properties

There are two Kane County Forest Preserve properties in the Upper Tyler subwatershed, totaling about 511 acres, or 8% of the subwatershed area.

Name	Area (acres)
Rutland F.P.	116.1
Pingree Grove F.P.	394.7
Total	510.8

Table 7.3

The Pingree Grove Forest Preserve contains over 300 acres of wetland in this 394 acre property. Pingree Grove is a magnificent marsh and woodland, and contains rich fen edges, prairie and wooded shorelines, Bur Oak-covered islands and peninsulas, and isolated wetland pockets, each with a different high quality plant community. It is home to Great Blue Herons and nesting Sand Hill Cranes, and a host of fine wetland birds. It is also a popular visiting spot for the endangered Yellow-Headed Blackbird and the American Bittern (*Source: Kane County Forest Preserve District webpage*).

Other Publicly Protected Land

The Village of Pingree Grove owns 17 parcels totaling 83.9 acres within the subwatershed. Most of this is comprised of the parcels on which the Village’s waste water treatment plant is located,

and in a large detention basin within the Cambridge Lakes development at Route 72 and Richard J. Brown Drive.

Wetlands

Kane County completed an Advanced Identification (ADID) Wetland Study in 2004. This study identified a total of 78 wetlands, totaling 721 acres, or 11% of the Upper Tyler subwatershed. Of these, 16 wetlands, totaling 569.9 acres (79%) were determined to be of High Quality or High Functional Value, the highest rating under the ADID classification system.

ADID Code	Wetland Type	Number of Wetlands	Total Area (acres)
HFV	High Functional Value	10	220.1
HHQ	High Habitat Quality	6	349.8
APH	Artificial Pond in Hydric Soils	16	21.8
APN	Artificial Pond in Non-hydric Soils	0	0
LWF	Linear Water Feature	4	7.2
NOW	Natural Open Water	0	0
R	Fox River	0	0
W	Other Wetlands (lower quality)	42	121.9
	TOTAL	78	720.7

Table 7.4

The wetland with the highest habitat quality in the Upper Tyler Subwatershed is the marsh located within the Pingree Grove Forest Preserve. This wetland actually has the highest weighted score (37) of ALL wetlands in Kane County, not just Tyler Creek (combination of plant diversity & health along with the overall size). Additionally, this wetland and three other High Quality Habitat wetlands are all located along Tributary # 7 (which passes through the Cambridge Lake Development).

Threatened & Endangered Species

The Kane County ADID Wetland Study indicates that there are Threatened and Endangered species located in Wetland #539 (Pingree Grove F.P.) This is likely referring to the occurrence of Sandhill Cranes, an Illinois State Threatened Bird that is known to inhabit the wetland (KCFPD staff records).

Existing Greenways

There are no formal greenways established in the subwatershed.

7.2 Analysis of Subwatershed Data and Problem Identification

7.2.1 Water Quality Data

The IEPA is tasked with assessing the quality of the surface water resources of Illinois. The IEPA has determined Tyler Creek's designated uses are:

- Aquatic Life
- Fish Consumption
- Primary Contact
- Secondary Contact
- Aesthetic Quality

The IEPA periodically produces a [303\(d\) list](#), which identifies waterways that are not achieving certain designated uses. In the 2006 IEPA 303(d) list, Tyler Creek is identified as being in Full Support of its Aquatic Life Designated Use, which is notable for a stream in northeastern Illinois.

However, Tyler Creek was also determined to be Non-supporting of its Primary Contact Designated Use, due to excessive levels of fecal coliform. This pollutant, associated with human and animal waste, was listed as coming from urban runoff, storm sewers, and runoff from forest / grassland / parklands. The IEPA also identified fish consumption, secondary contact and aesthetic quality as designated uses for Tyler Creek, although the ratings for these uses were classified as "not assessed".

The IEPA does not maintain any water quality sampling stations in the Upper Tyler Creek subwatershed.

The FRWMN, administered by the not-for-profit group, *Friends of the Fox River*, maintains ten volunteer stream monitoring sites along Tyler Creek. However, there are no sampling sites in the Upper Tyler subwatershed.

