Developing and Implementing Effective GIS Standards for a County PSAP

Keith Dailey, Cowley County GIS Coordinator
Lucas Goff, Cowley County MIS/GIS Director
Introduction
Keith Dailey, GIS Coordinator

• Bachelor’s and Master’s in Forestry from Stephen F. Austin State University
  - Emphasis on GIS
• Worked for Cowley County for 3 years
• Actively quality controlling emergency 911 data for the majority of the county
  - Address points
  - Street Centerlines
  - Emergency Response Polygons
• Coordinate with two municipalities to integrate data into CAD
  - Winfield, KS & Arkansas City, KS
Introduction
Lucas Goff, MIS/GIS Director

• Bachelor’s and MBA from Southwestern College
  - Double Major in Computer Information Systems & Business Accounting
• Worked for Cowley County for 10 years
  - MIS/GIS Director for 7 years
• Synchronize and direct staff towards a consolidation of two PSAP’s into a single PSAP that covers the entire county

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Introduction
Cowley County, KS

- Population: ~36,000
- Area: ~1,132 mi.²
- County Seat: Winfield, KS
- Location: South-Central Kansas, 45 mins southeast of Wichita.
PSAP History
Cowley County Consolidated PSAP

• Historically
  - 2 PSAP’s, 15 Dispatchers
  - Winfield PD
  - Arkansas City PD

• Consolidation
  - July 2, 2013

• Support
  - 7 fire districts
  - 8 law enforcement agencies
  - 2 EMS zones
  - 2 Emergency Management departments
Financial Investment
Cowley County Consolidated PSAP

- **Server Hardware**
  - $425,000 for high availability servers to host data
- **Software**
  - CAD: $350,000
  - RMS: $540,000
  - Supporting software (ESRI, Hiplink, etc): 50,000 annually
- **Funding**
  - 911 funds & taxes
  - County bonds
Goals & Objectives

1. Increase accuracy and efficiency in emergency situations.
   - Already good, can ALWAYS be better

2. Implement consistent data that meets county, regional, and national standards.
   - County Administration-approved policy manual
   - AOS
   - NENA

3. Continually QA\QC Data
   - Rely heavily on dispatchers and CAD exports for communication
### Practices & Procedures

**Goal 1 - Increase accuracy and efficiency in emergency situations**

<table>
<thead>
<tr>
<th>Month</th>
<th>Calls</th>
<th>Point Geocode</th>
<th>% Point Geocoded</th>
<th>Centerline Geocoded</th>
<th>% Centerline Geocoded</th>
<th>Not Geocoded</th>
<th>% Not Geocoded</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>1,648</td>
<td>1,270</td>
<td>77%</td>
<td>333</td>
<td>20%</td>
<td>45</td>
<td>3%</td>
</tr>
<tr>
<td>February</td>
<td>1,469</td>
<td>1,094</td>
<td>74%</td>
<td>326</td>
<td>22%</td>
<td>49</td>
<td>3%</td>
</tr>
<tr>
<td>March</td>
<td>1,718</td>
<td>1,250</td>
<td>73%</td>
<td>398</td>
<td>23%</td>
<td>70</td>
<td>4%</td>
</tr>
<tr>
<td>April</td>
<td>1,847</td>
<td>1,359</td>
<td>74%</td>
<td>420</td>
<td>23%</td>
<td>68</td>
<td>4%</td>
</tr>
<tr>
<td>May</td>
<td>1,783</td>
<td>1,321</td>
<td>74%</td>
<td>421</td>
<td>24%</td>
<td>41</td>
<td>2%</td>
</tr>
<tr>
<td>June</td>
<td>1,483</td>
<td>1,121</td>
<td>76%</td>
<td>317</td>
<td>21%</td>
<td>45</td>
<td>3%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>9,948</td>
<td>7,415</td>
<td>75%</td>
<td>2,215</td>
<td>22%</td>
<td>318</td>
<td>3%</td>
</tr>
</tbody>
</table>

![Chart Title](chart1.png)

*Developing and Implementing Effective GIS Standards for a County PSAP*
Practices & Procedures
Goal 1 - Increase accuracy and efficiency in emergency situations

By studying our dispatchers call logs, we have found discrepancies with the centerline data. We have corrected this data to improve efficiency.
Practices & Procedures

Goal 2 - Implement consistent data that meets county, regional, & national standards.

- Policy manual written in accordance with regional (AOS) and NENA standards
- Effectiveness of topology networks
  - Gaps
  - Overlaps
  - Overhangs (incorrect / too many intersections)
  - Dangles (no intersections)
Practices & Procedures
Goal 3 - Continually QA\QC Data

• We maintain open communication with the dispatchers
  - Actively: they communicate errors they are receiving
  - Passively: I find errors as I reverse geocode using the same geocoders they have.
Accomplishments

• Improved geocoding capabilities by 10%...and growing.
• Understand the needs of the CAD dispatchers.
• Deeper knowledge of emergency calls in Cowley County.
• Geocoded ~10,000 emergency occurrences in 6 months.
  - Can now analyze crime statistics and prevalence of emergency response in remote areas of the county
  - Online Mapping
Conclusions
What has Cowley County Learned?

• Accurate Data eases CAD geocoding
  - However, QA/QC is dynamic NOT static!

• Continued communication with data managers and end users is crucial
  - We need to ask dispatchers about problems as they arise, and they need to bring them to our attention when they happen

• Data remediation is the first and easiest step.
  - Data integration is continual with data QA/QC and is the most intricate/crucial
Acknowledgments

- Cowley County Emergency Dispatch
- Jerred Schmidt, City of Winfield, KS
- Josh White, City of Arkansas City, KS
Questions?