The Advancement of the BID Movement

- BIDs in the United States
- Context (Historic, Political, Economic)
- The Emergence of the BID in Philadelphia
- Center City District
- Other BIDs in Philadelphia
- State Enabling Legislation *(comparative analysis)*
- Empirical Work on BIDs

Empirical Work on BIDs

STUDY ONE

- **Do BIDs services impact crime patterns?**

STUDY TWO

- **If so, do BID services push criminal activity to adjacent neighborhoods?**

Research Design

- **Study One**

- **Method: Regression Analysis**

- **Research Questions:**
  Do BID services discourage crime (clusters)?

  Data Sources: Crime (1998 & 1999), Cartographic, Census, etc.
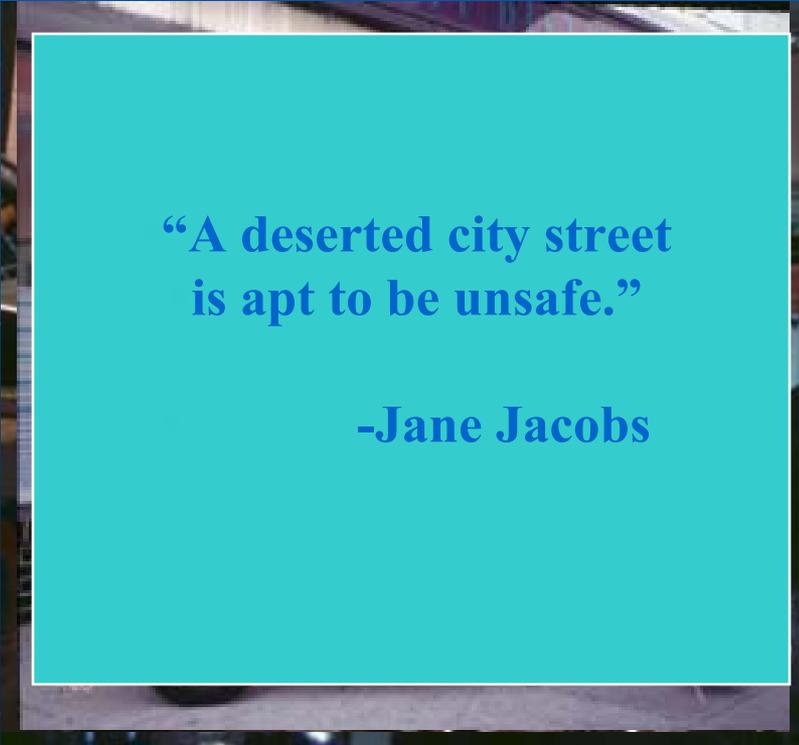 *Property = Burglary, Theft, Auto Theft*
  Violent = Rape, Robbery, Aggravated Assault

- **Related Research: Kelling, Jacobs, Knox and Mantel**

Rationale/Context

BIDs focus on "clean and safe" by…

> **"A deserted city street is apt to be unsafe."**
>
> **-Jane Jacobs**

- **enhancing *informal* surveillance**

- **enhancing *formal* surveillance**

Context

- **City of Philadelphia**
- **Integrated Municipal GIS**
- **No Data Layer for 9 BIDs**
- **Primary Data Collection - Surveys and Interviews**

Crime Hot Spots

Spatial Clusters

(Area, Grid, and Point)

Space-time Clusters

(Knox, Mantel, and K-function)

Customized GIS

Conceptual Framework
- A new point-level method of analyis
- Simultaneously considers space and time
- Captures information about how a pattern grows