In 2003, stream monitoring was done by Hey & Associates, Inc. to assess the ecological impacts of the proposed expansion of the Pingree Grove Wastewater Treatment Plant. Sampling was done on the main stem of Tyler Creek, and on the first tributary to Tyler Creek in the subwatershed, adjacent to where the Pingree Grove WWTP is located. Sampling was done on this tributary stream at Reinking Road and on the main stem of Tyler Creek at the Big Timber Road bridge (just above the confluence with Pingree Creek). The data reflects the degraded conditions that both the tributary and this upper reach of Tyler Creek have experienced as a result of extensive channelization and agricultural runoff. Macroinvertebrate index values for both sites were above 7.5, which indicates a Class "D" or Limited Aquatic Resource. In August 2003, water quality samples were also collected at both locations and found very high levels of total phosphorus (0.2 – 0.28 mg/L). Ammonia-nitrogen was also found to be very high at the Tyler Creek Tributary / Reinking Road station (0.44mg/L) and dissolved oxygen in the tributary was measured as low as 0.8-2.2 mg/L (5 mg/L is the minimum needed to support a healthy aquatic community, including fish).

7.2.2 Flooding Problems

There are no known flooding problems in the Upper Tyler watershed in which dwellings are subjected to flood damages. However, most of the streams in the subwatershed have not had their floodplains accurately calculated or mapped. The FEMA maps currently show the floodplain for Tyler Creek upstream (west) of Illinois Route 72 to be an unnumbered "A" Zone. The 100-year floodplain for the Tributary #6 through Cambridge Lakes has recently been mapped as part of Pingree Grove's expansion, although the floodplain for this tributary remains unmapped upstream of US Route 20. The second tributary (#7), which joins Tyler Creek west of Rutland Forest Preserve, and had no reported floodplain mapping. However, it is believed that new floodplain mapping has likely been generated as part of the on-going development in the vicinity (Cambridge Lakes South and Cambridge Lakes North developments bordering IL Rt 72).

7.2.3 Projected Development & Growth

In 1999, development occupied about 450 acres, or 7% of the subwatershed. Between 1999 and 2006, development increased to almost 1,100 acres, or 17% of the subwatershed. About 630 acres of the 650 acres of new development in that time period occurred in one development (Cambridge Lakes South) that was part of the Village of Pingree Grove. Within the Upper Tyler Creek subwatershed, the Village of Pingree Grove has another 700 acres of "undeveloped land" within its current municipal borders.

The City of Elgin currently has 689+ acres planned for residential development by 2010, and their Comprehensive Land Use Plans estimates 77 acres of light industrial and 697 acres of business park / warehouse developments along the Illinois Route 47 corridor, along with another 425+ acres of new residential development.

The Village of Gilberts also has indicated plans to annex in the northeast portion of the Upper Tyler subwatershed. There are about 200 acres of agricultural land north of Illinois Route 72 that the Village of Gilberts has proposed to become office / business park.

All totaled, the developed land in the Upper Tyler Creek subwatershed will increase from 1,100 acres (7%) to 3,888+ acres (61%). If not carefully planned and designed, the proposed land use changes in the subwatershed will result in profoundly negative impacts on water quality, total runoff, stream stability, and the ecological integrity of this portion of Tyler Creek.

7.2.5 Estimated Pollutant Loads

The table below summarizes pollutant load estimates in the Upper Tyler Creek subwatershed under existing and future condition land uses are summarized below. Nutrient loads are expected decrease as agricultural uses decline. The future load projections however assumed low-density development. Higher density residential or commercial development will result in higher loads. In addition, if agriculture displaced by urbanization, additional pollutants such as metals, oils and grease will be generated in addition to nutrients and sediment. Strategies for reducing existing pollutant loadings are discussed in Chapter 3 and 4.

Pollutant	Existing Condition	Future Condition
Total N (lbs/yr)	33,669	29,805
Total P (lbs/yr)	3,161	2,445
Sediment (tons/yr)	1,897	1,621
Runoff (acre-ft per yr.)	1,571	1,735
Fecal Coliform (FC)	35,922	36,072

Table 7.5 Estimated annual pollutant loads for the Upper Tyler Creek Subwatershed

7.2.5 Natural Area Protection Problems

Forest Preserve Sites

As of this writing, there is no information about specific management issues or concerns from KCFPD staff on specific properties in the subwatershed.

ADID Wetland Sites

In the Upper Tyler subwatershed, only 721 acres of wetland remain, compared to an estimated 2,601 acres that existed before settlement. That means that about 72% of the wetlands have already been lost and can no longer provide their valuable functions. Therefore, it is critical that the remaining wetland resources in the subwatershed be protected and managed so that stakeholders can continue to benefit from the functions these wetlands provide.

