Utilizing Geospatial Resources for Regional Collaboration during UCI World Championships

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Race Background

- 3rd Leg Cycling Triple Crown
  - Tour de France
  - Giro D’Italia
  - UCI World Championships
- 9 Days
- 4 Courses
- 450,000 Spectators predicted*

*645,000 actually attended!!!
Regional Challenges

- **Multi-Jurisdictional**
  - City of Richmond
  - Henrico County
  - Hanover County
  - Caroline County

- **Multi-Agency**
  - State – VDEM, VSP
  - Federal – FBI, EPA, DHS
  - Local Jurisdictions

- **Resource Tracking**
  - Response Personnel
  - Incidents
  - Field Observations
GIS Implementation

- Desktop/Static Maps unable to provide realtime situational awareness
  - Additional resources required

- ArcGIS Online (AGOL)
  - Provide operational view
  - Excellent for planning
  - Without dynamic feeds, data is static
Geospatial Resources

- **ArcGIS Online**
  - Map source
  - Backbone

- **iNet Dispatch**
  - CAD System
  - Feeds AGOL event information

- **Delorme Devices**
  - GPS tracking device
  - Feeds live services

- **ArcGIS Collector App**
  - Reporting tool for field
  - Provides current observations

- **Operations Dashboard for ArcGIS**
  - Monitors Resources
  - Presents all the information in sharable package
Geospatial Architecture

Collector Apps

AGOL feature services

Tracking web service created

iNet Dispatch

FS* used as background mapping

Operations Dashboard

AGOL tracking maps

Delorme tracking services
ArcGIS Online

- Basis for all mapping products
  - Features Services created
    - Drag and drop ability for desktop
    - Simplified Editing
  - Shared Data Development
    - Non-GIS users participated and provided feedback
    - Engagement invested responders in product development
ArcGIS Online Challenges

● Sharing across organizations
  • Feature services would not display on different orgs.’ maps
  • Minor changes resulted in data disappearance

● Data Governance
  • Creating multiple versions of maps and features
  • Caused by sharing between organizations
  • Determining the authoritative source

● Non-GIS personnel use
  • AGOL organization’s potential for confusion
  • Using ‘map notes’ for publishing

● Information Security
  • Event staff sharing without public access
  • Law Enforcement tracking limited access
ArcGIS Online Solutions

- **Creation of Super-User Accounts**
  - GIS Personnel upload to single account
  - Multi-tiered accounts for product management

- **Bulk Account Creation**
  - Simplified the account assignment
  - Temporary
  - Generic
AGOL Tracking Maps

- Displayed live services
  - Active CAD incidents
  - Dispatchable units
  - Collector applications (JHAT & Field Reports)
iNet Dispatch

- iNet Dispatch
  - Web based Computer Aided Dispatch (CAD)
  - Flexible deployment (just need an internet connection)
  - Base maps and feature services created in AGOL
iNet Challenges

- Geofence matching of response areas between special event and normal operations dispatching
- Creating searchable common places
- Call type designations differed between jurisdictions
- Any changes to AGOL background feeds during the live event could cause the iNet feed to break
iNet Solutions

- Including both Richmond CAD and iNet special event geofences in iNet dispatching basemap
- Export CAD common places name and import into iNet
- Used standardized (APCO) call types
- Feed secured by multi-tiered AGOL accounts preventing accidental access or changes
Delorme Tracking Devices

- Provided to response units
- Realtime trackers
- Unique identifiers for assigning units
- Delorme location information consumed through iNet creating web services
Delorme Challenges

- 120 devices across 4 organizations
- Devices administered by single group
- Different settings due to variable programming
- Poor placement on personnel and in vehicles caused signal issues
Delorme Lessons Learned

- All settings verified prior to use
- All organizations must play in same sandbox
- Simple training with end users
  - turning on/off
  - tracking on
  - placement
ArcGIS Collector

- Compatible with iOS and Android
- Multimedia capable
- Populates points of interest and potential hazards
- Reporting tool for Operation Command Staff (e.g. crowd estimates on Libby Hill)
Collector in Action

- Field observers notice inebriated patrons
- Point Entered in Collector
- Police advised to be aware
Collector Issues & Solutions

- Cell network overwhelmed during popular events
  - Inability to attach photos to collector and be seen AGOL
- Hardware availability
  - VDEM provided iPhones and iPads
Operations Dashboard

- Usable, easily disseminated format
- Available on both desktop and web
Operations Dashboard

- Provides situational awareness at a glance
- Non-Spatial Supplemental information
  - Event counts
  - Active incidents
  - Call types and details
Dashboard Issues & Solutions

● Issues
  • Desktop installation issues
  • Refresh issues

● Solutions
  • Switched from desktop to web operations dashboard
  • Changed refresh rate on features services in web maps that fed the dashboards
Conclusions

- Restricting access to AGOL feature services that were consumed by iNet (if changed broke iNet feed)
- Desktop Operations Dashboard shows promise but technical issues limited its use
- Delorme user training extremely important
- First time an event of this magnitude was hosted in our region – proven possible with lots of collaboration!
Questions

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