

An Interview with Remo Madella

by Adrian Zissos, August, 2015

Remo Madella is a professional orienteering map maker. He has been hired by the Foothills Wanderers Orienteering Club to update a number of maps that were damaged by the flooding of 2013. Adrian Zissos is a Calgary orienteer. The two of them went out for a pizza and some local beers...



Remo with GPS on his cap

Hello Remo. Welcome to Alberta and thank you for coming to make some nice new orienteering maps for us. Can you tell us which maps you will be working on while you are here?

I am here for about nine weeks. In the first four weeks I have already completely re-made four maps in Calgary: Lindsay Park, River Park, Carburn Park, and in my opinion the jewel that is Pearce Estates. These are all remapped following the flood damage, and they have all been made following the IOF's ISSOM (Sprint) mapping standard.

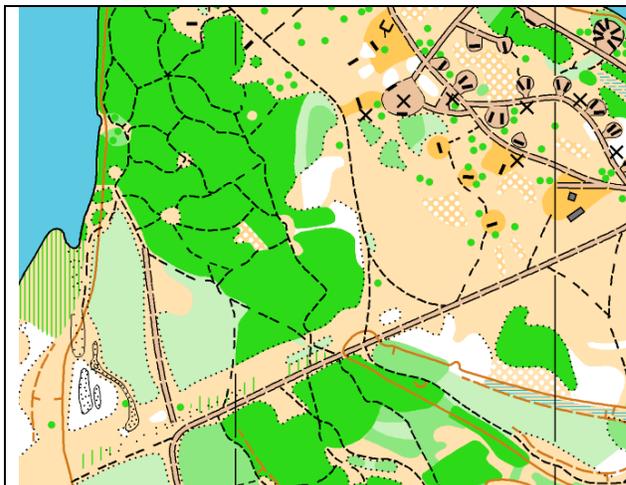
Now I am working on maps that will be used for the 2016 Canadian Orienteering Champs - to update vegetation and trails and to fix flood damage, update trails and vegetation. For the Long Distance map I will also make it more readable at 1:15,000 so it can be used for WRE race, and if there is time left then I will also expand this map to add some different terrain types.

What is involved in having a 1:15,000 map?

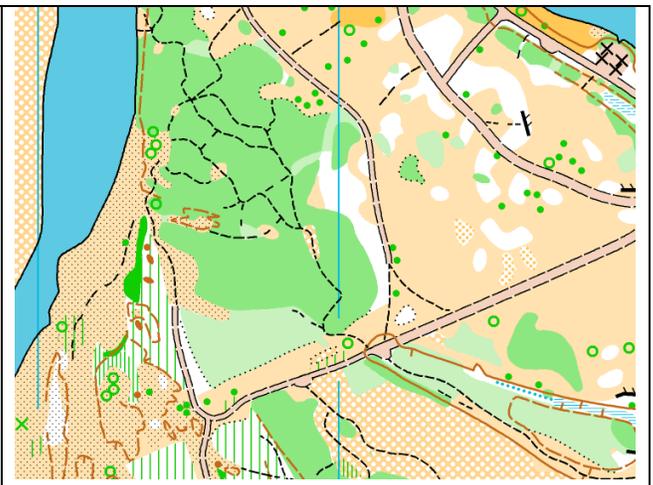
The key requirement is to generalize more. On 1:15,000 maps detail is difficult to be read. Generally I'm trying to remove unnecessary form lines and generalize the vegetation so as to use fewer symbols to represent the terrain.

What differences shall we expect to see in the Calgary maps from the old versions?

I think the maps are quite different from what they used to be, not only for the flood damage. Here also I tried to make the maps more readable, and of course I want that every feature is exactly in the right place.

