

CaseNum	Offense	DTReport	STNo	Street	DTFrom	DTTo	District
201700576	LOST PROPERTY	01/09/2017 23:45:00	15	KLICKITAT PKWY	01/09/2017 10:37:00	01/09/2017 23:45:00	A2
201700575	SHOTS FIRED	01/09/2017 23:03:00	175	STEVENS ST	01/09/2017 23:03:00	01/09/2017 23:03:00	B1
201700575	DISCHARGING FIREARM, S	01/09/2017 23:03:00	175	STEVENS ST	01/09/2017 23:03:00	01/09/2017 23:03:00	B1
201700575	SIA REPORT	01/09/2017 23:03:00	175	STEVENS ST	01/09/2017 23:03:00	01/09/2017 23:03:00	B1
201700574	RETURNED MISSING PERSC	01/09/2017 22:30:00	172	WILSONVILLE ST	01/09/2017 12:07:00	01/09/2017 22:30:00	B2
201700574	MISSING PERSON	01/09/2017 22:30:00	172	WILSONVILLE ST	01/09/2017 12:07:00	01/09/2017 22:30:00	B2
201700570	OFFERING SEX FOR MONE	01/09/2017 22:13:00		INTERURBAN AVE S	01/09/2017 22:13:00	01/09/2017 22:13:00	B1
201700572	LARCENY OF PROPERTY UN	01/09/2017 22:07:00	145	COWLITZ PKWY	01/09/2017 22:07:00	01/09/2017 22:07:00	B1
201700572	A&B DANGEROUS WEAPO	01/09/2017 22:07:00	145	COWLITZ PKWY	01/09/2017 22:07:00	01/09/2017 22:07:00	B1
201700571	OPERATING AFTER REVOC	01/09/2017 21:45:00		KLAMATH RD	01/09/2017 21:45:00	01/09/2017 21:45:00	B2
201700568	SUPERVISOR'S REPORT	01/09/2017 21:42:00	83	CROOK RD	01/09/2017 21:42:00	01/09/2017 21:42:00	A2
201700567	RETURNED MISSING PERSC	01/09/2017 21:38:00	4	NINTH AVE	01/09/2017 21:38:00	01/09/2017 21:38:00	B2
201700567	MISSING PERSON	01/09/2017 21:38:00	4	NINTH AVE	01/09/2017 21:38:00	01/09/2017 21:38:00	B2
201700566	ILLEGAL POSSESSION OF F	01/09/2017 21:32:00	8	TRUDYDALE ST	01/09/2017 21:32:00	01/09/2017 21:32:00	A1

