

SPADAC[®]
The Deciding Factor.

Fusion Center Analytics Project

29 September 2010

Corporate

- Founded in 2002
- Based in McLean, VA
- Staff: 119 employees, 8 locations
- 85% cleared, 65% with TS/SCI
- 57% PhD or Master's Degrees
- Top Secret facility clearance
SCIF complete 1st Q 2009



Where



Office Location



Analytic Team



Washington Area:

Skope

JIEDDO COIC

SCPC Counter Proliferation

DIA

NSA

Virginia State Fusion Center

FBI FTTTF

Florida:

SOCOM

CENTCOM

SOCSOUTH

New Jersey:

New Jersey State Fusion Center

OCONUS:

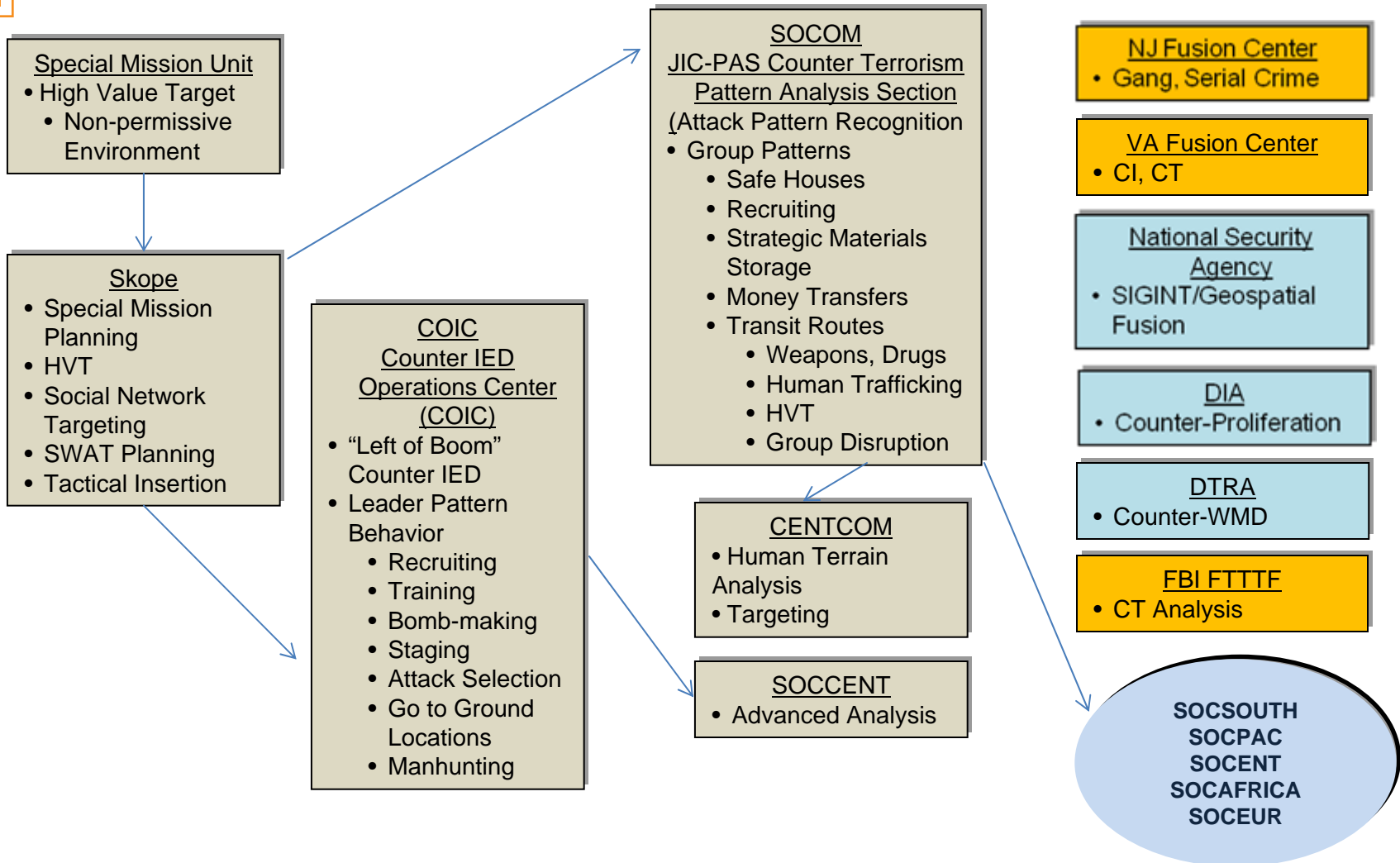
SOCAFRICA

SOCPAC

SOCCENT

SOCEUR

What Are We Doing CT, CN, CP, LE



FC1 History

- DHS Science & Technology Directorate awarded SPADAC a pilot project titled, “Geospatial Predictive Analytic Fusion Center Innovation;” an extension of earlier SBIR Phase III work.
- The project involved the insertion of Signature Analyst™ software, and skilled geospatial analysts, into two fusion centers.
- The fusion centers involved in this pilot project were the Joint Regional Intelligence Center (JRIC), in Norwalk, California; and the Regional Operations Intelligence Center (ROIC), in Trenton, New Jersey.

FC1 Objectives

- Technology transfer and knowledge transfer
- Geospatial analytic support for fusion center investigative products
- Operational Utility Assessment
- Requirements for transition to operational status

Benefits

- The benefits of this project align with the description of S&T's High-Priority Technology Needs in Information Sharing:
 - Geospatial analytics—in particular, the ability to correlate data and information for recognizing and potentially predicting terrorist attack patterns.
 - Data fusion from law enforcement and intelligence partners.
 - A toolkit of technologies, processes, and mechanisms to support gathering, analyzing, managing, sharing, and protecting information.