Operational Framework
- Unit of analysis is the individual crime event
- GIS calculates a cluster value *(using Avenue)*
- Analyst determines spatial and temporal parameters
- Treats each incident as if it initiated the cluster
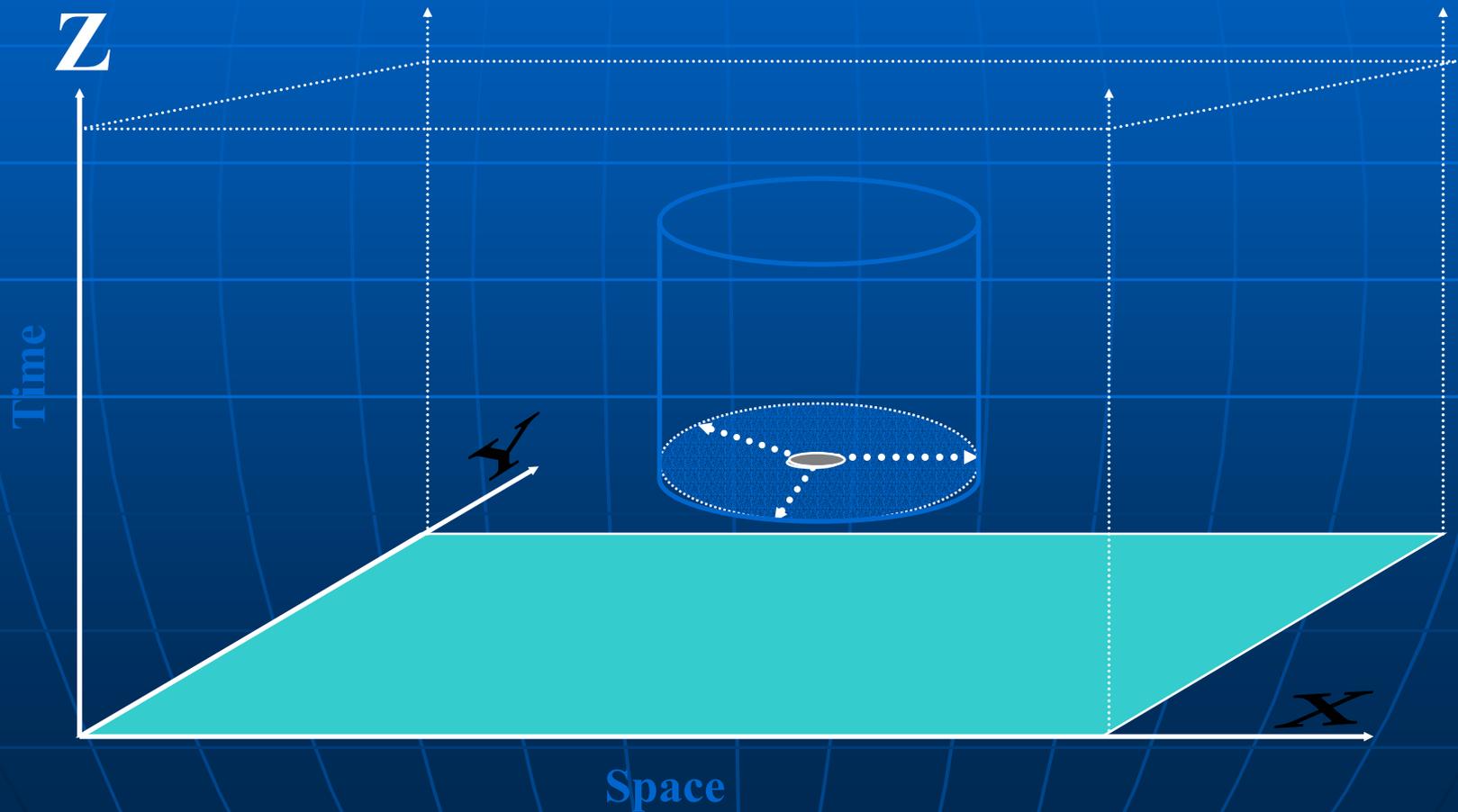- Excludes those crimes already counted

Note
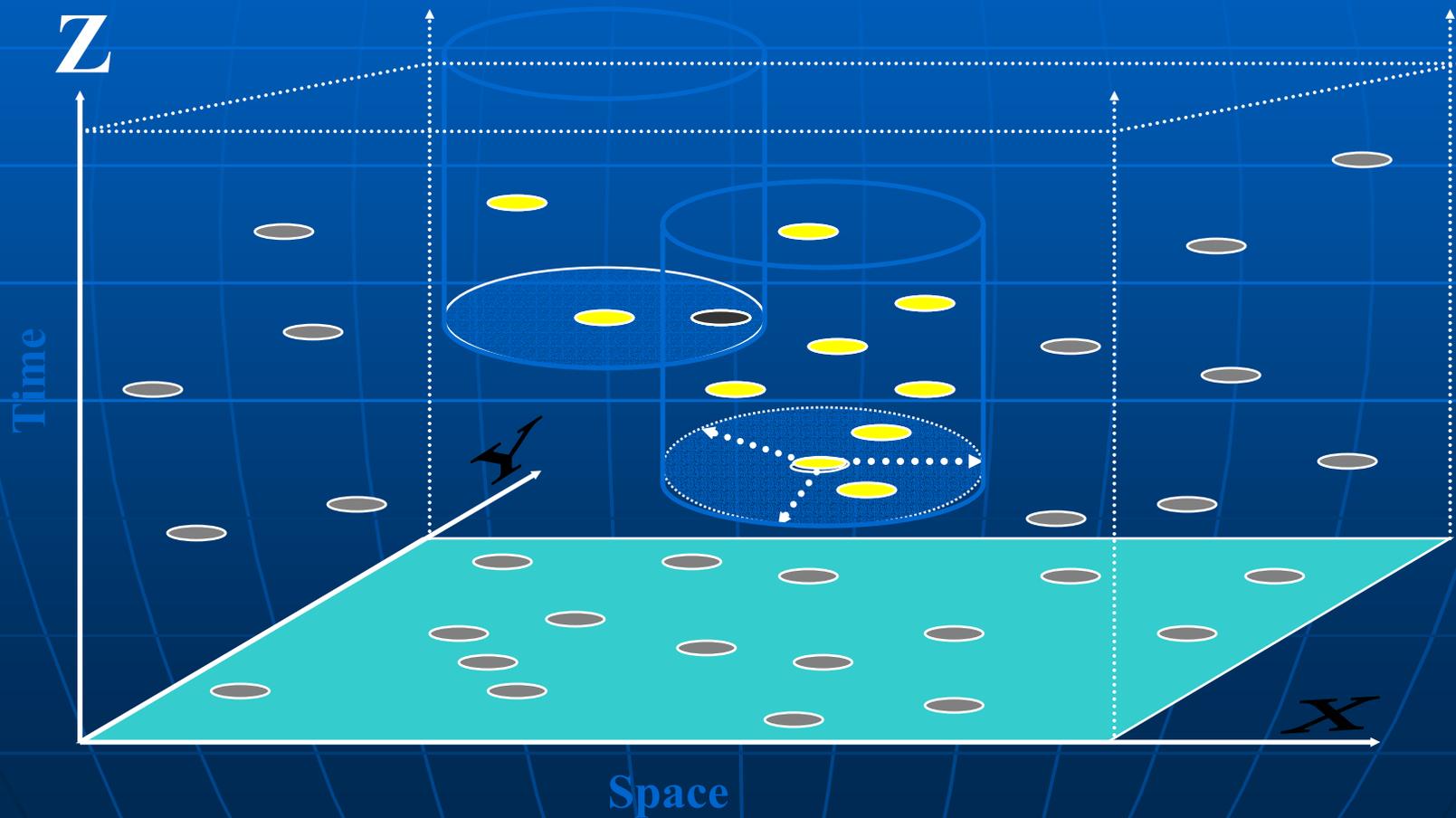- GIS can compute cluster values for 10,000 records in 4 minutes

