INTRODUCTION TO PROBLEM ANALYSIS

Int’l Problem-Oriented Policing Conference
Ann Arbor, MI
April 2022
## Comparing Analytic Products
### Group 1

**AUSTIN CRIME STATS**
**JANUARY – APRIL 2022**

<table>
<thead>
<tr>
<th>UCR Category</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td>Murder</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Rape</td>
<td>46</td>
<td>35</td>
<td>35</td>
<td>19</td>
<td>135</td>
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<td>Robbery</td>
<td>87</td>
<td>74</td>
<td>74</td>
<td>31</td>
<td>266</td>
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<tr>
<td>Agg. Assault</td>
<td>231</td>
<td>211</td>
<td>253</td>
<td>133</td>
<td>828</td>
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<tr>
<td>Burglary</td>
<td>400</td>
<td>413</td>
<td>371</td>
<td>79</td>
<td>1,263</td>
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<tr>
<td>Theft</td>
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<td>1,769</td>
<td>1,759</td>
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<td>6,016</td>
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<tr>
<td>Auto Theft</td>
<td>404</td>
<td>388</td>
<td>459</td>
<td>234</td>
<td>1,485</td>
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<td><strong>Grand Total</strong></td>
<td>3,290</td>
<td>2,892</td>
<td>2,954</td>
<td>871</td>
<td>10,007</td>
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<table>
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<th>Police District</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
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<tr>
<td>1</td>
<td>1,332</td>
<td>1,284</td>
<td>1,408</td>
<td>526</td>
<td>4,550</td>
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<tr>
<td>2</td>
<td>1,341</td>
<td>1,240</td>
<td>1,481</td>
<td>605</td>
<td>4,667</td>
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<td>3</td>
<td>867</td>
<td>785</td>
<td>922</td>
<td>342</td>
<td>2,916</td>
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<tr>
<td>4</td>
<td>870</td>
<td>738</td>
<td>810</td>
<td>315</td>
<td>2,733</td>
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<tr>
<td>5</td>
<td>716</td>
<td>685</td>
<td>734</td>
<td>252</td>
<td>2,387</td>
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<tr>
<td>6</td>
<td>727</td>
<td>640</td>
<td>717</td>
<td>240</td>
<td>2,324</td>
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<tr>
<td>7</td>
<td>789</td>
<td>730</td>
<td>716</td>
<td>268</td>
<td>2,503</td>
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<tr>
<td>8</td>
<td>522</td>
<td>456</td>
<td>462</td>
<td>198</td>
<td>1,638</td>
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<tr>
<td><strong>Grand Total</strong></td>
<td>7,164</td>
<td>6,558</td>
<td>7,250</td>
<td>2,746</td>
<td>23,718</td>
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<table>
<thead>
<tr>
<th>SHIFT</th>
<th>Sun</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>765</td>
<td>998</td>
<td>987</td>
<td>972</td>
<td>971</td>
<td>922</td>
<td>891</td>
<td>6506</td>
</tr>
<tr>
<td>B</td>
<td>1297</td>
<td>1494</td>
<td>1451</td>
<td>1410</td>
<td>1339</td>
<td>1459</td>
<td>1380</td>
<td>9830</td>
</tr>
<tr>
<td>C</td>
<td>1329</td>
<td>1098</td>
<td>897</td>
<td>938</td>
<td>1010</td>
<td>1095</td>
<td>1392</td>
<td>7759</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>3391</td>
<td>3590</td>
<td>3335</td>
<td>3320</td>
<td>3320</td>
<td>3476</td>
<td>3663</td>
<td>24095</td>
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Comparing Analytic Products

Group 2

<table>
<thead>
<tr>
<th>Burglary Type</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burglary Non-Residence</td>
<td>204</td>
<td>204</td>
<td>174</td>
<td>48</td>
<td>630</td>
</tr>
<tr>
<td>Burglary of Coin-Op Machine</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Burglary of Residence</td>
<td>98</td>
<td>125</td>
<td>137</td>
<td>24</td>
<td>384</td>
</tr>
<tr>
<td>Burglary of Shed/Garage/Storage</td>
<td>97</td>
<td>84</td>
<td>60</td>
<td>7</td>
<td>248</td>
</tr>
<tr>
<td>Burglary of Vehicle</td>
<td>903</td>
<td>770</td>
<td>686</td>
<td>138</td>
<td>2497</td>
</tr>
<tr>
<td>Total</td>
<td>1307</td>
<td>1187</td>
<td>1060</td>
<td>219</td>
<td>3773</td>
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Location Type

