

Montana Rural Water

February 25, 2011

## **Distribution Mapping Made Easy for Small Systems**

The goal of the class is to show you how to get free data and then give you tools to map small water and sewer systems without having to buy expensive software. With these tools you will be able to map your system and then convert it to a Google Earth (GE) that can be used on any computer that has an internet connection and Google Earth on it.

There is existing data online to get you started to use it to map your systems. This session will show you how to obtain and use the online data and then convert it to a GE file format and use it to overlay your utilities on the GE base map. This file or project file can then be used on any computer that has GE installed on it.

### **I. Software That You Need**

#### **A. Google Earth**

Google Earth is a free application that you can download and install on any Windows or Mac computer. It can be downloaded at the following link:

<http://www.google.com/earth/index.html>

Click on the download link and follow the on screen instructions to install Google Earth to your computer. It will show up in your installed programs list. Go to the program and run it after installing it and play around with it without doing anything else.

#### **B. MapWindow Open Source GIS Software**

Open source GIS software that you will use to create Geographic Information System (GIS) data shape files that we will convert into GE supported files. It can be downloaded at the following link:

<http://www.mapwindow.org/>

Before downloading this software figure out if you are running the 32 bit version of windows or the 64 bit version of windows. If you are running Windows XP it is 32 bit and you will download the first link: [MapWindowx86Full-v48RC1-installer.exe](#). If you are running Windows 7 you need to check which version of Windows 7 by clicking on "My Computer" and then select "Properties". The window that comes up will tell you which windows operating system version you are running. If it is a windows 64 bit version you will select the second download link: [MapWindow47SRa-x64-Setup.exe](#)

#### **C. GPS Babel**

GPSTabel is a donation based freeware program that converts waypoints, track GPS'd waypoint data between the programs and hardware that we choose to use. It can be downloaded at the following link:

<http://www.gpsbabel.org/>

After downloading this file install it. You will use this program if you are collecting mapped waypoint files and need to convert your waypoint files into a different format.

## **II. Get Base Data For Your System**

### **A. Aerial Images from the NATIONAL AGRICULTURE IMAGERY PROGRAM (NAIP)**

For aerial images of Montana go to NAIP site and show them how to download 2005 and 2009 aerial images. These are SID files which we will use as a base aerial image layer so we can overlay other data on to it. Show them how to download and save the file.

Remember where you save these files. Go to Map Window and add this base layer

There are two sets of statewide NAIP images that were taken in Montana; one set in 2005 and another set in 2009. The links for these aerial images are as follows:

Natural-Color Aerial Photos of Montana, 2005

[http://nris.mt.gov/nsdi/orthophotos/naip\\_2005.asp](http://nris.mt.gov/nsdi/orthophotos/naip_2005.asp)

Natural-Color Aerial Photos of Montana, 2009

[http://nris.mt.gov/nsdi/orthophotos/naip\\_2009.asp](http://nris.mt.gov/nsdi/orthophotos/naip_2009.asp)

The map image file will be downloaded to your computer. Make sure you remember where you download the file because you will use it as a base layer in the gis mapping software, Map Window.

### **B. Parcel layer.**

Go to the NRIS website to the GIS data bundler and go to the county that you want to download information from. The link for this webpage is:

<http://nris.mt.gov/gis/bundler/>

Downloading information from this website page is a little different. You have to select the layers of data that you want and then choose the coordinate system that you want the data in. You will want to select the "State Plane NAD 83 Meters" option for the coordinate system. Enter your email address and then click on the "Go" button. You will get an email that has the linked data that you requested. It comes as a zip file attachment. Download the zip file and then extract, or unzip it to its own folder. You will use this parcel layer in the Map Window program to add the parcel layer that you just downloaded.

### **C. Tutorial Information.**

I will be adding a webpage to our website at Big Sky that will have these links and more information about using Google Earth to map your system. The site for this is

[www.bigskywatersewer.com/mapping.htm](http://www.bigskywatersewer.com/mapping.htm)