AIMnet Toolkit: AIMSOIR

Data Processing Manual

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Atlantic Infrastructure Management Network

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1. Software Setup

The following software programs are required to run AIMSOIR:

- Microsoft Excel
  AIMSOIR is developed in Microsoft Excel and requires Excel 2013 or later
- QGIS Desktop
  Although the AIMSOIR input data can be generated without GIS, it is highly recommended that GIS be used. GIS adds a spatial dimension to the data and make it possible to capture the data more completely and accurately. GIS is also a very powerful analysis tool that will assist communities moving forward in the Asset Management planning process.

  QGIS, a free open source Desktop GIS is used to demonstrate the process in this manual. However, most commercial GIS software (e.g. ArcGIS or MapInfo) can be used to achieve the same goal. In this manual, data will be captured in ESRI shape files. Most other geodatabases, however, will work.

  If you have not done so already, download and install the latest version of QGIS at www.qgis.org . QGIS works on various platforms including Windows, Mac, Linux, BSD and Android. For the purposes of this manual we are using QGIS Version 3. The QGIS opensource community is very active and new versions are made available on a regular basis – make sure to check the QGIS site for upgrades.

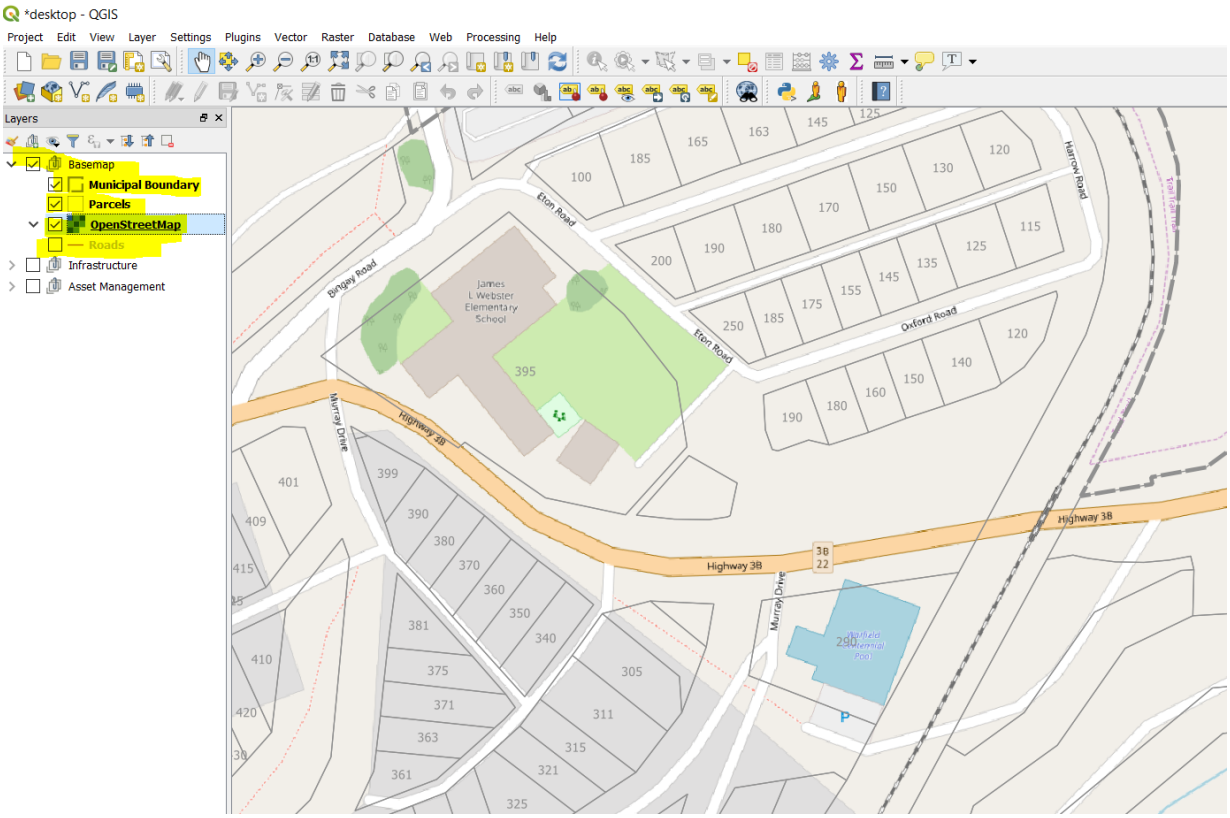
  It is not the purpose of the manual to provide detailed QGIS training. We assume that you have a working knowledge of QGIS. For more information and manuals on QGIS we recommend the QGIS website. The are also numerous training documents and videos available online.