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence / Home</td>
<td>364</td>
</tr>
<tr>
<td>Hotel / Motel / Etc.</td>
<td>13</td>
</tr>
<tr>
<td>Commercial / Office Building</td>
<td>2</td>
</tr>
<tr>
<td>Parking / Drop Lot / Garage</td>
<td>2</td>
</tr>
<tr>
<td>Construction Site</td>
<td>1</td>
</tr>
<tr>
<td>Hwy / Road / Alley / Street</td>
<td>1</td>
</tr>
<tr>
<td>Rest Area</td>
<td>1</td>
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</tbody>
</table>
To reduce crime…

we need to know what causes it.
PROBLEM ANALYSIS

• Approach/method/process

• Uses formal criminology theory, research methods, comprehensive data collection and analysis procedures

• Systematic way to:
  1. conduct in-depth examination of,
  2. develop informed responses to, and
  3. evaluate crime and disorder problems.
WHY TAKE A PROBLEM SOLVING APPROACH?

- Offenders rarely caught
- High-intensity enforcement not sustainable
- Criminal Justice system overburdened
- Most of what police are expected to address isn’t crime
- Residents care most about non-crime issues
1,200 CFS per year (27 motels)

- Most common CFS: disturbance

5 motels accounted for 28% of rooms, but 53% of CFS

Most motel users local
ANALYZING A LONG-TERM PROBLEM

- Initial CFS analysis
- Observations
- Motel “user” surveys
- Manager interviews
- Environmental surveys
- Literature review/site visits
- Investigating causes
INVESTIGATING CAUSES

- Bad neighborhood
- Low room price
- Local clientele
- Insufficient police attention
- Poor management practices
CALLS FOR SERVICE RATE

CFS Ratio Per Room, Per Year

$44-$60/night + local guests

$45-$55/night + local guests

City Motels - 2005
CITIZEN-INITIATED CALLS NOT AFFECTED BY ENFORCEMENT

![Graph showing citizen and officer initiated calls over time](image-url)
Bringing a civil action
Legislation mandating prevention
Charging a fee for police service
Withdrawing police service
Public shaming
Creating organization to assume ownership
Engaging another existing organization
Targeted confrontational requests
Straightforward informal requests
Educational programs

DEVELOPING RESPONSES:  
GOLDSTEIN HIERARCHY

Chula Vista Police Department
MOTEL ORDINANCE W/CITY STANDARD

- Collaborative effort of 7 city agencies
- Required annual permit to operate
- City could deny permit based on CFS
- City standard was median for 2005
Motels decided what steps to take

- Guest/visitor screening
- Access control
- Private security
- Rules
CFS TO MOTELS DOWN 41%

Includes certain officer-initiated CFS, such as vehicle theft not covered.
CRIMES AT MOTELS REDUCED 70%

[Diagram showing the reduction in crimes at motels from 2003-2005 to 2013-2014, with a significant decrease.]
Let's Talk About Crime

- Why is it important to be specific?
- Correctly identifying the underlying problem
- Asking the right analysis questions
- Having the most appropriate response strategies

- Don’t settle for UCR categories!
- ROBBERY: Commercial v. Street v. Residential
- VEHICLE THEFT: Joyriding v. Exporting v. Insurance Fraud
CRIME/PROBLEM ANALYSIS

Duck – repeat victims repeatedly attacked by different offenders
Suppose all situational controls were to be abandoned: no locks, no custom controls, cash left for parking in an open pot for occasional collection, no library check-outs, no baggage screening at airports, no ticket checks at train stations, no traffic lights, etc. would there be no change in the volume of crime and disorder?

-- Gloria Laycock and Nick Tilley, Jill Dando Institute
Know how hot spots develop

Crime Generators
- Places where large numbers of people are attracted for reasons unrelated to crime
- CAUSE: Many unprotected targets
- What circumstances are targets vulnerable and how to change that?

Crime Attractors
- Places affording many criminal opportunities well known to offenders
- CAUSE: Attractive to offenders
- What is attracting the offenders and how to change that?

Crime Enablers
- Situations when there is little regulation of behavior at places: rules of conduct are absent or not enforced
- CAUSE: Erosion of controls
- Who could control behavior and how can this be encouraged
DIAGNOSE YOUR HOT SPOT

- Show as dot
  - Action at facility, corner or address
  - Ex: CCTV in a parking garage or bar regulations

- Show as line
  - Action at path, street, etc.
  - Ex: change traffic patterns or parking regs.

- Show as area
  - Action at neighborhood, area, etc.
  - Ex: comm partnerships, neighborhood redev.