Spatio-temporal Analysis

Z

Time
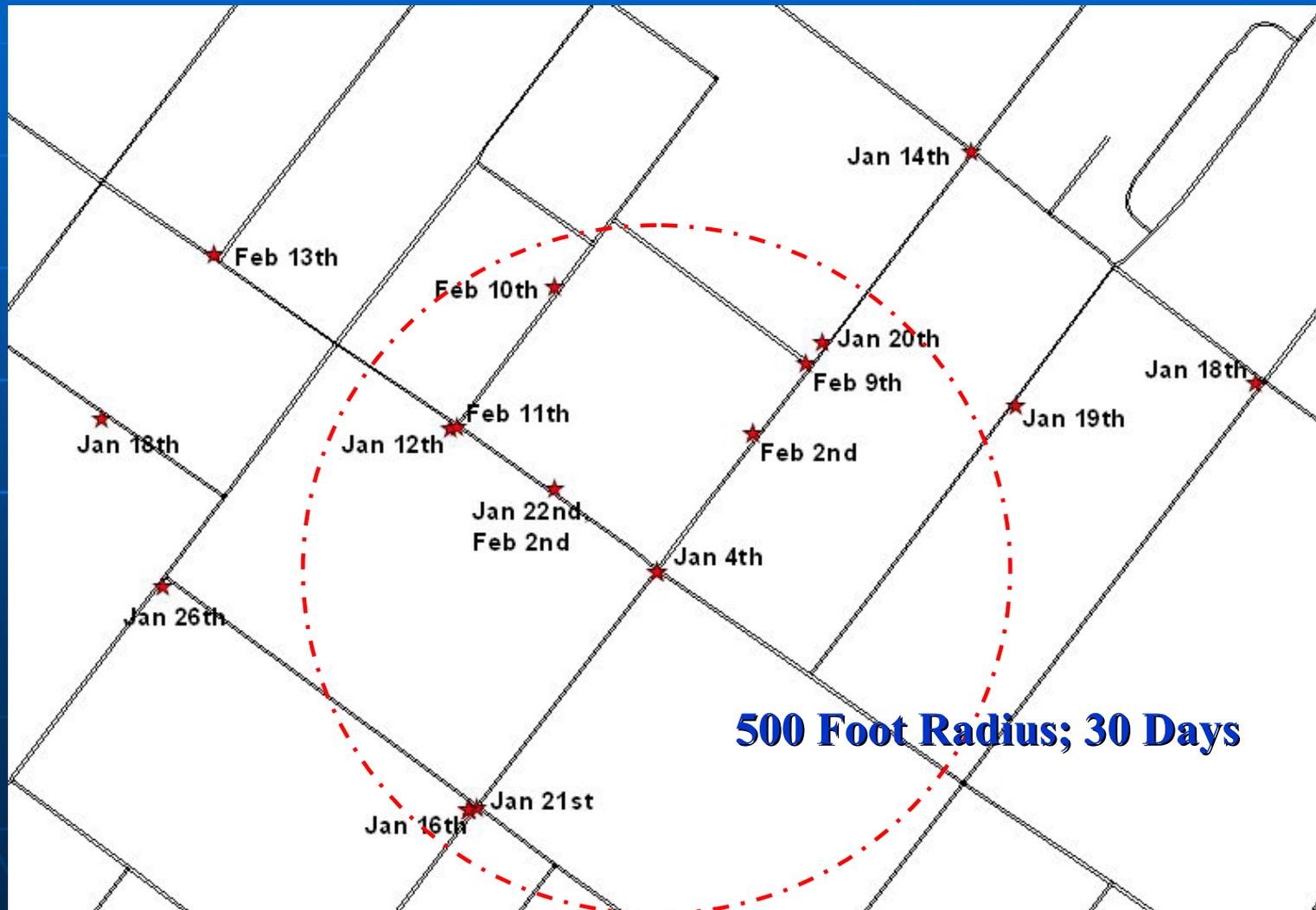
Y

◯ **X,Y,Z**

X

Space
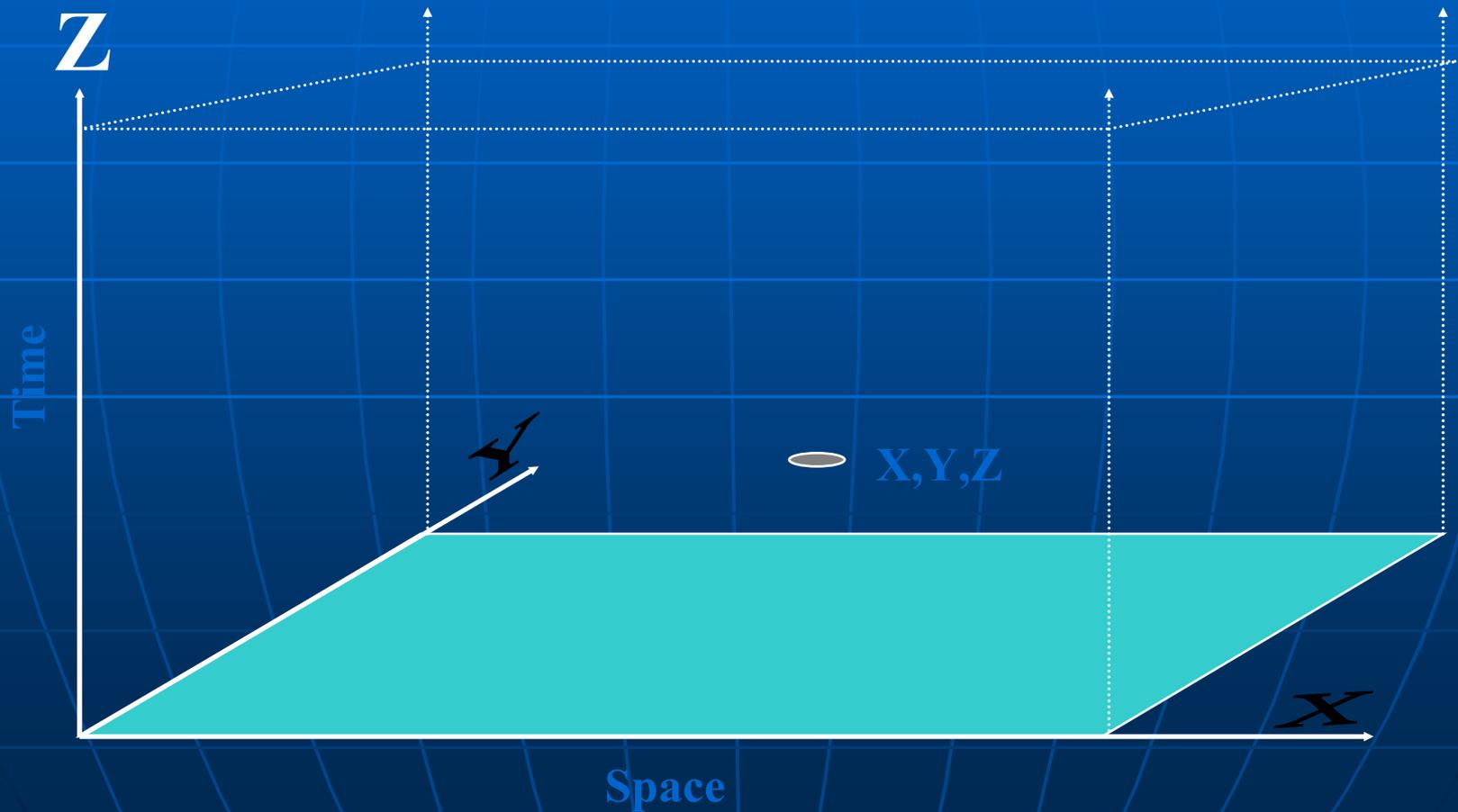
Spatio-temporal Analysis

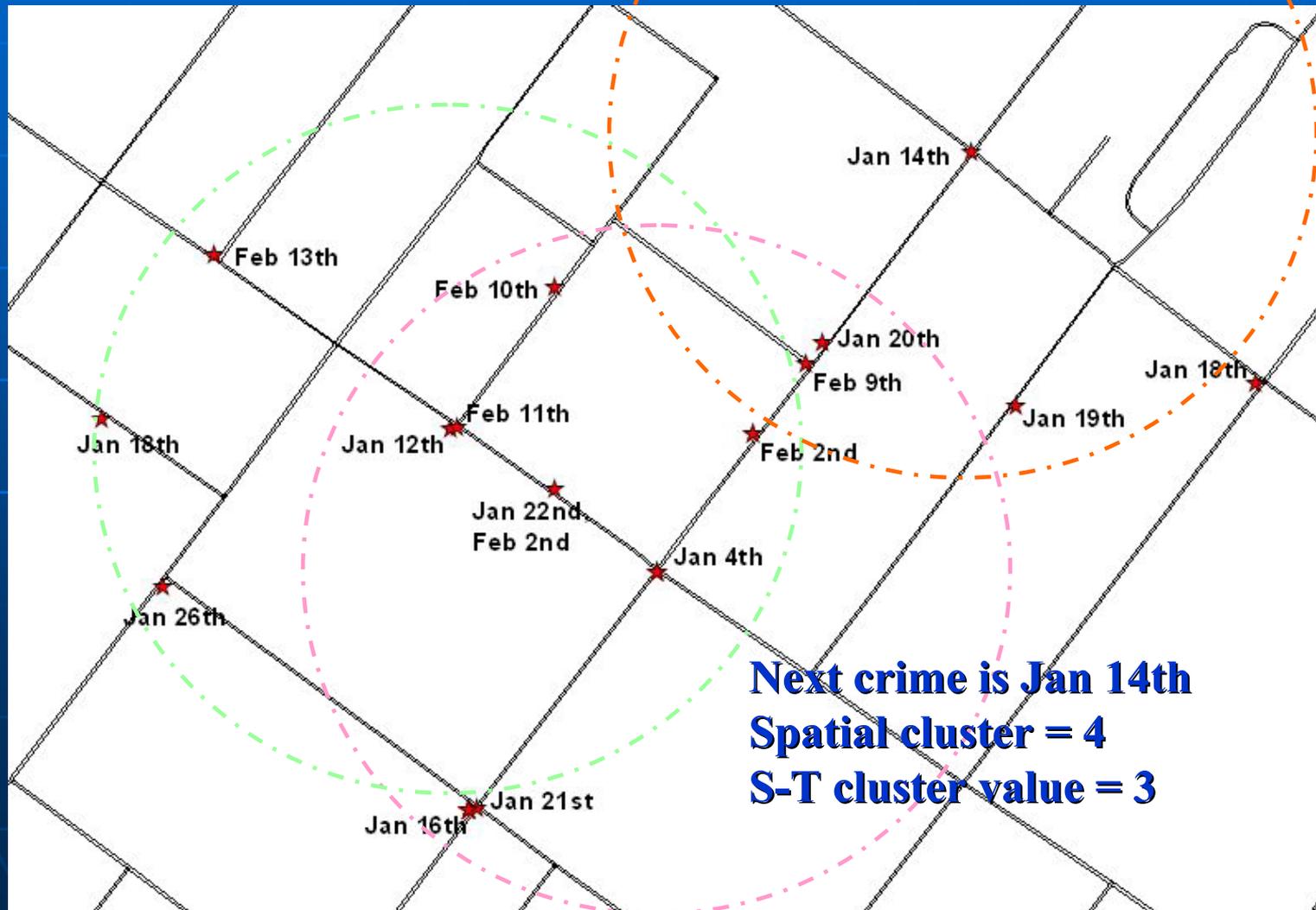# Spatio-temporal Analysis

Calculating Cluster Value

500 Foot Radius; 30 Days

Calculating Cluster Value

First crime is Jan 4th
Spatial cluster = 11
S-T cluster value = 8

Calculating Cluster Value

Next crime is Jan 12th
Spatial cluster = 10
S-T cluster value = 4? or 0?

