Safe Physical Activity Study: Tracking Crime in Dayton Parks

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Executive Summary

Public Health – Dayton & Montgomery County (PHDMC) and the Miami Valley Regional Planning Commission (MVRPC) in partnership with Wright State University are conducting the Safe Physical Activity Study (SPAS), tracking crime in 32 parks and a trail in the City of Dayton’s Downtown, North Central, and West sections. Safe parks are critical to the PHDMC goal of providing safe recreational opportunities, increasing physical activity, and improving the health of these communities.

Using crime data generously provided by Dayton Police Department and Five Rivers MetroPark Police, this report provides an analysis of park crime for the year of 2016. Every count of crime exposes the illegitimate uses and users of our parks. The greatest threat to the parks – violent crime – murder, rape, robbery, and assault – is noted as a percentage of total crime, revealing the challenge of protecting the park’s patrons from physical harm. Crime is segmented into seasonal quarters to discover if crime increases during the warmer months when park usage is expected to increase. Crime per acre, a crime rate developed exclusively for parks, displays the risk crime associated with each park. To better measure the proportion of crime in the parks, the density of crime in the parks is compared to the density of crime in the city.

Parks with “Contested” Space

Parks with high crime totals are in a “state of contest” between legitimate and illegitimate users. A total of 170 crimes were reported in the 32 parks in 2016. Of the 170 crimes, 60 (35%) were violent. There were no incidents of murder in the parks. Two reported rape incidents occurred in Downtown’s Dave Hall Plaza and Wesleyan MetroParks. Wesleyan MetroPark had the highest
Safe Physical Activity Study: Tracking Crime in Dayton Parks

park crime count with 68 total crimes of which 47% was violent. RiverScape had the second highest park crime count with 27 total crimes, however, 89% of the crimes were nonviolent incidents including 11 counts of property crimes and 13 disorder crimes. Dave Hall Plaza, future home of the Levitt Pavilion Amphitheatre, had the third highest park crime count (16), with 31% of the reported incidents being violent. Other parks with notable crime totals include two parks with adjoining recreation centers Greater Dayton Recreation Center (GDRC) at Roosevelt Commons (14) and Princeton Park and Northwestern Recreation Center (NWC) (9). Parks with notable crime totals are in a state of “contest” between legitimate and illegitimate users. These parks are not deemed dangerous, but “contested”, both the GDRC and NWC draw a large spectrum of cliental and provide a multitude of recreational opportunities for the community-at-large.

The Parks Are Mostly Safe

In general, the parks are safe from crime, with incidents of rape and robbery being rare. Sixteen of the thirty-two parks (50%) had no reported incidents of crime. Of the sixteen parks reporting crime, nine had five or fewer crimes in 2016. Property and disorder crimes dominate the park crime figures, accounting for 65% of total park crime.

Planning for Risk

As with any crime rate, crime per acre states the risk of using the park. RiverScape MetroPark leads all parks with 5.11 crimes per acre, followed closely by another Downtown section park Dave Hall Plaza with 4.23 crimes per acre. In both instances, the risk is nonviolent crime, thus the threat is to property or disturbance and not violence

Overall, the crime per acre average for all parks is 0.52, indicating there is one crime for every two acres of park land. However, three parks have more than double the average crime rate, including
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Gillispie Playground (1.41) GDRC at Roosevelt Commons (1.24) and Wesleyan MetroPark (1.12). By knowing the crime rate, the PHDMC, MVRPC, and other stakeholders can create strategies that mitigate the risk of patrons using the parks.

**Crime, Heat, & Violence**

Separating the seasons by quarters, the third quarter, comprised of the warmest months of July – September had the highest total crimes and the most violent crime. Surprisingly the fourth quarter comprised colder months of October – December had the second highest crime total, with property crimes accounting 64% of the reported incidents. In both quarters, Wesleyan MetroPark had the highest crime total amongst the parks.

**Park Crime Is Below the City Trend for Crime**

Despite some outlier parks, the parks in aggregate are 63% below the City of Dayton’s trend for all crime, based upon finding of an analysis that compares the parks’ crime density to the City of Dayton’s crime density. Known as a location quotient (LQ), the parks, as a collective and individually are compared to the City of Dayton’s crime density, which is set as a quotient of 1.0. If the parks as a collective exceed 1.0 they are above the trend, if lower, they are below the trend. The LQ for the collective parks was 0.37, well below the 1.0 standard. Therefore, the parks as a group are said to be 37% with the trend or 63% below the City of Dayton’s crime trend. This analysis was also conducted on the immediate surrounding of the parks, to determine the level crime density that may affect residents’ ability to engage in this public space similar results. Within an area equal to a half-block distance from the park was 73% below Dayton’s crime trend. The areas equal to a one block distance and a one-and-half-block distance from the parks were 65% and 62% below the city’s crime trend.
Recommendations for Keeping Our Parks “Below Trend”

1. **Dayton Police CPTED Assessment of the built environment.** Dayton Police Department inspection of parks with moderately high crime totals using Crime Prevention Through Environmental Design (CPTED) principles to assess if the layout of the park, including lighting and landscaping is encouraging crime. CPTED’s goal is to prevent crime by designing a physical environment that positively influences human behavior. The theory is based on four principles: natural access control, natural surveillance, territoriality, and maintenance.

2. **Increased Patrol of Dave Hall Plaza.** Dave Hall Plaza is strategically placed amongst high profile activity generators including, Crown Plaza Hotel, RTA Bus Hub, Dayton Convention Center and the Oregon District and is part of the Downtown Dayton’s Central Business District. Dave Hall Plaza also serves as one of three parks that comprise Downtown’s recreation opportunity for its growing residential component and is the future home of the $5million Levitt Pavilion, an outdoor concert venue. This is an asset that must be protected.

3. **Partner with Dayton Public Works and Dayton Police Department, ensuring crime prevention strategies are at the forefront of park redevelopment.** Parks can be redesigned to encourage active physical recreation, with strategically placed tracks and trails, that coupled with proper lighting and signage can attract legitimate users and increase safety. The Dayton Police play a pivotal role in ensuring that CPTED principles are integrated into the design phase.
4. **Find public and private funding to install cameras in the parks.** Cameras should be installed in parks with high crime totals as a deterrent to criminal activity. The City of Dayton can provide public funding as an extension of their park renovation plan. Private funding source should be sought from businesses and philanthropic foundations that take an interest in our community’s health. An example of this is Premier Health’s Good Samaritan Hospital providing funding for cameras in Fairview Park as part of an effort to reduce crime in the neighborhood.

5. **Conduct a focus group with residents of DeSoto Bass Housing Complex and business owners and residents that live along the Wolf Creek Bikeway in the James H. McGee Corridor.** Gillispie Park is part of the housing complex and strategically placed to provide recreation to the residents of this community. A focus group can uncover how many crimes go unreported and other incivilities that may hinder residents from using the park. A Wolf Creek Bikeway focus group can discover how residents really use the bikeway and uncover the underlying causes of crime in the area. The PHDMC could conduct a mobile health fair at the DeSoto Bass and Western Manor apartment as a prelude to the focus group.
Acknowledgements

This report would not be possible without the contributions of talented professionals and organizations that are concerned about park safety and most importantly, the people and communities who deserve equal access to safe recreation and healthy lives. This is a moment say thank you to the following individual contributed to the shaping of the report:

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Special thanks to Chris Bish, for organizing the data and producing the GIS generated maps included in this report.

Finally, a very special acknowledgment goes to Lucy Robson and the staff at New Yorkers for Parks, a non-profit organization committed to tracking crime and improving safety in New York City parks. It was their 2008 report, Tracking Crimes in New York City Parks, that provided the framework to approach tracking crimes in our parks. Their unique method of measuring crime is replicated in this report.
Tracking Crime in Dayton Parks: Safer Parks, Better Health

Public Health - Dayton & Montgomery County (PHDMC) in partnership with the Miami Valley Regional Planning Commission (MVRPC) is conducting the Safe Physical Activity Study (SPAS) to determine the actual amount of crime in select West Dayton and Downtown Dayton parks and trail in zip codes 45402, 45406, and 45417. Safe parks are essential to the PHDMC goal of increasing equal access to physical activity opportunities and improving the health status of the citizens in these communities.

Increased physical activity can aggressively combat various maladies including obesity, high blood pressure and diabetes. Assuring safe park space is paramount to achieving the goals set forth in the Community Health Improvement Plan (CHIP). The PHDMC’s CHIP is a long-term plan that identifies health priorities, goals, objectives, and action steps that can be used by community organizations to guide them in improving the health of Montgomery County’s residents. Essential to this plan is the objective of increasing the number of existing parks and recreation facilities in the targeted areas that are safe by 10%.

With this objective as the impetus, the PHDMC has partnered with the MVRPC to plan a concerted effort to make this a reality. As the preeminent planning organization for Montgomery, Miami, Greene, and northern Warren County, the MVRPC has a developed network of collaborators including local law enforcement and park organizations that bolster the efforts to reach this goal. In addition, the MVRPC with its longstanding relationship with Wright State University’s School of Urban and International Affairs has invited the Masters of Public Administration Program and Department of Geography to conduct research and transform raw crime data into statistics that provide a narrative of the crime in our parks.
Safe Physical Activity Study: Tracking Crime in Dayton Parks

Crime data generously submitted by City of Dayton Police Department and Five Rivers Metro Park Police was mapped and analyzed to provide an intricate depiction of not just crime in the parks, but the various types of crime that can utterly jeopardize resident’s ability to utilize this public space freely. Interviews with experts in the fields of recreation, policing, and park safety are used to form recommendations. This report uncovers the levels of violent, property, and disorder crimes in our parks. Separated by quarters, seasonal trends for park crime is identified. An individual crime rate is developed for each park. Finally, this report compares the collective crime in the parks to the collective crime of the City of Dayton.

What is most important is that every reported incident effected a member of our community in their attempt to use our parks. Every documented count of park crime is tracked in this report establishing a benchmark, a target, for reducing these occurrences in the 32 parks that constitute this study. This the first step, as the PHDMC and MVRPC plan to conduct community focus groups to gage their perceived safety of the parks. This will be coupled with inspection of parks to examine if the layout of the park is enabling crime. **However, this all begins with tracking of actual crime in Dayton parks.**

(Continued on page 3)
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Table 1: The Parks – City Section\(^1\), Neighborhood, and Zip Code

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**Trail Name**

| Wolf Creek Bikeway | West | Wolf Crk. / Westw. / Roosev. | 45417/45402 | N/A |

1. *Table 1 Displays the 32 parks with their designated Priority Land Use Board Division and neighborhood. Throughout this report the Priority Land Use Board Division will be used to identify park location within the city. Thus, a park will be in the Downtown, North Central or West section of Dayton.*
Review of Crime Tracking Measures

Tracking crime in Dayton area parks requires the implementation of methods from a well-formulated, established model. The New York Parks Department (NYC Parks) and New York Police Department (NYPD) criteria of tracking the seven Major Felony Crime Complaints (MFCCs) will serve as the focal point for tracking crime in the Dayton parks. The MFCCs include murder, rape, felony assault, robbery, burglary, grand larceny, and grand larceny auto (Huber 2008). The NYPD tallies these MFCCs to determine which parks have the highest number of total crimes (Huber 2008). In this report, the terminology for the number of total crimes in a park is park crime count.

Park crime count is a basic metric that is used to assess locations of crime “hotspots,” assess police workloads and estimate future resource needs (Brantingham and Brantingham 1997, p. 266). These counts are transformed into a multifaceted set of measures revealing various patterns of criminalization affecting the parks. Park crime counts are used to calculate the percentage of violent crime and property crime, seasonal crime trends, and crimes per acre. Crime per acre is a measure that allows comparison between parks with different acreage sizes (Huber 2008).

The park crime counts and any of its produced calculations provide Public Health – Dayton & Montgomery County (PHDMC) with the ability to consistently measure crime on an annual basis.
Parks with stark increases in counts, percentages, and rates of the crime indicate the ability to use those parks is at risk, directly affecting the health of the citizens in these communities. New Yorkers for Parks utilized these measures, in their report *Tracking Crime in New York Parks*. New Yorkers for Parks is a nonprofit New York City park advocacy group that was instrumental in shaping policy concerning park safety.

**Distinguishing Violent Crime and Property Crime**

The PHDMC will separate the percentage of violent crime from property crime to further define and enhance the measure of increasing safety by 10%. In the New Yorkers for Parks study the violent crime category includes murder, rape, robbery, and felony assault (Huber 2008). The Ohio revised code also includes (simple) assault, menacing and sex offenses as violent crime and will be classified accordingly for this report (Ohio Revised Code). As in the New Yorkers for Parks study, this study will distinguish if there is more violent crime or property crime, and the PHDMC and MVRPC will use this information to implement crime prevention strategies with local law enforcement agencies.

Developing violent crime indicators will inform the PHDMC, stakeholders, and specifically law enforcement, of the severity of the crime affecting the public’s ability to engage in physical activity at local parks. Calculating violent crime is important because parks are often stereotyped as harboring this category of crime. Troy and Grove (2008) analysis of park crime in Baltimore, separated robbery and rape as indicators most relevant to residents’ perceptions and fears of crime in parks. Their reasoning was based on the notions of actuality and randomness. Troy and Grove
highlighted robbery and rape as the type of crimes that often occur in parks and can occur to anyone who happens to be in the wrong place at the wrong time (Troy & Grove 2008). Fear of violent crime can force citizens to avoid participating in certain recreational activities altogether or alter their recreation participation (Stodolska Acevedo and Shinew 2009) and can hinder children from participating in outdoor recreation at parks (Stodolska Acevedo Shinew and Roman 2013).