There are six High Habitat Quality wetlands in the subwatershed. Each of these is in need of either protection and/or restoration to maintain the high quality characteristics that make the wetlands so valuable to the watershed.

High Habitat Quality (HHQ) ADID Wetland #539 is located in the Pingree Grove Forest Preserve and is the highest rated wetland in all of Kane County. This 120 acre marsh, despite its high quality and protection status as a Forest Preserve, is suffering from invasive species (Cattails & Reed Canary Grass). This site also faces future threats from altered hydrology and poor water quality associated with urban stormwater runoff from future developments planned upstream of the Forest Preserve.

High Habitat Quality (HHQ) ADID Wetland #1085 is located on private property along the south side of US Route 20, across from the Pingree Forest Preserve. Threats to this 56+ acre marsh are invasive species, and in the future, altered hydrology and poor water quality associated with urban stormwater runoff from future upstream developments.

High Habitat Quality (HHQ) ADID Wetland #1086 is located on private property between Illinois Route 47 and US Route 20 about ½ mile north of Plank Road. This 109 acre wetland contains sedge meadow, wet prairie and marsh communities and is noted for its good plant diversity. This wetland is currently threatened by invasive species (Reed Canary Grass), but more importantly it is located on properties planned for residential development in the next 3 years as far of the City of Elgin Far West Plan.

High Habitat Quality (HHQ) ADID Wetland #1087 is located on private property west of Illinois Route 47, about 1.2 mile north of Plank Road. This 34 acre wetland contains a high quality sedge meadow with good species diversity. This wetland is located on properties planned for warehouse / business park development in the future by the City of Elgin as part of a future annexation.

High Habitat Quality (HHQ) ADID Wetland #1094 is located on private property west of Illinois Route 47, about a ¼ mile north of Plank Road. This 17 acre sedge meadow wetland is currently being threatened by invasive species, including Reed Canary Grass and various noxious shrub species. There are no current plans for future development adjacent to this wetland, although the property's proximity to the Illinois Route 47 / Plank Road intersection suggests that may change in the near future.

ADID Wetland #466, is located at the confluence of Tyler Creek and the Pingree Tributary, between Illinois Route 72, Damisch Road, and Big Timber Road. This wetland is more than 200 acres in size and is classified as a High Functional Value wetland. The two streams that pass through the wetland are ditched, which has invariably altered the water table and the resulting species make-up of this marsh and sedge meadow community. The wetland is currently degraded as a result of this channelization and the invasive species (Reed Canary Grass) that have come to dominate the wetland. The future of this wetland is also of concern, as it is located entirely on privately owned parcels and about one-third of the wetland is on land that is planned for development by both the City of Elgin and Village of Pingree Grove.

7.3 Subwatershed-specific Recommendations to Protect Watershed Resources

The following is a summary list of recommendations for the Upper Tyler Creek Subwatershed to help stakeholders and decision makers meet the Goals and Objectives set forth for Tyler Creek. Background information regarding how each type of recommendation addresses watershed concerns and/or impairments (existing or future) can be found in Section 2.5. Note that there are several general, or watershed-wide recommendations contained in Chapter 3, Watershed Plan Recommendations.

Type: Education/Outreach; Regulatory; Natural Area Restoration; Monitoring; Permanent Habitat Protection, Water Quality; Flood Control

Target Goals: Which watershed plan goals the recommendation is intended to address.

Initial Cost: the initial cost, in 2007 dollars to initiate the recommended action, if applicable.

Annual Cost: the long term expected annual cost (in 2007 dollars) to successfully implement the recommendation

Responsible Party: Identifies the LEAD agency, entity, or landowner who will ultimately have to execute the recommendation. SUPPORTING parties, such as government agencies, grant sources, etc. may also be identified here.

Priority: A ranking of High, Medium, or Low, where High is represents a recommendation of utmost importance to be pursued immediately and Low represents those recommendations which may take more time and are less critical in terms their impact on meeting the watershed plan goals.

The project cost estimates contained in this report should be considered preliminary, and are only presented to identify the potential magnitude of cost, from a watershed scale perspective. No site-specific investigation, analysis, or design of any recommended project, from which accurate cost information could be obtained, was completed as part of the preparation of the 2007 Tyler Creek Watershed Plan.