Calculating Cluster Value

Jan 14th

Feb 13th

Feb 10th

Jan 20th

Feb 9th

Feb 11th

Jan 12th

Jan 18th

Jan 19th

Jan 18th

Feb 2nd

Jan 22nd
Feb 2nd

Jan 4th

Jan 26th

Jan 21st

Jan 16th

Next crime is Jan 14th
Spatial cluster = 4
S-T cluster value = 3
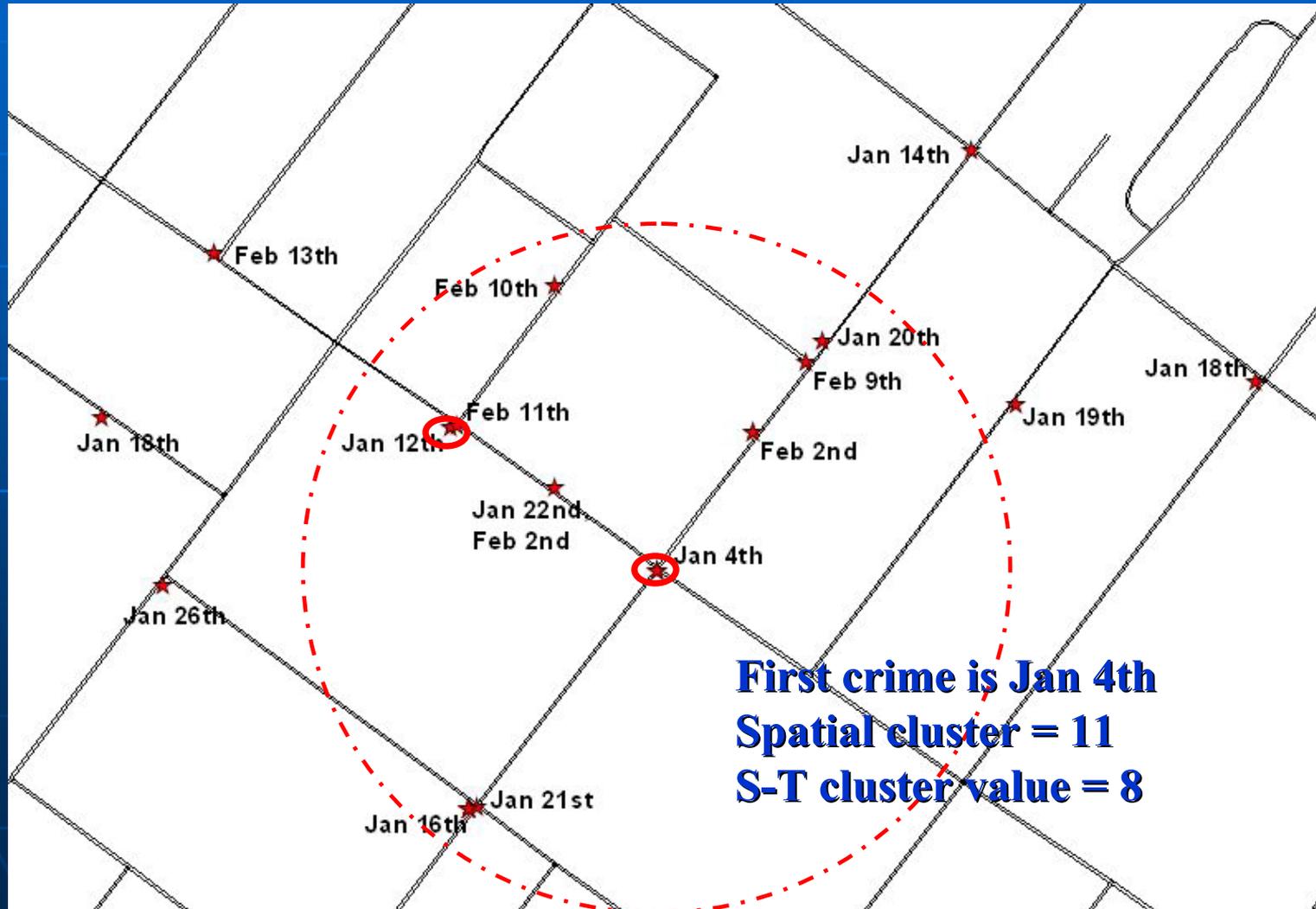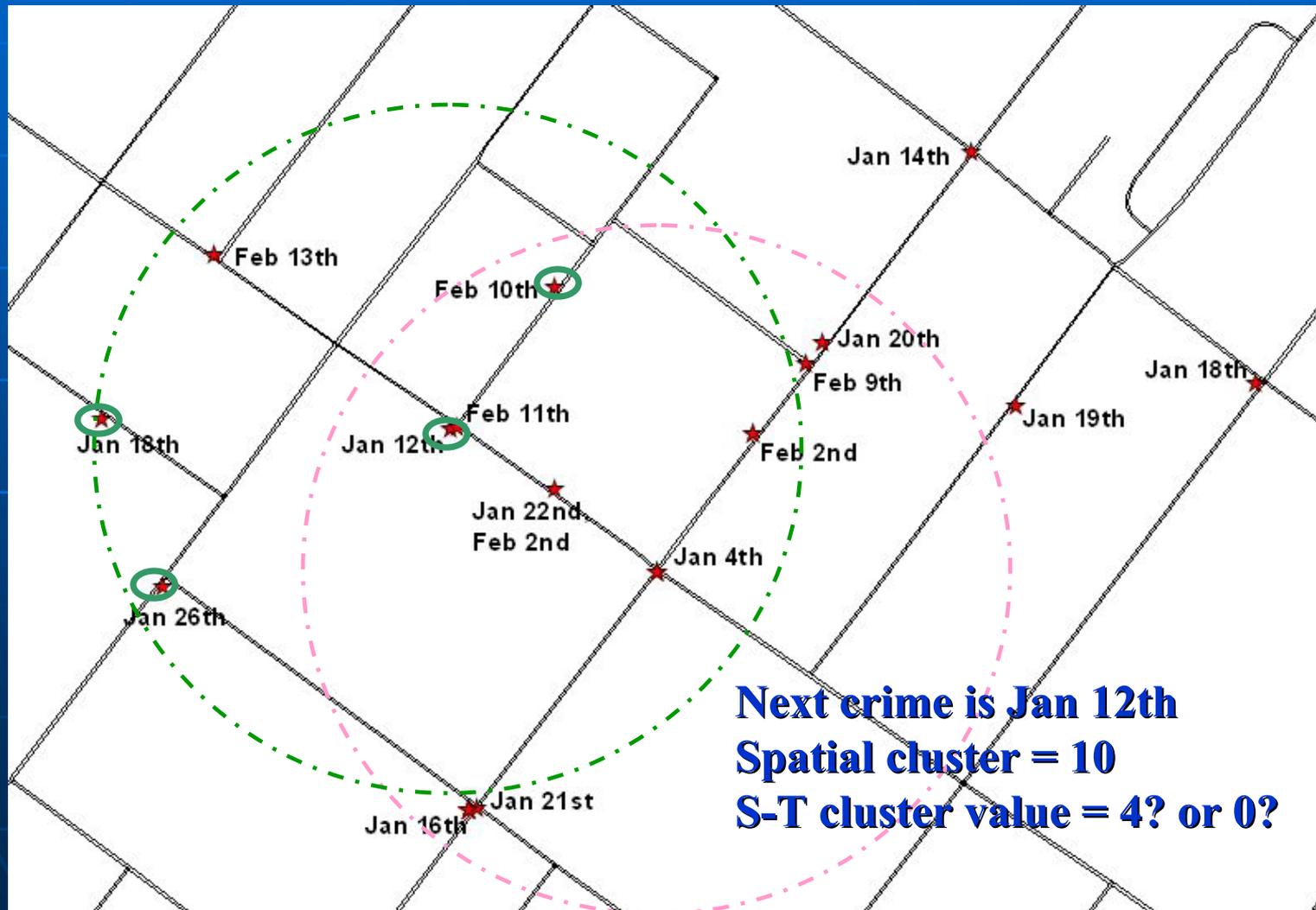
Data