Identifying Seasonal Crime Patterns

The PHDMC will track seasonal crime patterns to identify if there is a marked increase in crime during warmer months when the potential for physical activity increases. New Yorkers for Parks and the NYPD utilized this measure to identify an increase in crime during warmer months. In the New York study, crime data was divided into four, three-month segments. The months of April to June and July to September represented the two warm segments. The cold month segments were comprised of January to March and October to December. The PHDMC will segment the year accordingly to identify seasonal trends in the data. In the New York study, the number of crimes during the segments, spanning from April – September 2007 rose in comparison to the cold month segments, January – March, and October – December 2007 (Huber 2008).

This finding supports other studies that found a correlation between warm weather months and crime. The results of Cohn and Rotten (2000) seasonal crime analysis indicate that Minneapolis police received more reports of burglaries, thefts, and robberies during warm periods. Brunson et al. (2009) found significant correlations between high temperatures and violent crime, with their results indicating that both temperature and humidity significantly affect the geography of disorder or disturbances calls to police. They also suggest from a policing perspective seasonal trends can
be part of an early warning crime and incident system to help justify resource allocation decisions or as part of a resource targeting strategy (Brunson et al 2009). The PHDMC will utilize the measure of violent crime and seasonal crime to identify trends in the data and form collaborations with agencies that will institute corrective actions.

Scaling Parks for Comparison

Public Health and the MVRPC will use the crime per acre metric to compare the rate of crime in parks of varying sizes. Crime per acre is substitute standard measure that will establish a crime rate for parks and allows comparisons between parks of different sizes. New Yorkers for Parks utilized this metric due to their study’s vast range in park acreage (Huber 2008).

The crime rate is calculated by dividing the number of reported crimes by the total population (“Computational Formula” n.d.). Replicating this crime rate calculation for parks would require totaling the amount park visitors to create a “population”. Unless park visitations are recorded, substitute measures such as these must be used to assess the risk of crime occurring in a park. It would be a daunting challenge to even estimate the users of neighborhood parks, which constitutes 55% of the parks in this study. City of Dayton Department of Parks and Recreation, nor Five Rivers Metro Park collect data on park usage at a substantial level sufficient to create an exclusive crime rate for the parks.

The crime per acre measure will specifically indicate if the neighborhood parks have a higher rate of crime compared to a large community or regional parks. A higher rate of crime in a neighborhood park will prohibit residents from partaking in physical activity in parks that are in
the closest proximity to their residence. The National Recreation and Park Association (NRPA) states “that routes neighborhood parks should be no longer than a half of mile (within a 10-minute walk) from where people reside” (“Safe Routes to Parks: Improving Access to Parks through Walkability,” n.d. p.6).

A high crime rate for a neighborhood park will serve as an indicator to the PHDMC that corrective measures are needed to increase safety at the park. “Crime rates, such as these, are particularly useful in planning prevention campaigns and in assessing the impact of changing social conditions influencing the risk of crime” (Brantingham and Brantingham 1997 p.266). The PHDMC can examine any rise in non-criminal incivilities such as intimidating groups and disorderly youth that is negatively affecting the social environment, leading to an increase in crime at a specific park (Cohen et al., 2016; Hilborn 2009)

Finally, a high crime per acre total may indicate issues with the built environment. Parks with high crime rates may contain problematic features that discourage people from walking to parks and maintaining regular physical activity. Dense shrubs, inadequate lighting, and lack of formal surveillance are features of the park that could cause criminal activity to flourish (“Safe Routes to Parks: Improving Access to Parks through Walkability,” n.d.; Hilborn 2009). Thus, a high crime rate may be due to the park’s physical layout making offending easy, rewarding, or risk-free (Hilborn 2009).

Crime rates, such as crime per acre, are used to assess the risk of crime occurring to particular types of people in particular location (Brantingham and Brantingham 1997). In this occurrence, the metric assesses the risk of a particular type of people – park users – in a particular location – our parks. To further assess these risk, the PHDMC and MVRPC will inspect neighborhood parks with high crime per acre totals as part of the final phases of the Safe Physical Activity Study to be conducted within the next year.
Other Crimes Impacting Parks

As part of increasing parks safety, the PHDMC will also track the crimes of vandalism, arson, prostitution, sex offenses, disorderly conduct, and drug abuse violations. The decision was based upon the United States Department of Justice (USJ) report, *Dealing with Crime and Disorder in Urban Parks*, which describes how graffiti and illicit sexual activity in public places are not only criminal acts but serve as a perception altering elements for the community at large (Hilborn 2009). The report, produced by safety expert Jim Hilborn, founder of the Baltic Crime Prevention Practitioners based in Tallinn, Estonia, describes a multitude of park crime indicators that are critical to maintaining safe public space (“Jim Hilborn,” 2017). While the NYPD and New Yorkers for Parks concentrated on MFCCs, Hilborn focuses on disorderly conduct by youth and drug dealing in open markets as many of the antisocial and criminal acts that occur in urban parks (Hilborn 2009).

These are some of the features Hilborn deems a “Risky Park,” a place where crime and disorder have become the norm to the degree that local users consider the park unsafe, thus avoid being in the park, and limit their time in the park to necessary activities (Hilborn 2009). These parks are full of other violations of the law that are quantified to measure "risk. A "bad" place or "risky" facility sends out cues inviting crime and disorder. Vandalism, littering, dog fouling (solid waste), alcohol and drug abuse, and public sex has become the dominant activities in the park (Hilborn 2009). This notion of "risk" coincides with research by Cohen et al., on the measuring of incivilities. Their research focused on measuring incivilities such as
intoxication (drunkenness) and fighting (simple assault) in 48 neighborhood parks to determine how they affect park usage (Cohen et al. 2016).

Hilborn and the NRPA descriptions of vandalism provided legitimate context to also add arson to the list of crimes affecting parks. As Hilborn states, “Vandalism easily destroys the pleasure of being in a "natural" park setting and is the fundamental reason why a majority of users engaged in legal activities is so critical to the park's continued viability” (Hilborn 2009, p.17). NRPA states “Vandalism contributes to perceptions of fear because litter, graffiti, and broken furniture all support a place is uncared for and possibly unsafe” (“Creating Safe Park Environments to Enhance Community Wellness,” p.2). Arson, like vandalism, creates an image of instability that would deter patrons from using the parks. If the damage is severe, it transforms park structures into a safety hazard that prohibits usage.

Hilborn’s definition of a “risky park” featuring public sex acts provides the context to add other sexually oriented crimes such as prostitution and sex offenses (fondling, statutory rape, incest). Preventing sexually oriented crimes in parks will combat two health problems for the PHDMC. The parks will be safer, increasing opportunities for physical activity, while disturbing sexual crimes such as prostitution that spread sexually transmitted diseases.

The effects of the MFCCs and these crimes on public perception of safety will undermine the PHDMC objective of utilizing parks for physical activity. Future phases of the Safe Physical Activity Study will measure the community’s perception of safety in these zip codes. Additional information on how vandalism, lighting, signage and other features of the built environment effect on parks and the perception of fear, are included in Appendix D.
Mapping Crime for Comparison: Location Quotient Analysis

The PHDMC will use indicators generated from a location
quotient analysis to compare the density of crime in the parks
(and their immediate vicinity) with the density of crime in the
entire City of Dayton. This analysis is an adaptation of the
methods utilized by Groff and McCord in their article, *The role
of parks as crime generators*. Groff and McCord used location
quotient (LQ) analysis and a geographical information system
(GIS) technique, buffering, to discover if the parks and their three
block vicinities had a higher concentration of crime compared to
the concentration of crime in the entire City of Philadelphia. Groff and McCord (2011) theorized
that neighborhood parks will have more crime in their immediate vicinity. Furthermore, crime
levels will decrease as the distance from the park increases. Thus, parks are conceptualized as
“crime generators” – places that attract more people, including people with negative intentions.

Groff and McCord use of LQ in criminology is part of an expansive attempt to measure crime
by means of location comparison. LQs are ratio measures that were developed to indicate activity
in one area compared to its surrounds (Brantingham & Brantingham 1997). LQs are primarily used
in regional planning and economics (Brantingham & Brantingham 1997) as an analytical statistic
that measures a region’s industrial specialization relative to a larger geographic area (“What are
location quotients (LQs)?” n.d.). LQs analysis has been used in crime analysis to examine
connections between socioeconomic segregation, land use, and crime (Hirschfield & Bowers
1997) the spatial-temporal relationship between repeats shooting in the Philadelphia area (Ratcliffe
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& Rengert 2008) and to test the negative effects of sexually oriented business in the city of Louisville (McCord 2014).

From Philadelphia to Dayton: Applying Location Analysis to Our Parks

To initiate the location quotient analysis, Groff and McCord assessed parks in the City of Philadelphia using three categories of crime data: violent crime, property crime, and disorder events (Groff & McCord, 2011). The main component of the analysis was the park environs, which consist of parks and a 50-foot buffer drawn around a digital map of the parks. A buffer is a specified area (drawn) around a feature on the map (Boba 2005, p.43). Therefore, the park environs capture any crime that occurs on the streets immediately surrounding the park.

Groff and McCord’s (2011) study was confined to neighborhood parks, mini-parks, squares and plazas all less than 10 acres and meant for local residents within ½ mile. Capturing the streets surrounding the parks within the 50-foot buffer allows for comparison with the city’s crime concentration. Groff and McCord also wanted to compare the density of the crime in the three blocks surrounding each park. Using the same buffering process, three segments of distance ranging from 0 to 400 feet, 400 to 800 feet and 800 to 1200 feet (Groff and McCord 2011) were drawn around each park. The 400-foot buffers were used because they approximate the average length of a street block in Philadelphia (Groff and McCord 2011, p. 10). Thus, the 0 to 400-foot segment equals one city block distance from the park environs, the 400-800-foot segment is a two-city block distance from the park environs and 800 – 1200-foot segment is a three-block distance from the park environs.

The aggregate density of crime in the park environs and each segment was compared separately to the density of crime for all of Philadelphia. Through this process, individual parks (environs),
as well as parks as a whole, were assigned a single LQ value. An LQ value of less than 1.0 indicates less density than in the entire city and a value of greater than 1.0 indicates a higher density (Groff and McCord 2011, p.10). Groff and McCord (2011) established an LQ value of 2.0 as noteworthy clustering since it indicates the density of crime around a particular park is twice that of the entire city, suggesting that the park is likely to have promoted the occurrence. Therefore, 2.0 is established criteria to designate parks as “crime generators” (Groff and McCord 2011; Rengert et al. 2005).

This process will be reproduced for the parks in this report, however key measurement features will be adjusted to fit the City of Dayton and the objective of this analysis. The buffer will be set at a 1/3 of a mile (1800 feet) for each park and segmented at 300-feet, 600-feet, and 900-feet. The 1/3-mile buffer represents service area of a neighborhood park based on NRPA standards. The NRPA suggested service area for a neighborhood park is ¼ to ½ mile (“Recreation Size and Occupancy Standards” 2012). However, for accuracy purposes the buffers cannot be extended to ½ mile radius. The City of Dayton average block size is 520-feet, thus for the purpose of even segmenting, the 600-foot buffer will be considered one city block, with 300-foot buffer representing ½ block distance and the 900-foot buffer representing 1 ½ block distance from the block.

As in the Philadelphia study, the Dayton area LQ analysis focus on neighborhood parks, but will also include our community and regional parks in the analysis. Despite being a regional park, RiverScape also serves as a neighborhood park for our burgeoning downtown residential component. The three largest regional/large community parks, Wesleyan (61 acres), Madden (110 acres), and Possum Creek (559 acres) and will be included for similar reasons. Sections of Wolf Creek Bikeway that are part of the Wesleyan MetroPark park environ are included in the analysis.
Finally, following Groff and McCord (2011) and Rengert et al. (2005) the density of crime for the whole City of Dayton will set as an LQ of 1.0 with an LQ of 2.0 or higher will designate our collection of parks as “crime generators”. An LQ value of 2.0 means the proportion of crime density in the parks (environs) is twice the crime density of the whole city of Dayton. However, do to the political and social implications of this terminology, crime generator will be replaced with the term park crime nexus. **Park crime nexus can be defined as the connection between the park(s) and crime at an LQ level of 2.0 or above.**

The purpose of the LQ analysis in this report is to discover if crime clustered in and around our parks and not whether the parks "generated the crime". Thus, the terminology park crime nexus is more indicative of this study's reasoning for using this analysis. However, for clarity, it is important that the concept of crime generator is thoroughly presented.