# DATA MANAGEMENT

For Tactical Crime Analysis



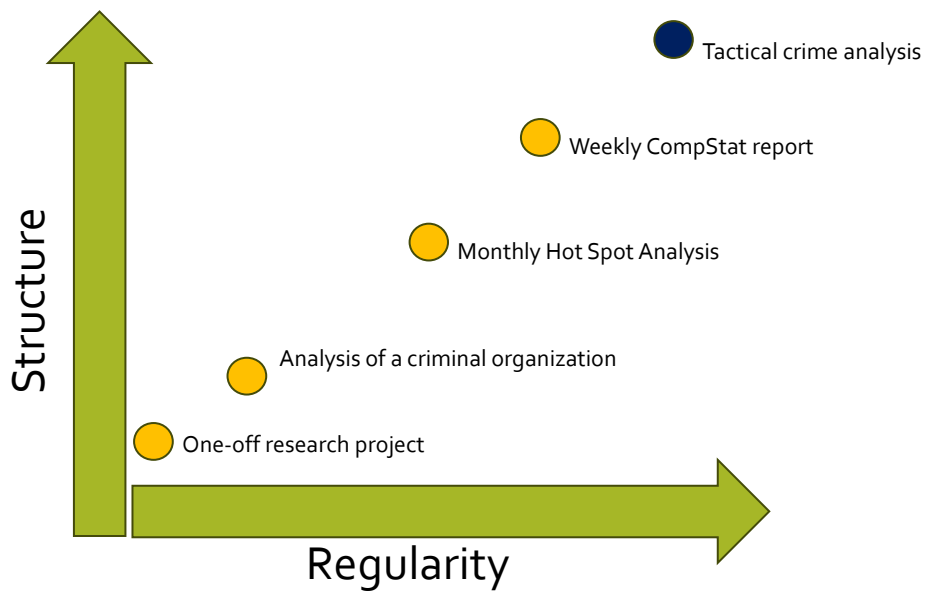
Christopher W. Bruce

Former President (2007-2012)  
Lifetime Certified Law Enforcement Analyst

Assistant Professor  
of Criminal Justice



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## What you need

Direct access to a complete set of timely, accurate data in its original relational form that allows for flexible querying, extraction, cleaning, supplementation, and synthesis with other data sets using whatever software tools you want.

### Calls for Service Crashes

- Crashes
- Arrests
- Citations
- Adjudication
- Probation/Parole
- Warrants
- Sex Offenders
- Pawn
- Others

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## 1. Direct Access / Software Tools

Case#	Offense	DTRReport	DTFrom	DTTo	StNo	Street	District	Dispo
20150C	UNFOUNDED - SHOTS FIRED	01/01/2015 00:24:00	01/01/2015 00:24:00	01/01/2015 00:54:00	1237	LAWRENCE ST	B2	
20150C	ASSIST OTHER (JURIS, POLICE, FIRE, MEDICA	01/01/2015 00:24:00	01/01/2015 00:24:00	01/01/2015 00:54:00	1237	LAWRENCE ST	B2	
20150C	DAMAGE TO CITY PROPERTY/VEHICLE	01/01/2015 00:12:00	12/31/2014 23:10:00	01/01/2015 23:50:00	60	ARCAND DR	A2	
20150C	UNFOUNDED - DOMESTIC	01/01/2015 01:05:00	01/01/2015 01:05:00	01/01/2015 01:35:00	61	TYLER PK	B1	Unfounded
20150C	UNFOUNDED - SHOTS FIRED	01/01/2015 01:03:00	01/01/2015 01:03:00	01/01/2015 01:33:00	0	ROGERS ST	B2	Unfounded
20150C	DISPUTE, DOMESTIC / ARGUMENT	01/01/2015 00:42:00	01/01/2015 00:42:00	01/01/2015 01:12:00	16	FERNALD ST	B	Other
20150C	ASSAULT BY DANGEROUS WEAPON	01/01/2015 00:51:00	01/01/2015 00:50:00	01/01/2015 01:20:00	150	AVON ST	A1	Arrest on Scene
20150C	DOMESTIC ASSAULT	01/01/2015 00:51:00	01/01/2015 00:50:00	01/01/2015 01:20:00	150	AVON ST	A1	Arrest on Scene
20150C	WIL/MALICIOUS / DESTROY PERS/REAL PR	01/01/2015 01:04:00	01/01/2015 01:04:00	01/01/2015 01:34:00	229	JACKSON ST	A2	Active
20150C	S1A REPORT	01/01/2015 01:15:00	01/01/2015 01:15:00	01/01/2015 01:45:00	43	TROTting PK RD	A1	Arrest on Scene
20150C	A&B DOMESTIC	01/01/2015 01:15:00	01/01/2015 01:15:00	01/01/2015 01:45:00	43	TROTting PK RD	A1	Arrest on Scene
20150C	MISSING PERSON	01/01/2015 00:58:00	01/01/2015 00:20:00	01/01/2015 01:28:00	62	CHAPEL ST	B2	Other
20150C	RETURNED MISSING PERSON	01/01/2015 00:58:00	01/01/2015 00:20:00	01/01/2015 01:28:00	62	CHAPEL ST	B2	Other
20150C	B&E NIGHT INT COMMIT FELONY BUILD/VESSEL	01/01/2015 01:27:00	12/31/2014 20:20:00	01/01/2015 01:51:00	897	VARNUM AV	A1	Active
20150C	A&B DOMESTIC	01/01/2015 01:24:00	01/01/2015 01:24:00	01/01/2015 01:54:00	53	LINCOLN ST	B1	Arrest on Scene
20150C	DOMESTIC A&B WITH DANGEROUS WEAPON	01/01/2015 01:24:00	01/01/2015 01:24:00	01/01/2015 01:54:00	53	LINCOLN ST	B1	Arrest on Scene
20150C	EVIDENCE COLLECTION REPORT	01/01/2015 01:24:00	01/01/2015 01:24:00	01/01/2015 01:54:00	53	LINCOLN ST	B1	Arrest on Scene
20150C	VIOLATION OF R/O (209A) DOMESTIC	01/01/2015 01:24:00	01/01/2015 01:24:00	01/01/2015 01:54:00	53	LINCOLN ST	B1	Arrest on Scene
20150C	DISPUTE, DOMESTIC / ARGUMENT	01/01/2015 01:48:00	01/01/2015 01:48:00	01/01/2015 02:18:00	33	ASH ST	B2	Other
20150C	GENERAL POLICE BUSINESS/ INFORMATION	01/01/2015 02:20:00	01/01/2015 02:20:00	01/01/2015 02:50:00	76	PLAIN ST	B1	Victim Uncooperative
20150C	A&B SIMPLE	01/01/2015 02:15:00	01/01/2015 02:15:00	01/01/2015 02:50:00	231	MOORE ST	B2	Other

