



**Place Network Investigations in Las Vegas, Nevada:
Program Review and Process Evaluation**



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EXECUTIVE SUMMARY

The gang and gun violence reduction project implemented in Las Vegas consisted of three components: hot spots deployment, focused deterrence, and place network investigations (PNI). This report focuses on a program review and process evaluation of the PNI initiative.

The PNI strategy, also known as PIVOT (Place-based Investigations of Violent Offender Territories), is grounded in crime science theory and research, which consistently finds that crime is highly concentrated, and patterns of crime concentration generally persist in the same locations over time despite repeated police intervention (Andresen, & Malleon, 2011; Braga, Andresen, & Lawton, 2017; Weisburd, Bushway, Lum, & Yang, 2004, Wilcox & Eck, 2011). The strategy was designed and first implemented in Cincinnati, Ohio. It is based on the assumption that historical, or persistent, hot spots are the result of deeply entrenched crime place networks used by active offender groups. The PNI strategy requires police investigations to uncover crime place networks, and a local *PNI Investigative Board* to focus existing city/county resources to alter crime-facilitating place dynamics (Madensen et al., 2017).

In early 2018, the LVMPD Command Staff, in consultation with the Director of Crime Analysis, selected a pilot project site within the bureau's Northeast Area Command (NEAC) for PNI implementation. A specific condominium complex, small strip mall that housed a convenience store, and nearby multi-family unit housing was selected to serve as the primary focus of the intervention. The NEAC Captain assigned her FLEX (Flexible Deployment) team to implement the PNI strategy and serve as the primary investigative unit. The International Association of Chiefs of Police (IACP) / University of Cincinnati (UC) *Center for Police Research and Policy* arranged to provide technical assistance and training to LVMPD's PNI investigative unit. An introductory training for investigators and internal/external partners was conducted in April 2018. On-going training and assistance were provided on a bi-weekly basis in the form of on-site meetings or telecommunication with strategy experts and police personnel involved in Cincinnati's PNI implementation from May 1, 2018, until the end of the evaluation period (April 30, 2019).

In order to better understand the process and influence of the pilot PNI program in Las Vegas, officials from LVMPD partnered with researchers from the *Center for Police Research and Policy*, along with academic partners from the University of Nevada Las Vegas (UNLV) to conduct a program review and process evaluation of the PNI initiative. Using bi-weekly investigative activity summaries and LVMPD reported crime incident data, this study addresses the following specific research questions:

- 1) What types of activities were conducted by the LVMPD PNI investigative unit in the targeted violent hot spot? Given that PNI is a recently developed strategy, LVMPD and other agencies interested in adopting the PNI strategy could benefit from systematic documentation of investigative and enforcement activities conducted by investigative units.

- 2) What successes and obstacles were experienced by those responsible for implementing the PNI strategy in Las Vegas? For the purpose of this evaluation, 11 specific implementation dimensions (or general steps) were identified based on the process used to conduct previous place network investigations in Cincinnati, Ohio. The current assessment attempts to describe the general degree of program fidelity achieved by the LVMPD during PNI strategy implementation.
- 3) What was the impact of the LVMPD PNI strategy on gun-related crime in the targeted area? While the analysis presented within this evaluation is mostly exploratory in nature, given the relatively short intervention period and low overall crime numbers, it offers insight into how the PNI strategy, as implemented by the LVMPD, could impact violent crime targeted areas.

Our interpretation of the program review and process evaluation findings can best be summarized as follows:

- 1) The program review identified four general PNI investigative and response activities: (1) surveillance and intelligence gathering, (2) external agency coordination and partnership building, (3) effecting changes to physical locations and in place management practices, and enforcement actions. The LVMPD PNI investigative unit was highly productive in establishing partnerships and implementing place-based changes to alter violence-facilitating dynamics, which if effective, will lessen the need for future traditional police response or justice system intervention.
- 2) The LVMPD PNI investigative unit developed systems and processes that allowed implementation of the vast majority of PNI strategy elements. The process evaluation found that PNI model compliance was high. The unit addressed each implementation step through their investigative actions. The unit also improved PNI strategy processes across several implementation dimensions (e.g., innovative surveillance tactics, creative intelligence sharing processes).
- 3) To improve PNI strategy processes and effectiveness, the most critical recommended actions fall within four categories:
 1. Leverage the influence of a project champion at the highest rank possible
 2. Conduct additional formal analyses and intelligence gathering prior to site selection and throughout the PNI project
 3. Assign additional dedicated personnel to the PNI investigative unit activities (e.g., crime analyst, legal personnel, project manager)
 4. Establish a formal PNI Investigative Board led by city/county government representatives

- 4) Although project limitations did not permit a comprehensive outcome evaluation, post-intervention changes in numbers of crime incidents (-39.1% in 12-month post-intervention period) suggest that the PNI strategy may have contributed to a decrease in gun-related violent crime the in targeted site.

The current evaluation findings suggest at least three policy implications:

- 1) PNI, as implemented in Las Vegas, holds promise for reducing gun-related crime and improving community safety. PNI investigative team activities appear to have significantly altered place dynamics to decrease violence, as evidenced by available crime data, site observations, and discussions with property employees conducted by the research team.
- 2) To enhance PNI strategy effectiveness and further lessen reliance on traditional criminal justice interventions, it is recommended that LVMPD work to establish a standing PNI Investigative Board before replicating this strategy in additional sites.
- 3) It will be necessary to implement the program across multiple sites for a sufficient period of time to fully assess the impact of the PNI strategy on gun-related violent crime. Post-intervention assessment periods should be designed to consider the lagged effect of PNI strategy interventions.

I. INTRODUCTION

In spring of 2017, researchers from the *IACP/UC Center for Police Research and Policy* (the “Center”) met with the command staff from the Las Vegas Metropolitan Police Department (LVMPD) to discuss their concerns related to violent crime. After a review of LVMPD’s historical and current methods of handling violent crime, it was decided that Center researchers would design, implement, and evaluate a strategy with the LVMPD to address gun and gang member involved (GMI) violence. Specifically, a three-prong approach was developed, which included: (1) hot spots policing to reduce GMI street violence; (2) focused deterrence efforts to reduce GMI offending and victimization; and (3) place network investigations (PNI) to identify and disrupt the infrastructures that support GMI violent activities. When used in combination, these interventions work to address all three elements of the crime triangle: offenders, victims, and places.

This report provides the findings specifically for the place network investigations (PNI) portion of this violence reduction project. Two additional, separate reports document the findings for the hot spots policing initiative, and the focused deterrence violence reduction intervention. The PNI strategy involved the assignment of an investigative unit into a historically violent hot spot within LVMPD’s jurisdiction. The PNI investigative unit worked in both overt and covert capacities to uncover places used by offenders to carry out illegal activities within and immediately adjacent to the selected hot spot. Investigators used police enforcement efforts and community partnerships to block opportunities for crime in locations identified as part of a crime place network. The PNI activities began in May 2018, and investigative unit members reported their activities for a 12-month period for the purpose of documentation and review.

The PNI strategy, also known as PIVOT (Place-based Investigations of Violent Offender Territories)¹, was first developed and piloted by the Cincinnati (Ohio) Police Department. The strategy was implemented in two Cincinnati neighborhood hot spots in 2016 in response to high numbers of shootings across the city during the previous year. Cincinnati officers uncovered and dismantled crime place networks using an investigative unit who identified criminogenic locations and reported investigative findings on a biweekly basis to local government leaders. These government leaders then leveraged city department resources to disrupt violence-facilitating place dynamics. By 2017, the PNI strategy had been implemented in three additional sites. Recent analyses reveal that, across all five sites, the number of shooting victims declined by 72.46% over a two-year period, with 69 shooting victims reported during the pre-evaluation

¹ In this report, the acronym PNI (Place Network Investigations) is used interchangeably with PIVOT (Place-based Investigations of Violent Offender Territories) and both represent the same crime reduction strategy. While the Cincinnati Police Department and the Las Vegas Metropolitan Police Department labeled their place network investigations PIVOT, the acronym PNI has been recently adopted to avoid confusion between this strategy and other non-similar violence reduction strategies that have adopted the PIVOT acronym (e.g., PIVOT to Peace in Louisville, Kentucky, or Atlanta, Georgia’s PIVOT gunshot hospital intervention program).