**Placing “Crime Generator” in The Proper Context**

> "Some places, such as shopping malls and schools, which attract many people will by definition attract a certain proportion of users who are motivated offenders. The more people attracted, the greater the number of potential targets and offenders. In this way, neighborhood parks meet the criteria for being crime generators; they act as general gathering places for people who would probably not congregate in the neighborhood if the park was not there and who subsequently end up being involved in crimes at or near the park" (Groff & McCord, 2011 p.3)

The term crime generator can be better understood in contrast with the concept of crime attractor. **Crime generators** are places that attract large volumes of people generating criminal opportunities (Brantingham & Brantingham 1997, p.271). **Crime attractors** are places notorious for providing opportunities for crime; offenders travel there with the pre-established intention of committing some specific crime there” (Brantingham & Brantingham 1997, p. 271). LQ are indicators of what generates interest in and attracts people to a particular location.
In this instance, LQ values indicate that people are attracted to regional, community and neighborhood parks. Most come for legitimate purposes, others for illegitimate purposes. The LQ provides the PHDMC with a crime indicator that displays both. The more people attracted, the greater the number of potential targets and offenders (Groff and McCord 2011). Neighborhood parks attract an aggregate of the community population that will include those with criminal inclinations and thus it is not the park or even the neighborhood that is dangerous, but the actions of a single individual or a select few conjugators.

The parks “generate” visitors and statistically speaking, an extremely small percentage of them commit “crime”, thus the term “crime generator”. Malls, stadiums and amusement parks could also be classified as crime generators. Parks are not crime attractors. “Crime attractors are non-residential locations with a reputation for crime-related opportunities” (Groff & McCord 2011 p.3). Bars and taverns, red-light districts and illicit drug markets are all classified as crime attractors (Groff & McCord 2011).

**LQ and PHDMC**

The use of LQ analysis demonstrates how mapping different measures of crime and comparing the results can enhance crime analysis (Brantingham & Brantingham 1997). LQ analysis provides the PHDMC with the ability to produce a relative comparison between the density of crime in the parks and the crime density of the entire City of Dayton. This comparison indicator can be cataloged on an annual basis establishing a benchmark for performance in crime safety.

The LQ, being neither a rate or percentage, provides an additional alternative view of crime. (Brantingham & Brantingham 1997) The LQ is without dimension; it is a relative measure that encompasses both the rate and percentage (Brantingham & Brantingham 1997). The power of the
relative measure is the ability to develop relative proportionality, meaning if the relative proportion of crime in a smaller study area – our parks – is less or below the normal trend of the larger area – Dayton – means that is safer by a direct percentage (Brantingham & Brantingham 1997).

For example, a set of parks (smaller area) with an LQ of .07 for property crimes relative to a larger area with an LQ of 1.0, means the smaller area is 30% \((1.0 - .07 = .03)\) below the trend for property crime (Brantingham & Brantingham 1997). Knowing the actual percentage above or below the trends provides a valuable indicator that states how safe the parks are compared to the community at-large. LQ percentage indicators can be coupled with the future perception of safety study to measure if the community’s perception of park safety parallels with the actual safety of the parks.

This is important because even experts have different opinions on the effects certain crime has on perceptions of park safety. Cohen et al. findings on measuring incivilities, concluded that people continue to use the park despite the incivilities, while Hilborn (2009) believes that certain demographic of park users will decrease. In the Cohen et al. study the correlations were positive: the more people in a park, the more likely we were to observe intimidating groups, homeless people, intoxicated people, and loose dogs (Cohen et al., 2016). This phenomenon aligns with the notion that public space such as a park will always be a "contested space" (Hilborn 2009). Therefore, a park with a high LQ value does not mean that the park is unusable, but it does serve as an indicator to PHDMC and other stakeholders that the park must be monitored for changing social conditions that could increase crime levels. Appendix C contains more information on how crime impacts and transforms parks.
Safe Physical Activity Study: Tracking Crime in Dayton Parks

Pathway to Discovery

The PHDMC desires that the parks become generators of increased physical activity. Some criminals are attracted to parks to commit a crime. **The purpose of this report is to discover how much crime is in parks within the City of Dayton borders:**

- What parks have the highest park crime count?
- What is the percentage of violent crime in the parks?
- Are crime totals higher during the warm months from April to September?
- Is the crime per acre higher in neighborhood parks or our regional park?
- Is the parks’ crime per acre lower or higher than the City of Dayton’s crime per acre?
- Does crime density decrease as the distance from the park increases?
- Is crime density higher in the parks compared to the crime density in the City of Dayton?

Measures provided by the literature review will be applied to answer these questions. These compiled measures form the Park Safety Fulcrum (PSF), a measurement tool that will be utilized to assess the amount and density of crime in the parks. **The Park Safety Fulcrum** includes all the relevant and traditional measures of crime, including counts, rates, and percentages, with the added feature of a crime density comparison indicator. **Figure 1** is a visual representation of the combined measures that support the ability to act strategically against crime in our parks. *(Continued on page 18)*
Figure 1: Park Safety Fulcrum

**MFCCs:** Murder, Rape, Aggravated Assault, Robbery, Burglary, Grand Larceny, and Grand Larceny Auto (Huber 2008) Arson

**TRACKING NON-MFCCS CRIMES:** Vandalism, Sex Offense, Disorderly Conduct, Menacing, Prostitution, Drug Abuse Violations, Driving Under the Influence (Hilborn 2009)

**Park Crime Count:** the number of total crimes (Huber 2008)

**VIOLENT & PROPERTY CRIME:** separating the percentage of violent crime from property crime will further define and enhance the measure of increasing safety by 10%. Higher percentage of violent crime indicates the need for increase in security resources (Huber 2008)

**SEASONAL CRIME PATTERNS:** reveal if crime is increasing in the warmer months of April till September (Huber 2008)

**CRIME PER ACRE:** is substitute standard measure that will establish a crime rate for parks (Huber 2008)

**CRIME MAPPING:** “Crime mapping is the process of using GIS to conduct spatial analysis of crime problems” (Boba 37).

**LQs:** are ratio measures that were developed to compare activity in one area compared to its surrounds (Brantingham & Brantingham 1997) (Groff and McCord 2011)
APPLYING PARK CRIME MEASUREMENT METHODS

This section describes how the aforementioned questions will be answered using the Park Safety Fulcrum (PSF). The PSF is comprised of measures adopted from the literature review in this report. This section provides information on the unit of analysis, data, descriptive measures (counts, rates, and percentages) and statistical techniques utilized to track crime in the thirty-two parks that encompasses the field of observation. Counts were used to determine the park crime count for total crimes, violent crime, and property crime. (Huber 2008; Brantingham & Brantingham 1997). Counts were used to calculate the percentage of violent crime and determine seasonal crime trends (Huber 2008). The park crime counts for total crimes were converted into crimes per acre, providing a crime rate for the parks (Huber 2008). Location quotients (LQs) were used to discover if the parks and their immediate surrounding areas have higher crime density in comparison to the whole city (Groff and McCord 2011).

Data

The Miami Valley Regional Planning Commission (MRPVC) provided open space shape files containing all the parks and trail area. The thirty-two parks in this study include parks designated by the MVRPC as regional, community, and neighborhood parks. The report’s only trail is Wolf Creek Bikeway, a 17-mile trail that begins at the Great Miami Valley River and ends in the Village of Verona. Only the sections of Wolf Creek Bikeway that fall within the City of Dayton boundaries (zip code 45402 and 45417) will be analyzed in this report. Information on the parks and trail was provided in the MVRPC’s Project Open Space shapefile. A shapefile is a format for storing the geometric location and attribute information of geographic features. Geographic features in a shapefile can be represented by points, lines, or areas (polygons) (“What is a shapefile n.d.”)
The crime data was obtained from the City of Dayton Police Department and Five Rivers MetroPark Police. The Dayton Police crime data was provided in excel format as a point table and geocoded containing the exact address of the occurrence as computerized map coordinate points. “Geocoding is the process of linking an address with its map coordinates so that the address can be displayed on the map”, (Boba 2005, p. 88). The MetroPark Police crime data was provided in excel table format for each park and assigned coordinates using the regional open space data.

In accordance with this study, the initial data set only contained crimes that occurred in zip codes 45402, 45406, and 45417. The Dayton Police supplied a second data set containing crimes that occurred in the entire city. This data was used to for crime density comparison and mapping. The citywide crime data will be used by Public Health – Dayton & Montgomery County (PHDMC) and the MVRPC in a future expansion of this study covering select parks in East and North Dayton.


The unit of analysis for this report is the thirty-two parks and trail and their immediate surrounding street that connect to their environment. Using ArcGIS 10.5, a 50-foot buffer was drawn around each park to create park environs. Park environs capture all crime on streets surrounding the park. Per Groff and McCord (2011) the streets adjacent to the park are part of its
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“situational backcloth”, meaning proximity translates into a greater likelihood the two will influence one another and thus the two are represented as a related whole.

The 50-foot buffer eliminated the challenge of counting crime geocoded to the surrounding street and not documented as occurring directly in the park (Groff and McCord 2011). The Dayton Police and MetroPark Police crime data provided the address of the crime but did not indicate if the crime occurred directly on park grounds. The park environs (park plus the 50-foot buffer) provides the means to geocode the crime that is directly related to the park. Groff and McCord created the park environ to address an identical limitation in their Philadelphia study, thus the park environ was utilized to accurately geocode crime in Dayton area parks.

Counts Calculated as Percentages

Counts were used to determine the park crime count for violent and nonviolent crime. As previously discussed, counts are a simplistic, basic metric that is transformed into various measures. “Counts are used to assess the locations of "hot spots," assess police workloads and estimate future resource needs” (Brantingham and Brantingham 1997 p266). The park crime count will provide PHDMC and law enforcement agencies with the total amount of crime for each park and are the first indicator a park requires corrective intervention. The park crime counts for the thirty-two parks and trail were used to calculate the percent of violent crime in the parks. According to Ohio Revised Code, violent crime categories include: homicide, rape, aggravated assaults, simple assault, sexual offense, and menacing (Ohio Revised Code). These measures are used by the New York Police Department and the New York Parks Department and are applied to this Dayton area study (Huber 2008).
Seasonal crime patterns: counts by quarter

The crime counts were divided by quarters to identify patterns of increased crime during warm months when physical activity increases in the parks. The four segments are divided into the colder months of Jan – March (Quarter 1), and October – December (Quarter 4); the warmer months April – June (Quarter 2) and July – September (Quarter 3). Adapted from the New York Yorkers for Parks study, each quarter will be presented in a bar chart. Within the bars, the percentage of violent and nonviolent crime is displayed to discover if violent crime increases during the third quarter from July to September (Huber 2008).

The PHDMC will use seasonal crime patterns from this report as a benchmark for future studies. Five Rivers MetroPark Police data did not provide dates for crimes occurring in their parks, thus, incidents from their data could not be used to calculate seasonal crime changes. However, crimes recorded by Dayton Police in Five Rivers MetroParks territory was included in the calculation.

Counts Calculated as Crime Per Acre

Counts were also used to calculate crime per acre. Crime per acre provides a crime rate for the parks (Huber 2008). As previously discussed, when park attendance is not recorded at a substantial level a crime rate exclusively for parks cannot be established. This calculation produces an exclusive crime rate for parks and allows comparison between small and large parks (Huber 2008). The parks in this report range from 2 acres (Thal Park) to 559 acres (Possum Creek).

As in the New Yorkers for Parks study, the crime per acre metric was used to establish a crime rate for Dayton area parks. In addendum, the PHDMC will use this metric to compare the crime rates between parks of different categories. There are three categories of parks in this study regional parks, community parks, and neighborhood parks. A neighborhood park with a starkly
higher crime rate than a regional park is an indication that crime may hinder residents from partaking in physical activity in a location closest to their homes. A regional park like RiverScape offers attractions and events that draw attendees from throughout the region and thus may have higher crime rates than a small neighborhood park. Anecdotal knowledge would suggest that these events may have disorder crime arrests that should generally increase their crime totals compared to a small park designed for leisure or recreation.

Four parks in this study have adjoining recreation centers including Linden, Princeton, Westwood and (fields of) Roosevelt Commons. The parks that are coupled with recreations centers provide a greater opportunity for physical activity due to the various options for exercise. Recreation centers are in-park activity generators, attracting large numbers of people to the park (Groff and McCord 2011). High crime rates at these parks are an indicator to the PHDMC that these parks are generating both a high volume of attendees and attracting some with criminal inclinations compared to other parks.

**Park Crime Density Compared to City Crime Density**

Location quotient (LQ) analysis was conducted to compare the collective crime density of the parks with the crime density of the City of Dayton. An LQ analysis was also conducted on three buffers drawn around the unit(s) of analysis – 32 neighborhood and community parks (environs). As previously mentioned, only portions of the Wolf Creek Bikeway that are part of the Wesleyan MetroPark environs are included in this analysis. The current construct of the LQ analysis used in this report does not allow for a proper analysis of linear continuous trail as a separate unit.

In adapting the Groff and McCord (2011) LQ model for the Dayton area, the three buffers of were drawn at a distance of 300-feet, 600-feet, and 900-feet totaling 1800-feet or 1/3-mile service
area around the parks (Figure 2). The comparison between park environs crime density and that of the entire City of Dayton remains the same. The combined crime density of the park environs is compared to the density of crime for the entire city of Dayton and represented as a single (quotient) indicator (Groff and McCord 2011).

