2015

# Adaptive Response Modeling Using GIS, Blog 4

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# uci 2015 gis

## HELLO WORLD!

**The Creation of an ArcGIS Map Simulation: Twitter Response to 2015 Road World Championships Live Event**

**IMG_9260**

The 2015 Road World Championships were held in Richmond, Virginia September 19th through September 27th.  Commonly referred to as the UCI, for the founding body of Union Cycliste Internationale, the nine-day event is reported to have attracted nearly 645,000 spectators from around the globe, through live web podcasts and turnout in the city's streets .

VCU, along with many other local organizations, set plans prior to the live event in an genuine attempt to accommodate Richmond City visitors, employees, and locals.  Map construction via ArcGIS online creates a cohesive simulation to prepare the impacted public and provide a fluent resource for the UCI spectator. Incorporating social media posts into ArcGIS map simulations can provide efficient means to deploy responses to  real-time population hot spots. An ArcGIS map is only as accurate, or as valid, as for the manner in which is it used.

*Process:*  **Creating an ArcGIS Map to determine live event population hot spots**

- Pictured below is the ArcGIS Map prior to the addition of a social media layer.  The map simulation incorporates several data layers to formulate an overview of race day events, and allow for travel and spectator arrangements to be planned accordingly.

**ArcGIS MAP Image 1** : *The pictured image displays data sets regarding established fan zones, street closures, the location of Eco-stations and emergency service, as well as the cyclist's course specific to the day's event.*

## Legend

### StreetClosures

### ShuttleStops

### UCI_Courses (1)

- ■ Road Circuit (9/25-9/27)
- ■ Team Time Trial (9/20)
- ■ Time Trial Circuit (9/21-9/22)
- ■ Men's Elite Time Trial (9/23)

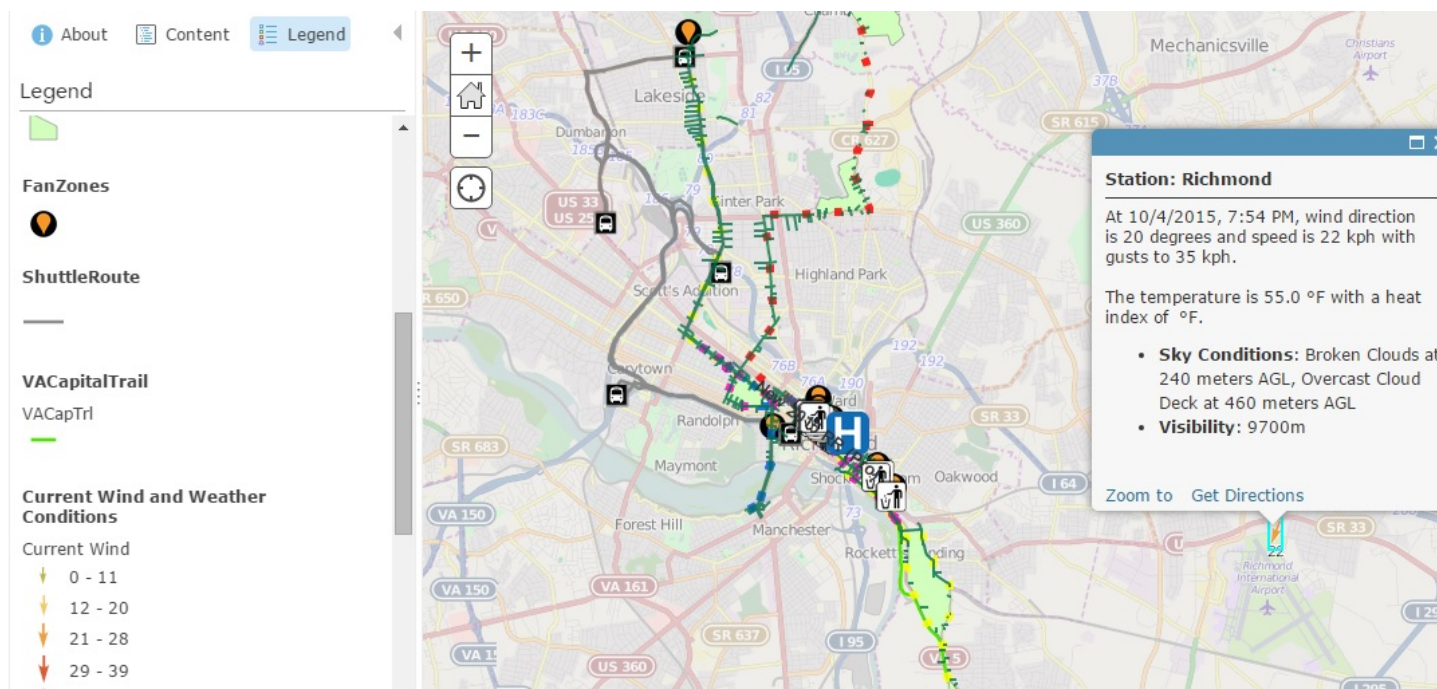### Accessibility_Areas

### FanZones

*ArcGIS MAP Image 2:* *Accompanying legend to*
*ArcGIS MAP Image 1(above)*

- Dynamic data sets such as wind, rain, or traffic patterns allow for response actions specific to local conditions. Online UCI spectators may use dynamic data sets to analyze the impacts of weather conditions on participating cyclist time trials and efforts. In the live ArcGIS map, wind data is set to refresh in one-minute intervals.