24-month period, and 19 shooting victims reported during the post-evaluation 24-month period (Hammer, 2020).

The PNI strategy is grounded in crime science theory and research, which consistently finds that crime is highly concentrated, and patterns of crime concentration generally persist in the same locations over time despite repeated police intervention (Braga, Andresen, & Lawton, 2017; Andresen, & Malleon, 2011; Weisburd, Bushway, Lum, & Yang, 2004). The strategy was designed based on the assumption that historical, or persistent, hot spots are the result of deeply entrenched crime place networks used by active offender groups. Although Cincinnati investigators found evidence of crime place networks in historical hot spots and successfully reduced shooting-related violence by changing place dynamics within these networks, it remains to be seen whether similar networks will be found within hot spots in other jurisdictions. Further, there has been no attempt to systemically document the activities of PNI investigators.² We have yet to determine the range or styles of interventions used to effectively uncover crime place networks. Finally, we have no evidence concerning how differing degrees of program implementation might affect the strategy's effectiveness. We have not yet determined if program fidelity, when judged against the strategy as originally designed, impacts violence reduction outcomes. This report examines the process of PNI implementation by the LVMPD.

The City of Las Vegas is the most populated city in the State of Nevada with an estimated population of 644,000 people. The city has grown by about 10% since 2010 and has an estimated median household income of \$53,000. In terms of racial/ethnic composition of the population, approximately 62.7% are White, 12.2% are Black, 6.7% are Asian and 6.2% are two or more races or of other races; approximately 32.7% of the population are of Hispanic or Latino descent (US Census Bureau, 2019). Las Vegas is most well-known for its tourism attractions, and therefore has a fairly transient population in comparison to other large cities in the United States. The city experiences a tourist volume of approximately 42 million visitors each year (LVMPD, 2019).

The City of Las Vegas is situated within Clark County, Nevada, which has a population of approximately 2.23 million people. The county has grown by approximately 14% from 2010 to 2018 and has an estimated median household income of \$56,000. In terms of racial/ethnic composition of the population, approximately 69.9% are White, 12.8% are Black, 10.4% are Asian and 6.9% are two or more races or of other races (US Census Bureau, 2019). In addition, approximately 31.4% of the population is of Hispanic or Latino descent. Overall, the City of Las Vegas and the larger surrounding Clark County have fairly similar demographics.

The Las Vegas Metropolitan Police Department (LVMPD) provides all policing services for the City of Las Vegas and Clark County, Nevada (excluding the cities of Henderson, North Las

² One recent exception to this can be found in Hammer (2020); some activities were also briefly described in the Cincinnati Police Department's (2017) submission for the Herman Goldstein Award for Excellence in Problem-Oriented Policing.

Vegas, Boulder City, and Mesquite). The LVMPD was formed by the incorporation of separate police agencies in Clark County in July of 1973 and is led by the Sheriff of Clark County, who is publicly elected every four years. The LVMPD is the largest police department in the State of Nevada, with 3,200 sworn police officers and 1,300 civilian employees. In addition, the LVMPD has approximately 1,200 personnel devoted to detention services. According to the most recent estimates (N=5,832), approximately 33.6% of the LVMPD is comprised of female employees and 66.4% of the agency is comprised of male employees (LVMPD, 2019). In terms of the LVMPD's ethnic composition, approximately 61.5% of employees are White, 16.9% are Hispanic, 10.0% are Black, 5.7% are Asian, and 5.9% are of mixed races or of other ethnicities.

In total, the LVMPD serves a geographic jurisdiction of 7,500 square miles, with a population of approximately 1.6 million—more than half of the population of the state of Nevada (LVMPD, 2019). The LVMPD is divided into nine urban area commends: Bolden, Convention Center (which includes the Las Vegas Strip and Convention Center), Downtown, Northeast, Northwest, Southeast, Spring Valley, Enterprise and South Central. The PNI violence reduction project was specifically implemented within the LVMPD's Northeast Area Command.

II. PLACE NETWORK INVESTIGATIONS (PNI)

The PNI strategy is grounded in the assumption that crime is not random, and police resources can be directed to disrupt crime concentrations (Spelman & Eck, 1989). A large evidence base confirms that crime concentrates across places, victims, and offenders. This evidence has prompted police administrators to adopt focused policing strategies; for example, hot spots policing in high-crime places, initiatives to protect high-risk victims, and repeat offender deterrence strategies. The importance of the place-crime connection, in particular, is widely acknowledged by both researchers and practitioners. Early research reported that just three percent of addresses in Minneapolis, Minnesota accounted for 50% of calls for service in a given year (Sherman, Gartin, & Buerger, 1989), and this finding has been replicated and supported by decades of subsequent research reporting similar patterns of crime concentrations across multiple types of places and units of analysis (see Weisburd, Groff, & Yang, 2012).

Researchers and practitioners have found much success in reducing violence by employing focused deterrence strategies that disrupt offender *networks*. Using social network analysis, police identify and target specific offenders for enhanced deterrence efforts or incapacitation. Research evidence suggests that interventions targeting offender networks can lead to substantial reductions in violence across cities (Braga & Weisburd, 2012). While we know that police interventions targeting individual high-crime places can significantly reduce crime at particular locations (Braga & Weisburd, 2010; Sherman & Weisburd, 1995; Weisburd, 1997), recent theoretical advances suggest that, like offenders, places might function together as part of a larger network.

A recent hypothesis proposed by those responsible for developing the PNI violence reduction strategy is that crime place networks provide the “infrastructure” needed to operate illicit markets. Locations that form crime place networks lack effective place management (see Eck 1994). Violent incidents result from offender interactions that take place at these unmanaged locations as they engage in activities related to the operation of illicit markets (e.g., drug, weapon, or human trafficking).

While crime maps depict places where crime occurs, crime place networks include at least three other types of locations used by offenders that do not always or regularly come to the attention of police. Drawing from recent advances in crime place theory (Felson, 2003; Hammer, 2011; Madensen & Eck, 2013), the PNI strategy attempts to uncover four types of places (CS⁴) that constitute crime place networks:

1. Crime Sites—specific places where crime occurs
2. Convergent Settings—public places where offenders routinely meet
3. Comfort Spaces—private meeting, staging, and supplying locations
4. Corrupting Spots—places that encourage criminal activity in other locations

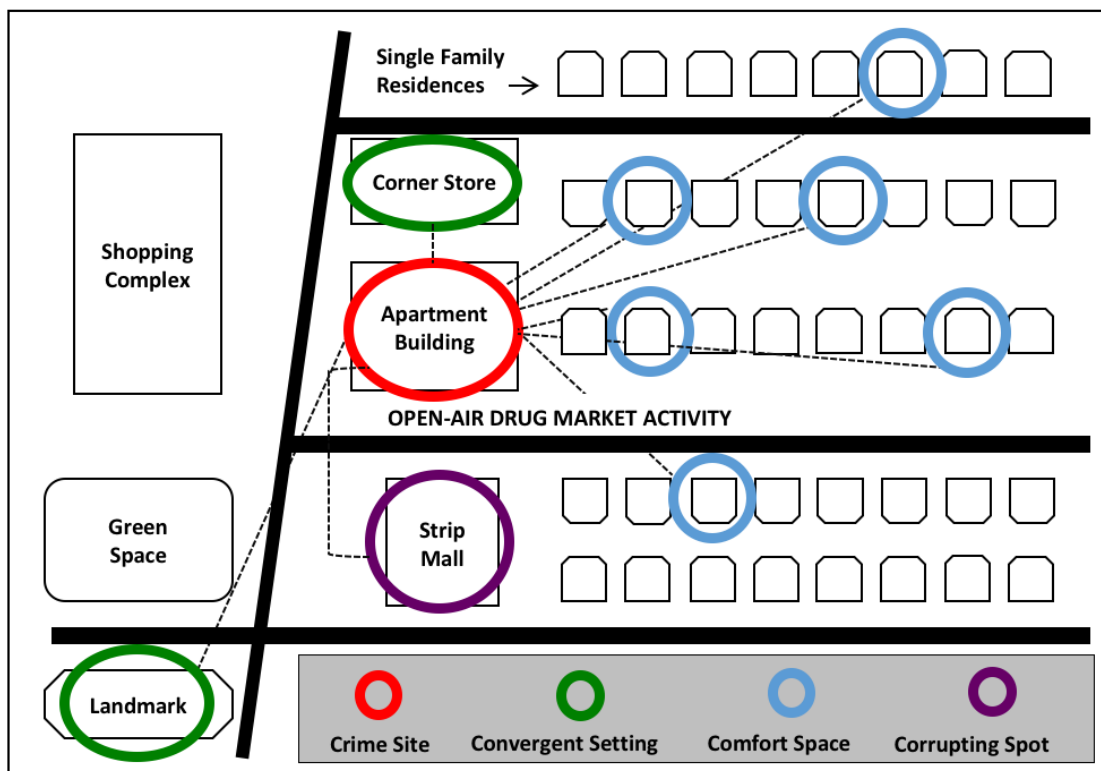
Given that police data reflect only places where crime occurs (i.e., crime sites), the other three locations in crime place networks – convergent settings, comfort spaces, and corrupting spots –