Dependent Variable:	**Violent Crime Clusters** **Property Crime Clusters**
Independent Variables:	**Security Staff (FTE)** **Sanitation Staff (FTE)**
Control Variables:	**Number of Businesses** **Zoned Residential** **Median Household Income**

Findings

PROPERTY CRIME
- Explanatory power of model is .297 (R-squared)
- Security regression coeficient is negative and significant
- Sanitation is positive and significant

VIOLENT CRIME
- Explanatory power of model is .085 (R-squared)
- Clusters are an inappropriate measure for predicting violent crime

Research Design

- **Study Two**

- **Methods: Summary Statisitcs & Time Series Analysis**

- **Research Question:**
  Do BID services push criminal activity to adjacent neighborhoods?

- **Data Sources: Crime (1998 through 2001) and Cartographic**
  Property = Robbery, Burglary, Theft, Auto Theft
  Quality of Life = Vandalism, Prostitution, Drug Activity, Drunkeness, Disorderly Conduct

- **Related Research: McIver, Spiegel, and Hellman**

Context
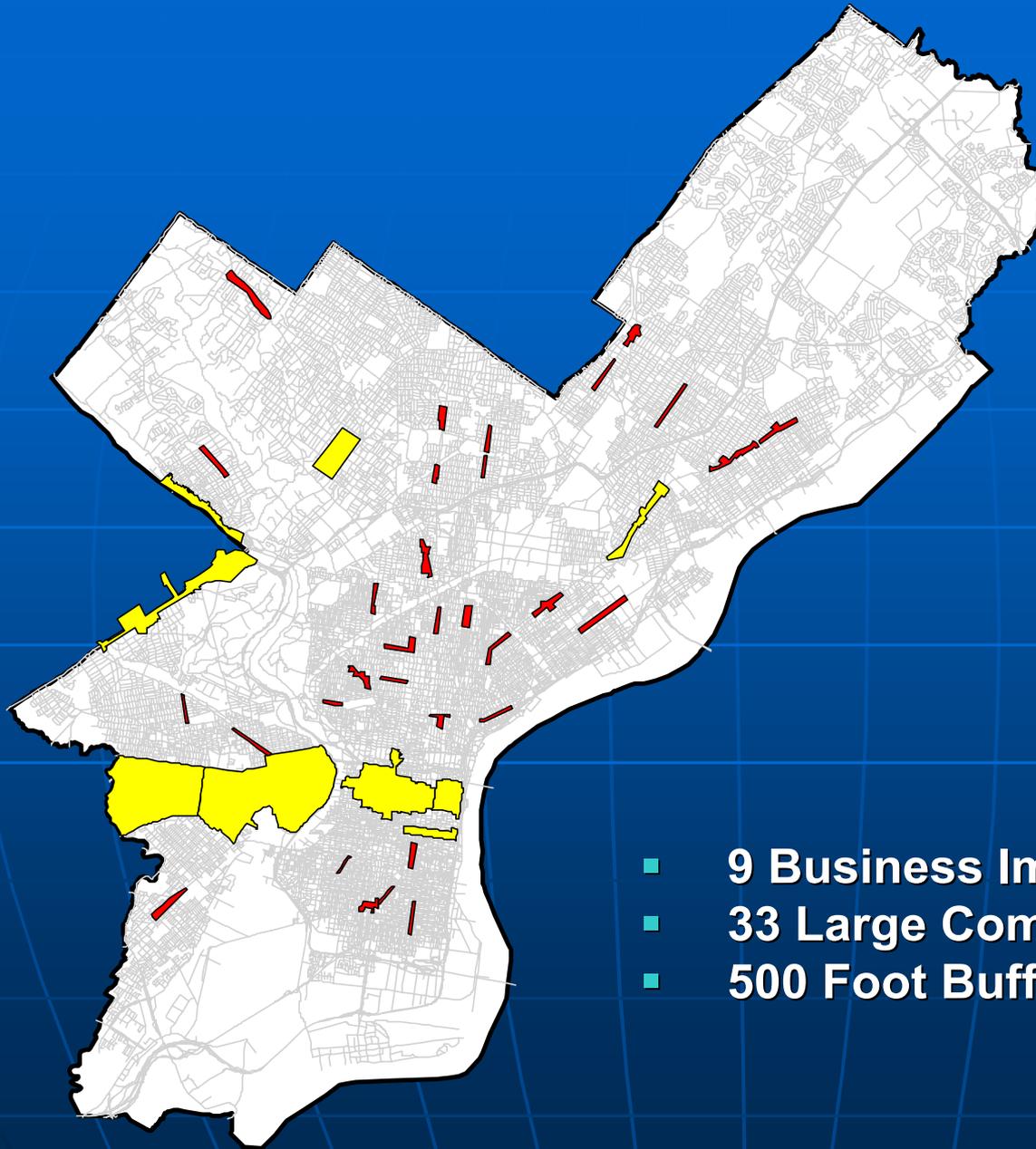
- 9 Business Improvement Districts
- 33 Large Commercial Areas
- 500 Foot Buffer