- Show as dot
  - Action at victim location(s)
  - Ex: educating victims or target hardening

**Places**  
**Victims**

**Streets**  
**Areas**

**Clerkenwell Hotspot**

From wheredunit to whodunnit

<table>
<thead>
<tr>
<th>Vehicle type</th>
<th>Camden</th>
<th>Clerkenwell (n)</th>
<th>Clerkenwell(%)</th>
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<tbody>
<tr>
<td>Car</td>
<td>51%</td>
<td>41</td>
<td>18%</td>
</tr>
<tr>
<td>Sports or convertible</td>
<td>3%</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>Scooter or moped</td>
<td>26%</td>
<td>95</td>
<td>42%</td>
</tr>
<tr>
<td>Motor cycle</td>
<td>13%</td>
<td>70</td>
<td>31%</td>
</tr>
<tr>
<td>Van</td>
<td>5%</td>
<td>3</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>2.0%</td>
<td>10</td>
<td>4%</td>
</tr>
<tr>
<td>Not known</td>
<td>0.5%</td>
<td>0</td>
<td>0%</td>
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ANALYZING “HOT” PLACES
ANALYZING “HOT” PLACES
• There are 1,539 rental properties in University Area Housing (UAH).

• BPD received 18,415 calls for service to UAH rental properties between January 2018 and April 2021.
There were 7,522 calls for service to 215 Apartment Complexes (top 20% = 57.5%).

There were 2,811 calls for service to 602 Single Family Dwellings (top 20% = 55.4%).
USING HIGH DEF MAPS
STUDY THE JOURNEY TO CRIME

- Crime Pattern Theory
  - Nodes
  - Paths
  - Edges
- Ways that offenders find suitable targets:
  - Personal knowledge of victim
  - Work
  - Overlapping “activity spaces”
- Offenders – local vs. not local
LEARN IF THE 80-20 RULE APPLIES

• Pareto Principle – 80% of consequences stem from 20% of causes
• Crime is highly concentrated across people (offenders and victims) and places
• Visualized as a j-curve:
<table>
<thead>
<tr>
<th>Address</th>
<th>No. Robberies</th>
<th>% Robberies</th>
<th>Cum. % Robberies</th>
<th>% Addresses (N=106)</th>
<th>Cum. % Addresses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 134 E Main St</td>
<td>25</td>
<td>9.23%</td>
<td>9.23%</td>
<td>0.94%</td>
<td>0.94%</td>
</tr>
<tr>
<td>2 254 S Clover Av</td>
<td>17</td>
<td>6.27%</td>
<td>15.50%</td>
<td>0.94%</td>
<td>1.89%</td>
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<tr>
<td>3 8012 N Grand Blvd</td>
<td>15</td>
<td>5.54%</td>
<td>21.03%</td>
<td>0.94%</td>
<td>2.83%</td>
</tr>
<tr>
<td>4 8210 N Grand Blvd</td>
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<td>3.69%</td>
<td>24.72%</td>
<td>0.94%</td>
<td>3.77%</td>
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<tr>
<td>5 1430 E Main St</td>
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<td>3.32%</td>
<td>28.04%</td>
<td>0.94%</td>
<td>4.72%</td>
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<tr>
<td>6 365 W Haverty Rd</td>
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<td>3.32%</td>
<td>31.37%</td>
<td>0.94%</td>
<td>5.66%</td>
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<tr>
<td>7 3401 N Staple Dr</td>
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<td>2.95%</td>
<td>34.32%</td>
<td>0.94%</td>
<td>6.60%</td>
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<td>8 210 S Daisy Rd</td>
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<td>2.58%</td>
<td>36.90%</td>
<td>0.94%</td>
<td>7.55%</td>
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<td>9 4598 N Roan Rd</td>
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<td>1.85%</td>
<td>38.75%</td>
<td>0.94%</td>
<td>8.49%</td>
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<td>10 132 E Main St</td>
<td>5</td>
<td>1.85%</td>
<td>40.59%</td>
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<td>9.43%</td>
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<td>Addresses with 4</td>
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<td>7.38%</td>
<td>47.07%</td>
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<td>14.15%</td>
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<td>Addresses with 3</td>
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<td>16.61%</td>
<td>64.58%</td>
<td>14.15%</td>
<td>28.30%</td>
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<tr>
<td>Addresses with 2</td>
<td>40</td>
<td>14.76%</td>
<td>79.34%</td>
<td>18.87%</td>
<td>47.17%</td>
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<td>Addresses with 1</td>
<td>56</td>
<td>20.66%</td>
<td>100.00%</td>
<td>52.83%</td>
<td>100.00%</td>
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<tr>
<td>Total</td>
<td>271</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
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</table>
Repeat Victimization

- Hot Dots
- Hot Products
- Hot Spots
- Hot Targets
- Hot People
The risk of a home being re-burglarized is highest:

A) within 24 hours
B) 1 to 3 days
C) 4 to 30 days
D) 1 to 2 months
Once a home has been burglarized, the risk of re-victimization increases:

A) By a factor of 2
B) By a factor of 4
C) By a factor of 6
D) By a factor of 8

B) Once hit, a house is 4 times more likely to be burglarized than those never burglarized.
### Repeat Offending

"Rundberg has been F&A&%ed up for centuries."