often remain hidden without targeted police investigations. These investigations and subsequent efforts to dismantle crime place networks form the basis of the PNI strategy.

Figure 1 depicts a crime place network uncovered by the co-developer of the PNI strategy in 2013, while serving as a district commander in Cincinnati. One of the city’s most violent crime sites was an apartment building with a gang-run, open-air drug market operating just south of the building. A corner market and an area surrounding a community landmark functioned as two public convergent settings where gang members would regularly meet. Nearby private residences provided supply and staging locations and were used as private comfort spaces. An adjacent strip mall contained businesses suspected of accepting stolen goods and laundering money, which allowed these locations to serve as corrupting spots within the network.

The drug market offender network was identified and disrupted using a focused deterrence strategy, and key gang members were arrested. Extensive resources were dedicated to making environmental and management changes at the apartment building (crime site). Although the district commander was able to reduce violent crime, the reduction was short-lived, and violence returned to – and eventually exceeded – previous crime levels. The drug market remained active since the larger crime place network remained intact. The importance of place networks was largely unrecognized at the time. The PNI strategy was developed in an attempt to address these and other shortcomings of traditional enforcement and place-focused strategies.

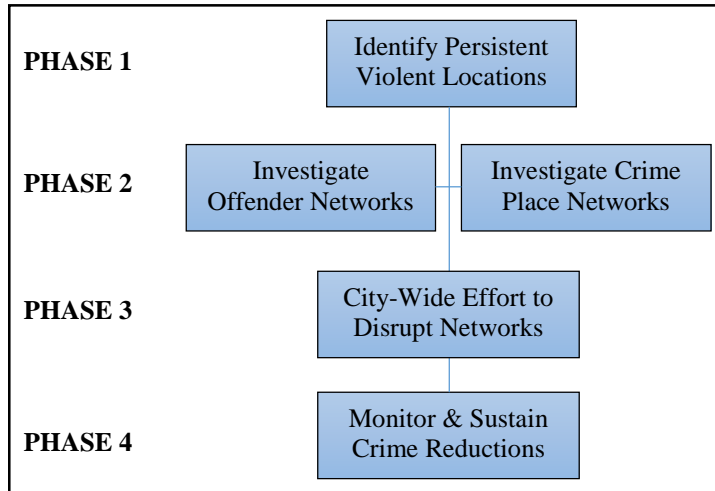
Figure 1: Crime Place Network (Source: Madensen et al., 2017)



The PNI strategy follows the SARA model of problem-solving, which includes four phases: scanning, analysis, response, and assessment (Clarke & Eck, 2005), to uncover and address crime place networks. Figure 2 depicts the general strategy phases and related objectives.

In the first phase, analyses are conducted to determine how and where gun violence clusters across the jurisdiction. In Cincinnati, analyses revealed that more than 40 percent of all shooting victims were shot within 23 geographically small areas, called micro-locations. These micro-locations spanned approximately two square blocks and made up only 1.4 percent of the city’s land mass. Further analysis revealed that violent crime and officer injuries were also disproportionately concentrated in these locations (Cincinnati Police Department, 2017).

Figure 2: PNI Strategy Phases



The second phase involves investigations of offender and crime place networks. Offender networks can be investigated and addressed through complimentary strategies (e.g., focused deterrence). The PNI strategy requires officers to study offender movement patterns and ownership/management practices in and around known crime sites. Table 1 describes investigative techniques used by PNI officers to uncover locations within crime place networks in Cincinnati.

Table 1: Investigative Techniques Used to Uncover Crime Place Networks

Intelligence	
•	Conduct intelligence briefings with beat officers, detectives, specialized units (e.g., violent crime, gang, vice, homicide), crime analysts, all city departments, and community members, including community service personnel (e.g., postal service), to identify key players and places involved in possible network activities.
•	Gather intelligence from municipal, state, and federal databases on historical place violations and ownership connections among places.
Surveillance	
•	Video and photograph the initial and changing physical characteristics and social dynamics of key places.
•	Conduct ongoing surveillance of place and offender activities (e.g., temporary surveillance cameras, undercover officers).
Information Sources and Confidential Informants	
•	Develop internal and external confidential informants to investigate place activities (e.g., security personnel, management personnel, labor contractors, existing CIs).
•	Train confidential informants to gather place-based intelligence (e.g., manager involvement/knowledge of illicit activities, offender movement among places).

Source: Madensen et al., 2017

Once locations within a crime place network are identified, the third phase involves biweekly meetings with a citywide PNI Investigative Board. The PNI Investigative Board consists of representatives from various city departments and community organizations. Board members hold leadership roles and can leverage resources within their respective departments and organizations. The board reviews investigator findings, and members provide additional information about the identified locations from their respective departments/agencies. The board can dismantle the place network through various means, including using legal remedies to revoke business licenses, requiring new management practices, mandating employee training, ordering owners into court-mandated receivership, requiring changes to the physical design of a building, or, ultimately, ordering complete property abatement. The board can also prioritize city resources to more quickly address crime-facilitating places (e.g., schedule building demolitions, reroute traffic patterns, initiate redevelopment projects). Table 2 provides examples of agencies and organizations who contributed to the Cincinnati PNI Investigative Board and the types of resources that can be leveraged to disrupt crime place networks.

Table 2: PNI Investigative Board Responses

City Department	Disruption Techniques
Fire	<ul style="list-style-type: none"> • Eliminate hazards (e.g., remove illegal scrap yard) • Fire code violations fines/arrests
Traffic/Engineering	<ul style="list-style-type: none"> • Street redesign (e.g., traffic calming, closures) • Adding/removing signage
Community Improvement Organizations	<ul style="list-style-type: none"> • Private property consultations (e.g., graffiti removal) • Adding fencing or public space definition markers
Buildings	<ul style="list-style-type: none"> • Parking spaces, dumpster placement/organization • Execute vacate orders
Health	<ul style="list-style-type: none"> • Removal of illegal kitchens or vendors • Address lead paint in buildings
Port Authority	<ul style="list-style-type: none"> • Building demolitions • Initiate large-scale redevelopment projects
Treasury	<ul style="list-style-type: none"> • Permit revocation (e.g., illegal dance halls) • Citations for non-licensed activities (e.g., gaming)
Parks & Recreation	<ul style="list-style-type: none"> • Redesign or development of park spaces • Removal of dilapidated playground equipment
Non-profit Redevelopment Groups	<ul style="list-style-type: none"> • Purchase vacated properties • Help community leaders secure low-income housing
Public Services	<ul style="list-style-type: none"> • Foliage removal, community clean-up efforts • Altering trash pick-up schedules
Human Relations Commission	<ul style="list-style-type: none"> • Advocacy and offender desistance outreach • Job and social services messaging

Adapted from: Madensen et al. 2017

A coordinated all-city response provides additional leverage, resources, and intervention options to effectively dismantle deeply entrenched crime-place networks – the source of persistent and chronic hot spots. PNI interventions block crime activities by changing the way in which places are managed and used. Interventions might involve altering parking restrictions or traffic patterns

along a road commonly used in drive-by shootings or seizing and repurposing a corner store laundering money for a violent drug market. A focus on place networks, rather than individual crime sites, roots out the larger infrastructure offenders retreat to and then reemerge from once police resources are deployed elsewhere.