2. Data Setup

a) Basemap

In order to have a spatial reference for capturing data, it is recommended to create a basemap in QGIS with any available data such as a municipal boundary, property parcels, roads, ortho-imagery, etc. Data can be obtained at no cost from various government resources as well as online data sources like OpenStreetMap.

Here is an example of base map layers that was set up in QGIS:



b) Underground assets

Underground assets include potable water supply (PWS), wastewater collection (WWS) and stormwater collection (SWC).

Create a line and point shape for each asset group. The data fields required are set up in the table below:

AIMSOIR Data fields for Underground assets

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					Required for PSOIR	
ID	**Attribute Field Name**	**Data Type**	**Field Length**	**Precision**	**Lines**	**Points**
0	Mun_ID	String	10		Needed	Needed
1	FeatCode	String	50		Needed	Needed
2	Northing	Real	20	5		
3	Easting	Real	20	5		
4	Elevation	Real	20	5		
5	Condition	Integer	1	0	Needed	Needed
6	Material	String	50		Preferred	
7	Install_Yr	Integer	4		Preferred	Preferred
8	LocDesc	String	254			
9	Diameter	Real	10	3	Preferred	
10	Width	Real	10	3	Preferred	
11	Comments	String	254			
12	Length	Real	20	3	Needed	
13	Status	String	15			
14	GIS_Link	String	40		Needed	Needed
15	pPoF	Integer	1			
16	pCoF	Integer	1			
17	rPoF	Integer	1			
18	rCoF	Integer	1			
19	Social	Integer	1			
20	Economic	Integer	1			
21	Legal	Integer	1			
22	Environ	Integer	1			
23	Technical	Integer	1			
24	Risk	Integer	2			
25	RiskMangmt	String	254			

Mun_ID (Municipal ID)

The *Mun_ID* attribute field **is required** to be captured with all assets in order to use the AIMSOIR spreadsheet. Each municipality will need a unique municipal ID. It is recommended that each province agree on a unique Municipal ID for each jurisdiction. Consult your province for your Mun_ID.

FeatCode (Feature Code)

The *FeatCode* attribute field **is required** in order to use the AIMSOIR spreadsheet. Each type of asset has a specific feature code that the AIMSOIR spreadsheet uses to identify unit costs, calculations, etc. A list of all default feature codes can be downloaded from AIM Network's website

Northing

The *Northing* attribute field **is not required** in order to use the AIMSOIR spreadsheet. This value is the Y coordinate in your desired coordinate reference system.

Easting

The *Easting* attribute field **is not required** in order to use the AIMSOIR spreadsheet. This value is the X coordinate in your desired coordinate reference system.

Elevation

The *Elevation* attribute field **is not required** in order to use the AIMSOIR spreadsheet. This value is the Z coordinate in your desired coordinate reference system.

Condition

Condition is **required**. A value from 1 to 5 with a general rating scheme as shown below.

Rating	Condition
1	Very good
2	Good
3	Fair
4	Poor
5	Very poor

Guidelines to do condition rating can be downloaded from AIM Network's website under the Resource page

Material

The *Material* attribute field **is not required** to use the AIMSOIR spreadsheet **but preferred**. It will increase accuracy of reports if included.

Install_Yr (Year of Installation)

The *Install_Yr* attribute field **is not required** to use the AIMSOIR spreadsheet **but preferred**. The data format is 4 integers (ex. 1994).

LocDesc (Location Description)

The *LocDesc* attribute field **is not required** to use the AIMSOIR spreadsheet. This field is intended for notes to help locate the asset.

Diameter

The *Diameter* attribute field **is not required** to use the AIMSOIR spreadsheet **but preferred**. It will increase accuracy of reports if included.

Width

The *Width* attribute field is only applicable to roads, sidewalks and trails and **is not required** to use the AIMSOIR spreadsheet. It will, however, increase the accuracy of reports if included. Please use the width of linear transportation assets in meters.

Comments

The *Comments* attribute field **is not required** to use the AIMSOIR spreadsheet. It is intended for any general comments regarding the captured asset.

Length

The *Length* attribute field **is required** to use the AIMSOIR spreadsheet. For line features, this should be the length in meters of that asset. The length is automatically calculated in GIS and does not need to be captured for each individual asset. For point features, it should be the quantity of that asset – generally 1.

Status

The *Status* attribute field **is not required** to use the AIMSOIR spreadsheet. It is intended to keep track of inactive infrastructure and active infrastructure.

GIS_Link

The *GIS_Link* attribute field **is required** to use the AIMSOIR spreadsheet. This field ***must*** be unique to link the results from the AIMSOIR back to GIS.

Data Fields 14 – 25

These are required for the Risk-based State of Infrastructure Report (RSOIR). The RSOIR is currently in development and this document will be updated at the same time as the new version of the AIMSOIR is released.