The density of crime for the City of Dayton is assigned an LQ value of 1.0. Thus, an LQ value of less 1.0 indicates less density than in the entire city and a value of greater than 1.0 indicates a higher density (Groff and McCord 2011, p.10). LQ value of 2.0 is established as the indicator of high crime density clustering in the three-block buffers (McCord and Groff 2011; Rengert et al. 2005). An added feature in this report will be a table displaying the LQ indicator for each park (environ) compared to the crime density in the City of Dayton.

(Continued on page 25)
Figure 2: LQ Visual Description: Park Environ and 1/3-Mile Service Buffer

**Figure 2:** The green figure in the center represents the parks. The surrounding black dashed lines surrounding them represents the GIS drawn 50-foot buffer capturing the crime on the streets immediately surrounding the parks. This creates the park environs. The red line represents the condensed one block distance from the park environ. Highlighted in orange, if the LQ indicator is at 2.0 or above in this buffer a crime nexus has developed around the parks. A strong indication of this will be lower LQ indicators in the 500-1000-foot and 1000-1500-foot buffer as the distance from the parks increases. The crime density for each buffer is compared to crime density of the entire city, producing one LQ indicator for each buffer.
Establishing a Crime Nexus for The Park Environs

- LQ value of 2.0 for the park environs as a group means a crime nexus has developed
- LQ value of less than 1.0 indicates less proportion of crime density compared to the entire city
- LQ value of more than 1.0 indicates higher proportion of crime density compared to the proportion of crime density of the entire city

Establishing a Crime Nexus Around the Parks

- LQ value of 2.0 indicates the proportion of crime density around the parks is twice that of the entire city and is the cutoff point indicating a crime nexus has developed around the park
- Higher LQ values (2.0) in the 300-foot buffer and lower LQ values in the 600-foot and 900-foot buffers indicates crime cluster is generating around the park.

Limitation of LQ Analysis and Crime Per Acre

Location quotient analysis provides an indicator of the density of crime compared to its surrounding. However, there are limitations in the ability to establish causation. LQ analysis is not designed to provide statistical significance, therefore an analyst cannot state from a quantitative analysis perspective that the parks caused crime to generate in the neighborhood; meaning there are potentially other issues in the neighborhood that could have caused the effect. For this reason, Groff and McCord (2011) set the LQ value for crime generating at 2.0, signifying that the proportion of crime density in the park environs or buffers is twice that of the proportion of crime in the city. An LQ value of 2.0 is important because this means that the proportion of crime in the parks environs 100% more than the proportion of crime for the whole city.

The Groff and McCord study was based in a highly urbanized northeastern city; thus, their methods and findings are not generalizable to other types of parks or even neighborhood parks in other cities (Groff and McCord 2011). This proved a challenge when attempting to replicate other
portions of the study. Due to time constraints and expertise, certain elements of their analysis will be completed during future studies conducted by the PHDMC.

Using LQ analysis to compare crime density of the park environs with the city's crime density generally, lacks precision and reduces the analysis to a simple ratio of crime count to regional rate (McCord and Ratcliffe 2007). In addition, there are no guidelines as to suitable distances to use for crime studies conducted with GIS-generated buffers (McCord and Ratcliffe 2007).

Finally, LQ analysis strengthens and exposes the limitations of the crime per acre measure. From the perspective of strength, crime per acre is suitable for comparing neighborhood parks to regional parks. Neighborhood parks generally do not have the activity generators, such as events and festivals that draw large crowds of people that could cause increase crime based on the theories of Cohen et al. (2016) which identified that incivilities increased as legitimate park users increased. Neighborhood parks are generally smaller and thus even moderate crimes totals will tend to increase the crime per acre values. The exact formula for LQ analysis divides the combined crime per acre of the parks by the crime per acre of the city to produce a quotient. **The crime per acre is the “location” in the LQ analysis and allows for comparison between locations.**

The limitations of the LQ exposes the limitations of the crime per acre measure. As McCord and Ratcliffe stated that LQ comparisons across “Different jurisdictions, land uses, or crime types are less meaningful” (2007 p.21). With the crime per acre measure as the main component of the location quotient formula, the inherent weakness of the LQ applies to the crime per acre measure. Every park is as unique as the neighborhood that surrounds them. The attempt to externally compare parks using crime per acre is problematic. To produce a proper benchmark, a group of parks must be similar sized, serve similar purposes to their respective communities, and have similar socioeconomic characteristics in those communities. For the PHDMC to benchmark the
crime per acre of these parks with comparison communities requires finding parks located in
majority minority low-income neighborhoods, with similar size, facilities, and purposes (“Crime
rate in parks and recreation areas” n.d.).

**The Findings: Crimes Tracked**

This section of the report presents the findings from the analysis of 12 months of crime data on
32 parks and a trail located in Dayton area zip codes 45402, 45406, and 45417. These findings
are not an exhaustive examination of park crime in the City of Dayton or Five Rivers MetroParks.
The findings from this report will provide a context to further examine the multilayered
complexities of park safety.

Park crime counts provide actual metrics that can be analyzed and used for benchmarking in
future studies. What it does not reflect is the amount of crime that is unreported in these parks.
These unreported crimes are often a known quantity to the community-at-large, thus validating the
National Recreation and Parks Association (NRPA) viewpoint on the magnitude of crime statistics.

“How is park judged to be safe? Many look to crime statistics but these can be misleading.
Many crimes, particularly sexual assault, go unreported; low crime statistics may, in fact, be
influenced by people’s avoidance of areas they perceive to be high risk. Thus, when evaluating
whether space is safe or not, **perception may be more important than crime statistics**” (“Creating
Safe Park Environments to Enhance Community Wellness n.d.”)

Thus, the data collected on the 32 parks and trail cannot be used to generalize regarding
crime in the parks of this study (Huber 2008). However, **these findings are part of a larger
process of creating and maintaining safer park space**. The long-term process involves
gauging the community's perception of safety and inspecting the parks to determine if the
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features and maintenance are fostering an environment that supports crime in parks with higher crime totals.

Applying the Findings

The finding from this section will be compared to the results of the PHDMC's future perception study, leading to the implementation of an evidence-based strategy that will improve park safety. The metrics provide "numerical narrative" of what was reported to law enforcement agencies. It is a much about safety as it is about various stakeholders working together to assure that our parks are providing public value to the minority communities of this study and furthermore, the community at-large. The documented counts of crime found in this report will be used to develop a stronger, cohesive relationship between the PHDMC, MVRPC, Dayton Police and Five Rivers MetroPark Police.

The findings in this section will be used to recognize crime hotspots, assess risk, and discover the density of crime in the parks. The high crime totals are an indication to law enforcement that more resources need to be allocated to a park where actual crimes are reoccurring. As previously discussed, crime per acre is substitute measure that is used to create a crime rate for the parks (Huber 2008).

The PHDMC and the MVRPC will use the crime per acre findings to assess the risk of crime at small neighborhood parks. This calculation is based on park acreage, thus higher crime per acre at these parks indicate a risk for residents to use parks that are near their homes. Community parks often have larger acreage than neighborhood parks and draw large numbers of people from several neighborhoods, thus there is an anecdotal expectation that crime will be higher at these parks compared to a small neighborhood park.
Lastly, the PHDMC will use the crime density findings to determine if there is a strong connection between the parks and crime. A higher proportion of crime in parks compared to the proportion of crime in the city indicates that the parks are subject to criminal influences.

**Final Considerations**

The findings are based on 2016 crime data provided by the Dayton Police Department and Five Rivers MetroPark police. The Fiver Rivers data did not provide dates for the crimes and thus was unavailable for the seasonal crime trend analysis. Trotwood and Jefferson Township (Montgomery County Sheriff) was unable to provide crime data for parks in their jurisdiction, which would have expanded the study to zip codes 45416 and 45426. The Ohio Department of Natural Resources (ODNR) crime data for Sycamore State Park is held and processed by the State of Ohio and subsequently was unable for this report.

The Wolf Creek Bikeway was included in this report to provide an expansive analysis of recreational opportunities in zip codes 45402 and 45417. The bikeway is considered a separate item in this report and will have a separate listing for park (trail) crime count and total crimes. However, a portion of the bikeway is also part of the Wesleyan MetroPark park environ that is located on James H. McGee Boulevard, a major thoroughfare in the City of Dayton’s West Section, thus, Wesleyan park environ captures crimes on sections of the bikeway. Therefore, crimes in this portion of the bikeway will be counted as part of the Wesleyan park crime count and included in the total crimes count for parks as the “Wesleyan/Wolf Creek Environ.”

Maintaining the bikeway as a separate item displays the spectrum of crime along the trail on the James H. McGee corridor in areas not associated with the Wesleyan park environs. As a trail of linear, continuous space, the bikeway is part of the tapestry of several neighborhoods and is subject
to non-recreational community influences on a much larger scale compared to a park which is
centralized in one location. Any crimes committed on the boulevard’s sidewalks, including the
immediate surrounding businesses and residences, is attributed to the bikeway. Table 3 provides
a breakdown of the separate crime totals for the Wesleyan MetroPark and Wolf Creek
distinguished from the Wesleyan/Wolf Creek park environ that captures the crimes together.

Finally, for presentation purposes, only parks that reported crime incidents will have separate
park crime count information boxes providing the number of incidents by category. Categories
that did not have any reported crimes for the specific park, will not be included in the information
boxes. The crime categories tracked in this report are defined in Appendix A. An expansive
spreadsheet of all crime categories tracked, including those that reported no crimes for the period
is included in Appendix B.

(Continued on page 32)
Safe Physical Activity Study: Tracking Crime in Dayton Parks

Map 1: Total Crimes – Year 2016

Reported Crimes in Select Dayton Parks
Downtown, West, and North Central
January - December 2016

Based on Data Provided by:
City of Dayton Police Department
Five Rivers Metroparks Police
Miami Valley Regional Planning Commission
Created by Chris Bash
## Table 2: Total Crimes\(^2\) Parks and Trail – January 2016 – December 2016

<table>
<thead>
<tr>
<th>Park Name</th>
<th>Priority Land City Section</th>
<th>TOTAL CRIMES</th>
<th>% Violent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wesleyan MetroPark/Wolf Creek</td>
<td>North Central</td>
<td>68</td>
<td>47%</td>
</tr>
<tr>
<td>RiverScape MetroPark</td>
<td>Downtown</td>
<td>27</td>
<td>11%</td>
</tr>
<tr>
<td>Dave Hall Plaza</td>
<td>Downtown</td>
<td>16</td>
<td>31%</td>
</tr>
<tr>
<td>GDRC at Roosevelt Commons</td>
<td>West</td>
<td>14</td>
<td>29%</td>
</tr>
<tr>
<td>Princeton Park &amp; NRC</td>
<td>North Central</td>
<td>9</td>
<td>56%</td>
</tr>
<tr>
<td>Gissieo Playground</td>
<td>West</td>
<td>7</td>
<td>28%</td>
</tr>
<tr>
<td>McIntosh Park</td>
<td>North Central</td>
<td>6</td>
<td>50%</td>
</tr>
<tr>
<td>Possum Creek MetroPark</td>
<td>West</td>
<td>5</td>
<td>0%</td>
</tr>
<tr>
<td>Residence Park Playground</td>
<td>West</td>
<td>4</td>
<td>50%</td>
</tr>
<tr>
<td>Mallory Park</td>
<td>West</td>
<td>3</td>
<td>33%</td>
</tr>
<tr>
<td>Madden Park</td>
<td>West</td>
<td>3</td>
<td>0%</td>
</tr>
<tr>
<td>Westwood Park and Rec. Ctr.</td>
<td>West</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Gettysburg Playground</td>
<td>West</td>
<td>2</td>
<td>0%</td>
</tr>
<tr>
<td>McCabe Park</td>
<td>West</td>
<td>2</td>
<td>0%</td>
</tr>
<tr>
<td>Cooper Park</td>
<td>Downtown</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>College Hill Playground</td>
<td>North Central</td>
<td>1</td>
<td>100%</td>
</tr>
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</table>

16 Parks with no incidents of crime 45402/45406/45417 0 N/A

<table>
<thead>
<tr>
<th>Trail Name</th>
<th>TOTAL CRIMES</th>
<th>% Violent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wolf Creek Bikeway</td>
<td>91</td>
<td>48%</td>
</tr>
</tbody>
</table>

Total, SPAS Parks 170 35%
Total, SPAS Trail 91 48%

\(^2\) Source based on data provided by the City of Dayton Police and Five Rivers MetroPark Police; includes both arrests and complaints

The total number of crimes in the 32 parks was 170. Wesleyan MetroPark/Wolf Creek, a Five Rivers nature reserve had the highest counts of crime amongst the parks with 68 total crimes (see Map1 and Table 2). Of the 68 crimes, 32 (47%) were violent crimes as defined by the Ohio Revised Code. Notably, this total includes one of the two reported rapes occurring during the 12-month span. However, the rape, nor any of the violent crimes occurred directly on park grounds, but in the surrounding park environs. In total, 61 of the 68 crimes associated with Wesleyan occurred in the portion of Wolf Creek Bikeway shared as part of the James H. Magee Boulevard corridor (see Table 3).

Downtown Dayton parks, RiverScape and Dave Hall Plaza hold the second and third highest totals with 27 and 16 counts of crime, respectively. RiverScape’s crime totals were dominated by nonviolent crime, accounting for 89% of its park crime count. Thus, these figures may overstate the danger inherent in this park. However, a robbery was one of the three violent crimes that did occur at the park in 2016. The other serious crime that occurred in a Downtown park was a rape that occurred at Dave Hall Plaza, located in the Downtown’s Central Business District (CBD).