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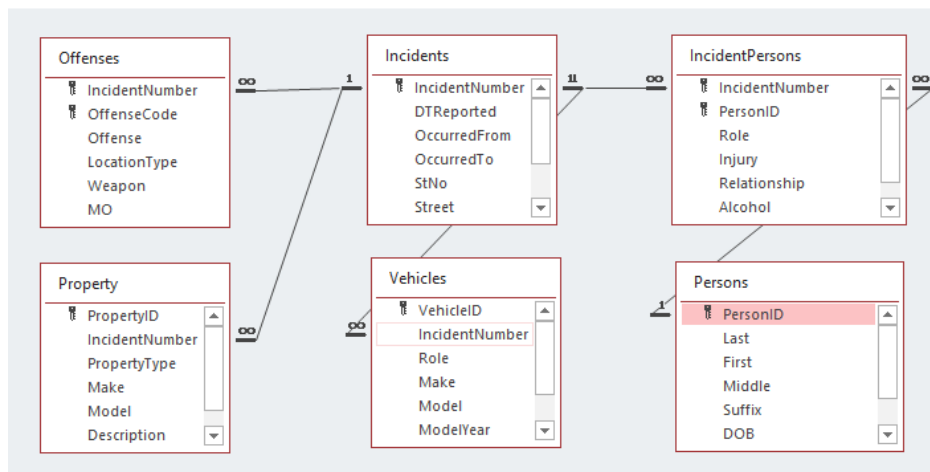
## Required Analytical Software

Software type	Examples
Relational querying	Microsoft Access, Tableau, Power BI, Microsoft Excel Power Query
Statistics and charting	Microsoft Excel, SPSS
Mapping	ArcGIS Pro, QGIS



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## 2. Original relational form



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## Relational (separate tables, linked)

Incidents		
IncNum	Date	Crime
2024032519	01/03/2024	Robbery
2024032923	01/05/2024	Burglary
2024033006	01/07/2024	Theft from Vehicle

One-to-many relationship

Property						
IncNum	Role	PropType	PropValue	Description		
2024032519	ST	Wallet	\$20	Brown Eckster		
2024032519	ST	Keys	\$2	House, car		
2024032519	ST	Cash	\$50	U.S. currency		
2024032519	ST	Mobile Phone	\$400	iPhone 8		
2024032923	ST	Television	\$450	Roku 55-inch		
2024032923	ST	Jewelry	\$500	Assorted silver, gold		
2024033006	ST	Mobile Phone Accessories	\$15	iPhone charger		

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## Not relational (one table only)

IncNum	Date	Crime
2024032519	01/03/2024	Robbery
2024032923	01/05/2024	Burglary
2024033006	01/07/2024	Theft from Vehicle