FC1 Accomplishments

- Technology transfer and knowledge transfer
 - “All crimes, all hazards” analytic support
 - Created “success stories” and use cases
 - TTPs developed and shared to support local issues
- Geospatial analytic support for fusion center investigative products
 - Property crimes (burglary, auto theft, vandalism, cargo theft/ theft from delivery vehicles)
 - Violent crimes (robbery, shootings, assault, rape, murder)
 - CT/ CIP
 - Other (threats to police, highway safety)
- Deliverables
 - *“Operational Utility Assessment”*
 - *“Requirements for Transition to Operational Status”*

Challenges and Course of Change

- All crimes, all hazards results – great!
- Transition from what we learned to new set of objectives (CT/ CIP)
 - ROIC (CIKR)
 - Virginia FC (Terrorism Finance, Homegrown Terrorism/ Radicalization, SAR, CIP)
- Coordinate with SLPO for Fusion Center requirements
- Align with DHS priorities and initiatives
- Plan for transition to operational status
 - Transition Plan
 - Training

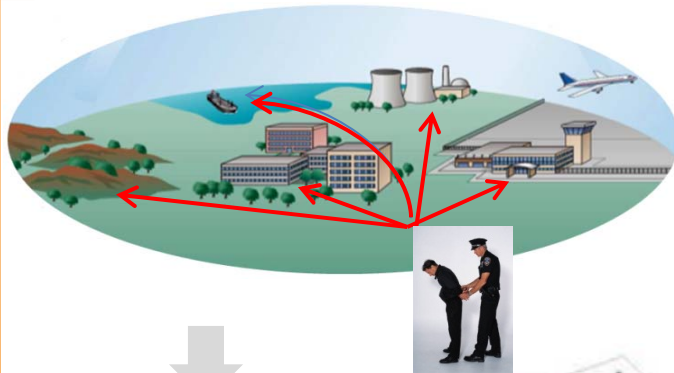
FC2 Executive Summary

- This proposed project has the goal of planning the transition for the current DHS S&T geospatial statistical analytic project in order to move from a pilot to operational use in fusion centers.
- Specific Objectives of the project are:
 - Perform Geospatial Analytics in Fusion Centers
 - Develop case studies that will be used in development of training materials
 - Exchange analytic methods to test the teaching of techniques among fusion centers
 - Develop Pilot Training Module
 - Support pilot training by participating in pilot training development and execution
 - Development of TTPs and use cases
 - Pilot Video Collaboration Training
 - Develop Transition Plan