The Greater Dayton Recreation Center at Roosevelt Commons (GDRC) and Princeton Park and Northwest Recreation Center (NRC) occupy the fourth and fifth highest totals for crime. GDRC at Roosevelt Commons, located in the Roosevelt neighborhood, combines multiple activity generators including a recreation center, school, playgrounds and athletic fields in one location. Of the GDRC’s fourteen reported crimes, only four or 29% were violent, including one aggravated assault. Princeton Park & NWC, located in the Princeton Heights neighborhood, had nine incidents of crime, of which five were violent, including two counts of robbery. Amongst the parks, GDRC and Princeton Park also led in the categories for larceny with a combined total of nine counts.
Both locations are designated as community parks serving large sections of the city. Princeton Park & NRC serving the North Central portion of the city and GDRC Roosevelt Commons serving the West section of the city.

Gillispie Playground, located in the West section’s Miami Chapel neighborhood, had seven crimes, ranking this park first for total crimes amongst neighborhood parks. Three of the crime incidents were violent (one assault and two simple assaults) and two were disorderly conduct complaints. This five-acre park also serves as recreation space for the Desoto Bass Housing Project and is owned by the Dayton Metropolitan Housing Authority.

The Wolf Creek Bikeway (and immediately adjacent area) had 91 total counts of crime, of which 48% was violent crime, including one incident of rape (shared with the Wesleyan park environ). During 2016, there were 22 counts of simple assault and six accounts of aggravated assault. The spectrum of crime also affected property along the trail, with a combined 29 counts of burglary and vandalism. For the purpose of clarity, many of the crime incidents occurred at the Western Manor Apartments and neighboring businesses, including Family Dollar and More For Less which are situated in immediate proximity of the bikeway.

Conclusion

Of the 170 incidents of crime in the parks, 110 were nonviolent property and disorder crimes. Violent crime made up 35% of the total crimes. Forty-three aggravated and simple assaults accounted for 25% of the total crimes. Sixteen of the thirty-two parks (50%) in this study reported no crimes during 2016. There were no reported incidents of murder in the parks, however, the two occurrences of rape are an indication that the built environment of Wolf Creek Bikeway and Dave
Safe Physical Activity Study: Tracking Crime in Dayton Parks

Hall Plaza must be examined (even if the crime occurred indoors) in the future perception study and park inspection process.

The incidents of crime along areas surrounding the trail provides a unique perspective on crime. The occurrence of 91 incidents of crime is evidence of a safety concern for the residents in these communities that use the bikeway. The documentation of these crimes is also evidence of the work of the Dayton Police and the community in fighting crime along the path. People are reporting crime, whether it be the victim or witnesses. Just as importantly, the police are documenting and investigating these crimes and provided the information for this report. Table 3 provides a breakdown of the park crime count for each park.

(Continued on page 37)
Table 3: Park Crime² Count – Total Crimes by Park and Trail, January 2016 – December 2016

<table>
<thead>
<tr>
<th>Wesleyan³ MetroPark</th>
<th>RiverScape MetroPark</th>
<th>Dave Hall Plaza</th>
<th>GDRC Roosevelt Commons</th>
<th>Princeton Park &amp; NWC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stolen Property – 2</td>
<td>Simple Assault – 2</td>
<td>Simple Assault – 3</td>
<td>Simple Assault – 2</td>
<td>Robbery – 2</td>
</tr>
<tr>
<td>Arson – 2</td>
<td>Robbery – 1</td>
<td>Rape – 1</td>
<td>Aggravated Assault – 1</td>
<td>Simple Assault – 2</td>
</tr>
<tr>
<td>Vandalism – 1</td>
<td></td>
<td>Menacing – 1</td>
<td></td>
<td>Menacing – 1</td>
</tr>
<tr>
<td></td>
<td>Property Crime</td>
<td>Property Crime</td>
<td>Property Crime</td>
<td>Property Crime</td>
</tr>
<tr>
<td></td>
<td>Stolen Property – 9</td>
<td>Larceny – 2</td>
<td>Larceny – 5</td>
<td>Larceny – 4</td>
</tr>
<tr>
<td></td>
<td>Larceny (Theft) – 2</td>
<td>Motor Vehicle Theft – 1</td>
<td>Motor Vehicle – 2</td>
<td></td>
</tr>
<tr>
<td>Disorder Crime</td>
<td>Disorder Crime</td>
<td>Disorder Crime</td>
<td>Disorder Crime</td>
<td>Disorder Crime</td>
</tr>
<tr>
<td>Drug Abuse – 10</td>
<td>Drug Abuse – 4</td>
<td>Weapons – 2</td>
<td>Weapons – 1</td>
<td>Weapons – 1</td>
</tr>
<tr>
<td>Driving Influence – 2</td>
<td>Disorderly Conduct – 2</td>
<td></td>
<td>Disorderly Conduct – 2</td>
<td></td>
</tr>
<tr>
<td>Weapons – 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Wolf Creek Bikeway – 61)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Trail Crime Count: 68

<table>
<thead>
<tr>
<th>Park Crime Count: 27</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Park Crime Count: 16</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Park Crime Count: 27</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Park Crime Count: 16</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Park Crime Count: 14</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Park Crime Count: 9</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Gillispie Playground</th>
<th>McIntosh Park</th>
<th>Possum Creek MetroPark</th>
<th>Residence Park Play.</th>
<th>Mallory Park</th>
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</thead>
<tbody>
<tr>
<td>Aggravated Assault – 1</td>
<td>Simple Assault – 2</td>
<td>Larceny – 3</td>
<td>Robbery – 1</td>
<td>Sex Offense – 1</td>
</tr>
<tr>
<td>Simple Assault – 1</td>
<td>Aggravated Assault – 2</td>
<td>Vandalism – 1</td>
<td>Simple Assault – 1</td>
<td>Disorderly Crime</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stolen Property – 1</td>
<td>Motor Vehicle – 1</td>
<td>Disorderly Conduct – 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disorderly Conduct – 2</td>
<td>Motor Vehicle – 1</td>
<td>Park Crime Count: 3</td>
</tr>
<tr>
<td>Disorder Crime</td>
<td>Disorderly Conduct – 1</td>
<td></td>
<td>Disorderly Conduct – 2</td>
<td>Park Crime Count: 4</td>
</tr>
<tr>
<td>Disorderly Conduct – 1</td>
<td></td>
<td></td>
<td>Drug Abuse – 1</td>
<td></td>
</tr>
</tbody>
</table>

Park Crime Count: 7

<table>
<thead>
<tr>
<th>Park Crime Count: 5</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Park Crime Count: 4</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Park Crime Count: 3</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Park Crime Count: 1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Park Crime Count: 4</th>
</tr>
</thead>
</table>

37
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weapons – 2</td>
<td>Simple Assault – 2</td>
<td>Larceny – 1</td>
<td>Drug Abuse – 2</td>
<td>Larceny – 1</td>
<td>Simple Assault – 1</td>
</tr>
<tr>
<td>Drug Abuse – 1</td>
<td></td>
<td>Vandalism – 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park Crime</td>
<td></td>
<td>Park Crime</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count: 3</td>
<td></td>
<td>Count: 2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Parks with zero reported crimes in 2016**
- Arlington Hills Park
- Burkham Park
- Dayton View Park
- Fairview Park
- Hickorydale Park
- Highview Hills Park
- Joan Heirs Playground
- Linden Playground & Rec. Ctr.
- McNary Park
- Salem Heights Playground
- Sunrise Park
- Thal Park
- Vietnam Memorial
- Welcome Park
- Western Hills Playground
- Wright - Dunbar Gateway

**Wolf Creek Bikeway**

<table>
<thead>
<tr>
<th>Violent Crime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple Assault – 22</td>
</tr>
<tr>
<td>Menacing – 9</td>
</tr>
<tr>
<td>Aggravated Assaults – 6</td>
</tr>
<tr>
<td>Robbery – 6</td>
</tr>
<tr>
<td>Rape – 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Crime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vandalism – 14</td>
</tr>
<tr>
<td>Burglary – 12</td>
</tr>
<tr>
<td>Motor Vehicle Theft – 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Crime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug Abuse – 8</td>
</tr>
<tr>
<td>Weapons – 3</td>
</tr>
<tr>
<td>Disorderly Conduct – 2</td>
</tr>
</tbody>
</table>

(Wesleyan MetroPark – 7)

<table>
<thead>
<tr>
<th>Park Crime Count: 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trail Crime Count: 91</td>
</tr>
</tbody>
</table>

**Total Crimes – Park: 170**

**Total Crimes** – Trail: 91

---

2. *Source based on data provided by City of Dayton Police Department and Five Rivers MetroPark Police; includes both arrests and complaints*

3. *Portions of Western Manor Apartments are part of the park environ of Wesleyan Metro Park bringing the park crime count to 68*

4. *A section of Wesleyan MetroPark park environ is situated along James H. McGee Boulevard and is part of the trail environ of Wolf Creek Bikeway bring the trail crime count to 91*
Map 2: Violent Crimes – Year 2016

Reported Violent Crimes in Select Dayton Parks
Downtown, West, and North Central
January - December 2016

- 0
- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 40+

Legend:
- Black Circle: 0
- Red Circle: 1 - 10
- Orange Circle: 11 - 20
- Yellow Circle: 21 - 30
- Green Circle: 31 - 40
- Blue Circle: 40+

Based on Data Provided by:
City of Dayton Police Department
Five Rivers MetroParks Police
Miami Valley Regional Planning Commission
Created by Chris Bush

1 inch = 0.79 miles
**Violent Crime: Greatest Threats to Parks**

This section of the report addresses crimes designated as violent by the Ohio Revised Code Title (29) XXIX – Crimes Procedure, which include homicide, rape, robbery, aggravated and simple assault, menacing and sex offenses (Ohio Revised Code). As previously discussed violent crime accounted for 35% of the total crimes occurring in the parks. Furthermore, assault-related offenses (aggravated, simple, and menacing) comprised 87% of these violent crimes. Of the parks, Wesleyan MetroPark/Wolf Creek’s 32 violent crimes accounted for 53% of the violent crime totals for all parks that had recorded incidents of crime in 2016.

As shown in **Map 2**, Wolf Creek Bikeway, had 44 counts of violent crime, including the 32 violent crimes shared with the Wesleyan park environ, and an additional 11 acts of violent crime exclusive to bikeway area. Thus, violent crime accounted for 48% of the trail’s crime totals. These figures were dominated by assault related offenses, comprising 84% of the trail’s violent crime total.

While the number of assaults is a challenge to maintain safety along the bikeway, other forms of violent crime, though having lesser amounts in this study, can completely deter residents in the community from engaging the trail. The City of Dayton segment of Wolf Creek Bikeway was the scene of six robberies and a rape incident. As previously discussed, this was one of two rapes in this study, with the other occurring in Downtown Dayton’s Dave Hall Plaza.

At 17 miles of continuous space, the Wolf Creek Bikeway spans three neighborhoods in the City of Dayton’s West section, including Wolf Creek, Roosevelt, and Westwood. With this, there is a range of crimes in the area of the trail affecting persons and businesses alike. Of the six robberies reported on the trail, five occurred at businesses along the James H. McGee corridor.
Conversely, parks nearby to Wesleyan/Wolf Creek including College Hill and Salem Heights playgrounds had no incidents of crime in 2016. Princeton Park and Northwest Recreation Center, also located nearby in the Dayton’s North Central section, is the only park within the vicinity of Wesleyan/Wolf Creek having occurrences of violent crime, reporting two incidents of robbery amongst its five violent crimes.

**Conclusion**

While rape and sex offenses were rare, the serious nature of these crimes warrants examination of the landscape and lighting to prevent these heinous crimes from occurring in the parks or in the immediate vicinity of the trail. The Dayton Police Department recently conducted a security assessment on Mallory Park, located in the Pineview neighborhood in the City of Dayton’s West section. Using Crime Prevention Through Environmental Design (CPTED) safety indicators as a guide, the Dayton Police determined that increased lighting was crucial to improving safety for park users (Dayton Police Department). The Dayton Police assessment of this park is important, being that the only documented incident of a sex offense (fondling) in this report occurred at Mallory Park.

Conducting a safety inspection of the parks is a high priority for the PHDMC and MVRPC. During future phases of the Safe Physical Activity Study, CPTED and other parks inspection tools will be used to assess the built environment – lighting, signage, landscaping – with the purpose of identifying areas in the parks that are vulnerable to crime. Portions of Wolf Creek Bikeway is adjacent to a thoroughfare, meaning any arrest occurring on the road directly affect the crime totals of the trail. However, due to the large spectrum of violent crime occurring either on or immediately adjacent to the Bikeway, the assessment must center on inspecting the conditions on the actual
trail that could encourage crime. Appendix E includes discussion on CPTED and other safety inspection measures.

Finally, the alternative crime prevention strategies may be needed for the residential areas and businesses located on Wolf Creek Bikeway. Many of the reported crime incidents occurred in or around Western Manor Apartments, a Section 8 housing project with a known history of illegal activity. Residents of this housing complex deserve access to safe recreation whether it be Wesleyan or the bikeway. Multiple stakeholders, including the Dayton Metropolitan Housing Authority (DMHA) and Dayton Police may provide intervention to correct the current challenges facing the bikeway.