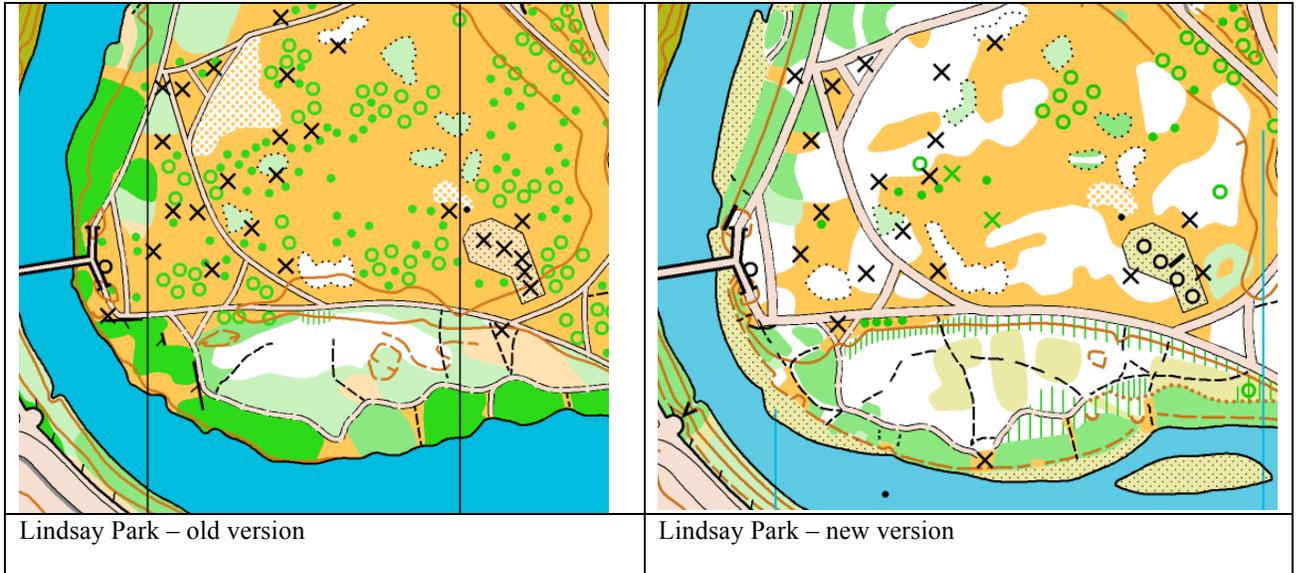


Carburn Park – old version



Carburn Park – new version

* trails corrected, vegetation updated and simplified, readability increased through generalization



What tools do you use when making maps?

First I need good background information to base my fieldwork on. This can include base maps, photos, LIDAR. The more of this information that I have the more smoothly will go the fieldwork. In other words, I can also work without any base information, but the more I have the faster and more accurate I can work.

For equipment, I do my fieldwork on a tablet. I also use an external GPS unit that communicates with the tablet by Bluetooth. Also I carry a compass. I sometimes also carry a paper copy of the map, but only in big maps so I can find my way home when the batteries in my tablet run out at the end of the day ;-)

At home after fieldwork I work on my tablet with an external keyboard and hopefully I find a monitor to plug in, where I can work easier than on my 7” screen.

Can you say something more about the tablet that you use?

I have a Samsung Q1 tablet. I use OCAD software so I must have a Windows tablet. The exact tablet is not important and if you use different software, for example Open Orienteering Mapper, then you can also use an Android or Apple tablet.

The main factors in choosing a tablet are price, battery life, accurate drawing with a stylus pen, visibility of the screen in daylight, and weather-proofing.

For the battery life I use 3 spare battery so I can stay 5 – 7 hours in the field.

The stylus needs to be a precision pen so you can be very accurate with your drawing. In old resistive screen no problem, but if you use capacitive screens (touch screens) you need to find a good stylus that can be expensive.

The actually size of the screen is not so important – I use a 7” screen but Erik Sundberg from Sweden maps on his mobile phone which has just about a 3” screen! Smaller screen means also less weight to carry... an important issue.

The screen visibility sometimes makes it impossible to work in the open areas in bright sunlight around noon, while in the forest usually the screen is visible all day.
So If you often work in open areas you might consider buying a rugged tablet that is designed for work in surveying or by the military. These can be expensive – for example YUMA Trimble 2 (a map-maker's

dream) can cost between 3,000 and 4,000 USD – but it is designed for outside work so it is rugged and has very good screen display for sunlight.