IncNum	Date	Crime	PropType1	PropVal1	PropType2	PropVal2	PropType3	PropVal3
2024032519	01/03/2024	Robbery	Wallet	\$20	Keys	\$2	Cash	\$50
2024032923	01/05/2024	Burglary	Television	\$800	Jewelry	\$500	Silverware	\$250
2024033006	01/07/2024	Theft from Vehicle	Cell phone charger	\$50				

IncNum	Date	Crime	PropRole	PropType	PropValue	PropDesc
2024032519	01/03/2024	Robbery	ST	Wallet	\$20	Brown Eckster
2024032519	01/03/2024	Robbery	ST	Keys	\$2	House, car
2024032519	01/03/2024	Robbery	ST	Cash	\$50	U.S. currency
2024032519	01/03/2024	Robbery	ST	Mobile Phone	\$400	iPhone 8
2024032923	01/05/2024	Burglary	ST	Television	\$450	Roku 55-inch
2024032923	01/05/2024	Burglary	ST	Jewelry	\$500	Assorted silver, gold
2024033006	01/07/2024	Theft from Vehicle	ST	Mobile Phone Accessories	\$15	iPhone charger

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## 3. Regular Access

### Acceptable Possibilities

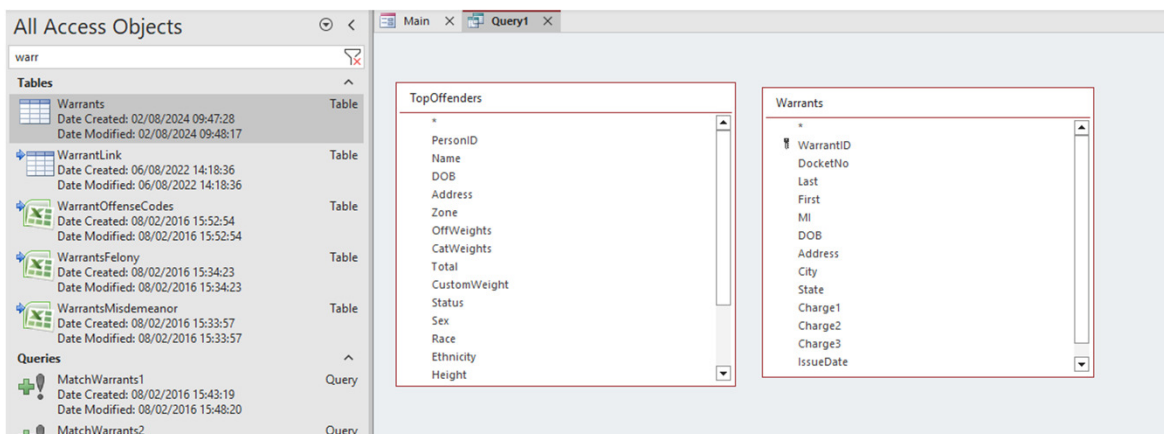
- Direct access to main database or regular replication of main database
  - ODBC
  - Odata
  - JDBC
- Regular downloads of all valuable fields in a series of files in common data format like .txt or .csv.

### Unacceptable

- Searches that must be conducted in the RMS itself
- Proprietary report designers
- Extracts/downloads of only part of the dataset
- Extracts/downloads that combine multiple tables into one\*
- "Call us and we'll provide you what you need."