Once the crime place network has been dismantled (i.e., opportunities for violence have been blocked or place dynamics that facilitate violence have been altered at identified locations), phase four begins. In phase four, crime levels continue to be monitored, community resources are organized by the PNI Investigative Board or other local community councils and organizations, and organic neighborhood-led redevelopment can begin in the absence of persistently high levels of violence. This redevelopment makes the reestablishment of crime place networks less likely with the introduction of additional or more effective management at nearby places.

The PNI violence reduction strategy is *similar* to other successful problem-focused policing projects in at least three ways. First, PNI focuses attention on a specific problem (i.e., shootings) and calls for detailed analysis of place conditions that facilitate similar harmful events (see Clarke & Eck, 2005). Second, PNI focuses attention on criminogenic places. A vast body of evidence suggests that a small number of risky facilities (Clarke & Eck, 2007; Eck, Clarke and Guerette, 2007) or individual crime generators and attractors (Brantingham and Brantingham, 1995) account for the majority of crime in any hot spot. Third, the PNI strategy also promotes “shifting and sharing of responsibility” (Scott and Goldstein, 2005; Scott, 2005) for solving crime problems. Place managers are held accountable for harms that occur on their properties. Responsibility is also shifted to “super-controllers” (Sampson, Eck and Durham, 2010) who control local government resources. Like most other successful crime reduction initiatives, the success of PNI requires strong leadership and participation on the part of local government (see Plant and Scott, 2009).

The PNI strategy is *different* from traditional policing strategies in at least three ways. First, this is one of the first place-based strategies to acknowledge that violent micro-locations are dangerous places for police. In Cincinnati, officer injuries and suspect behaviors that lead to officer injuries (e.g., resisting arrest) were also disproportionately concentrated in the identified violent micro-locations. Thus, persistently violent hot spots are risky for both residents and officers who respond to these locations. Second, PNI focuses on how places function as crime-facilitating networks. Long-term crime reduction is achieved by dismantling the entire physical infrastructure used by offenders, beyond places where crime occurs (crime sites). Trained investigators uncover connected networks of offender-used places that cannot be identified through calls-for-service analyses alone. These places include public and private locations used by offenders to plan and carry out crime (also known as convergent settings and comfort spaces), as well as businesses that facilitate crime markets (referred to as corrupting spots). Third, PNI leverages all city resources to dismantle crime-place networks. Championed by the mayor and/or city manager, PNI investigators regularly present their findings to other city department managers (e.g., representatives from departments like Traffic and Engineering, Buildings and Inspections, and the city solicitor), who can often be much better suited to design and implement place-focused crime prevention interventions than police.

Early results from Cincinnati's PNI initiative appear promising. The pilot sites selected by CPD experienced significant reductions in violence during the first year (over 89 percent in the first site and 71 percent in the second site), and the agency reports that violence remains historically low in these areas more than three years after intervention. By 2017, the PNI strategy had been implemented in three additional sites in Cincinnati. Recent analyses reveal that, across all five sites, the number of shooting victims declined by 72.46% over a two-year period, with 69 shooting victims reported during the pre-evaluation 24-month period, followed by 19 shooting victims reported during the post-evaluation 24-month period (Hammer, 2020).

In addition to early promising evaluation results, at least five other benefits have been associated with the PNI strategy (Herold & Eck, 2020). The PNI strategy:

1. aligns with evidence-based crime science principles;
2. lessens reliance on police suppression tactics that, while often immediately effective in driving down crime numbers, continually put officers at risk, offer short-lived crime reductions, are costly, and often harm police-community relations;
3. works well with offender-based strategies by finding "hidden" locations where high-level players in violent offender networks operate, thus concentrating justice system resources on impactful, targeted arrests;
4. asks officers to engage in investigations (policework) and government leaders to better organize and reprioritize existing city resources, rather than acquire new resources; and
5. provides conditions for organic neighborhood redevelopment by promoting community resiliency.

III. RESEARCH QUESTIONS

The primary purpose of implementing the PNI strategy in Las Vegas was to – in combination with other strategies – reduce gang-member involved violence. LVMPD analysts had previously linked shooting violence in Las Vegas with gang activity. Thus, implementation of PNI in a location historically marked by high levels of gun-related crime was hypothesized to reduce gang-member involved violence in the target location. However, given that PNI had been implemented in only one other jurisdiction, the LVMPD agreed to attempt PNI implementation in a single pilot site to assess potential effects, but with the understanding that it was unlikely to have a substantial impact on crime outside of the boundaries of treatment location. For this reason, the primary focus of the evaluation was not on crime-related outcome measures, although these are reported. Instead, the primary goal of the current evaluation is to review the PNI program, as implemented by the LVMPD, and offer a cursory process evaluation to determine the degree to which the agency was able to implement specific elements of the program.

Specifically, this review was designed to address the following three related key research questions:

- 1) **Program Review.** What types of activities were conducted by the LVMPD PNI investigative unit in the targeted violent hot spot? Given that PNI is a recently developed strategy, LVMPD and other agencies interested in adopting the PNI strategy could benefit from systematic documentation of investigative and enforcement activities conducted by investigative units. While many violence reduction evaluations report outcomes associated with specific crime reduction initiatives, few sufficiently describe the specific activities used to achieve these outcomes (see Famega, Hinkle, & Weisburd, 2017). For replication purposes, and to better understand the causes associated with PNI outcomes, this initiative describes and provides a typology of interventions used by the PNI investigative unit.
- 2) **Process Evaluation.** What successes and obstacles were experienced by those responsible for implementing the PNI strategy in Las Vegas? For the purpose of this evaluation, 11 specific implementation dimensions (or general steps) were identified based on the process used to conduct previous place network investigations in Cincinnati, Ohio. A wide variety of factors can influence model adherence, including available agency resources, investigator/supervisor training, internal unit coordination, analytic capabilities, local government engagement, and cooperation by outside agencies and community organizations. The current assessment attempts to describe the general degree of program fidelity achieved by the LVMPD during PNI strategy implementation.
- 3) **Impact on Gun-related Crime.** What was the impact of the LVMPD PNI strategy on gun-related crime in the targeted area? It remains to be seen whether the crime reduction successes observed in Cincinnati can be replicated in other jurisdictions. Further, it is unknown whether full program implementation, as measured by the 11 implementation dimensions, is needed to achieve similar outcomes. While the analysis presented within this evaluation is mostly exploratory in nature, given the relatively short intervention

period and low overall crime numbers, it provides partial insight into how the PNI strategy, as implemented by the LVMPD, could impact violent crime targeted areas.

Our study methodology and statistical analyses used to examine these research questions are presented in the sections below.

IV. METHODOLOGY

Project Implementation

In May 2017, researchers from the IACP/UC Center met with the LVMPD's Director of Crime Analysis and Command Staff to discuss PNI strategy objectives and select a suitable project implementation site. The following were among the primary strategy objectives discussed by the research team and LVMPD personnel:

- Reduce gun-related violence (often tied to gang violence) by altering place dynamics in persistent violent locations.
- Target crime-facilitating infrastructures by identifying existing crime place networks that gang members could use to carry out illegal and harmful activities.
- Refocus existing police resources/strategies to investigate and address both crime place networks and offenders.
- Establish coordinated/formal partnerships, both internal and external to LVMPD, to leverage additional resources to eliminate crime infrastructures.

The LVMPD command staff elected to pilot test the strategy in a single location and committed to assigning an investigative unit to the project for a minimum of 12 months.