After months of monitoring on eBay to find a second-hand rugged tablet (to have a sunlight-readable LCD) right here in Canada I have found a crazy price on a rugged tablet – so I gambled that 50 USD, knowing that the chances that the tablet would be fully functional were really small for that price and... I won the bet! :-) It is fully working with a fantastic sunlight-readable screen! I am already using it for the mapping here in Calgary and it is going so well that, for that price, I have bought a second unit to have extra batteries.

And what about your GPS unit – what do you use for that?

I use an external unit that is attached to the brim of my cap using tape. It is accurate, though very cheap – I use the Holux brand.

How accurate is the GPS signal?

It is 5m error or less – good enough for the forest. Problems arise when you are mapping in a deep valley or with needle-leaved trees where the accuracy can drop. Experience tells you when the GPS signal is good enough or when you can't rely on it and go back to old pacing for measuring distances.

I don't use much on the GPS when doing urban maps because the basemaps are generally very accurate and I can always know my precise location from these.

How do you set up the software to use the GPS?

The GPS unit & the tablet communicate using Bluetooth SPP protocol. This creates a virtual COM port. In Windows Control Panel under BlueTooth Settings you can select which COM port to use. In OCAD you then use the GPS menu to set up the GPS port. There is online documentation in OCAD about how to do this. Open Mapper will have some similar method, though it is a little more compicate if you are using Android, as you have to install an extra app.

You mentioned how important it is to have some existing information such as basemaps, photos, Lidar. Can you say more which of these is most useful in Calgary?

The City of Calgary has very good basemaps for making sprint maps. The basemaps are very accurate and detailed, for example showing the edge of pavements and often the exact location of trees. Contour data is also available on the City of Calgary maps but not as accurate for orienteering purposes, so I had to adjust contours. Actually I don't even know the scale of these base maps (maybe 1:2,000) because what is important is that the information is geo-referenced.

There are also good photos easily available - not only from City of Calgary website, but anything can help: Google Maps, Bing Maps, or Nokia's imagery.

What about LIDAR – is the LIDAR data useful here in Calgary?

Lidar has very accurate contour information and sometimes vegetation boundary data too. The LIDAR is generally more useful when the basemaps aren't so good as in urban areas i.e. when you are working in the forest. So I didn't use LIDAR for Calgary park maps but I'm using it to update the forest maps.

Is maybe a danger having too much background data?

Not for me :-) Of course if you have a lot of data you are tempted to put too much detail on the map, but here your experience should tell you how to generalize, and a lot of data can just help you to have a better map, where every feature is at the right place.

