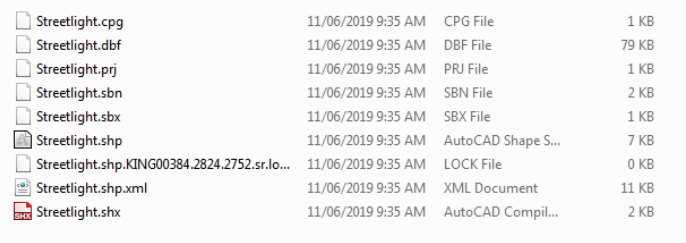
Section I

Shapefile Acceptance Standards: The shapefile (*.shp*) is a geospatial vector data format accepted almost universally across various GIS platforms. Due to its cross-compatibility and lack of processing overhead all GIS data accepted by the King Township must be in shapefile format opposed to file geodatabases. Shpefiles store nontopoligical geometry and attribute information. Shapefiles are capable of storing the geometric data types of points, lines, and polygons. A shapefile consists of three mandatory files *.shp* containing the feature geometry, *.shx* shape index/positional index, and *.dbf* attribute format information such as column attributes. However, a shapefile is likely to consist of a variety of other supporting files including but not limited to: *.shp.xml* relating to geospatial metadata and *.prj* which defines the projection for the shapefile.



(Image 1: shapefile contents post CAD conversion example)

Section II

Coordinate System and Projection Standards*:* All shapefiles submitted to the Township of King must adhere to the coordinate system and projection standards stated below.

Geographic Coordinate System: GCS North American 1983
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D North American 1983
Spheroid: GRS 1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

Projection: Universal Transverse Mercator Zone 17N
False Easting: 500000.0
False Northing: 0.0
Central Meridian: -81.0
Scale Factor: 0.9996
Latitude Of Origin: 0.0
Linear Unit: Meter (1.0)

In most GIS and CAD software packages, this specific coordinate system-projection combination will be recognized simply as, NAD_1983_UTM_Zone_17N

Section III

Schema Standards: While the data files must adhere to the formatting and coordinate system standards stated above (*sections I and II*), the data stored in the attribution tables (also referred to as tabular data) must mirror the schema standards presented in the tables below. These standards include geometry type, column naming conventions/field names, units, data type, length, precision, and scale. These tables are organized by subject matter; these categories include roads and infrastructure, water, utilities, and parks and landscaping.

XML Schema Downloads:

XML schema definitions will be provided as downloadable files for all the datasets presented above (roads, water, utilities, park and landscaping). These XML files can be digested by the vast majority of GIS software packages (ex. ArcMap, QGIS), relational databases. These XML schemas may contain fields which the contactor/developer is not responsible for populating. The contractor/developer is only responsible for populating the fields listed in the tables above.

XML Schema Hyperlinks:

Roads and Infrastructure:

Water:

Utilities:

Parks and Landscaping:

Section IV

Asset ID's:

All of the tables listed above feature *Asset_ID* as a universal field. *Asset_ID* acts as the primary key for all datasets pertaining to township assets. An asset ID value is assigned based on the asset location (village), which system it belongs to (water, roads), the type of asset (hydrant, bench etc.) [prefix] followed by four digits unique to the prefix [sequence]. Developers/contractors will be provided a range of these four digits for each asset they are responsible for installing prior to drafting preliminary drawings. The specific nomenclature of these asset ID's are as follows:

[PREFIX]

The prefix is a 4 digit alpha identifier where:

Digit	Description	Definition ***Short*** ***Long***

1st	Location of the Asset	A	Ansnorveldt
		B	Kettleby
		C	Cold Creek
		K	King City
		L	Lloydtown
		N	Nobleton
		O	all Other
		P	Pottageville
		S	Schomberg
		W	Snowball
		Y	Laskay
2nd	System the Asset is part of	B	Building
		F	Facilities
		P	Parks
		R	Roads
		S	Sanitary (Waste Water)
		T	Storm
		W	Water
		U	Utility
3rd and 4th	Type of Asset	AR	Air Release Valve
		AU	Above Utilities
		BD	Ball Diamond
		BH	Ball Hockey Pad
		BK	Bridge Deck
		BL	Bleacher
		BS	Bridge Structure
		CB	Catchbasin (Ditch inlet, catchbasin)
		CD	Conduit
		CL	Catchbasin Leads
		CM	Catchbasin Manhole
		CO	Culvert (structural culverts)
		CP	Connection Point
		CS	Curb Stop
		CR	Curb
		CV	Culvert (small culverts)
		CW	Clean water Collector
		CX	Community Mailbox
		DB	Double Catchbasin
		DH	Dry Hydrant
		DI	Ditch Inlet
		EM	Easement
		ET	End Treatment
		FB	Foot Bridge
		FD	Foundation Drain Collector
		FL	Fiber Line
		FN	Fence
		FT	Fitting
		GB	Geodetic Benchmark
		GL	Gas Line
		GR	Guide Rail
		HH	Hand Holes
		HW	Headwall
		HY	Hydrant
		LW	Light Wiring
		MC	Meter Chamber
		MF	Major Closed Facility
		MH	Manhole
		ML	Municipal Lands (Easement, Open Spaces, Buffer
		MS	Blocks)
		ND	Management System (Oil Grid Separator, Cistern)
		OG	Node
		OF	Oil Grid Separator

		PD	Open Facility (Kiosk, Gazeebo)
		PI	Pedestal
		PO	Pipe (Sanitary Main, Foundation Drain Collector Sewer Storm Sewer)
		PS	Pond
		PT	Pumping Station
		PU	Play Structure
		RB	Pump
		RC	Road Base
		RD	Rear Lot Catchbasin
		RS	
		RW	Road Surface
		SB	Retaining Wall
		SC	Sign Banner
		SD	Soccer Field
		SF	Subdrain
		SG	Secondary Closed Facility
		SL	Sign
		SM	Street Lights
		SP	Septic Maintenance
		SS	Splash Pad
		SV	Sampling Station
		SW	Service (Water Service, Sanitary Service, Foundation Drain Collector Lateral (Storm Lateral))
		SY	Sidewalk
		TC	Spillway
		TF	Tennis Court
		TL	Trail
		TP	Transformer
		TR	Transit Pad
		UF	Tree
		UT	Utility Street Furniture
		VA	Utility Trench
		VC	Valve
		WM	Valve Chamber
		WS	Watermain
			Water Storage

(Table 53)

[SEQUENCE]

The sequence is a 4 digit numeric identifier. There is no particular order for how the sequence value is assigned. However, this field is 4 characters in width and so may require leading zeros.

Example:

A **Hydrant** in the **Water Network** within **King City** with a unique identifier of **320** will be assigned **KWHY_0320** as the ID.

King City	Water Network	Hydrant	Separating underscore	Leading zero	Sequence
K	W	HY	_	0	320

(Table 54)

Section V

CAD Standards and Guidelines:

All drawings and designs submitted to the Township of King are expected to meet the construction design guidelines and standards of York Region. The York Region Drawing Information Manual (2004) can be accessed via the following hyperlink:

All drawings submitted to the Township of King must also have an assigned coordinate system with parameters identical to those referenced in *section II* (*NAD_1983_UTM_Zone_17N).*