Intervention Site

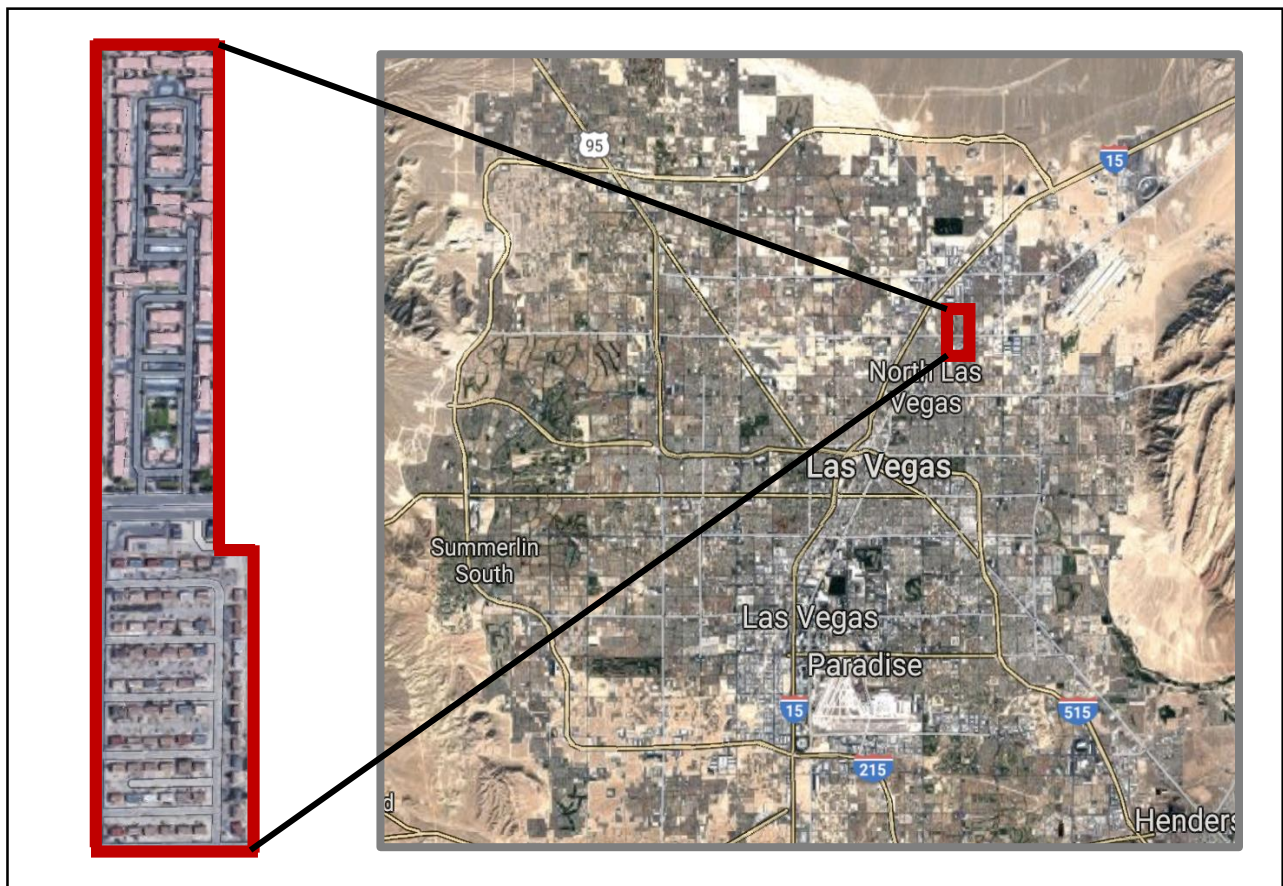
In early 2018, the LVMPD Command Staff, in consultation with the Director of Crime Analysis, selected a project site within the bureau's Northeast Area Command (NEAC) for PNI implementation. A specific condominium complex, small strip mall that housed a convenience store, and nearby multi-family unit housing was selected to serve as the primary focus of the intervention. Site selection was based on the following four criteria:

1. the location was considered a persistent hot spot within the NEAC;
2. a gang shooting involving a 16-year-old recently occurred at the complex and received considerable media and public attention;
3. the NEAC Captain had strong relationships with internal and external partners who could assist with the project – including the County Commissioner; and
4. other social services projects being conducted in the area (e.g., Pathway from Poverty) were seen as complimentary to PNI objectives and personnel believed these resources could be leveraged to achieve long-term sustainability in crime reductions.

The condominium complex was previously an apartment complex that consisted of individual 430 units. Each unit was sold to individual owners when the property was transformed into condominiums. Although governed by an HOA, the combination of individual ownership, owners who lived outside of Las Vegas, and high numbers of transient renters presented obstacles to previous police interventions. Similarly, the nearby multi-family housing included 58 fourplex buildings were also individually owned and often rented by owners who did not live in or near the buildings.

The selected PNI location is situated in the northeast area of LVMPD's Las Vegas jurisdiction. The location is in close proximity to Nellis Air Force Base.³ Figure 3 depicts the project site location within the larger Las Vegas valley.

Figure 3: PNI Site Location



³ The distance between the PNI site and the Nellis Air Force Base is approximately 1.3 miles.

LVMPD's PNI Investigative Unit

The NEAC Captain assigned her FLEX (Flexible Deployment) team to implement the PNI strategy and serve as the primary investigative unit. The LVMPD PNI investigative unit consisted of a supervisory Sergeant, with extensive investigative experience, and a team of officers. Typically, four to six officers were assigned at any given time to the unit. As personnel changes were made during the duration of the project, officers were selected based on their desire to gain investigatory experience and interest in learning to conduct place network investigations. The PNI investigative unit Sergeant and his team provided regular briefings to the NEAC Captain.

Technical Assistance and Training

Researchers from the IACP/UC Center arranged to provide technical assistance and training to LVMPD's PNI investigative unit. An introductory training for investigators and internal/external partners (e.g., LVMPD's Special Investigations Section, Parole and Probation) was conducted in April 2018.⁴ The introductory training covered general place-crime principles and evidence supporting the use of place network investigations, as well as examples of investigation techniques and partnerships found to be effective in addressing crime facilitating dynamics at places. On-going training and assistance were provided on a bi-weekly basis in the form of on-site meetings or telecommunication with strategy experts and police personnel involved in CPD's PNI implementation. This assistance provided the LVMPD PNI unit with information regarding effective place network investigatory tactics and evidence-based place interventions associated with violence crime reduction.

Data and Analysis

Qualitative and quantitative data were analyzed to describe and evaluate the implementation and impact of the PNI strategy. Specifically, we reviewed bi-weekly investigative activity summaries and LVMPD reported crime incident data. For the purpose of examining investigative work to inform the program review and process evaluation, the investigative activity summaries were reviewed to identify discrete investigative tactics employed by the PNI unit and activities related to the 11 dimensions associated with PNI model adherence (see Table 3). These dimensions were identified based on the processes used to implement PNI by Cincinnati's PNI strategy development and investigative unit.

For the purpose of evaluating the impact of the strategy on gun-related crime, the following crime categories were examined:

- assault with a deadly weapon;

⁴ The PNI strategy co-creator, Tamara Herold, developed and led this training.

- battery (excluding misdemeanor);
- murder and attempted murder;
- robbery and attempted robbery; and
- shooting.

As described in the findings section that follows, the number of gun-related crime incidents documented during the treatment period (May 1, 2018 – Apr 30, 2019) were compared to the number of gun-related crime incidents that occurred during the year prior to intervention. The 12-month to 12-month comparison allowed the analysis to control for seasonal effects.

Table 3: Dimensions of PNI Model Adherence

Implementation Steps
Select violent micro-locations
Select and train PNI unit
Establish and follow investigative protocols
Establish, train, and gain compliance from PNI Investigative Board members
Gather pre-intelligence
Assess and establish intelligence systems
Conduct internal intelligence sessions
Collect community intelligence
Present intelligence products to PNI Investigative Board
Identify offender and crime place networks
Disrupt offender and crime place networks

V. FINDINGS

This section describes outcomes associated with the program review, process evaluation, and analysis of the PNI strategy's impact on gun-related crime.

Program Review

The following program review provides a snapshot of the investigative and enforcement/compliance tactics used by the LVMPD PNI investigative unit in the implementation site. Although not exhaustive, this review of PNI activities provides a general overview of the tactics used to uncover and address crime place networks.

Four general investigative and response activities were identified:

- surveillance and intelligence gathering;
- external agency coordination and partnership building;
- effecting changes to physical locations and in place management practices; and
- enforcement actions.