(Continued on page 43)
Table 4: Crimes$^2$ Per Acres – January 2016 – December 2016

<table>
<thead>
<tr>
<th>Park Name</th>
<th>Priority Land City Section</th>
<th>TOTAL CRIMES</th>
<th>ACRES</th>
<th>CRIMES PER ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RiverScape MetroPark</td>
<td>Downtown</td>
<td>27</td>
<td>5</td>
<td>5.11</td>
</tr>
<tr>
<td>Dave Hall Plaza</td>
<td>Downtown</td>
<td>16</td>
<td>4</td>
<td>4.00</td>
</tr>
<tr>
<td>Gillispie Playground</td>
<td>West</td>
<td>7</td>
<td>5</td>
<td>1.41</td>
</tr>
<tr>
<td>GDRC at Roosevelt Commons</td>
<td>West</td>
<td>14</td>
<td>11</td>
<td>1.24</td>
</tr>
<tr>
<td>Wesleyan Metro Park</td>
<td>North Central</td>
<td>68</td>
<td>61</td>
<td>1.12</td>
</tr>
<tr>
<td>Residence Park Playground</td>
<td>West</td>
<td>4</td>
<td>5</td>
<td>0.87</td>
</tr>
<tr>
<td>McIntosh Park</td>
<td>North Central</td>
<td>6</td>
<td>7</td>
<td>0.82</td>
</tr>
<tr>
<td>Princeton Park</td>
<td>North Central</td>
<td>9</td>
<td>17</td>
<td>0.54</td>
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<tr>
<td>Cooper Park</td>
<td>Downtown</td>
<td>1</td>
<td>2</td>
<td>0.46</td>
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<td>Westwood Park and Rec. Ctr.</td>
<td>West</td>
<td>2</td>
<td>9</td>
<td>0.23</td>
</tr>
<tr>
<td>Mallory Park</td>
<td>West</td>
<td>3</td>
<td>15</td>
<td>0.22</td>
</tr>
<tr>
<td>College Hill Playground</td>
<td>North Central</td>
<td>1</td>
<td>4</td>
<td>0.20</td>
</tr>
<tr>
<td>Gettysburg Playground</td>
<td>West</td>
<td>2</td>
<td>15</td>
<td>0.13</td>
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<tr>
<td>McCabe Park</td>
<td>West</td>
<td>2</td>
<td>16</td>
<td>0.12</td>
</tr>
<tr>
<td>Madden Park</td>
<td>West</td>
<td>3</td>
<td>110</td>
<td>0.03</td>
</tr>
<tr>
<td>Possum Creek MetroPark</td>
<td>West</td>
<td>5</td>
<td>559</td>
<td>0.01</td>
</tr>
<tr>
<td>Arlington Hills Park</td>
<td>West</td>
<td>0</td>
<td>4</td>
<td>0.00</td>
</tr>
<tr>
<td>Burkham Park</td>
<td>West</td>
<td>0</td>
<td>11</td>
<td>0.00</td>
</tr>
<tr>
<td>Dayton View Park</td>
<td>North Central</td>
<td>0</td>
<td>6</td>
<td>0.00</td>
</tr>
<tr>
<td>Fairview Park</td>
<td>North Central</td>
<td>0</td>
<td>4</td>
<td>0.00</td>
</tr>
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<td>Hickorydale Park</td>
<td>North Central</td>
<td>0</td>
<td>37</td>
<td>0.00</td>
</tr>
<tr>
<td>Highview Hills Park</td>
<td>West</td>
<td>0</td>
<td>26</td>
<td>0.00</td>
</tr>
<tr>
<td>Joan Heirs</td>
<td>West</td>
<td>0</td>
<td>6</td>
<td>0.00</td>
</tr>
<tr>
<td>Linden Playground &amp; Rec. Ctr.</td>
<td>West</td>
<td>0</td>
<td>3</td>
<td>0.00</td>
</tr>
<tr>
<td>McNary Park</td>
<td>West</td>
<td>0</td>
<td>4</td>
<td>0.00</td>
</tr>
<tr>
<td>Salem Heights Playground</td>
<td>North Central</td>
<td>0</td>
<td>2</td>
<td>0.00</td>
</tr>
<tr>
<td>Sunrise Park</td>
<td>West</td>
<td>0</td>
<td>5</td>
<td>0.00</td>
</tr>
<tr>
<td>Thal Park</td>
<td>North Central</td>
<td>0</td>
<td>2</td>
<td>0.00</td>
</tr>
<tr>
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<td>Downtown</td>
<td>0</td>
<td>6</td>
<td>0.00</td>
</tr>
<tr>
<td>Welcome Park</td>
<td>West</td>
<td>0</td>
<td>24</td>
<td>0.00</td>
</tr>
<tr>
<td>Western Hills Playground</td>
<td>West</td>
<td>0</td>
<td>10</td>
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</tr>
<tr>
<td>Wright - Dunbar Gateway</td>
<td>West</td>
<td>0</td>
<td>3</td>
<td>0.00</td>
</tr>
</tbody>
</table>

| Average, SPAS parks only               | 5.3                        | 31.2         | 0.52  |
2. *Source based on data provided by the City of Dayton and Five Rivers MetroPark Police; include both arrests and complaints*

5. *The average is the statistical mean of 32 parks (environs) as listed above*
Crimes Per Acre: A Crime Rate for Parks

The Dayton Department of Recreation and Youth Services and Five Rivers Metro Parks collect data on park usage for some, but not for all parks. With this data, the PHDMC and MVRPC could calculate a crime rate for each park – for example, the number of crimes per 1,000 park users (Huber 2008). Crime per acre is the substitute measure that creates a crime rate for the parks (Huber 2008). The crime per acre measure also allows comparison between parks of different sizes. The crime per acre figures will also provide a means of comparison between our neighborhood, community, and regional parks. High crime per acre totals in neighborhood parks will directly impact the PHDMC’s ability to provide safe recreation opportunities for the residents in these areas.

Table 4 shows that two downtown parks, RiverScape Park and Dave Hall Plaza with 5.11 and 4.23 crimes per acre, respectively. RiverScape Park, as a regional park it serves several communities and generates a large spectrum of users, as does Dave Hall, a community park featuring various events. Both parks are ranked second and third highest for total crimes, with RiverScape reporting 27 crimes and 16 crimes over the 12-month period.

As previously discussed, RiverScape’s crime totals were dominated by nonviolent crime. Of the 27 total crimes, 78% were property or disorder crimes. RiverScape size at 5 acres, is a small regional park. National Regional Park Association (NRPA) suggested size for a regional park is 200 acres ("Recreation Size and Occupancy Standards", 2012). Thus, the crime per acre total is amplified due to size and purpose of the park. The same applies to Dave Hall Plaza, designated as a community park, at four acres, it is five times smaller than the NRPA suggested 25 acres for a community park ("Recreation Size and Occupancy Standards", 2012)
Gillespie Playground, a neighborhood park, had the third highest crime per acre (1.41) and sixth highest in total crimes. This neighborhood park is also designated as a playground. Playgrounds are important to the physical activity needs of children in the neighborhoods. Other neighborhoods and community parks with noticeable crime per acre totals include Residence Park (0.87) and McIntosh Park (0.82) crimes per acre.

Amongst parks that are adjoined with recreation centers, the Greater Dayton Recreation Center at Roosevelt Commons, which contains athletic fields, in addition to the recreation center, was fourth highest in crime per acre (1.24) and in the absolute number of crimes (14). Princeton Park and Northwest Recreation Center, which was ranked fifth in absolute crimes with nine, and was ranked eighth on the crime per acre index. Westwood Park and Recreation Center, at 0.23 crime per acre, had the lowest total of the park/recreation center dual facilities. Linden Playground and Recreation Center, located in the Five Points neighborhood in Dayton’s West section had no reported crime incidence in 2016.

Amongst the large community parks, Wesleyan MetroPark/Wolf Creek spanning the North Central and West District, ranked first in absolute crimes with 68 and fifth in crime per acre, as the park covers 68 acres. Two other large community parks in Dayton’s west section Possum Creek MetroPark (0.01) and Madden Park (0.02) had crime rates close to zero.

Finally, Wolf Creek Bikeway as an independent item, was excluded from the crime per acre measurement do to its logistics as a linear trail located in various neighborhoods and communities. For this reason, the crime per acre measurement is not applicable. Future independent studies of the bikeway may use alternative measures to establish a crime rate for the trail.
Conclusion

Parks with activity generators such as festivals, and events draw people from various points in the community and region, with this a small percentage of individuals may be attracted to the location to commit a crime. Five Rivers MetroPark data does not include dates, therefore some of the documented crimes may have occurred during an event. The crime per acre metric is a crime rate, and as a crime rate, it provides a measure of risk at a park. The PHDMC will use the crime rate information to develop a standardized measure of risk that serves as a guide in the safety planning process.

The safety of neighborhood parks, specifically those with adjoining recreation center are paramount to providing healthy recreation opportunities to residents in this study. GDRC at Roosevelt Commons and Princeton Park & NWC are health empowering assets for the community at large. As these findings provide an indicator of risk at these facilities, the PHDMC and Dayton Recreation and Youth Services can merge capacities to improve the safety of patrons.

Gillispie Playground's crime rate (1.41) is nearly three times the average crime per acre (0.52) of all the parks. As previously mentioned this park serves low-income residents whose access to healthy foods is extremely limited. Criminalized recreation space will only compound the challenges of improving their health status. Unlike the recreation opportunities provided by RiverScrape and Greater Downtown, low-income neighborhood parks may be the accessible recreation option for these residents.

This priority does not diminish the importance of providing safe recreation space for Downtown Dayton. Downtown Dayton recreation opportunities are part of expansive effort to bring residents back to the urban core. RiverScape’s high crime per acre total serves as an indicator to the PHDMC
and Five Rivers MetroPark that an assessment is needed regarding the social conditions of the park. Property and Disorder crime was the dominant driver of the crime rate for this park including reported incidents of stolen property and drug possession. However, safety expert Jim Hilborn warns that incivilities such as these can create a “risky park” (Hilborn 2009).

(Continued on page 48)
Seasonal Crime² Trend Graphs I and II

Graph I

Seasonal Crime Trend (32 Parks Only)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Violent</th>
<th>Nonviolent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: JAN-MAR</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Q2: APR-JUN</td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td>Q3: JUL-SEP</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>Q4: OCT-DEC</td>
<td>12</td>
<td>21</td>
</tr>
</tbody>
</table>

Graph II

Seasonal Crime Trend (Trail Only)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Violent</th>
<th>Nonviolent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: JAN-MAR</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Q2: APR-JUN</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Q3: JUL-SEP</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>Q4: OCT-DEC</td>
<td>10</td>
<td>18</td>
</tr>
</tbody>
</table>

²Source based on data provided by Dayton and Five Rivers MetroPark Police; include both arrests and complaints

The purpose of the seasonal crime trend measure is to identify if crime increases during the warmer months of April-June and July-September compared to the colder months of January-March and October-December. From a subjective viewpoint, the warmer months is when park usage and physical activity will increase. Thus, increases in crime during warmer months will negatively impact the PHDMC goal of providing safe recreational activities for residents of these communities.

As shown in Graph 1, the number of crimes increased during the months of July – September 2016 (third quarter) compared to other three quarters. The third quarter had the highest crime totals with 47 reported incidents, representing 35% of the crime totals provided by the Dayton Police data. The months of July-September also had the highest percentage of violent crimes in the study. The third quarter’s violent crime figures were dominated by assault based offenses, accounting for 91% of violent crime during the period. The two most notable violent crimes occurrences during this period included an incident of rape in the Wesleyan/Wolf Creek park environ and a robbery at Princeton Park. In addition, Wesleyan/Wolf Creek 24 incidents of crime were highest totals amongst parks in the third quarter (see Map 5).

The first quarter’s (January – March 2016) 23 incidents of crime was the lowest totals of the four quarters. The first quarter had 48% less crime than the third quarter. However, 10 of the quarter’s 23 crimes (43%) were violent, including an incident of sex offense (fondling) at Mallory Mark, located in the Pineview neighborhood in City of Dayton’s West Section.

As shown in Graph 1, the second and fourth quarter’s crime totals were nearly identical with 31 and 33 crimes respectively. Notably, there was only a 7% decrease in crime incidents between the
third and fourth quarters. With the fourth quarter comprised of the colder months of October – December, the assumption is that park attendance and crime would decrease compared to warmer months. Disorder and property incidents dominated these figures, accounting for 64% of the crime during the fourth quarter. Included in these figures is the rape that occurred in Downtown Dayton's Dave Hall Plaza. Wesleyan/Wolf Creek was first amongst all parks with 19 reported incidents of crime in the fourth quarter. The spectrum of crimes occurring at Wesleyan/Wolf Creek during the fourth quarter include assaults, robberies, and vandalism. As previously mentioned, these crimes occurred in the environs of the park which include Western Manor Apartments.