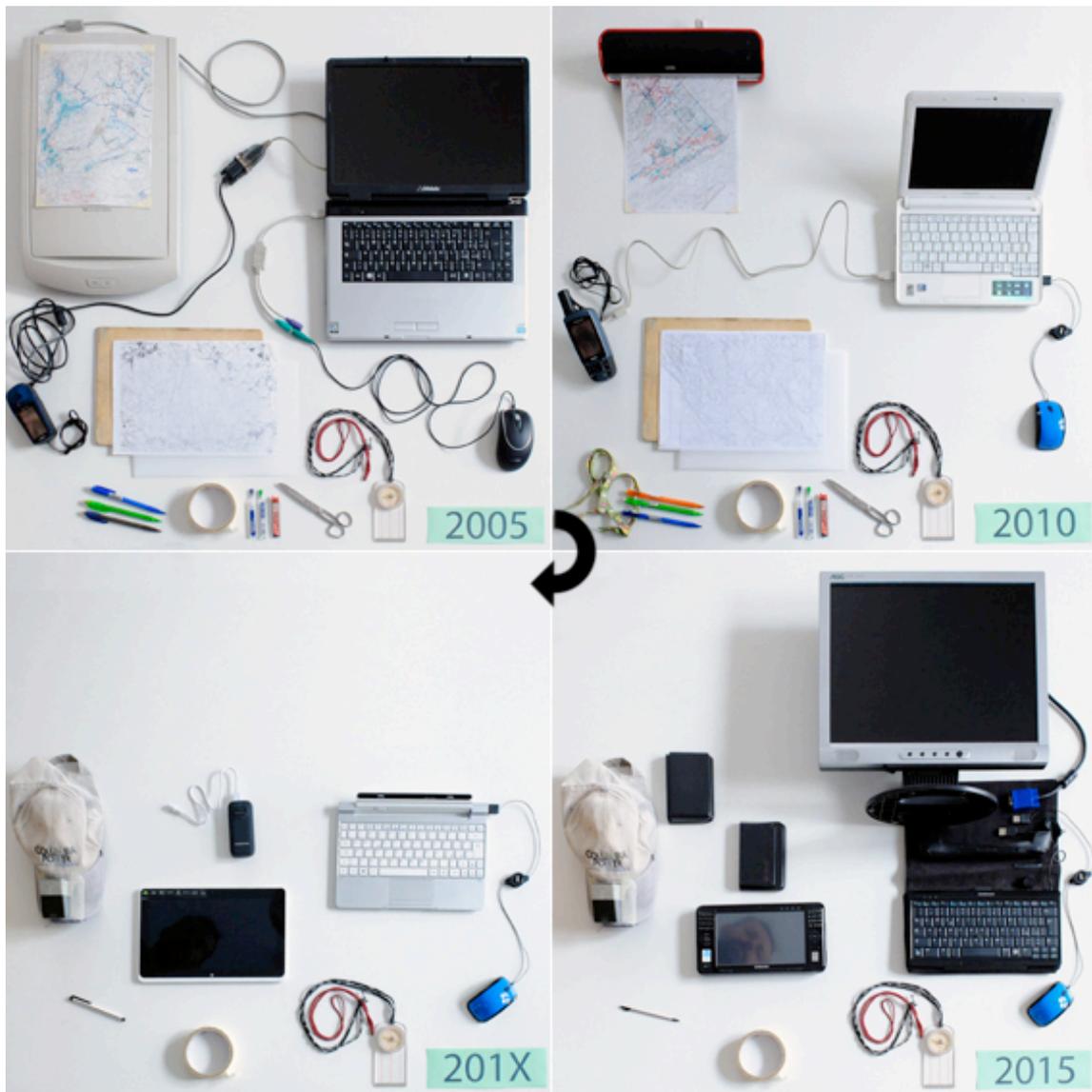
This is actually a big advantage of using a tablet for mapping. With “old style” paper mapping you must pick in advance what background information you want to use before you go to do the fieldwork and print it and tape it on your survey board. With “new style” tablet mapping you bring all background information with you in the field and you can easily switch between them with just a couple of clicks.

When did you start using “new style” mapping with tablet & gps?

I was “old style” until just two years ago. The idea came when I was at the Portugal O Meeting (POM) 2012 working on setting some Trail-O courses and maps. I met some Portuguese mappers (Raquel Costa and Tiago Aires) who were using a tablet. I was quite skeptical about this technique, but they gave me some tips and I decided to try it. It took me some months to find a suitable tablet (cheap and running Windows) and when I found one on eBay I bought it and tried surveying.

The first day I used the tablet (for a small school map) I was so frustrated. I couldn't see the screen in the bright light and it was so difficult to draw. I went back to paper and pencil for the day. The second try was a bit better, and so on. After a while it was impossible for me to go back to the “old style” of mapping with paper. There are too many advantages to mapping with the tablet.

Yes these last two years have been really challenging and full of changes in my job. But then, of course my job has always been changing...



Remo's mapping gear over the last decade

When you use a tablet do you make the final map directly while you are in the field?

No. I must still do some work on the computer back at home. In the field I try to be as quick as possible and then lines and areas are fine tuned at home. Now for each eight hours in the forest I must do about one hour on the computer. Before, with paper and mylar, eight hours in the forest required maybe three hours at the computer.

Would you recommend a beginning mapper to use a tablet or to use paper/mylar?

Definitely should start with tablet/gps.

What does “geo-referenced” mean, why is it important, and how do you geo-reference a map?

Geo-referencing means to associate map – say an OCAD file – with real world coordinates. If a map is geo-referenced then it is simple to add base maps and place the map in relation to other map. For example, if the basemap and the OCAD file are both geo-referenced then they will automatically align when displayed in OCAD. Also without geo-referencing you can't use a live GPS, and without geo-referencing all your base data must be manually placed and this takes time and can have errors.