Numerous surveillance and intelligence gathering methods were used to uncover an existing crime place network. Direct site observations were conducted through overt and covert investigator surveillance. Resident and business owner/manager interviews and surveys were conducted throughout the project period. Sources of information (e.g., postal workers, security personnel) and confidential informants were used to gather additional place-specific intelligence. Calls placed by arrestees in detention facilities and social media sites were monitored. Persons arrested in the PNI site were later interviewed by investigators. Property and crime data records were analyzed to identify place-offender connections. Pen registers⁵ and GPS monitoring were used to analyze offender movement patterns between locations. Intelligence bulletins were created to facilitate information sharing between internal LMVPD personnel and units.

Coordination with external agencies generated additional intelligence concerning offenders and places in the PNI site. PNI investigators worked with the Gaming Control Board and Business Licensing investigators and personnel to investigate local business practices. Additional intelligence was gathered through meetings with IRS investigators, HUD representatives, the Attorney General's Office, and Nevada Real Estate Division personnel. Coordination with a local constable led to resident education concerning eviction rights to stem illegal eviction practices.

⁵ A pen register allows officers to record all numbers called from a specific phone line.

Physical and place management changes were made to alter dynamics in crime place network locations. Additional cameras, license plate readers, additional lighting, removal of business window obstructions, and new access controls were added to network locations. In partnership with HOA representatives, PNI investigators assisted in making substantial changes to the condominium bylaws. HOA bylaws were revised to require owners to provide updated tenant information 10 days prior to move-in, and new regulations instituted a \$5,000 fine leveraged against owners of properties subjected to SWAT raids finding evidence of illegal activities.

Enforcement action was taken against known offenders, as well as businesses and property owners/managers of places identified as part of the crime place network. A case was built and filed against a problematic property manager who facilitated illegal activities across multiple housing units. Controlled drug buys identified key offenders operating in the area. Targeted arrests were made as a result of operations with Parole and Probation. Businesses were cited and fined for illegal practices. Surveillance operations with internal (e.g., Special Investigations Section) and external (e.g., Gaming Control Board) partners led to citations for health violations and illegal security practices.

Process Evaluation

The following process evaluation serves to identify the degree to which the LVMPD PNI project was implemented as designed by the Cincinnati PNI team. It is important to note that multiple explanations exist for model non-adherence, including differences in available agency resources, investigator/supervisor training, internal unit coordination, analytic capabilities, local government engagement, and cooperation by outside agencies and community organizations. The purpose of this evaluation is to begin to identify specific strategy elements that might pose implementation challenges for other agencies, and to consider how model adherence might impact the effectiveness of the strategy.

For the current evaluation, three primary tasks associated with each implementation step are listed. We briefly describe activities that occurred during the project planning phase, as well as activities reported by the LVMPD PNI investigative unit that align with each task (Model Adherence) and note any specific differences between these activities and activities carried out by the CPD PNI investigative unit (Recommended Action). These differences, or recommended actions, are noted strictly for future planning and implementation considerations. Table 4 provides a summary of the following narratives.

Step 1: Select Violent Micro-Locations

The PNI model suggests that sites should be selected for intervention based on a combination of criteria, including (1) crime data analysis of gun-related violent crime concentrations, (2) input from police personnel, and (3) local resources available to assist with neighborhood stabilization and organic economic development.

Model Adherence: The LVMPD PNI site was selected with input from the LVMPD Director of Crime Analysis who confirmed that the location was a persistent hot spot for gun-

related violent crime. Input concerning project viability in potential locations was solicited from Captains, Deputy Chiefs, and Assistant Sheriffs during the site selection process. Careful consideration was given to neighborhood resources during planning discussions, and the PNI site was selected after identifying a location with local government and corporation-sponsored initiatives that could help sustain and further develop neighborhood enhancements that occurred as a result of the project.

Recommended Action: A more systematic and data-driven approach to site selection may identify sites with higher concentrations of gun-related violence, thus allowing the strategy to generate a larger impact on the overall number of crime events in a particular area command.⁶

Step 2: Select and Train PNI Unit

The (1) designation of a command-level project champion, (2) assembly and assignment of a dedicated and skilled investigative team, and (3) a team of embedded support personnel, including dedicated project managers, crime analysts, and legal personnel are necessary for building an effective internal PNI team within the agency.

Model Adherence: The primary project champions included two Captains assigned to the Northeast Area Command during the PNI project period. A team of police personnel, including a Sergeant and four to six officers, was assigned to serve as a dedicated PNI investigative unit. Crime analysis was performed, when requested, by an Area Command Intelligence Officer (ACIO), LVMPD's centralized crime analysis unit, or PNI investigators; and legal personnel participated in PNI strategies when assistance was requested by the PNI unit.

Recommended Action: The initial project champion was an Assistant Sheriff who retired before the launch of the project. A project champion regularly involved in the initiative at the Assistant Sheriff level could facilitate a greater number of partnerships and help to address potential obstacles (e.g., resources, internal unit coordination) encountered by the PNI investigative unit. The PNI Sergeant had an extensive investigative background, while most of the officers assigned to the unit were looking to gain such experience. LVMPD may consider adding more experienced investigators to determine if this improves the unit's performance.⁷ A dedicated project manager and crime analyst, as well as embedded legal personnel may help to improve unit performance.

⁶ The following section (Impact on Gun-Related Crime) suggests that the PNI strategy may have reduced crime in the selected location, but the relatively low number of gun-related violent crime prior to PNI implementation did not allow for a comprehensive assessment, given the 12-month post-intervention period.

⁷ LVMPD personnel indicated that including officers seeking investigative experience allowed the unit to recruit highly productive and motivated members for the investigative team.

Step 3: Establish and Follow Investigative Protocols

Effective investigative protocols for uncovering crime place networks include (1) undercover and overt surveillance activities, (2) training and use of confidential informants (CIs), and (3) identifying and interviewing additional sources of information.

Model Adherence: The PNI investigative unit reported using a wide array of undercover and surveillance activities, beyond those initially used in previous PNI sites (e.g., PEN registers, GPS tracking, law enforcement-sponsored UBER accounts). The PNI unit was also able to leverage CIs and multiple sources of information, including security personnel and others involved in the management and maintenance of PNI-focused locations.

Recommended Action: Future PNI activities could benefit from increased numbers of CIs trained to report management activities that facilitate crime, as well as additional sources of information (e.g., additional interviews with social service providers working in the area).

Step 4: Establish, Train, and Gain Compliance from PNI Investigative Board Members

A formal PNI Investigative Board that (1) is established and directed by the highest-ranking local government officials, and includes (2) assigned personnel from each city/county department that can direct or reallocate their respective agency resources to the project and (3) intra- and inter-jurisdictional law enforcement partners, should be trained to participate in PNI processes.

Model Adherence: Several partners, including the County Commissioner, county department representatives, and other law enforcement agency representatives (local and federal) expressed willingness to participate on a regular basis in the PNI process.

Recommended Action: Provide an initial training, and regularly scheduled on-going training, for all selected PNI Board members to facilitate partner participation in the PNI initiative.

Step 5: Gather Pre-Intelligence

Prior to the deployment of PNI investigators, a complete analysis of available intelligence and information should be conducted. Analyses should include, but should not be limited to, a review of (1) all available police records (e.g., calls-for-service, arrest, incident, and gang data); (2) city/county, state, and federal records; (3) environmental surveys (e.g., blight index surveys or CPTED assessments).

Model Adherence: Law enforcement records from local, county, state, and federal agencies were reviewed, and partner information was leveraged throughout the course of the PNI process.

Recommended Action: More comprehensive and structured record reviews and information gathering activities that are guided by and grounded in crime science (e.g., journey

to crime and field interview card analyses) prior to PNI initiation will provide investigators with additional intelligence. This early intelligence could expedite the identification of potential locations within the crime place network.

Step 6: Assess and Establish Intelligence Systems

To maximize the collection of information and organize investigative intelligence, previous PNI processes included (1) routine documentation of PNI investigator activities, (2) creation of an electronic case management system to identify offender networks and crime place networks, and (3) partnerships to access to surveillance technologies.