Empirical Work on BIDs

- Property Crimes in BIDs and Commercial Areas

Commercial Areas	1998	1999	2000	2001	
	4,470	4,421	4,019	4,071	-9%

Business Improvement Districts	1998	1999	2000	2001	
Center City District	5,771	5,162	4,336	4,328	-25%
South Street	892	779	723	592	-34%
Germantown	601	449	384	398	-34%
Frankford	398	380	419	412	4%
Manayunk	221	208	237	149	-33%
City Ave	451	405	286	259	-43%
Old City	665	643	547	493	-26%
University City	3,537	3,490	4,000	3,590	1%
Mercy-Health	1,990	2,136	1,833	1,686	-15%
Total	14,526	13,652	12,765	11,907	-18%

Empirical Work on BIDs

- Property Crimes adjacent to BIDs and Commercial Areas

Adjacent Commercial Areas	1998	1999	2000	2001	
	2,832	2,956	2,817	2,803	-1%

Adjacent Business Improvement Districts	1998	1999	2000	2001	
Adjacent Center City District	991	792	663	616	-38%
Adjacent South Street	409	296	254	249	-39%
AdjacentGermantown	297	213	152	159	-46%
Adjacent Frankford	302	295	263	272	-10%
Adjacent Manayunk	118	113	107	82	-31%
Adjacent City Ave	219	181	197	165	-25%
Adjacent Old City	151	98	72	64	-58%
Adjacent University City	277	316	266	222	-20%
Adjacent Mercy-Health	379	389	313	276	-27%
Total	3,143	2,693	2,287	2,105	-33%

Empirical Work on BIDs

- Quality of Life Crimes in BIDs and Commercial Areas

Commercial Areas	1998	1999	2000	2001	
	2,980	3,007	3,017	3,335	**12%**

Business Improvement Districts	1998	1999	2000	2001	
Center City District	2,132	1,200	1,011	1,389	-35%
South Street	525	484	568	559	6%
Germantown	179	110	134	203	13%
Frankford	515	449	334	311	-40%
Manayunk	195	151	139	107	-45%
City Ave	103	91	95	74	-28%
Old City	186	150	167	198	6%
University City	1,280	1,173	1,164	1,266	-1%
Mercy-Health	1,199	1,191	1,063	1,627	36%
Total	6,314	4,999	4,675	5,734	**-9%**

Empirical Work on BIDs

- Quality of Life Crimes adjacent to BIDs and Commercial Areas

Adjacent Commercial Areas	1998	1999	2000	2001	
	2,859	3,161	2,587	3,283	**15%**

Adjacent Business Improvement Districts	1998	1999	2000	2001	
Adjacent Center City District	477	276	227	294	-38%
Adjacent South Street	228	137	150	206	-10%
AdjacentGermantown	88	62	63	83	-6%
Adjacent Frankford	302	203	218	286	-5%
Adjacent Manayunk	135	73	109	86	-36%
Adjacent City Ave	39	36	75	60	54%
Adjacent Old City	38	14	11	19	-50%
Adjacent University City	175	144	115	138	-21%
Adjacent Mercy-Health	217	288	261	290	34%
Total	1,699	1,233	1,229	1,462	**-14%**

Findings

PROPERTY CRIME

- **Rate is decreasing more rapidly in BIDs than in commercial areas**
  (9% in Commercial Areas, 18% in BIDs)

- **Rate is significantly lower in neighborhoods adjacent BIDs**
  (Down 35% overall)

- **Steady in neighborhoods adjacent commercial areas**

QUALITY OF LIFE CRIME

- **Rate is up in commercial areas and adjacent neighborhoods**
  (12% AND 15%, respectively)

- **Rate is down in BIDs and adjacent neighborhoods**
  (9% AND 14%, respectively)

Summary

- BID organizations have a positive impact within the BID
- BIDs not have a (negative) impact around the BID
- Need to look beyond Philadelphia
- Need to move beyond crime