*ArcGIS Map Image 3:* *Display of a larger scale of the ArcGIS map showing additional features such as shuttle routes and accessibility areas.. Note the addition of dynamic data sets (wind speed and Doppler radar)*

- ArcGIS social-media layers can assist in the determination of population hot spots through post density and post content. The location parameters of Twitter posts are suitable in providing a general analysis of populated areas.  When viewing the ArcGIS live web app, it is assumed that Twitter posts are posted in real-time to provide an accurate representation of the UCI event. Multiple Twitter posts in the same general areas, coupled with communication with a dispatched observer, may confirm the reliability of real-time assumption.
-  An online analyst may then dispatch an appropriate response in regards to live event population hot spots.
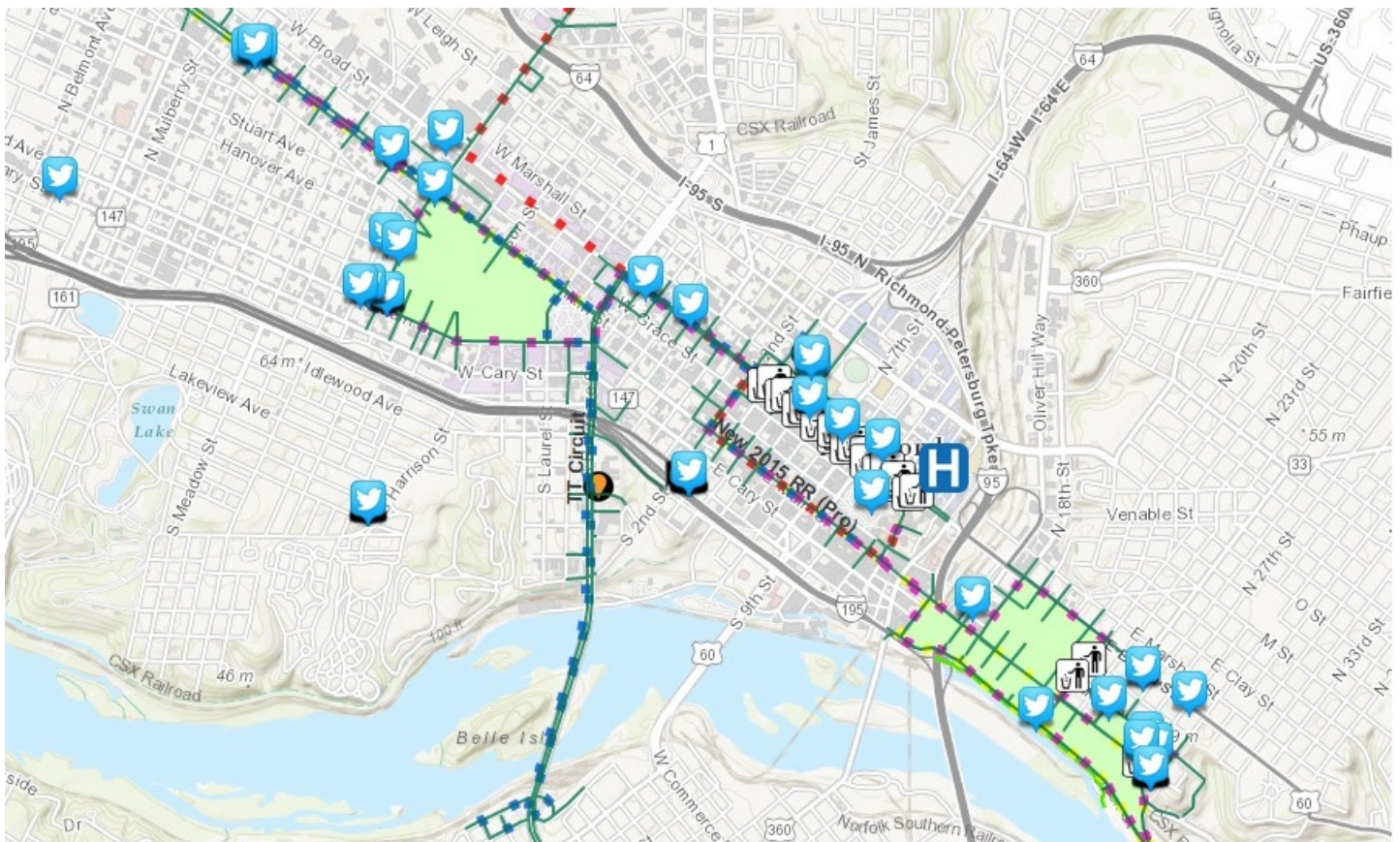
*Web APP Image 1: The addition of a social media layer (Twitter) to assist in the determination of population hot spots.*

*Observed Findings*: Eco-station locations and population hot spots

- Eco-station locations are fairly consistent with Twitter postings; indicating the successful prediction of spectator areas  prior to the live event. The spatial distribution of race-day Twitter posts suggest mixed success in Eco-station distribution throughout the course.



*Web APP Image 2: Live Tweet from 2015 UCI*

- The content of social media posts can warrant responses to unanticipated hot spots that arise during live events. The featured post from Alanna Durkin (above: Web APP Image 2), with verification, may warrant the deployment of additional Eco-stations to the Libby Hill Park area.

*Conclusions:*

Utilization of spatial technology, such as ArcGIS Online, is an extremely valuable tool in a world brimming with data. Incorporating data layers into an ArcGIS event map provides a visual synthesis to thoroughly prepare and inform the public. Dynamic, real-time, data layers within an ArcGIS event map result in a strategic tool to display, and to act, upon the unexpected.