Model Adherence: Formal documentation of PNI investigator activities was created on a bi-weekly basis (at minimum). Documentation was stored electronically in folders accessible to all unit members. The PNI unit also partnered with internal units (e.g., Central Intelligence Unit) to secure needed surveillance technologies (e.g., covert/overt CCTV coverage), and with housing managers to obtain access to existing surveillance feeds.

Recommended Action: Integration of social and place network analysis software could help to manage and analyze information gathered by PNI investigators.

Step 7: Conduct Internal Intelligence Sessions

A critical component of the PNI process is information sharing, particularly between other internal units and the PNI unit. To facilitate this process, regularly scheduled information sharing or “intel” session should occur between the PNI unit and (1) patrol officers assigned to the area and (2) other specialized units that have knowledge of offender activities in the area (e.g., gang/vice, violent crime, fraud units), and (3) regular briefings should be provided by the PNI investigative unit to agency leadership.

Model Adherence: The PNI investigative unit regularly communicated with patrol officers, specialized units, and LVMPD leadership – namely the NEAC Captain. Further, the investigative unit distributed a special project bulletin requesting patrol officers’ assistance in obtaining specific offender and place intelligence.

Recommended Action: Formal information sharing mechanisms, including regularly scheduled intelligence sessions between officers and units (e.g., creating an internal PNI Investigative Board), could further improve information sharing.

Step 8: Collect Community Intelligence

Residents and business owners in PNI sites can provide PNI investigators with information leading to the identification of specific locations used by offenders within a crime place network. Such information can be collected through (1) interviews with business and housing owners and managers, (2) community interviews and surveys, and (3) community meetings.

Model Adherence: The PNI investigative team conducted interviews with residents and business owners during community meetings and during field operations. Community surveys were also conducted.⁸

Recommended Action: Partner with organizations to conduct independent community surveys to measure changes in community perceptions across time.

Step 9: Present Intelligence to PNI Investigative Board

A key element of the PNI strategy is regular interaction and information sharing between the investigative unit and the PNI Investigative Board. These processes allow the police to leverage city/county resources to alter place dynamics using interventions that would be difficult, inefficient, or impossible to implement with available police resources. The PNI Investigative Board should (1) meet formally on a regularly scheduled basis, (2) be staffed with members that can directly control the allocation of specific city/county department resources, and (3) incorporate members – both public and private – involved in economic development and neighborhood resiliency efforts.

Model Adherence: A group of individuals, including the County Commissioner – and law enforcement, county, and community partners met formally with the PNI investigative team on one occasion during the project period (February 2019).

Recommended Action: Establish, under the direction of the County Commissioner, a formal PNI Investigative Board should be scheduled to meet and review investigation intelligence on a regular (e.g., bi-weekly) basis.

Step 10: Identify Offender and Crime Place Networks

The primary responsibility of PNI investigators is the identification of crime place networks. The process of crime place network identification also allows investigators to identify connections between offenders and offender groups that carry out illicit activities in these locations. An effective PNI investigative team will work to uncover (1) place connectivity within the PNI site, (2) connected places that fall outside of the initial site boundaries, and (3) offender networks operating in these locations.

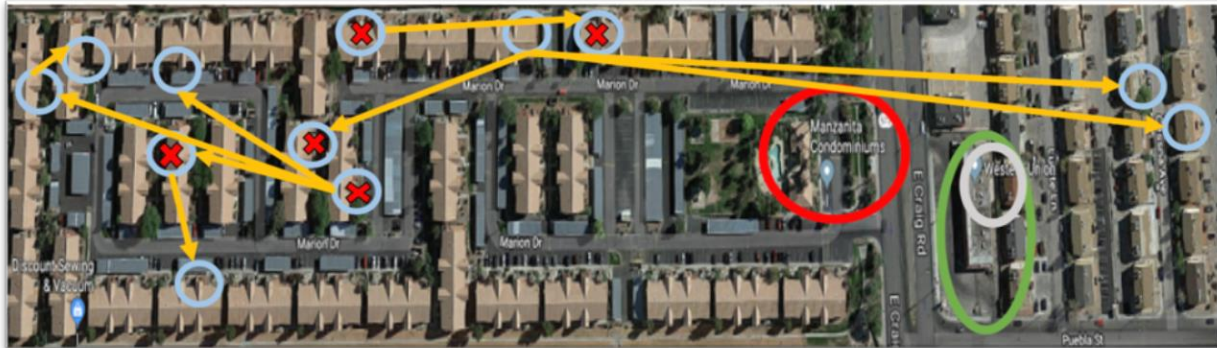
Model Adherence: The PNI investigative team identified a crime place network that included all four crime places: crime sites, convergent settings, comfort spaces, and corrupting

⁸ Although limited in number (n=12) and not representative of all resident perceptions, a door-to-door survey was used by the agency to establish contact with residents and begin to assess community concerns. LVMPD personnel shared that, while crime and violence was the main community concern during the initial project phase, a subsequent community meeting during the project period revealed that condominium residents' primary concern was related to parking issues at the complex.

spots. Figure 4 depicts a portion of this network.⁹ Places linked to the network beyond the initial PNI site boundaries were also identified (e.g., a nearby motel). Primary offenders, and others associated with the offenders, were identified during the investigative process.

Recommended Action: Social network analysis could identify larger offender networks and allow investigators to better prioritize enforcement action.

Figure 4: Crime Place Network in NEAC



Step 11: Disrupt Offender and Crime Place Networks

To disrupt offender and crime place networks, PNI investigators must effectively (1) build cases against owners and managers of locations in the crime place network, (2) build cases against violent offenders operating in the area, and (3) permanently alter place dynamics to block opportunities for violence.

Model Adherence: The PNI unit made targeted arrests, executed productive search warrants – removing weapons and drugs – at comfort spaces, and built cases against prolific offenders operating in the area. In partnership with HOA representatives, the PNI investigative team altered place dynamics at the condominium complex in multiple ways (e.g., new HOA rules for owners and tenants, as well as improved security, cameras and gates) and leveraged oversight of a nearby market by external partners (e.g., code enforcement).

Recommended Action: Legal personnel embedded in PNI investigative unit activities could help to build stronger cases against problematic owners and managers. Resources associated with a formal PNI Investigative Board could be leveraged to more effectively and

⁹ Specific locations are approximate and do not represent specific addresses. It identifies potential crime sites (red circle), convergent settings (grey circle), comfort spaces (blue circles), and corrupting spots (green circle). The red “X” indicates a location linked to the network by a specific owner/manager found to be engaged in illegal housing practices.

quickly address challenging place and social dynamics, such as those found within the fourplex housing location.

Table 4: PNI Model Adherence and Recommended Action Summary

Step/Task	Model Adherence	Recommended Action
1. Select violent micro-locations		
Data-driven	Director of Crime Analysis input	Formal city-wide gun-violence analysis
Police input	Command staff input	---
Local resource identification	Considered in site selection	---
2. Select and train PNI unit		
Project champion	NEAC Captains	Assistant Sheriff involvement
Dedicated/skilled unit	Experienced Sergeant	Incorporate skilled investigators
Support personnel	Leveraged external resources	Embed personnel in unit
3. Establish and follow investigative protocols		
Undercover/surveillance	Numerous innovative activities	---
Trained CIs	CI involvement	Expand training and number of CIs
Sources of information	Contact with multiple sources	Consider additional sources
4. Establish, train, and gain compliance from PNI Investigative Board members		
County Commissioner	Willing to participate	Establish PNI Investigative Board
Assigned department heads	Informal cooperation gained	Direct assignment by Commissioner
Jurisdictional partners		Training for all partners
5. Gather pre-intelligence		
Police record analysis	Conducted on an on-going basis	Complete prior to project initiation
External record analysis		
Environmental surveys	Informal assessments conducted	Establish formal evaluations
6. Assess and establish intelligence systems		
PNI activity documentation	Formal bi-weekly documentation	---
Electronic case management	Accessible files	Formal network analysis
Surveillance access	Partnerships to leverage technologies	---
7. Conduct internal intelligence sessions		
Patrol sessions	Information sharing/bulletins	Formalized sessions
Specialized unit sessions	Informal information sharing	
Leadership briefings	Regular briefings to NEAC Captain	---
8. Collect community intelligence		
Owner/manager interviews	Conducted by PNI investigative unit	---
Resident interviews/surveys		Leverage partners to conduct surveys
Community meetings		---
9. Present intelligence to products to PNI Investigative Board		
Formal/scheduled meetings	Ad hoc board meeting held	Regular meetings with formal board
Appropriate board staffing	---	
Economic development	---	
10. Identify offender and crime place networks		
Site place connectivity	Identified crime place network	---
External place connectivity	Identified external network locations	---
Offender networks	Identified key offenders/associates	Formal social network analysis
11. Disrupt offender and crime place networks		
Build owner/manager cases	Identified manager involved in network	Embed legal personnel
Build violent offender cases	Targeted enforcement	---
Alter place dynamics	Physical changes and place oversight	Leverage board resources