If a watershed stakeholder decides to apply for grant funding assistance to implement any of the recommended projects presented in this report, they should first undertake any additional studies / research needed to determine an updated / accurate project cost. They should not solely rely on the cost estimates presented in the TCWP report as the basis for their grant request.

Ordinance/Planning Recommendations

Recommendation 3-1

Direct development plans for parcels west & south of US Route 20 along Tyler Creek Tributary #6 to permanently protect High Habitat Quality ADID Wetlands #1085, 1086, 1087, and 1094 from the impacts of proposed development. This includes both direct encroachment as well as discharge of untreated stormwater runoff from detention basins or storm sewer outfalls. A direct greenway connection of at least 100 foot width should also be provided to link these 4 wetland complexes together along the historic drainage way of Tyler Creek Tributary #6.

This will protect the remaining high quality habitat in the subwatershed.

Type: Permanent Habitat Protection / Water Quality

Target Goals: Goal 1; Objectives 1,2

Initial Cost: unknown (municipal staff & elected official time)

Annual Cost: unknown (municipal staff & elected official time)

Responsible Party: City of Elgin

Priority: High

Natural Area Restoration Projects

The following recommendations are site-specific natural area restoration projects that should be implemented to increase natural habitat quality and diversity along the Tyler Creek stream corridor.

Recommendation 3-2

Develop and implement an ecological restoration plan to remove and manage invasive species (Cattails & Reed Canary Grass) in 120 acre marsh at Pingree Grove Forest Preserve. Investigate feasibility of water level control structure at wetland outlet under railroad.

Type: Site Restoration

Target Goals: Goal 1, Objective 3

Initial Cost: \$120,000

Annual Cost: \$5,000

Responsible Party: Kane County Forest Preserve District

Priority: High

Water Quality Projects

Recommendation 3-3:

Develop a permanent protection and habitat restoration plan for ADID Wetland #466, the 200+ acre wetland complex located at the confluence of Tyler Creek and the Tyler Creek Tributary #6, between Illinois Route 72, Damisch Road, west of Big Timber Road. Manage invasive species (Reed Canary Grass) and investigate feasibility of dechannelizing the streams through the wetland to maximize the water quality benefits provided by the natural wetland. This wetland extends across the subwatershed divide into Central Tyler Creek.

Type: Permanent Habitat Protection / Site Restoration

Target Goals: Goal 1, Objective 3

Initial Cost: \$200,000

Annual Cost: \$10,000

Responsible Party: Kane County Department of Environmental Management

Priority: Medium

Recommendation 3-4:

Retrofit existing dry bottom, turf grass detention basin in Triple Oaks Farm subdivision (at Meadow Court). Project will provide incremental water quality benefits as well as aesthetic improvements.

Type: Permanent Habitat Protection / Site Restoration

Target Goals: Goal 1, Objective 3

Initial Cost: \$20,000

Annual Cost: \$500

Responsible Party: Triple Oaks Farm Subdivision HOA

Priority: Medium

Recommendation 3-6:

Investigate possible heavy metals/oil/hydrocarbon pollution source from abandoned car storage directly adjacent to high-quality ADID Wetland #492 and Tyler Creek Tributary #6 (private property). If pollution is found, work with landowner to develop a pollution control plan to remove/protect pollution sources from discharging to the stream or groundwater.

Type: Water Quality

Target Goals: Goal 1, Objective 5

Initial Cost: \$900 for water sampling & laboratory analysis at each site

Annual Cost: N/A

Responsible Party: Kane County Water Resources Dept. / Kane County Health Dept.

Priority: High

Permanent Habitat Protection Recommendations

Recommendation 3-5:

Protect portions of high-quality ADID Wetland #492 located at the east end of Reinking Woods Subdivision (unincorporated). About 50% of this wetland is located on property that is available for future development. Develop a management plan to remove invasive species (Reed Canary Grass)

Type: Permanent Habitat Protection / Site Restoration

Target Goals: Goal 1, Objective 3

Initial Cost: unknown

Annual Cost: unknown

Responsible Party: Local Not-for-profit Land Trust Organization

Priority: Medium

Recommendation 3-7:

Develop a plan to permanently protect the oak woodlands and savannahs remnants on agriculture parcels along Thurnau Rd at the upper edge of the Tyler Watershed. Work with existing landowners to develop and implement management plans to restore these historic remnants to their full potential.