So, tell me – you talk a little bit funny. Where are you from?

Do I? :-) I live in Milan, Italy.

Is orienteering popular in Milan?

No, not really. There are two clubs: the Big one which used to have about 30 or 40 members (now no more than 20); and the Little one which has four or five. I am a member of the little club ;-)

And I think you went to school in Milan. What did you study at school?

I have a degree in Environment Engineering and a PhD in Urban Planning. But I never worked in this field, instead my work before mapping was in I.T.

How did you get into orienteering?

When I first arrived at University there was a lot of information pamphlets given to me, including one from the sports organization (CUS MILANO). Here they had information about some not so popular sports including rowing, golf, rugby and orienteering. I didn't do anything about it at the time, but years later I remembered this information and so called CUS to find out more information. But they told me that orienteering was no longer part of CUS. So again I did nothing for a while. Then once again after a few more years I thought: “Hey! I really want to try this orienteering” I decided to look on the internet and I found a nearby club and called them – they told me “no we don't have lessons. Just come and try to run a course and see how you like it.” So I did, and I liked it very much and never stopped doing it. That was in 1997 that I did my first orienteering event.

How long have you been making maps?

Thirteen years from my first map, but actually eleven years full time. You can check the list of my maps on my website :-) www.remmaps.it

Why did you start making maps?

That is a good question. I don't know why. I think that perhaps all orienteers are curious to make a map. I was asked to make a small school map for my club (at that time I was in 'the big one') and so tried mapping - and enjoyed it.

What is your advice to a beginning mapper?

First, realize that it is difficult to become a good mapper. It takes time.

Then understand that when you start, you will tend to include everything on the map. This gives you confidence that the map is “correct”. However the map will be too detailed probably, “overmapped”, and not as good as it could be. The first mistake is also being very accurate (too accurate) where you are able to map (map every single tree with obsessive accuracy), and have a poor map for things you are not able to map (generally contours are difficult for the beginners). As you gain more confidence in your mapping you

learn to generalize, you learn how to draw contours and so your maps become more enjoyable and better quality for competition.

What are some of your favorite maps that you have made?

I like the sprint maps – in particular the London City race map that will be used this year, and the one that was used a few years ago at Canary Wharf. Perhaps the map I made with the most runners is a sprint map in Belfast that was used for the JK.

I understand that you are very involved in Trail-O – in fact at the Canadian Champs in Whistler last year you set the famous Trail-O that was done on the chairlift on the way up Blackcomb Mountain to the start of the Long Distance race. Is Trail-O important for your mapping or for your foot-o technique?

Yes, it's a real virtuous circle going on. Mapping, competing in Foot-O and competing in Trail-O (and Temp-O) all help each other. Doing high-level Trail-O (in Sweden for instance) has helped me to have better understanding of the contour lines and now I'm more confident in mapping them. Temp-O gave me the speed to recognize things with a quick look and it helps me a lot while running in Foot-O: no more need to stop to read the map. Mapping urban areas, when you have to translate terrain into map, is also a great training for Temp-O.

Mapping has also helped me to understand that a lot of maps out there are crap, and when I run I have the experience to understand what I can trust in a map and what not. Running orienteering races also makes me understand what a competitor needs and helps me to keep in mind that map readability is the most important goal for the mapper.

