How I did VASSAL map editing with GIMP

Firstly you need to become at least moderately familiar with GIMP. If you don't know GIMP well then I can suggest this course on Udemy: https://www.udemy.com/course/gimp-photo-editing/ — it gives you a good introduction and run through all of the useful features of GIMP and the instructor is very prompt at answering questions.

I started with a badly stained and water damaged copy of the map from Jack Radey's game Kirovograd. You can find the VASSAL module and all of my files here: http://www.vassalengine.org/wiki/Module:Kirovograd — including the GIMP file containing all of the layers that I mention below.

Scanning

I then started the process of scanning the map. I only have a desktop A4 scanner so the map needed to be scanned in pieces. Each section of the map (the supplied map was in 4 sections) had to be scanned 4 times, twice each for the top and bottom halves because the section width was wider than A4. I then loaded each image into GIMP and rotated them as necessary, slid them around and stitched them together. All of which is not very difficult. Load each scanned file as a separate layer and then set the layer opacity of each layer to 50%, which allows you to see through the layers to get the overlap correct. Some layers will need a few degrees of rotation one way or the other to get things to line up.

Once you are finished importing all of the scans, flatten the image inside GIMP and crop it to the correct size. This will become your basemap.

Basemap Editing

Next thing to do was to make the overall map appearance a bit better.

To do this I used standard GIMP photo editing tools. I increased the brightness (a lot) and decreased the contrast. Next I increased the colour saturation. I also manually took an eraser to some obvious map stains although the majority were removed simply by increasing the brightness and flattening the colour of the image.

In the files section of the Kirovograd module you will see a zip file called kirovograd_files. I included both my original and edited basemaps in there, within the xcf (GIMP format) file. The original basemap isn't actually needed for the final image because it's masked out by the edited basemap but I left it there for reference.

Hex Grid

The next problem was the hex grid. I had hopes of retaining the original map hex grid but it was too badly damaged with the colour seeping into the map itself. So I re-drew a new hex grid in a program called Hexographer, which I use for creating other VASSAL game maps from scratch. I created the hex grid in a few different sizes and had to fiddle with the exact size by trial and error, loading it into GIMP with a 50% opacity until it fitted over the base map. I then colour-erased all of the white hexes from the hex grid until it was black on transparent. I made this my top layer.

Colour Separation

The next trick was taking the base map and separating all of the colours so that they could be retouched independently. Fortunately game maps tend to lend themselves to this fairly well, there is blue for rivers, brown for roads, black for buildings and labels, etc.

The way to do this is to use the colour picker tool to select adjacent areas of the same or similar colour in GIMP. This takes some time as well as adjusting the colour tolerance of the colour picker so that you can get all of the hexes on each road selected, for example. Create a new transparent layer above your map layer (but below your hex grid) for each colour, then copy the selected area from the base map and paste it to your colour layer. You can do this many times for each colour layer if necessary.

Colour Fixing

What will happen here is that the colours for each feature on the map won't all be the same colour, for example there will be lighter and darker patches of brown in each road. You then need to start work on each of the colour layers.

Starting with the original selection in the colour layer, pick a single brown colour using the colour picker tool. Then you want to paint in all of the more-or-less brown areas on this layer with exactly that colour brown. If you still have the non-transparent parts of that layer selected, that is fairly simple to do, you just pick a paintbrush tool and paint all over the layer and the paint should "stick" to only those areas selected.

Later on you will find that you have lost your selection, so you have a couple of options:

1. Use the colour selection tool to re-select all non transparent areas of your layer.
2. Zoom in on the layer and use the paintbrush tool to hand-paint all of the areas that need painting.

I used a bit of a combination of those methods.

Whatever you do, make sure that the only colour you see on the “brown” layer in your GIMP file is brown. Everything else should be 100% transparent. This effectively allows you to paint over areas of the map without painting on the base map itself. This becomes important later when you need to decide on the order of your layers.

Layer Ordering

Having a brown layer and a green layer is fine, but what goes on top? You have to fiddle around with this by trial and error a bit. For example, if you want a brown road to show up over the top of a green forest, then you probably need to have the brown layer above the green layer.

White Layer

To fix a bunch of map imperfections I found that I needed to create a white layer above the basemap layer. This was to be able to paint over any water and other stains on the map. This layer needs to go under all of the colour layers so that you can paint on the colour layers and have those colours not erased by your white layer.

I created the white layer as a solid white layer exactly the same size as the base map. I then created a layer mask which started as 100% black (transparent) so that the white would not show. I then started painting on the layer mask in solid white so those areas were painted out.

As an example of how this works, load the basemap-new.xcf file that is in the kirovograd_files zip file (on the Kirovograd modules page). In the layers dialog, hide all of the layers except edited_basemap. Then zoom to the area just south of the city of Kirovograd.

The hexes here are a mess with water staining, mis-alignment, a badly marked bridge, etc. If you then turn on the white layer you will see how I have masked out large parts of this area. Then turn on the brown layer and you will see how I have re-drawn the road and bridge as well as added a bit of definition to the other hills and things around the area.

Exporting

Once the map is complete (it never will be, you will always find something new to fiddle with), you need to export it from GIMP as a PNG file. Don’t use any other format such as JPEG, they are less efficient inside VASSAL.

I like to have a nice large scale map so that I can have big counters — 100x100 or thereabouts, so don’t be tempted to scale the map down too much. For an operational scale game, provided the players have recent model PCs with sufficient RAM, larger scales work fine in VASSAL.

You can see my exported map as a PNG file in the kirovograd_files zip file. It’s far from perfect but makes a playable game.