Type: Permanent Habitat Protection / Site Restoration

Target Goals: Goal 1, Objective 3

Initial Cost: unknown

Annual Cost: unknown

Responsible Party: Local Not-for-profit Land Trust Organization / City of Elgin (during future development planning)

Priority: Low

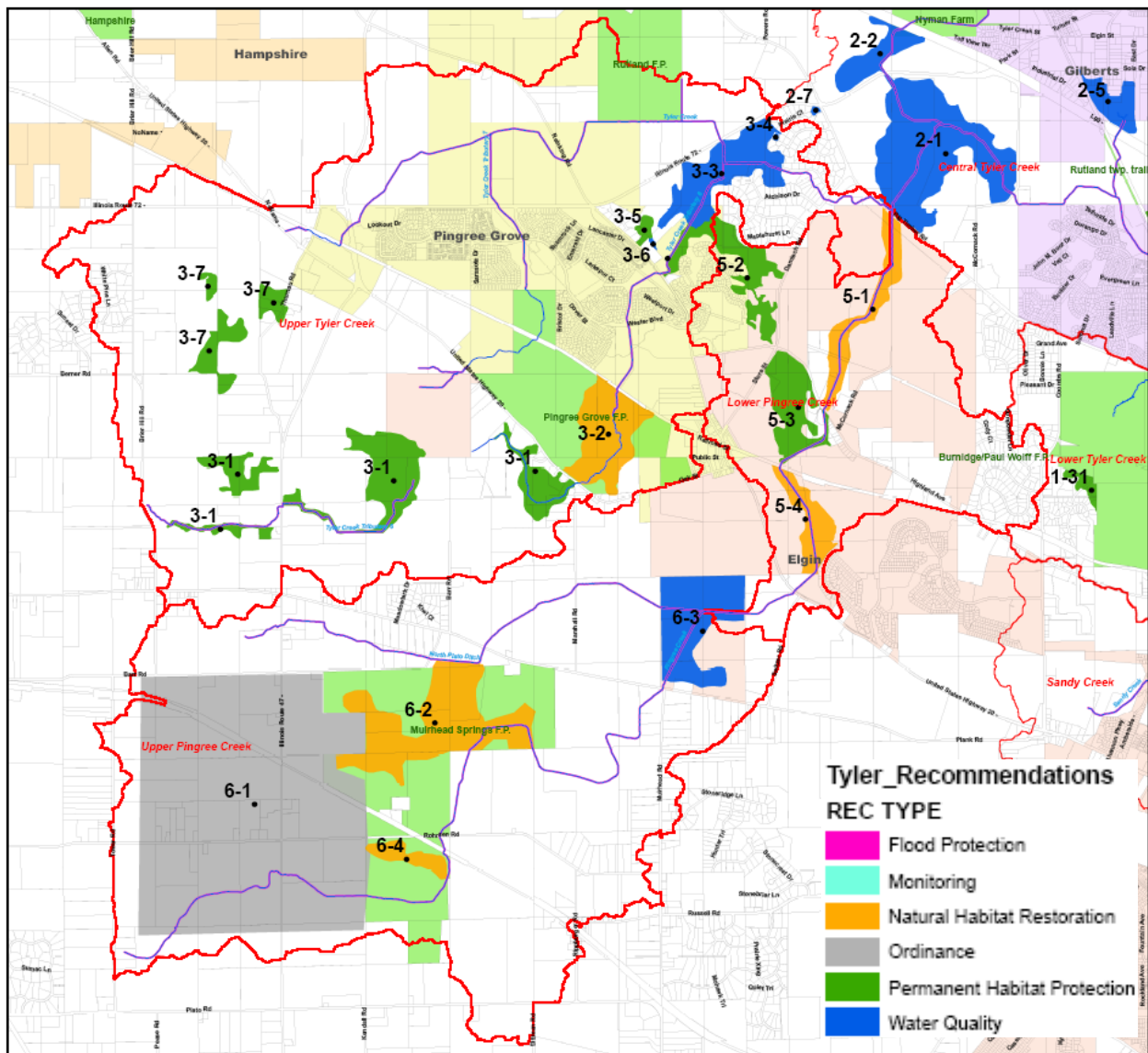


Figure 7.5 Upper watershed recommendations location map

REC NUMBER	REC TYPE	DESCRIPTION	RESPONSIBLE PARTY	INITIAL COST	ANNUAL COST	PRIORITY
3-1	Permanent Habitat Protection	Permanently protect and restore ADID Wetland 1085	City of Elgin	\$0	\$0	High
3-1	Permanent Habitat Protection	Permanently protect and restore ADID Wetland 1086	City of Elgin	\$0	\$0	High
3-1	Permanent Habitat Protection	Permanently protect and restore ADID Wetland 1094	City of Elgin / Private Landowner	\$0	\$0	High
3-1	Permanent Habitat Protection	Permanently protect and restore ADID Wetland 1087	City of Elgin	\$0	\$0	High
3-2	Natural Habitat Restoration	Water level control structure and invasive species removal at Pingree F.P. wetland	KCFPD	\$120,000	\$5,000	High
3-3	Water Quality	Permanently protect ADID Wetland 466; dechannelize and reconfigure to increase pollutant removal and stream water polishing properties	Kane Co. Dept of Environmental Management	\$200,000	\$10,000	Medium
3-4	Water Quality	Retrofit dry bottom detention basin	Triple Oaks Farm HOA	\$20,000	\$500	Medium
3-5	Permanent Habitat Protection	Permanently protect ADID Wetland 492	NP Land Trust Organization	\$0	\$0	Medium
3-6	Water Quality	Investigate possible water pollution source from auto storage on private property	Kane County Water Resources Dept.	\$900	\$0	High
3-6	Water Quality	Investigate possible water pollution source from auto storage on private property	Kane County Water Resources Dept.	\$900	\$0	High
3-7	Permanent Habitat Protection	Protect and restore remaining oak woodlands	Private Landowners / NP Land Trust Org support	\$0	\$0	Low

Table 7.6 Summary of recommended BMPs for the Upper Tyler Creek Subwatershed