As seen in Graph 2, Wolf Creek Bikeway as an independent unit of analysis reflects a corresponding increase in reported crimes during the third quarter. As shown in Map 5, the months of July – September recorded 32 incidents of crime which are slightly more than the first and second quarters combined total of 31 reported crimes. The 32 incidents include the 24 related to the shared Wesleyan environs, with eight additional crimes. The third quarter had a marked increase in violent crimes which accounted for 69% of the recorded incidents during this period. The 22 reported incidents of violent crime were an 83% increase the first and second quarters. Of these violent crimes, 91% were assault based, including both aggravated and simple assaults.

**Conclusion**

The marked rise in reported incidents during the period of July – September serves as an indicator that warmer months must be monitored for increases in crime. The third quarter led all quarters in absolute and violent crime totals. However, this is based on one year of crime data, thus evidence from future studies are needed to substantiate this theory.
Finally, the expected decrease in crime during the colder months did not occur in the period of October – December 2016. The fourth quarter had the second highest total of reported incidents, which was due to an increase in nonviolent crime. A large proportion of these incidents occurred in Princeton Park, Dave Hall Plaza, GDRC at Roosevelt Commons, and Wesleyan/ Wolf Creek, all community parks that draw patrons year-round. As the PHDMC intensifies its efforts to increase physical activity in these zip codes, community parks, especially those with recreation centers must be closely monitored for any signs that crime is increasing as more patrons use the facilities during colder months.

(Continued on page 52)
Map 3: First Quarter Crime – Year 2016

Reported Crimes in Select Dayton Parks by Quarter Downtown, West, and North Central January - March 2016

- 0
- 1 - 10
- 11-20

Based on Data Provided by City of Dayton Police Department Fire Rescue Metropark Police Miami Valley Regional Planning Commission Created by Olena Bain

1 inch = 0.79 miles
Map 4: Second Quarter Crime – Year 2016

Reported Crimes in Select Dayton Parks by Quarter
Downtown, West, and North Central
April - June 2016

- Hickorydale Park: 0
- Fairview Park: 0
- Salem Heights Playground: 0
- Collingo Hill Playground: 1
- Wolf Creek Bikeway: 16
- Dayton View Park: 0
- Sunrise Park: 0
- McIntosh Park: 5
- Wright - Dunbar Gateway: 0
- Cooper Park: 1
- Dane Hall Plaza: 2
- Linden Playground and Rec. Center: 0
- Resilience Park Playground: 2
- Gottysburg Playground: 0
- GDRC at Roosevelt Commons: 4
- Malcolm Park: 0
- Gillispie Playground: 2
- Mallory Park: 0
- Brumbaugh Park: 0
- Welcome Park: 0
- Madden Park: 0
- Possum Creek Metropark: 0
- Arlington Hills Park: 0
- Princeton Park: 3
- Thiel Park: 0
- McAlary Park: 0
- Joan Hiers Park: 0
- Glicks Park: 4

Based on Data Provided by:
City of Dayton Police Department
Five Rivers Metropolitan Police
Miami Valley Regional Planning Commission
Created by Chris Balb
Reported Crimes in Select Dayton Parks by Quarter
Downtown, West, and North Central July - September 2016

Map 5: Third Quarter Crime – Year 2016

Based on Data Provided by:
City of Dayton Police Department
Five Rivers Metropolitan Police
Miami Valley Regional Planning Commission
Created by Chris Banf
Map 6: Fourth Quarter Crime – Year 2016

Reported Crimes in Select Dayton Parks by Quarter Downtown, West, and North Central October - December 2016

- 0
- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 40

Based on Data Provided by:
City of Dayton Police Department
Five Rivers MetroParks Police
Miami Valley Regional Planning Commission
Created by Chris Bash

1 inch = 0.79 miles
Location Quotient Analysis: Comparing Park Crime to City Crime

The final analysis of this report compares crime density of the parks and their 1800-foot service area with the crime density of the entire City of Dayton in the form of quotient. The location quotient (LQ) for the City of Dayton is set at 1.0. To establish that a crime nexus has developed in the park environs, their cumulative LQ must exceed 2.0 (Groff and McCord 2011; Rengert et al. 2005). A crime nexus is defined as a strong connection between the park, legitimate users, and illegitimate users indicated by LQ value surpassing 2.0.

In addition, the LQs values for each individual park will be presented in a table form (see Table 5) and interpreted as a percentage of safety compared to the city. Under this comparison, the City of Dayton’s LQ value is again set at 1.0. Individual parks (environs) with LQ value less than 1.0 declared below the city crime trend. Individual parks (environs) with an LQ value more than 1.0 are declared above city crime trend.

Parks that are 200% above the city crime trend are deemed “contested park space.” The term "contested" is adapted from safety expert Jim Hilborn’s article Dealing with Crime and Disorder in Urban Parks. Hilborn (2009) views parks as contested space between legitimate and illegitimate users, thus park, with high individual LQ values are in a state of "contest" between illegitimate users and legitimate users. Figure 3 displays the results of the LQ analysis as graphic, with Table 5 providing a breakdown of the LQ analysis for the parks as a group and individual results.
Figure 3: LQ Results: Park Environs and 1/3-Mile Service Buffer

<table>
<thead>
<tr>
<th>Collective Buffer Level</th>
<th>All Crime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Park Environs</td>
<td>0.37</td>
</tr>
<tr>
<td>300 foot</td>
<td>0.27</td>
</tr>
<tr>
<td>600 foot</td>
<td>0.35</td>
</tr>
<tr>
<td>900 foot</td>
<td>0.38</td>
</tr>
</tbody>
</table>
Table 5: LQ Analysis Park Environs, Buffers and Individual\(^6\) Parks

<table>
<thead>
<tr>
<th>Park Name</th>
<th>LQ Value</th>
<th>LQ Converted %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collective Park Environs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All 32 Parks</td>
<td>0.37</td>
<td>37%</td>
</tr>
<tr>
<td><strong>Collective Buffer Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 Foot Buffer</td>
<td>0.27</td>
<td>27%</td>
</tr>
<tr>
<td>600 Foot Buffer</td>
<td>0.35</td>
<td>35%</td>
</tr>
<tr>
<td>900 Foot Buffer</td>
<td>0.38</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Individual Parks Environs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RiverScape</td>
<td>11.00</td>
<td>1100%</td>
</tr>
<tr>
<td>Dave Hall Plaza</td>
<td>9.13</td>
<td>913%</td>
</tr>
<tr>
<td>Gillispie Playground</td>
<td>3.03</td>
<td>303%</td>
</tr>
<tr>
<td>GDRC at Roosevelt Commons</td>
<td>2.68</td>
<td>268%</td>
</tr>
<tr>
<td>Wesleyan MetroPark</td>
<td>2.42</td>
<td>242%</td>
</tr>
<tr>
<td>Residence Park Playground</td>
<td>1.88</td>
<td>188%</td>
</tr>
<tr>
<td>McIntosh Park</td>
<td>1.77</td>
<td>177%</td>
</tr>
<tr>
<td>Princeton Park and NWC</td>
<td>1.18</td>
<td>118%</td>
</tr>
<tr>
<td>Cooper Park</td>
<td>1.00</td>
<td>100%</td>
</tr>
<tr>
<td>Westwood Park and Recreation Center</td>
<td>0.50</td>
<td>50%</td>
</tr>
<tr>
<td>Mallory Park</td>
<td>0.48</td>
<td>48%</td>
</tr>
<tr>
<td>College Hill Playground</td>
<td>0.43</td>
<td>43%</td>
</tr>
<tr>
<td>Gettysburg Playground</td>
<td>0.28</td>
<td>28%</td>
</tr>
<tr>
<td>McCabe Park</td>
<td>0.26</td>
<td>26%</td>
</tr>
<tr>
<td>Madden Park</td>
<td>0.06</td>
<td>6%</td>
</tr>
<tr>
<td>Possum Creek MetroPark</td>
<td>0.02</td>
<td>2%</td>
</tr>
<tr>
<td>16 Parks with no incidence of crime</td>
<td>0.00</td>
<td>0%</td>
</tr>
</tbody>
</table>

6. *Individual LQ values are indicators of crime trend in proportion to crime in the city and are not a complete description of inherent danger at a particular park. Table 3, Park Crime Count provides specific reported incidents to persons, property, and society*
Translating LQ – Collective and Individual LQ Parks

As shown in Table 5 and Figure 3, the parks collective LQ value of 0.37 does not exceed the (LQ) 2.0 threshold, thus it can be stated that a crime nexus has not formed in the parks as a group. In addition, the LQ value of 0.37 (37%) means that the parks as a group are 63% (0.63) below the Dayton crime trend which is set at an LQ value of 1.0 (100%) (Brantingham & Brantingham 1997).

LQ values decrease as distance from the park increases, indicating a crime nexus has not formed around the parks. There is a decrease in the LQ value of the 300-foot buffers (0.27) and a steady increase moving out from the parks with the 600-foot buffers having an LQ value of 0.35 and 900-foot buffers at 0.38 (Groff and McCord 2011). All buffers are below the established crime nexus cutoff point established by Groff and McCord and Rengert of 2.0 and the City of Dayton of LQ value of 1.0. Therefore, it can be stated that at 0.27, the 300-foot buffers are 73% (0.73) below city crime trend, with the 600-foot buffers (0.65) and 900-foot buffers (0.62) being 65% and 62% below city crime trend, respectively.

Several parks do individually exceed the City of Dayton LQ value 1.0. and thus, are higher than the city crime trend. RiverScape MetroPark, has a LQ value of 11.00, meaning it exceeds the crime trend by 1000%. As previously mentioned RiverScape’s crime totals are dominated by property crime (See Table 2) which accounts for 89% of the park’s crime totals. RiverScape’s status as entertainment based regional park draws a large spectrum of attendees and coupled with it small acreage, can quickly increase its LQ values if crime occurs.

Likewise, Dave Hall Plaza, a small size community park, hosts events and is situated amongst multiple activity generators exhibits a high LQ value of 9.13, 813% above the city crime trend. Greater Dayton Recreation Center at Roosevelt Commons (2.68) and Wesleyan MetroPark (2.42),
both large community parks also exhibit moderately high LQ values, at 168% and 142% above city crime trend. Of the large community parks, Princeton Park and Northwest Recreation Center had the lowest LQ value at 1.18 at modest 18% above the city crime trend.

Amongst the parks with reported incidents of crime, Possum Creek, a large regional park located in Germantown Meadows neighborhood in Dayton’s west section, had the lowest LQ value amongst parks with reported incidents of crime at 0.02, 98% below the city crime trend. Neighborhood parks with noticeable LQ values include Gillispie Park (3.03) and McIntosh Park (1.88) at 203% and 88% above the city crime trend.

Conclusion

The proportion of crime in the park environs is 63% less compared to the rest of the City of Dayton, however some individual parks substantially surpass the 1.0 and 2.0 thresholds. As previously mentioned in the literature review, a park (environ) with a high LQ value is not an indication that the park is unusable or inherently dangerous. What it does indicate is that the park is “contested” space between legitimate and illegitimate users. At the base of the LQ is the crime per acre indicator that provides a measure of risk for each park. Akin, to crime per acre, it provides the PHDMC and MVRPC an indicator for developing a plan to enhance park safety and attract legitimate users.

Most importantly, it prepares these organizations for the upcoming perception study. As stated by Brantingham and Brantingham, “(LQ) are potentially helpful when analyzing fear or concern about crime” (Brantingham and Brantingham 1997, p. 271). Patrons of smaller neighborhood parks with high LQs are likely more sensitive to crime than those that use large
Safe Physical Activity Study: Tracking Crime in Dayton Parks

community parks. In this regard, LQ is truly a location analysis. Map 7 (next page) displays a visual interpretation of the crime density comparison.

(Continued on page 62)
Map 7: Crime Density Comparison – Year 2016

Crime Per Acre Compared to Locations of City Parks
City of Dayton Ohio
January - December 2016

0 21-30
1-10 31-40
11-20 40+

Park Boundaries

1 inch = 0.79 miles

Based on Data Provided by:
City of Dayton Police Department
Five Rivers Metroparks Police
Miami Valley Regional Planning Commission
Designed by Chris Bish
Recommendations: Current Opportunities for Improving Safety

Recommendations offered in this section is based upon findings in this report and serve as the initial step toward the broader process of fulfilling the PHDMC’s goal of increasing park safety by 10%. Final recommendations will be provided by the PHDMC and MVRPC at the conclusion of the community focus group and park safety inspections. Parks are fluid, dynamic environments, thus all recommendations offered are based upon current crime figures and should modified to address the ever-evolving challenges that affect open public space.

1. Dayton Police Inspection of Parks with High Crime Totals. The City of Dayton Police Department utilizes the concepts of Crime Prevention Through Environmental Design (CPTED) to improve park safety. CPTED core safety principle is that proper design and effective management of the physical environment can prevent crime (NPCP 2003). CPTED is based on four principles: natural access control, natural surveillance, territoriality, and maintenance ("Crime Prevention Through Environmental Design Training Program" n.d.)

Dayton Police Department Crime Prevention Officer Ron Strehle of the West Patrol Operations Division recently completed an CPTED inspection of Mallory Park, documenting areas of the park that were susceptible to crime. Officer Strehle stated that he would personally inspect the parks with the high crime totals (Strehle, personal interview, April 13, 2017). Park to be inspected include: Wesleyan MetroPark and Wolf Creek Bikeway, Dave Hall Plaza, Gillispie Playground, Princeton Park and Northwestern
Recreation Center, Greater Dayton Recreational Center at Roosevelt Commons and McIntosh Park.