FC2 Status

- ROIC
 - Ongoing provision of “all crimes, all hazards” analytic support
 - Property crimes
 - Violent crimes
 - Other
 - Continued creation of “success stories” and use cases
 - Ongoing development of TTPs developed to support local issues
 - Outreach to expand purview to include CT and CIP
- Virginia Fusion Center
 - Focus on CT, Homegrown Terrorism/ Radicalization, CIP
 - Creation of “success stories” and use cases
 - Ongoing development of TTPs developed to support local issues
- Plan for transition to operational status
 - Transition plan
 - Training

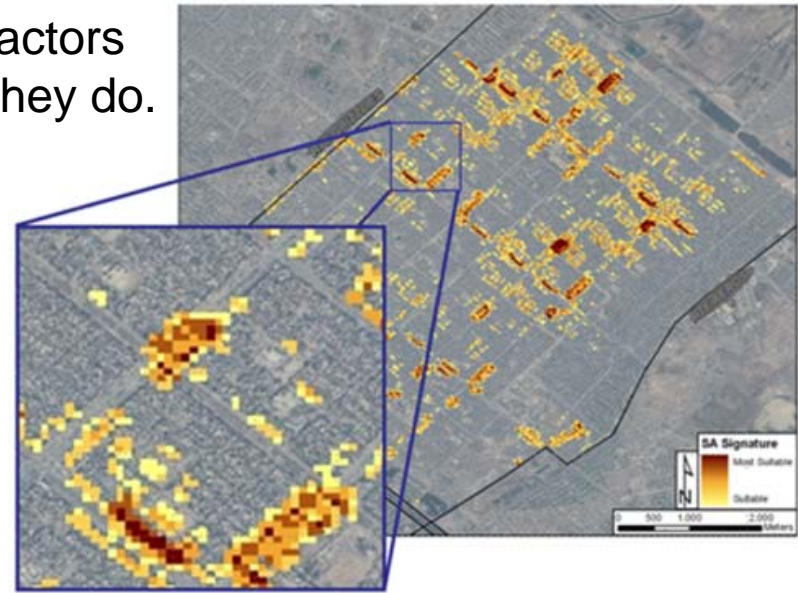
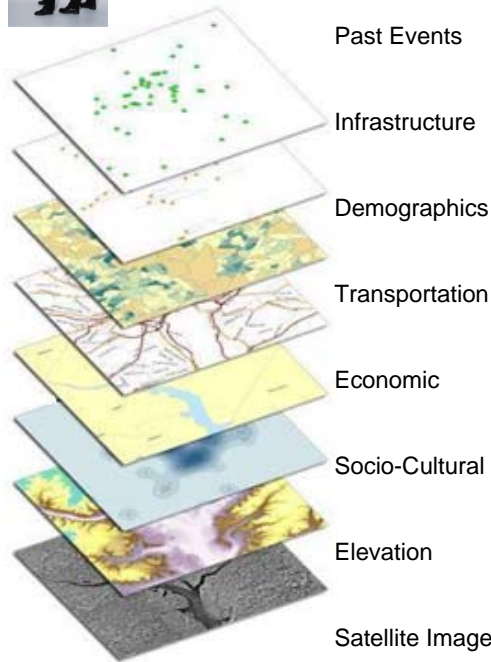
Geospatial Predictive Analytics uses past events to predict locations for future events



People are influenced by conscious and unconscious factors in everything they do.

Geospatial Predictive Analytics statistically characterizes the environment where past actions took place ...

100's or 1000's of Factors



... and then identifies statistically similar places where the likelihood is highest for future actions to occur.