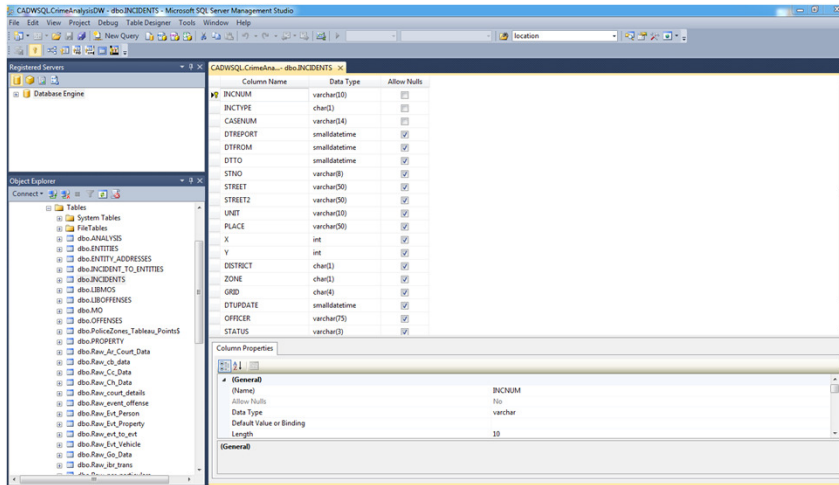
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## 4. Synthesis



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## Enterprise-level crime analysis database



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	Desktop DBMS	Server DBMS
Strengths	<ul style="list-style-type: none"> <li>Inexpensive</li> <li>Includes application-development tools and integrated reporting tools</li> <li>Easier to learn</li> <li>Many analysts use them; more opportunities for training, literature, help</li> </ul>	<ul style="list-style-type: none"> <li>Can handle more records</li> <li>Faster</li> <li>Fewer crashes and corruptions</li> <li>More features for user-level security</li> <li>Supports large number of users at once</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>Slower</li> <li>Poor user-level security options</li> <li>Poor network performance</li> <li>Size limitations</li> </ul>	<ul style="list-style-type: none"> <li>More expensive</li> <li>Difficult to learn; need IT help</li> <li>Need to learn other programs to design reports, forms, and other interfaces</li> </ul>

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## 5. Cleaning

### Common issues

- Wrong crime code
- [Date/time from] and [Date/time to] not entered or entered incorrectly
- Address reflects original call rather than crime location
- Incomplete address information
- No coordinates
- Duplications

### Solutions

- Formulas and expressions
- Macros
- Linked "fault/fix" tables
- Update queries
- Append queries
- Delete queries
- Manual review