--- = no specific process improvement recommendations

Impact on Gun-Related Crime

The primary goals of the current evaluation are to describe the PNI strategy as implemented by LVMPD and examine general model adherence to the strategy implemented by CPD, as presented in the previous sections. However, here we also note the early impact of the project on gun-related crime and consider the outcome within the context of the process evaluation results in the discussion section that follows.¹⁰ The results presented should be viewed and interpreted with caution. The 12-month post-intervention evaluation period may be insufficient to detect meaningful results associated with the PNI strategy, given the small geographic boundaries of the PNI site (see Hammer, 2020). Further, differences across CPD and LVMPD PNI sites and jurisdictional contexts should be considered when comparing outcomes across agencies.

We compared the number of gun-related offenses that occurred during the 12-month period after the LMVPD PNI investigative team began their work in the selected location to the number of gun-related offenses that occurred during the 12-month period prior to the start of the PNI initiative. Table 5 shows that the number of gun-related offenses declined by 39.1 percent following the implementation of the PNI strategy.¹¹

Table 5: PNI Impact on Gun-related Violent Offenses

	# Pre-intervention	# Post-intervention	% Change
Gun-related Offenses	23	14	-39.1

Further analyses examined a possible differential treatment effect by location. Table 6 reveals the number of offenses reported for each location within the PNI site. The data show that the number of gun-related offenses declined across all three locations. However, caution should be exercised when interpreting percent change values based on small numbers. These values are reported here for general comparison purposes, but future analyses based on a longer post-intervention period are required to confidently determine whether the strategy proved more effective at reducing gun-related violence at particular types of locations.

Table 6: PNI Impact on Gun-related Violent Offenses by Location

Location	# Pre-intervention	# Post-intervention	% Change
Condominiums	8	4	-50.0%
Strip Mall	3	2	-33.3%
Fourplex Housing	12	8	-33.3%

¹⁰ This presentation of crime incident data serves to inform the participating agency and does not represent a formal empirical evaluation of the project. Future evaluations could be strengthened by examining multiple PNI intervention sites over a longer post-intervention period with matched control sites for comparison purposes.

¹¹ No formal significance tests were conducted given the small number of offenses.

VI. DISCUSSION

The LVMPD PNI strategy was implemented as part of a combination of strategies used to reduce gang-member involved violence. Agency command staff elected to implement the PNI strategy in a single site, historically linked to gun-related gang violence in LVMPD's Northeast Area Command. Given the relatively recent development of PNI, the project was implemented with the goal of documenting the PNI investigative activities and process outcomes as part of a pilot project. Our evaluation of this pilot project was designed to review and describe LVMPD PNI investigative activities and assess the degree to which the agency was able to implement specific elements of the program.

A PNI investigative unit was assembled and assigned to the selected site. Following an initial training provided by the research team to investigators and internal/external PNI partners, a Sergeant assigned to the project led a team of officers to investigate offender and crime place networks in the target location. The PNI investigative unit identified key offenders and a set of locations that formed a crime place network within the site. The unit engaged in surveillance and intelligence gathering, external agency coordination and partnership building, effecting changes to physical locations and place management practices, and enforcement actions. On-going technical assistance was coordinated by the research team throughout the project. Documentation of PNI investigation activities and crime data were reviewed after 12-months of PNI strategy implementation.

Our interpretation of the program review and process evaluation findings can best be summarized as follows:

- 1) The LVMPD PNI investigative unit was highly productive in the targeted location. The wide variety of activities described in the program review reveal that, while traditional enforcement efforts were used to incapacitate or deter key offenders, the unit was also successful in building partnerships and changing both physical and social place dynamics. These partnerships and place-based changes focused on altering violence-facilitating dynamics and may lessen the need for future traditional police response or justice system intervention.
- 2) The LVMPD PNI investigative unit developed systems and processes that allowed implementation of the vast majority of PNI strategy elements. Overall, PNI model compliance was high. The unit addressed each implementation step through their investigative actions. The unit also expanded or improved upon Cincinnati PNI strategy processes across several implementation dimensions (e.g., innovative surveillance tactics, creative intelligence sharing processes).
- 3) To improve PNI strategy processes and effectiveness, the most critical recommended actions fall within four categories:
 1. leverage the influence of a project champion at the highest rank possible;

2. conduct additional formal analyses and intelligence gathering prior to site selection and throughout the PNI project;
 3. assign additional dedicated personnel to the PNI investigative unit activities (e.g., crime analyst, legal personnel, project manager); and
 4. establish a formal PNI Investigative Board led by city/county government representatives to regularly review PNI findings.
- 4) Although project limitations did not permit a comprehensive outcome evaluation, post-intervention changes in crime incidents numbers suggest that the PNI strategy may have contributed to a decrease in gun-related violent crime the in targeted site.

Policy Implications

The results of this study were presented by members of the research team to the LVMPD command staff in November 2019. Several research and policy implications were discussed at this meeting. These issues are relevant for both LVMPD officials and the larger law enforcement field.

First, the activities conducted by the PNI investigative team appear to have significantly altered place dynamics, particularly at the condominium complex. Site observations and discussions with property employees conducted by the research team supported investigative documentation suggesting that the project increased residents' perceptions of safety. Several other quality of life indicators (e.g., increased housing values, discussions between government leaders and Nellis Air Force Base regarding housing military personnel in the area) demonstrated evidence of neighborhood improvement following PNI implementation. As such, PNI, as implemented in Las Vegas, holds promise for reducing gun-related crime and improving residents' quality of life.

Second, although not the primary focus of the current evaluation, the decrease in gun-related violent crime appears less dramatic in Las Vegas than the decreases observed in Cincinnati following PNI strategy implementation. There are two plausible explanations for this difference. First, numbers of shootings and gun-related violent crime were higher prior to implementation in the Cincinnati sites than in the Las Vegas site. A Las Vegas location with a higher concentration of violence, or a site with a larger project boundary and more crime events, might have experienced a more dramatic decline. Second, the Cincinnati PNI strategy effectively leveraged the resources of the PNI Investigative Board. It is recommended that LVMPD work to establish this board before replicating this strategy in additional sites to enhance PNI strategy effectiveness and further lessen reliance on traditional criminal justice interventions.

Third, to fully assess the impact of the PNI strategy on gun-related violent crime, it is necessary to implement the program across multiple sites for a sufficient period of time. We do not yet know how contextual factors influence PNI strategy effectiveness. Implementing the strategy across sites that differ along physical (e.g., single family versus multifamily housing) and social (e.g., resident demographics) dimensions, as well as across multiple jurisdictional contexts (e.g.,

large metropolitan areas versus smaller urban cities) will help to determine when and where the PNI strategy is mostly likely to have the largest impact on crime. We have yet to assess potential displacement or diffusion of crime control benefits, or how these effects might vary across contexts. Further, it can take months to identify and implement PNI strategy interventions likely to produce long-term effects – like the HOA bylaw changes described in previous sections. Therefore, post-intervention assessment periods should be designed to consider the lagged effect of PNI strategy interventions.

While PNI is a relatively new strategy, it appears to offer a promising new approach to violent crime reduction. We remain cautiously optimistic about the potential of this approach to reduce gun-related violent crime in historically violent locations. Further evaluation is necessary to properly assess the impact of the PNI strategy on residents, businesses, police agencies, local governments, and the larger justice system.

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