Geospatial Predictive Analytics

A Tool for Intelligence-Led Policing

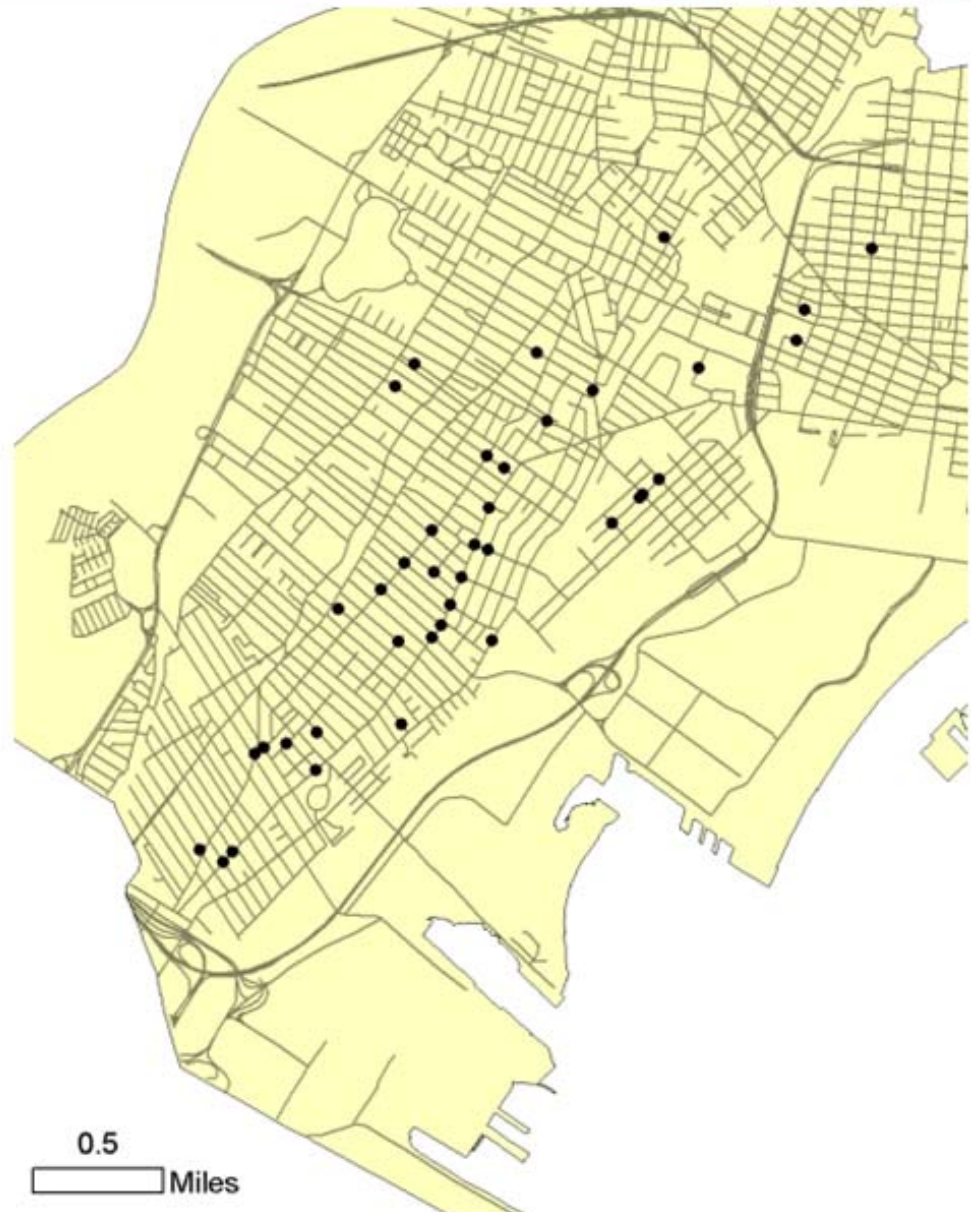


Jersey City Shootings Example



Black dots indicate location of shootings between December 2008 and March 2009.

