Data Driven Approaches to Crime and Traffic Safety (DDACTS)

Chief Howard B. Hall
Roanoke County Police Department
Shawnee, Kansas
(population 62,000; 86 sworn officers)

- Residential Burglary: 50%
- Comm Burg: 66.7%
- Traffic Crashes: 17.6%
- Calls for Service: 50.4%
- Motor Vehicle Theft: 69.2%
Baltimore County, Maryland
(population 801,000; 1918 sworn officers)

- Traffic Crashes: 8.2%
- Traffic Stops: 16.1%
- Robbery: 13.1%
- Burglary: 19.6%
Data-Driven Approaches to Crime and Traffic Safety

DDACTS is an operational model that uses the analysis of location-based crash, crime, calls for service and enforcement data to establish effective and efficient methods for deploying resources.
DDACTS
DATA-DRIVEN APPROACHES TO CRIME AND TRAFFIC SAFETY

Operational Guidelines

Integrating "hot spot" technologies to establish effective methods for deploying law enforcement resources through analysis of crash and crime data.

March 2014
DDACTS Guiding Principles

Partners / Stakeholder Participation
Data Collection
Data Analysis
Strategic Operations
Information Sharing and Outreach
Monitor, Evaluate and Adjust Outcomes
Roanoke County Police Department

Our mission is to unite with our evolving community to provide professional and pro-active police services to maintain a safe environment.
Roanoke County Police

- 93,000 Population
- 250 square miles
- 142 sworn
- Part I Crime: 1,300
- CFS: 30,000
- Traffic Stops: 15,000
- Crashes 2,250
3 Year Analysis: Larceny From Vehicle
3 Year Analysis: Burglary
3 Year Analysis: Crashes
3 Year Analysis: Combined
## Part 1 Crimes: Target Zone 1

<table>
<thead>
<tr>
<th>Incident Type</th>
<th>Nov 2009 - May 2013</th>
<th>Jun 2013 - Dec 2016</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homicide</td>
<td>1</td>
<td>0</td>
<td>-100.00%</td>
</tr>
<tr>
<td>Rape</td>
<td>10</td>
<td>7</td>
<td>-30.00%</td>
</tr>
<tr>
<td>Robbery</td>
<td>8</td>
<td>8</td>
<td>0.00%</td>
</tr>
<tr>
<td>Aggravated Assault</td>
<td>21</td>
<td>47</td>
<td>123.81%</td>
</tr>
<tr>
<td><strong>Part 1 Violent SubTotal</strong></td>
<td>40</td>
<td>62</td>
<td>55.00%</td>
</tr>
<tr>
<td>Arson</td>
<td>2</td>
<td>2</td>
<td>0.00%</td>
</tr>
<tr>
<td>Motor Vehicle Theft</td>
<td>11</td>
<td>11</td>
<td>0.00%</td>
</tr>
<tr>
<td>Burglary</td>
<td>87</td>
<td>48</td>
<td>-44.83%</td>
</tr>
<tr>
<td>Larceny</td>
<td>281</td>
<td>246</td>
<td>-12.46%</td>
</tr>
<tr>
<td>Larceny - Theft f/ MV</td>
<td>68</td>
<td>41</td>
<td>-39.71%</td>
</tr>
<tr>
<td><strong>Part 1 Property SubTotal</strong></td>
<td>449</td>
<td>348</td>
<td>-22.49%</td>
</tr>
<tr>
<td><strong>Part 1 Total</strong></td>
<td>489</td>
<td>410</td>
<td>-16.16%</td>
</tr>
<tr>
<td>Reportable Crash Type</td>
<td>Nov 2009 - May 2013</td>
<td>Jun 2013 - Dec 2016</td>
<td>% Change</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>----------</td>
</tr>
<tr>
<td>DMV-Fatality</td>
<td>1</td>
<td>0</td>
<td>-100.00%</td>
</tr>
<tr>
<td>DMV-Personal Injury</td>
<td>47</td>
<td>68</td>
<td>44.68%</td>
</tr>
<tr>
<td>DMV-Property Damage</td>
<td>239</td>
<td>155</td>
<td>-35.15%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>287</td>
<td>223</td>
<td>-22.30%</td>
</tr>
</tbody>
</table>
## Part 1 Crimes: Target Zone 2