Recommended BMPs, costs and projected load reductions for the Upper Tyler Creek are presented in Table 7.7. Table 3.4 shows the subwatershed contributes disproportionately higher sediment and nutrient loads, consistent with the little data available from the Hey & Associates data as reported in section 7.2.1. The disproportionate contribution may warrant more intensive application of BMPs since there would be the potential for greater pollutant reductions. The limited water quality data in the subwatershed indicates elevated levels of nutrients possibly create DO violations. It is important to improve water quality conditions in this watershed because of the abundance of natural resources. In addition to the BMPs implementation, monitoring has been recommended in order to assess the risk that might be posed by increasing nutrient loads due to increased urbanization.

Table 7.7 Recommended BMPs for the Upper Tyler Creek Subwatershed

BMP Category	BMP Location	Project Locations ²	BMP		Removal Efficiency**			Total Cost (\$)	Pollutant Load Reduction (lbs/year)			Percentage Reduction (%)		
			Size	Unit	TN	TP	TSS		TN	TP	TSS	TN	TP	TSS
Natural Habitat Restoration	Site-specific	3-2	120	acres	30%	35%	60%	\$120,000	952	104	107	2.8	3.3	5.7
Permanent Habitat Protection	Site-specific	3-1, 3-5, 3-7	282	acres	53%	51%	88%	0	3,952	357	370	11.7	11.3	19.5
Point Source Control	Site-specific	3-6	1	lump sum	-	-	-	\$1,800	673	63	38	2.0	2.0	2.0
Ecological Restoration	Site-Specific	3-3	123	acres	53%	51%	88%	\$200,000	1,724	156	161	5.1	4.9	8.5
Detention Basin Retrofit	Site Specific	3-4	1	lump sum	32%	55%	68%	\$20,000	8	1	1	0.0	0.0	0.1
Regulatory	Watershed-Specific	Subwatershed wide	1	lump sum	-	-	-	\$10,000	1,683	158	95	5.0	5.0	5.0
Nutrient Management	Watershed-specific	Subwatershed wide – agricultural parcels	750	acres	70%	28%	-	\$75,000	13,883	521	-	41.2	16.5	-
Rain Gardens	Watershed	Subwatershed wide – urban parcels	2	acres	46%	61%	10%	\$21,400	24	3	0	0.1	0.1	0.0
Total								\$448,200	22,901	1,364	772	68.0	43.2	40.7

² = Site specific location numbers correspond with BMPs specified in table 7.6 and map figure 7.5

** TN = total Nitrogen; TP = total Phosphate; TSS = total Suspended Solids or Sediment; "-" = "not available" or nominal values have been applied.