Minutes are in DRAFT Form until Approved at the Next Meeting

**TOWN OF WINDHAM
CONSERVATION COMMISION**

**Minutes from May 21, 2019**

**Present:**

**Hal Wilkins, Chair; Frank Seawright, Presenter; Alison Trowbridge, Dawn Bower, Ellen McDuffie, Conservation Commission Members; Bill Dunkel, Vance Bell, Ernie Friedli, Jeff Wheeler, Guests.**

**Meeting was called to Order at 7:10 PM by Hal Wilkins**

There was no agenda for this meeting/presentation.

**Presentation of GIS Mapping by Frank Seawright**

Frank was first introduced to GIS mapping in 1992 by a friend at CDC who was using mapping to track cancer reports in Iowa from phenol exposure. Frank uses QGIS, an open source software and VT Geodata Portal, [www.geodata.vermont.gov](http://www.geodata.vermont.gov) . The following You Tube is very helpful in getting started: <https://www.youtube.com/user/wboykinm/videos>

Frank also uses Startpage.com as his search engine; private and no ads. Frank showed us how he determined the watershed areas in Windham. He started with the Windham town and sister town boundaries from VT Geoportal, click on Download which is usually a shape file with 4 files in a zip file. Clear the color so you can see overlays more clearly, then overlay with streams, then wetlands to show water draining into Burbee Pond. If you want elevation, go back to the VT Geoportal / VT Lidar files. Used by engineers, **GRASS** (**Geographic Resources Analysis Support System**), is a free and open source Geographic Information System (GIS) software suite used for geospatial data management and analysis, image processing, graphics and maps production, spatial modeling, and visualization. There are online tutorials for this software also. (ARC GIS cost approximately $1,000/year to subscribe.) Using watershed and elevation data, Frank determined that there are 119 homes in the Burbee Pond watershed, draining 4,900 acres, 29% of Windham. The wetlands at Lawrence Four Corners has only 61 homes, draining only 5-6 % of Windham. In elevation analysis, Frank joined elevation and 911 addresses in town to determine number of houses in an elevation range. All homes in Windham are at 1400 – 2300 feet in elevation.

 **Stack Exchange** is a network of [question-and-answer (Q&A) websites](https://en.wikipedia.org/wiki/Comparison_of_Q%26A_sites) on topics in diverse fields, each site covering a specific topic. It is very useful resource in teaching how to accomplish a particular task with GIS and other software.

 On the VT Geodata Portal you can download the Windham map, then click on culverts and it will show you the location of all culverts in Windham. There are more than the number of registered voters in town, 360! When you click on a particular culvert, you can see dimminsions and other info on the culvert. The Turkey Mountain Brook culvert under Windham Hill Road near the intersection of Abbott Road is 96”. Mace Wicker has kayaked through it. Sixty percent of our culverts are undersized and need to be replaced.

 Using Etsy.com or https://www.grasshoppergeography.com you can look up river basins of the world or of the U.S. or of Europe, etc.

 Frank has begun some work on Windham Parcels from the CAI parcel maps. (Not sure how to pull these up.) He and Vance Bell used mapping to mark evidence of bear droppings, scratch marks on trees and bear nests on Meadowsend Timberland high elevation property using a Garmin Montana 650 to mark locations and take pictures.

 Frank is happy to work with anyone who wants to learn more about GIS mapping.

 Frank has seen several spring bird species; a kinglet and an Indigo Bunting to name a couple. Sitings of otter, beaver, wood ducks, other birds and an Osprey have recently been made at Burbee Pond. We all commented on how wonderful it is to see Burbee Pond full of water. A few comments were made concerning the height of the “Beaver Deceiver”.

**Meeting**: In attendance, Hal Wilkins, Alison Trowbridge, Dawn Bower and Ellen McDuffie

 No agenda. Hall announced that all is set for Monica Przyperhart, Community Mapping Project, for Tuesday, May 28 at 6 PM at the Meeting House, sponsored by the Conservation Commission. Please bring cookies and juice.

 Hal has been in communication with Irwin Kuperberg, facilitator for the Lowell Lake Concerned Citizens. They will be meeting on Thursday, May 30 at 6:30 PM at the Londonderry Town Office in South Londonderry. All are urged to attend.

 Hal will post an agenda for our next meeting which will be on June 18 at 7 PM at the Town Office.

 The minutes from the April 16, 2019 meeting, submitted by Alison Trowbridge were approved.

 Alison Trowbridge would like to organize a Saturday Workday to cut roadside invasives, specifically Wild Chervil (blooms white, before St. Anne’s Lace) on Windham Hill Road. She has seen it taking over a much larger area in 2018 than in 2017. It must be cut before it seeds and town mowing will not occur before then. We all agreed that Alison will come up with a time and date and let us know. There is also some Wild Parsnip (blooms yellow) on Golding Road which should also be cut before it seeds. There was a short discussion of Knotweed, especially on Popple Dungeon Road and Route 121 to Grafton, but previous efforts to control it have not been successful.

 Meeting was adjourned at 8:55 PM.

 Respectfully Submitted by

 Ellen McDuffie



https://www.grasshoppergeography.com

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**Windham Conservation Commission Meeting Demo of GIS**

**May 22, 2019 Presentation – Frank Seawright**

**What is (G)eographic (I)nformation (S)ystem?**

GIS is a technological field that incorporates geographical features with tabular data in order to map, analyze, and assess real-world problems or events.

To map data it must be spatially referenced and we need the latitude and longitude to locate something on a map.

**Open source GIS programs**

QGIS <https://qgis.org/en/site/>

 GRASS <https://grass.osgeo.org/>

 SAGA http://www.saga-gis.org/en/index.html

**Where do we get data? What kinds of data can we use?**

Locate and use data someone else has created. We’ll use data from <http://geodata.vermont.gov/>

We’ll be interested in Shape files and Raster files.

 *KML files that can be viewed on Google Earth can be downloaded also.*

Demonstrate an example of downloading extracting and adding to map*.*

 **Create your own data.**

Use GPS to track a stream, hiking trail, locate animal or plant colonies and …

Local examples – mapping a stream, locating old stone foundations, stone walls.

Hike to talc mine looking for water dams …

Show how to load GPS data onto map. Locate geotagged pictures

Parcel work and Grand List

Table joins – parcels to GL data

**Check data for accuracy**

October12, 2018 NY Times article titled “A Map of Every Building in America”

<https://www.nytimes.com/interactive/2018/10/12/us/map-of-every-building-in-the-united-states.html>

Compare to Windham 911 data.

Discussion, thoughts, inspiration, utility, more detailed workshop?

Map projections - https://www.youtube.com/watch?v=nJ5r4HJMrfo

Other open source / free software I use:

Google Earth - https://www.google.com/earth Free - not open source. Great for finding/viewing maps and shape files. Limited analytic potential.

GIMP (Gnu Image Manipulation Program) - https://www.gimp.org/

LibreOffice Suite - <https://www.libreoffice.org/> - plus Libreoffice Calc, Libreoffice Base