<table>
<thead>
<tr>
<th>Incident Type</th>
<th>Nov 2009 - May 2013</th>
<th>Jun 2013 - Dec 2016</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
<td>2016</td>
<td></td>
</tr>
<tr>
<td>Homicide</td>
<td>0</td>
<td>0</td>
<td>Up 0</td>
</tr>
<tr>
<td>Rape</td>
<td>10</td>
<td>6</td>
<td>-40.00%</td>
</tr>
<tr>
<td>Robbery</td>
<td>6</td>
<td>2</td>
<td>-66.67%</td>
</tr>
<tr>
<td>Aggravated Assault</td>
<td>17</td>
<td>39</td>
<td>129.41%</td>
</tr>
<tr>
<td><strong>Part 1 Violent</strong></td>
<td><strong>33</strong></td>
<td><strong>47</strong></td>
<td><strong>42.42%</strong></td>
</tr>
<tr>
<td>Arson</td>
<td>2</td>
<td>0</td>
<td>-100.00%</td>
</tr>
<tr>
<td>Motor Vehicle Theft</td>
<td>6</td>
<td>8</td>
<td>33.33%</td>
</tr>
<tr>
<td>Burglary</td>
<td>73</td>
<td>38</td>
<td>-47.95%</td>
</tr>
<tr>
<td>Larceny</td>
<td>217</td>
<td>185</td>
<td>-14.75%</td>
</tr>
<tr>
<td>Larceny - Theft f/ MV</td>
<td>44</td>
<td>30</td>
<td>-31.82%</td>
</tr>
<tr>
<td><strong>Part 1 Property</strong></td>
<td><strong>342</strong></td>
<td><strong>261</strong></td>
<td><strong>-23.68%</strong></td>
</tr>
<tr>
<td><strong>Part 1 Total</strong></td>
<td><strong>375</strong></td>
<td><strong>308</strong></td>
<td><strong>-17.87%</strong></td>
</tr>
</tbody>
</table>
# Reportable Crashes: Target Zone 2

<table>
<thead>
<tr>
<th>Reportable Crash Type</th>
<th>Nov 2009 - May 2013</th>
<th>Jun 2013 - Dec 2016</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMV-Fatality</td>
<td>1</td>
<td>2</td>
<td>100.00%</td>
</tr>
<tr>
<td>DMV-Personal Injury</td>
<td>48</td>
<td>59</td>
<td>22.92%</td>
</tr>
<tr>
<td>DMV-Property Damage</td>
<td>169</td>
<td>134</td>
<td>-20.71%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>218</td>
<td>195</td>
<td>-10.55%</td>
</tr>
</tbody>
</table>
Partner/Stakeholder Participation

- Partner vs. Stakeholder
- Internal and External Partners
- Engagement
- Communications
- Buy in
Data Collection

Data Sources

- Call for Service (CAD)
- Incidents (CAD/RMS)
- Crashes (CAD/RMS/State)
- Enforcement
  - MV Stops
  - Citations & Warnings
  - Field Contacts
  - Arrests/Summons
  - Directed Patrols

Data Quality

- Accurate
- Timeliness
- Completeness
- Accessible
Crime Analysis and Mapping
“Crime analysis is the systematic study of crime and disorder problems as well as other police-related issues—including socio-demographic, spatial, and temporal factors—to assist the police in criminal apprehension, crime and disorder reduction, crime prevention and evaluation.”

-Rachel Boba, Crime Analysis with Crime Mapping (Sage, 2009), 5
What is Crime Analysis?

- The study of criminal incidents
- The identification of patterns, trends, and problems
- The dissemination of information so the agency can develop strategies and tactics
Strategic Operations

Turning Analysis into Action
Developing Responses

Initiative
- Officer initiative
- Supervisor initiative
- Community initiative

Plans & Policies
- Evidence-Based protocols
- Standard tactical action plans
- Other agency policies

Collaboration
- Problem-Solving/Tactical Teams
- COMPSTAT
High Visibility Enforcement

Return on Investment

- Specific deterrence-crime
- Specific deterrence-traffic
- General deterrence-crime
- General deterrence-traffic
- Intelligence

Lower Tolerance!!

- Target areas/hot spots
- Community complaints
- Other?

Enforcement Options

- Arrest
- Citation
- Written warning
- Verbal warning

Fair & Consistent

Professional & Respectful

Safe Drivers · Safe Vehicles · Secure Identities · Saving Lives
Information Sharing and Outreach

• Internal

• External

• Media
Monitor, Evaluate, Adjust

- Monitoring performance
- Tracking expenditures
- Review against plan
- Review problems and how handled
- Feedback
- Leadership
Outcomes

- Output v Outcome
- Types of Outcomes:
  - Crash
  - Crime
  - Other?
What are the issues?

- We don’t have time!
- I already know my problem areas!
- What about displacement?
- This is fine for big departments but what about mine?
- Doesn’t this mean that some areas will lose coverage?
What Can DDACTS Do for Your Agency?

✓ Acknowledges spatial relationships between crashes & crime
✓ Renews emphasis on traffic safety
✓ Provides a flexible approach
✓ Meets CALEA® accreditation standards
✓ Increases agency accountability & productivity
✓ Strengthens relationships with partners & stakeholders
Keys to Success

- Data and Analysis
- Planning and Evaluation
- Flexibility
For More Information
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