Our goal is not just to know where things happened in the past but to anticipate where they are most likely to happen in the future. That is the basis of Intelligence-Led Policing.



Geospatial Predictive Analytics



The color indicates areas which are geospatially similar to locations at which shootings occurred historically.

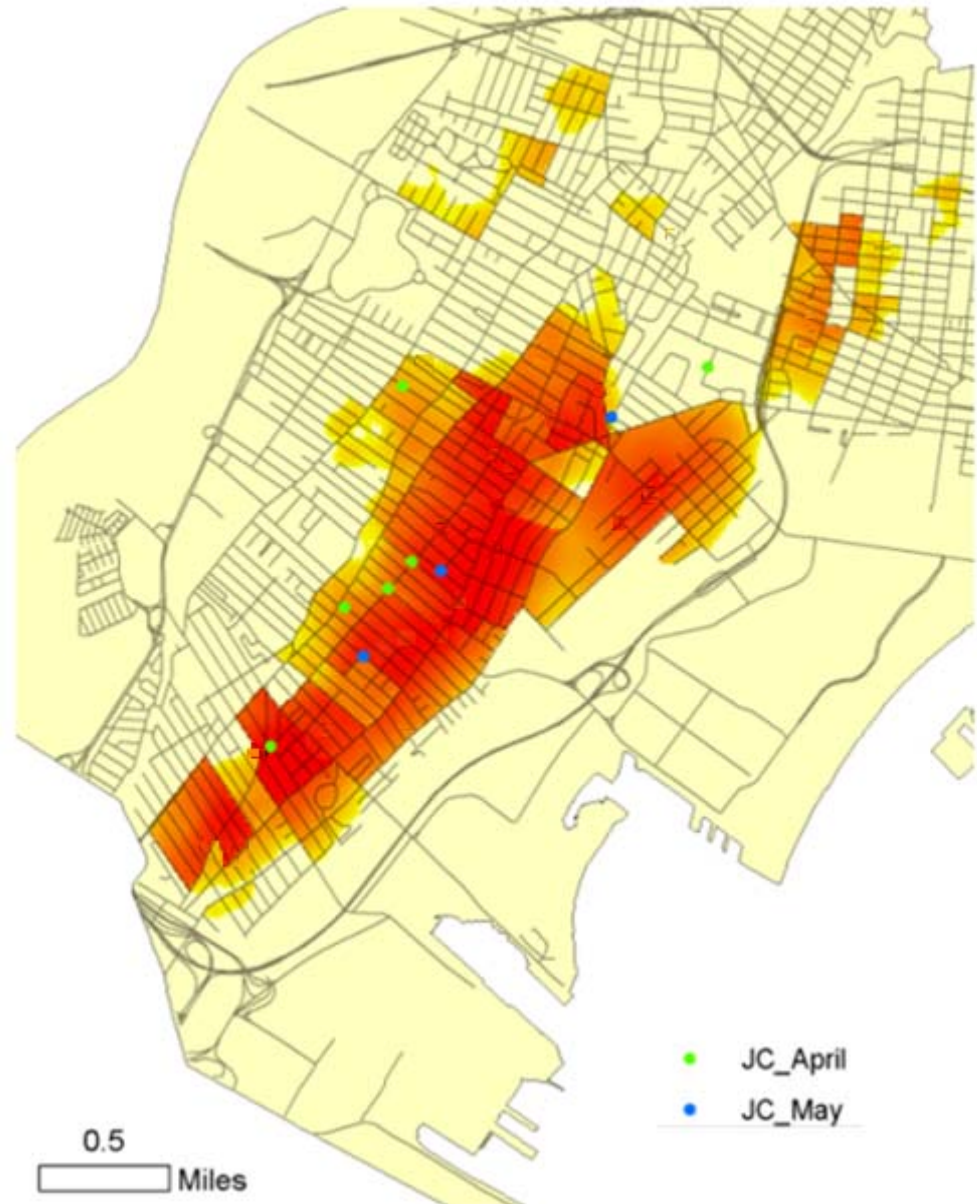
The darker red, the higher the likelihood that if a shooting occurs, it will be in a geospatially similar location.