#### Rundberg

<table>
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<tr>
<th>Event</th>
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<tr>
<td>Aug 1-17</td>
<td>3%</td>
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<table>
<thead>
<tr>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>App 1</td>
<td>5%</td>
</tr>
<tr>
<td>App 2</td>
<td>5%</td>
</tr>
<tr>
<td>App 3</td>
<td>5%</td>
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#### 3rd qtr stats 2013

<table>
<thead>
<tr>
<th>Date</th>
<th>Vehicle Stop</th>
<th>Ped Stop</th>
<th>Arrest</th>
<th>Warrants</th>
<th>Haz</th>
<th>Non Haz</th>
<th>F/U/Warnings</th>
<th>Drug/Prost</th>
<th>Involvement</th>
<th>Lives in Grant Area</th>
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</thead>
<tbody>
<tr>
<td>Aug 16/17</td>
<td>45</td>
<td>15</td>
<td>30</td>
<td>13</td>
<td>8</td>
<td>6</td>
<td>14</td>
<td>27</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>Aug 23/24</td>
<td>35</td>
<td>20</td>
<td>15</td>
<td>14</td>
<td>7</td>
<td>2</td>
<td>16</td>
<td>18</td>
<td>12</td>
<td>12</td>
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#### Operation Name: Mobile Walking Beat

<table>
<thead>
<tr>
<th>Date</th>
<th>Officer 1</th>
<th>Officer 2</th>
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<tbody>
<tr>
<td></td>
<td>10</td>
<td>14</td>
</tr>
</tbody>
</table>

#### Lives in Outside Influence

- **21%** stopped
- **79%** continued

---
Examining rates helps to understand if the number of targets contributes to the problem.

Rates describe the number of crimes/incidents per target at risk, during a time period.

Calculating rates
- Be careful of the correct denominator!

Emphasis on high numbers or rates?
Which lot is riskier to park in?

**Swap meet**
- Huge (2,500 spaces)
- Open only 2 days a week
- Park time: 1.5 hours

**OR**

**H Street Trolley**
- Tiny (300 spaces)
- Open 7 days a week
- Park time: 8 hours

### Comparing Risk Rates

![Bar graph comparing risk rates of Swap Meet and H Street Trolley](chart)

- **Swap Meet**
  - # of Auto Thefts in 2001: 42
  - Risk Rate: [Bar]

- **H Street Trolley**
  - # of Auto Thefts in 2001: 21
  - Risk Rate: [Bar]
Don't be discouraged by displacement doomsters

- Geographical
  - Crime moves to a different place
- Temporal
  - Crime moves to a different time
- Target
  - Changes from 1 target to another
- Tactical
  - A new method of committing the crime occurs
- Crime Type
  - A different crime occurs
### COLLECT YOUR OWN DATA

<table>
<thead>
<tr>
<th>Visual assessments</th>
<th>Environmental surveys</th>
<th>Maps</th>
<th>Time graphs</th>
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<tbody>
<tr>
<td>Photos/videos</td>
<td>Intelligence info</td>
<td>Police interviews</td>
<td>Police records</td>
</tr>
<tr>
<td>Stakeholder canvass</td>
<td>Neighborhood surveys</td>
<td>Business surveys</td>
<td>Student surveys</td>
</tr>
<tr>
<td>School personnel surveys</td>
<td>Parent surveys</td>
<td>Offender interviews</td>
<td>Victim interviews</td>
</tr>
</tbody>
</table>
The purpose of the survey is to help create a safer neighborhood for you and your family. It is not required to provide any personal information. El propósito de la encuesta es para ayudar a crear un vecindario más seguro para usted y su familia. No es necesario proporcionar ninguna información personal.

4. Is this a safe place for you and your family? ¿Es esto un lugar seguro para usted y su familia?

5. **CLICK FOR INSTRUCTIONS / HAGA UN CLIC PARA VER LAS INSTRUCCIONES**

6. Drug Dealing / Tráfico de drogas

7. Drug or alcohol usage / Uso de drogas o alcohol

8. Prostitution / Prostitutas

9. Homelessness / Personas sin hogar

10. Panhandling / Pedir dinero en las calles

11. Robbery (Person stealing from person) / Asalto (Robar de persona a persona)
RESOURCES TO SUPPORT PROBLEM ANALYSIS

- Center for Problem Oriented Policing
  - http://www.popcenter.org/
  - http://www.popcenter.org/learning/60steps/
  - http://www.popcenter.org/tools/
  - http://www.popcenter.org/problems/

Resources to support problem analysis.
THANK YOU.

QUESTIONS? COMMENTS?

• Julie Wartell
  • julie.wartell@att.net

• Ray Kianes
  • ray.kianes@raybertechnologies.com