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#### CRIME ANALYSIS RECAP

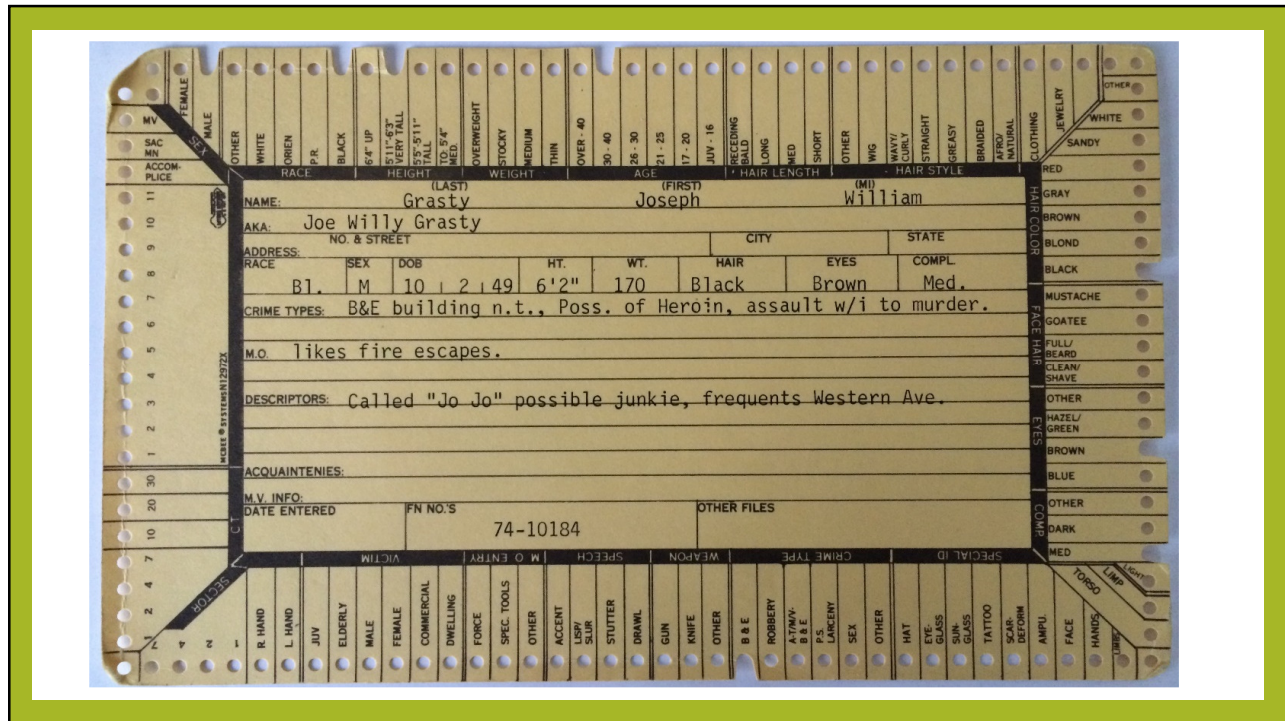
#### INDIVIDUAL ROBBERY

1 November 1976

SUSPECT INFORMATION	REPORT AREA	DATE & TIME	DAY OF WEEK	LOCATION OF OCCURRENCE	VIC	MO INFORMATION	WEAPON USED	LOSS/INJURY	RECORD NUMBER
1-MN 5'10", thin, beard, lsv pullover shirt & jeans 2-MN, heavy 3-MN 6'2 heavy	4 130	30Oct76 2200	Su	13 A/S and 16 S/S area of grocery store	MN 46 Sober	Vic had left store and was walking thru pk lot when he heard someone call his name over by his veh. As he approached, sus #1 grabbed him from behind and held him while #2 attempted to search vic's pockets. Vic fought off both sus until #3 hit vic w/ pipe. At this time other customers were coming out of grocery & sus ran away.	Pipe	No Loss - Victim suffered severe lacerations of head.	99368
<b>CONFIDENTIAL</b>									

Grassie, R. P., Macsas, C. J., & Wallace, W. D. (1977). *Crime analysis systems manual*. Washington, DC: U.S. Department of Justice, Law Enforcement Assistance Administration.

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## 6. Supplementation

- M.O. codes
- Crime analysis-specific categorizations
- Flags for reporting
- Multiple locations
- Coordinates
- More complete codes for:
  - Location types
  - Property types
  - Clearances
- Narrative summaries
- Pattern codes

**Officer:**  **Narratives** **Flags:**

WFJo awoke to find boyfriend Cameron Lonergan (WM, 24, of Bangor) stealing her Ritalin and Xanax. In ensuing fight, Poole hit her over the head with a lamp. Arrested on scene.

Disposition: Arrest

IncNum	Date/Time	Offense	Subcategory
2024113117	03/03/2024 07:55	Aggravated Assault	Bar Fight
2024143715	04/07/2024 17:02	Robbery	Mugging
2024186169	06/23/2024 13:40	Robbery	Bully
2024219535	06/24/2024 04:48	Robbery	Escalated Shoplifting
2024351575	06/25/2024 20:09	Simple Assault	Juvenile
2024448931	07/01/2024 01:26	Vandalism	Tagging
2024503142	08/02/2024 09:07	Noise	Loud Music
2024693359	08/28/2024 17:02	Sexual Assault	Acquaintance
2024776561	09/06/2024 10:48	Sexual Assault	Blitz

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## Summary

- Don't treat tactical crime analysis as if it's a new project every time.
- Approach the question of data strategically. Make a plan. Continually review and revise it.
- Demand direct access to data in its original relational from your vendor. Don't accept no for an answer.
- Analyze your data for what needs to be cleaned and supplemented. Make it part of your daily process.
- Create a database specifically for crime analysis. Feed crime and other data into it. Take classes that show you how to work with it.

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## Thank you!

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*Trainer and consultant in crime analysis  
and crime reduction*

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Crime analysis	Hot spot policing
Data access	DDACTS
Data management	COMPSTAT
Crime mapping	Pattern intervention
Crime statistics	Problem-solving

  
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CRIME ANALYSTS  
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