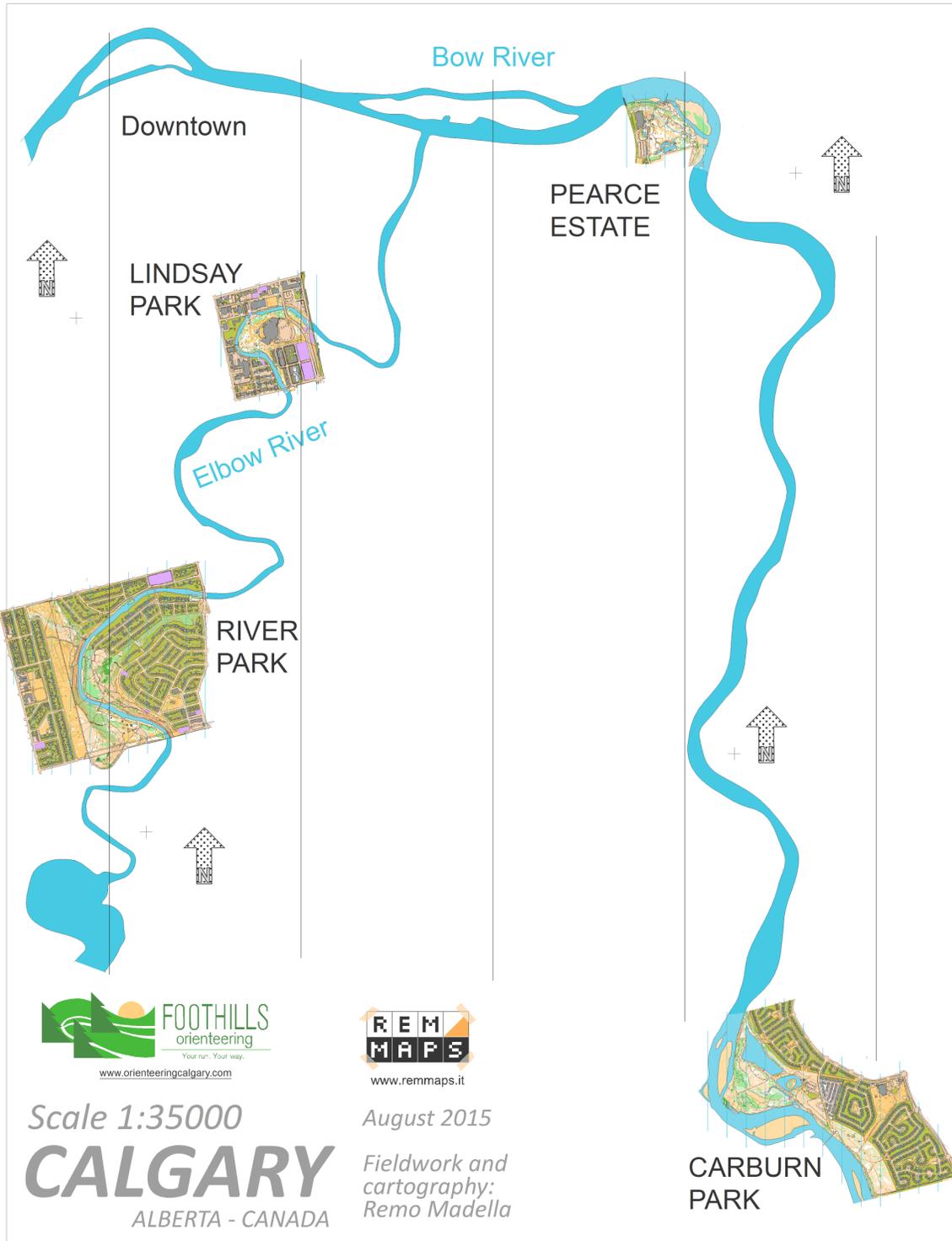
And it's a great thing that competing around Europe, visiting countries and having fun, is at the same time my continuing education as a mapper and a way to keep in touch with a lot of potential customers :-)

What do you do when not making maps?

I do a lot of orienteering races, a lot of Trail-O, listen to music and go to concerts, and go bike touring in Europe (where you can find a cheap hotel every 20 km, not in Canada where you should bring your own tent and camp in the dangerous wildlife :-)).

One last question – which do you prefer, to make ISSOM sprint maps or to make ISOM forest maps?

I think I prefer the Sprint maps because I am more in control of the final product. With forest maps at 1:10,000 or 1:15,000 there will always be an approximation of the terrain, a compromise somewhere. But a sprint map can be almost “perfect”... at least to me. Anyway when you manage to draw a very detailed area with ISOM standard (with all its constraints of a 1:10,000 or 1:15,000 scale) using all techniques of generalization, exaggeration and misplacement of objects to have enough room to fit everything... you feel really proud.



Remo's first four weeks of work in Calgary