Of all the potential area for shootings, the colors predict to the top 15% most likely shooting area.



Using the forecast of locations for future shootings from December – March, all but one of the shootings that occurred in April and May (green and blue dots) fell into the highest 15% likelihood area as predicted.

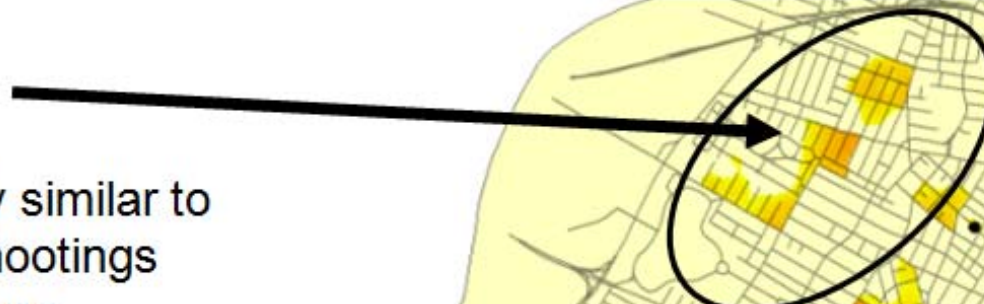
The model will learn from the one event that fell outside and improve in the future.



Lessons to Learn



Note this area ...

