2015

Adaptive Response Modeling Using GIS, Blog 1

Joanna Benavides

Virginia Commonwealth University, benavidesjm@vcu.edu

Follow this and additional works at: http://scholarscompass.vcu.edu/bike_student

Part of the Higher Education Commons

Downloaded from

http://scholarscompass.vcu.edu/bike_student/5

UNIV 291 Adaptive Response Modeling

CREATING A LIVE ARCGIS APPLICATION TO ASSIST WITH KEEPING OUR UCI EVENT GREEN!

OCTOBER 5, 2015 | BENAVIDESJM | LEAVE A COMMENT

Adaptive Response Model for the 2015 UCI Road World Championships

It was exciting to be able to create a map of Richmond specifically for the 2015 UCI Road World Championships. Creating this map was my first experience and introduction into using spatial technology. It allowed me to look at my city from a completely new way and to explore data sets that I did not know I had access to.

The aim of this map was to respond to recycling and trash needs during the event. To begin my map, I added topographic layers of Richmond, Virginia, including the streets and names in the city. The routes for each of the races were also very important, so we would know what areas would be blocked off and inaccessible during the races. Course crossings (areas where the race would cross important streets), road closures and road blocks were also crucial elements to making sure that my map would keep first responders informed.
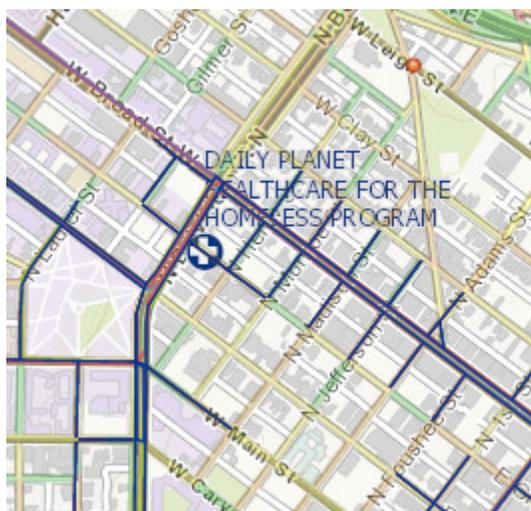

Course crossings and road closures

After adding the above basic layers, I began adding in points of importance, such as fire stations and medical centers. Since the focus of my map was to respond to trash and recycling needs during the event, I added in the Fan Zones, which would be population hot spots during the race and most likely have high amounts of waste.

The event planning staff did a good job of setting up Eco Stations along Broad Street where the most fans would be located. I created map notes for these stations by using dropping pins where each one would be located.
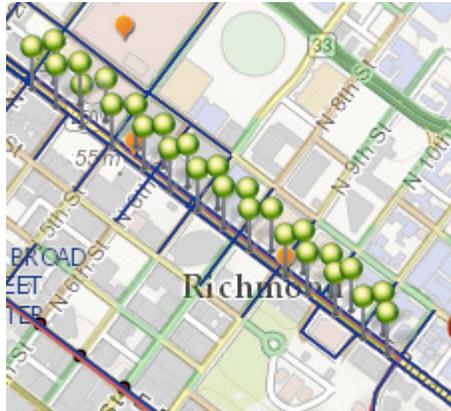
Pins represent Eco Stations

Once all of the layers and notes to my map were added, I created a web application so the map could be used and viewed by the public. It was important that I enabled the Twitter application so all of the live tweets were shown on the map after they were filtered by hashtags that I had chosen. This enabled us to figure out where high density population areas were located, and how to route them to the Eco Stations. I was not surprised to see that the density of tweets increased with proximity to the Fan Zones.
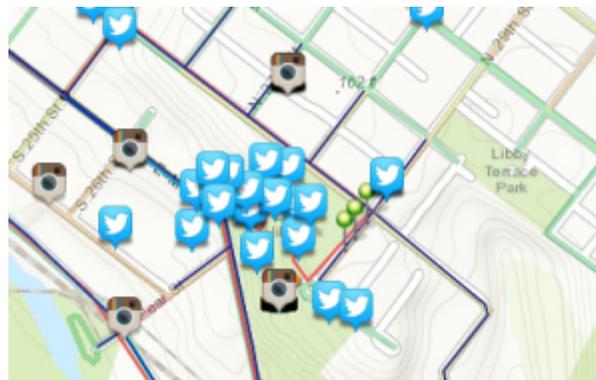
Tweets centered around a Fan Zone at Libby Hill Park

Results

The resulting map was full of useful information that could easily be used to regulate trash and recycling during large scale events in the city. However, it is hard to signify trash build up on a map like this during a live event. In my opinion, this type of map is much more useful for emergency preparedness and routing emergency vehicles and other commuters. It would be especially helpful if we had users

surveying the area during our event, so we would know the amount of trash and recycling pick up that was still needed and whether some areas were experiencing higher amounts than others. We would then be able to deploy technicians who knew how to resolve the trash situations to the areas in most need.

Fan Zones were a very helpful way to determine areas that would experience high levels of trash, however this data set was incomplete. It would to beneficial to also include top viewing areas, such as Governor's Street, because there was a large crowd gathering there as well. The addition of live tweets really helped us figure out where fans were gathering as well. We would not have had any information on this if we did not enable Twitter on our maps. I was also hoping that the Instagram layer would be more useful, however there is no way to filter Instagrams other than by location. This resulted in my map being cluttered by irrelevant photos.

It is also difficult to asses the level of accuracy that my map had as well. I solely relied on data sets that were uploaded into ArcGIS by other users. We were also limited by the data sets that were already created.

During the full extent of this course, I learned how to take a completely blank map and add in relevant information from a database of files that were already uploaded by other users. I experimented with a previous map and created my own file that listed Fan Zones during the race that I thought were more relevant to our population questions. I have never used GIS technology and I already can see how this program would be useful in my other classes and during other research that I am hoping to conduct in my career. This was a great exercise in making an adaptive response map for a large event. I don't think it was necessarily practical in its uses for what we were aiming to measure and respond to. I believe that the addition of live tweets was very beneficial for us to locate hot spots and how they would change at different times.

◄ RICHMOND2015   ◄ UCI   ◄ VCU   ◄ VCUBRB