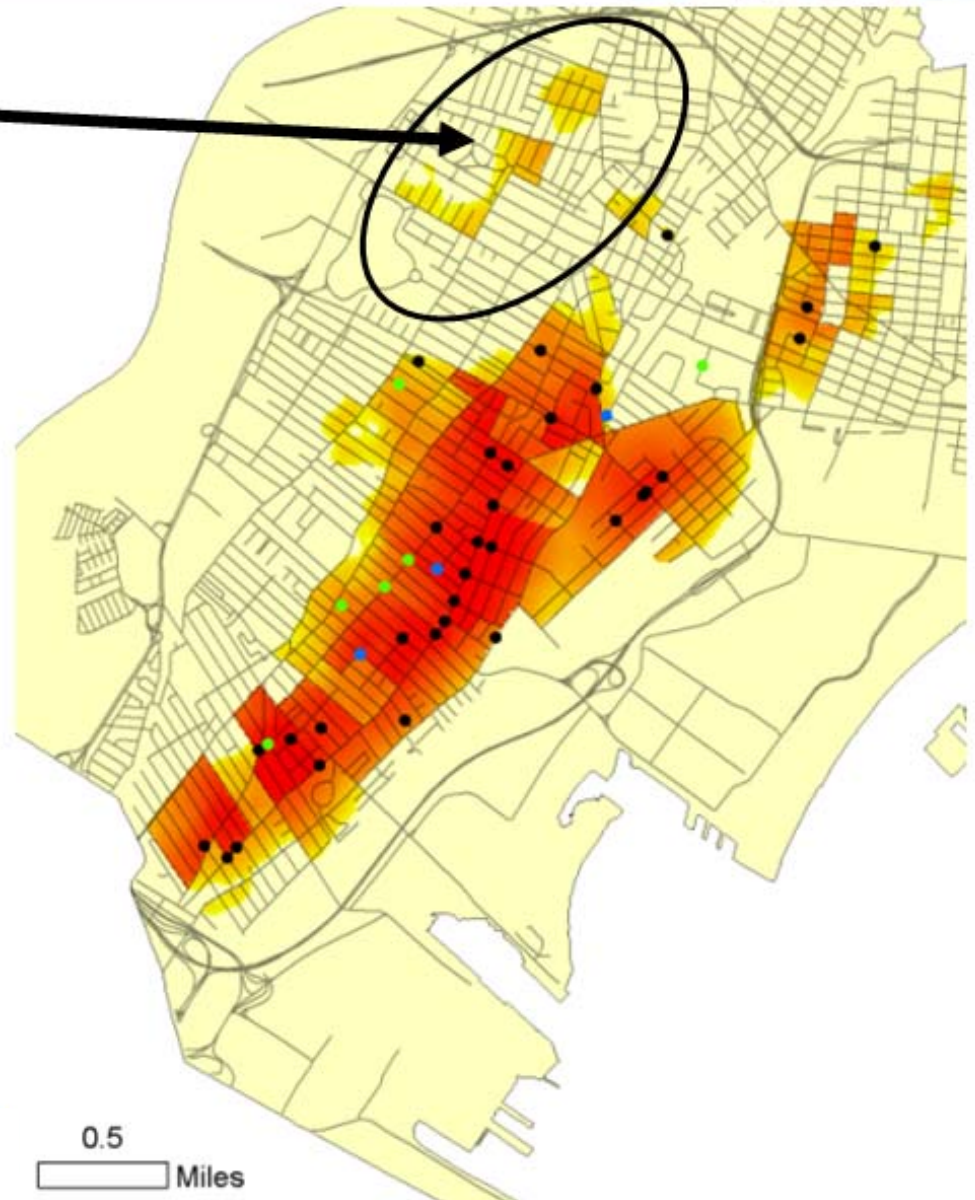


While geospatially similar to the area where shootings occur, there were no shootings in this area since December.

Is it simply a matter of time?

Or is something positive being done in that area that could be replicated elsewhere?

What can we do to make sure?



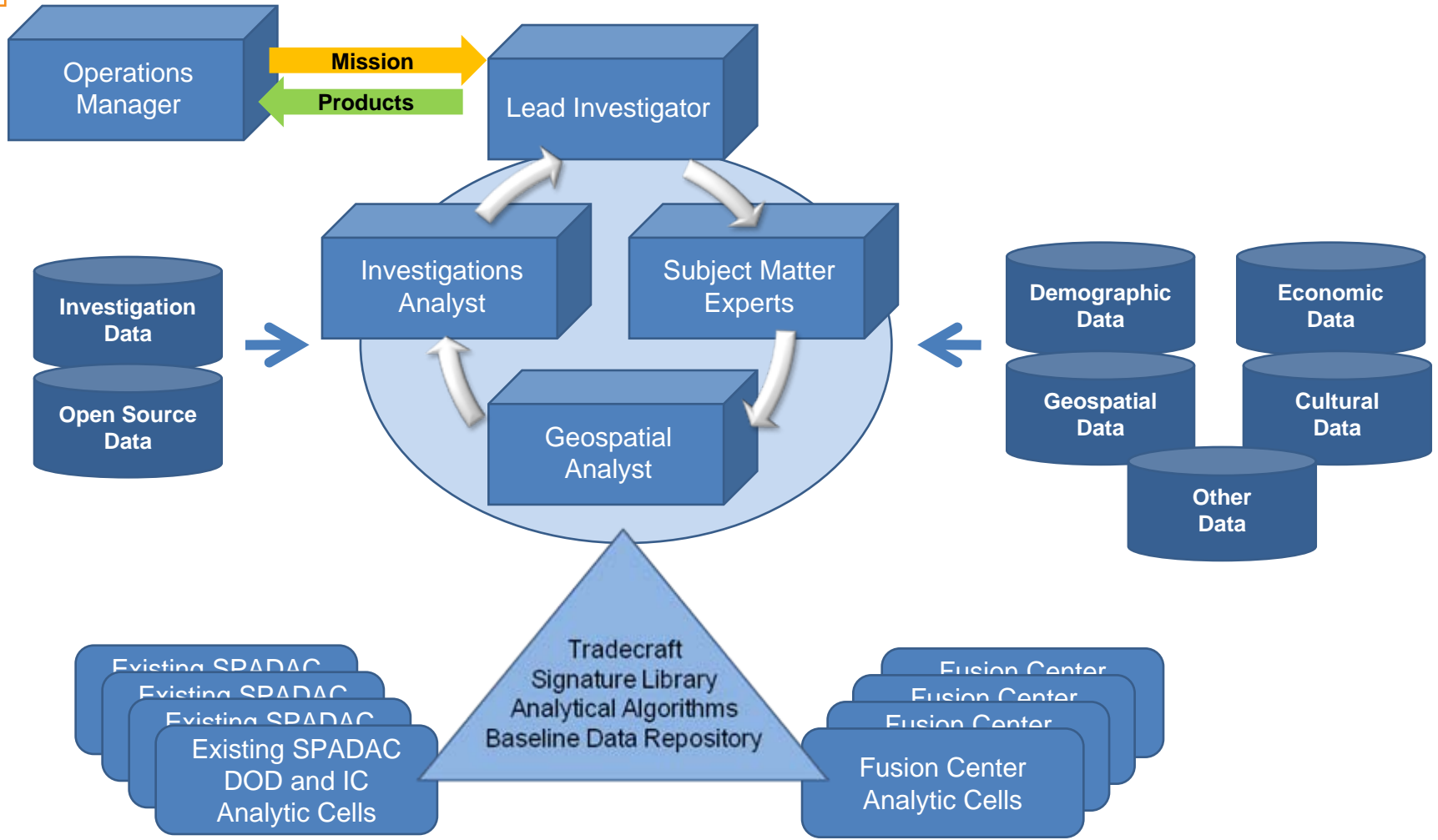
A shooting occurred where predicted.

Intelligence-Led Policing calls for using this predictive analytic information in advance, by sharing it and making strategic and tactical decisions to *avoid* an incident, rather than just respond.



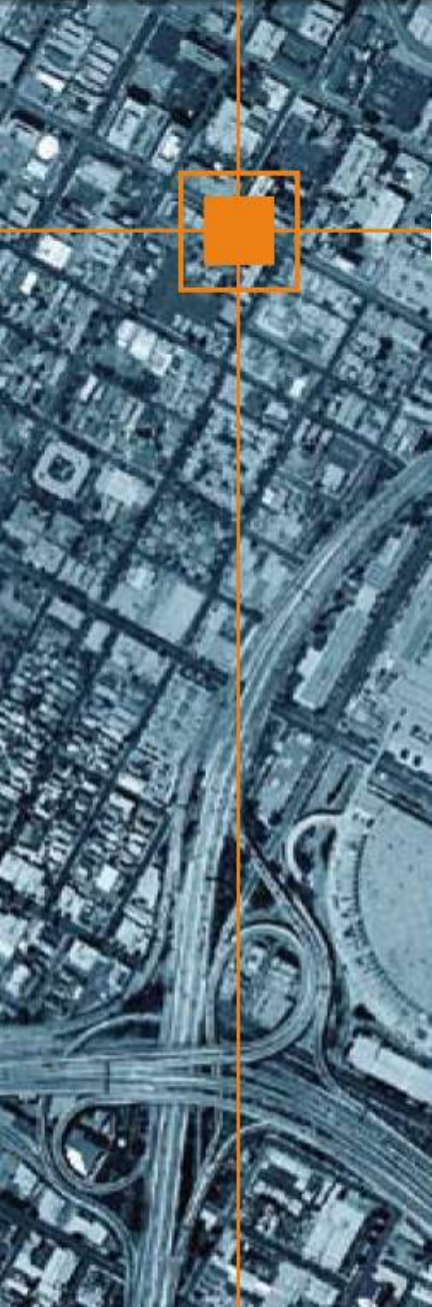
"all crimes, all hazards, all threats, all the time"

Concept of Operations and Capabilities that Work for Fusion Centers



The Capability is Well-Suited for Transition from DHS to all Fusion Centers

- The blending of technology and analytic tradecraft works for the fusion centers.
- CONOPS and Transition plans being developed for several deployment options
 - Individual Fusion Center
 - Regional Based Collaboration Capability
 - National Reach Back Collaboration Capability



SPADAC Fusion Center Analytics

Colleen McCue, PhD

Project Manager

Colleen.McCue@SPADAC.com

703.328.4328