2. Increased Police Patrol of Dave Hall Plaza. Dave Hall Plaza with 14 crimes, should have increased patrol. Dave Hall Plaza is strategically placed amongst high profile activity generators including, Crown Plaza Hotel, RTA Bus Hub, Dayton Convention Center and the Oregon District and is part of the Downtown Dayton’s Central Business District. Dave Hall Plaza also serves as one of three parks that comprise Downtown’s recreation opportunity for its growing residential component. These factors, coupled with a reported incident of rape, requires attention of law enforcement to maintain public safety at this high-profile park.

Security will become more important, with the upcoming addition of Levitt Pavilion, an $5million outdoor concert facility to be constructed on the southwest portion of the park. With multiple police jurisdictions interacting in the Downtown constant patrol of this area is possible. Another tactic to decrease crime is parking an empty police car near the area. This makes it appear to would be assailants that the police are in the vicinity, and thus thwart crime.

3. Partner with Dayton Public Works and Dayton Police Department, To Ensure Crime Prevention Strategies Are at The Forefront of Park Redevelopment. With the November 8th 2016 passing of Issue 9, the City of
Dayton has the revenue capacity to initiate park improvements. Parks can be redesigned to encourage active physical recreation, strategically placed tracks and trails, that coupled with proper lighting and signage can attract legitimate users and increase safety. John Parker, Acting Division Manager of Dayton Convention Center, a division of City of Dayton’s Recreation and Youth Services, stated that “Amenities grow clientele and provide natural surveillance” (Parker, Personal Interview, March 23, 2017). The Dayton Police can play an integral role in this process by assuring CPTED principles are integrated into the design process of the park’s physical layout from its inception.

4. Find Public and Private Funding to Install Cameras in The Parks. Cameras should be installed around the perimeter of parks, with high crime totals. Public funding for this should be available as the City of Dayton begins to renovate their parks. In addition, private funding source should be sought from businesses and philanthropic foundations that take an interest in our community’s health. For example, Premier Health’s Good Samaritan Hospital provided funding for cameras in Fairview Park as part of the Phoenix Project, a partnership between City of Dayton, Citywide Corporation, and Dayton Public Schools formed with the purpose of revitalizing neighborhood around the hospital (Parker, personal interview, March 23, 2017). The City of Dayton efforts to revitalize parks should begin with a strong security that insures the safety of residents that use the parks.

5. Conduct focus group with residents of DeSoto Bass Housing Complex and business owners and residents that live along the Wolf Creek Bikeway in
the James H. McGee Corridor. Gillispie Park is part of the housing complex and strategically placed to provide recreation to the residents of this community. A focus group can uncover how many crimes go unreported and other incivilities that may hinder residents from using the park. A Wolf Creek Bikeway focus group can discover how residents really use the bikeway and uncover the underlying causes of crime in the area. The PHDMC could conduct a mobile health fair at the DeSoto Bass and Western Manor apartment as a prelude to the focus group. Focus groups with these residents is paramount to grasping the magnitude of incivilities in the area. As Lucy Robson, Director of Research and Planning for New Yorkers for Parks states about the limitations crime statistics and the power of the perception of safety:

“The crime stats report out crimes that made it into the system. What is harder to unpack – but just as important – is the local perception of crime rates and safety for various parks. It doesn’t make a difference in the world what a park’s crime-per-acre stat is if people just plain don’t feel safe there. Data is great, but data is also very limited.”

(Lucy Robson, personal communication, April 20, 2017)

Final Conclusion

Statistically speaking the parks as a group are not inherently more dangerous than any other area within the City of Dayton. Thus, in this report parks with crime, even a violent crime event, are considered “contested space.” As the perception study begins, crime figures such as these are simply a glimpse at the conditions in and around these parks. These figures serve as a guide as to “who to ask” and “what to ask” about park safety. Ultimately, it is the people – the residents of
the community and low-cost programming that will have the largest impact on public safety in these parks. Stakeholders who have a vested interest in health and safety can partner with community leaders to take “ownership” over this public space.

**Appendix A: Crime Definitions**

The following section provide a condensed description of the crimes tracked in this report according to the Ohio Revised Code. For an official expanded definition of these crimes visit Ohio Revised Code Title XXIX [29] Crime Procedures at [http://codes.ohio.gov/orc/29](http://codes.ohio.gov/orc/29)

**Violent Crime**

**Murder:** Person purposely cause the death of another or causes the unlawful termination of another's pregnancy.

**Rape:** Person engages in sexual conduct with another when the offender purposely compels the other person to submit by force or threat of force.

**Aggravated Assault:** Person causes serious physical harm to another or to another's unborn

**Simple Assault:** Person commits assault that is a misdemeanor

**Robbery:** Person, in attempting or committing a theft offense, attempt to inflict, or threaten to inflict physical harm on another

**Menacing:** When a person knowingly causes another to believe that the offender will cause physical harm to the person or property of the other person, the other person's unborn, or a member of the other person's immediate family.

**Sex Offenses:** Sexual Contact and/or conduct including, but not limited to sexual battery, unlawful sexual conduct with a minor, gross sexual imposition

**Property Crime**

**Arson:** Person causes, or creates a substantial risk of, physical harm to any property of another without the other person's consent

**Vandalism:** Person knowingly causes serious physical harm to an occupied structure or any of its contents
Burglary: Attempt to inflict, or threaten to inflict physical harm on another when trespassing in an occupied structure with the attempt to commit criminal offense

Theft: A Person, with the purpose to deprive the owner of property or services, shall knowingly obtain or exert control over either the property or services without the owner’s consent

Stolen Property: Person receives, retains, or disposes of property of another knowing or having reasonable cause to believe that the property has been obtained through commission of a theft offense

Disorder Crime

Disorderly Conduct: Person that recklessly causes inconvenience, annoyance, or alarm to another; Engage in conduct or create a condition that presents a risk of physical harm to the offender or another, or to the property of another.

Driving Under the Influence: violation of any statute or ordinance of which an element is operating a motor vehicle, locomotive, watercraft, aircraft, or other vehicle while under the influence of alcohol or any drug of abuse

Drug Offenses: Offense under an existing or former law of this or any other state, or of the United States, of which planting, cultivating, harvesting, processing, making, manufacturing, producing, shipping, transporting, delivering, acquiring, possessing, storing, distributing, dispensing, selling, inducing another to use, administering to another, using, or otherwise dealing with a controlled substance is an element

Drunkenness: person appears to an ordinary observer to be intoxicated, it is probable cause to believe that person is voluntarily intoxicated for purposes of inconvenience, annoyance, or alarm to another; Engage in conduct or create a condition that presents a risk of physical harm to the offender or another, or to the property of another.

Weapons: "Deadly weapon" means any instrument, device, or thing capable of inflicting death, and designed or specially adapted for use as a weapon, or possessed, carried, or used as a weapon. "Firearm" means any deadly weapon capable of expelling or propelling one or more projectiles by the action

Prostitution: Person (male or female) who promiscuously engages in sexual activity for hire, regardless of whether the hire is paid to the prostitute or to another
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Appendix B: Expanded Park Crime Count Chart

This version of the total crimes chart is an expanded “raw data” version of Table 2 and Table 3 Total Crimes and Park Crime Count Charts. This chart provides a tabulation of all 19 crimes categories tracked in this report. Violent crime is in red font, property crime in blue font, disorder crime in purple.
Appendix C: Four Stages of Park Rehabilitation

The following section provides a synopsis of safety expert Jim Hilborn’s “Criminal Career” of a park. Based upon the concept of rehabilitating a criminal offender this illustration describes a progressive process of reestablishing a park from a “contested” state.

Stage 1: “Soft crimes” like vandalism send cues to would be offenders the park is uncared for

Stage 2: Escalation of conflict between user and/or increase complaints from users

Stage 3: The perception of risk will discourage legitimate users from using the park

Stage 4: Utilization of landscape management techniques, direct intervention through legitimate users and uniformed patrol to combat illegitimate users.

(Hilborn 2009)
Appendix D: Built Environment, Programs and Crime Prevention

This section provides a description of how the built environment of parks encourages crime and how well maintained parks with amenities and programs can transform a park from neighborhood liability to a community asset. This section serves as a “better practice guide” for Dayton to transform troubled parks after the park inspection process is complete.

There are a multitude of park features that are identified with safety including lighting and clear sight lines. Proper lighting enhances perceptions of safety. Improved lighting and increased legitimate activity allow for greater night time surveillance. Clear sightlines give the perception of actual safety because people can see what is ahead and around them and if other people are visible (“Creating Safe Park Environments to Enhance Community Wellness,” n.d.). The National Recreation and Parks Association (NRPA) endorses enhancing formal/informal surveillance as important cog in reducing vandalism, inappropriate actions and feelings of isolation (“Creating Safe Park Environments to Enhance Community Wellness,” n.d.).

From “Risky Park to Safe Park”

Oregon Health Authority’s Cully Park Community Project recognized walkability features such as community scale lighting and safe restrooms as indicators from a survey of residents of the Northeast Portland neighborhood. Relating to Hilborn’s concept of a “safe park”, as one that parents bring their children, the project list amenities like safe restrooms as a factor encouraging families with young children to use the park (“Cully Park Community Health Indicators Project” n.d.). The survey also directly asked the residents about their perception of safety in terms of walking in the day or night. The percent who felt safe during the day was 81 % compared to 30% at night.
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The NRPA has many case studies that illustrate how the layout of the park including amenities can have a positive effect on perception. New York’s Bryant Park was poorly maintained, lack amenities, and had a proliferation of drug dealing that would fit Hilborn’s description of a park on a “criminal path” (Hilborn 2009). Amenities ranging from food beverage kiosks, a restaurant, and concerts began to transform the park. Akin to the Cohen et al. study, as new development within the park worked to attract more park users and more people ventured into the park, the drug dealing did increase (“Creating Safe Park Environments to Enhance Community Wellness,” n.d.).

Macon, Georgia’s Village Green was lower-income, mixed ethnic community whose park was surrounded by drugs and gang activity. Amenities including picnic shelters, new playground unit and new basketball courts increased park usage by 25%. Hilborn’s theory of natural surveillance became reality in the form organized volunteers forming a neighborhood watch group that saw incidents of crime or violence reduce by 50% (“Creating Safe Park Environments to Enhance Community Wellness,” n.d.).

The City of Los Angeles Summer Nights Lights program extended nighttime lights till midnight in 24 troubled parks and saw a 57% reduction in gang related homicides (“Creating Safe Park Environments to Enhance Community Wellness,” n.d.) This reduction in violent crime supports Groff and McCord statistical findings supporting certain amenities reducing violent crime (Groff and McCord 2011). The transformation also resembles Hilborn’s concept of the “Safe Park”; a park where crime and disorder is limited, diverse usage of the park and legal activities are the dominant activities in the park (Hilborn 2009).

As the City of Dayton prepares to reinvest in their parks, the PHDMC and MVRPC can use these example from other cities as model for what can be accomplished in our parks. Macon’s park transformation could be used as a model to improve Dayton Metropolitan Housing
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Authority’s (DMHA) Gillispie Park. With DeSoto Bass standing as low-income housing project, federal grants may be available to remake the park and should be pursued.

(Continued on page 74)
Appendix E: Inspection Assessments for Parks

The third phase of the Safe Physical Activity Study involves the examination of the built environment of parks. This section provides three measurement tools that can be applied to the Dayton area as the MVRPC, PHDMC and various stakeholders seek to improve the safety of our parks. The recommendation that Crime Prevention Officer Strehle of the Dayton Police Department inspects parks using Crime Prevention Through Environmental Design (CPTED) measures is still the superior option for assessing park safety. However, this section provides some alternative options for examining parks based on the size of the park, its built environment and amenities.

PIP for Small Parks

Small neighborhood parks in Dayton can be inspected using the New York City Department of Parks & Recreation Parks Park Inspection Program (PIP). PIP is a rigorous performance management system that measures the condition and quality of New York City’s parks (“Best Practice: Parks Inspection Program,” n.d.). Each inspected park is given a rating for overall conditions in three separate categories which includes as many as 17 ratable park features. These ratings are based on a set of comprehensive and objective standards as set forth in the 91-page Parks Inspection Program manual (“Best Practice: Parks Inspection Program,” n.d.). Cleanliness inspections include documenting broken glass, graffiti, litter, and weeds. Structural inspections include evaluating the conditions of benches and fences. Landscaping inspections include athletic fields and trails and lawns.

The parks are assigned a rating of Acceptable (A) or Unacceptable(U), the programs two key performance indicators (“Best Practice: Parks Inspection Program,” n.d.). Handheld computers
and digital cameras to document conditions and collect data. The inspection of parks usually requires two weeks and focuses on the inspection of small parks and playgrounds.

**PEAT for Large Parks**

Wolf Creek Bikeway, Sycamore State Park, and Possum Creek can be inspected using the Path Environment Audit Tool (PEAT) which was designed to examine how trail characteristics may influence use (Troped et al., 2006).

PEAT measures have three general content areas: design features, amenities, and maintenance/aesthetics. Most measures focus on the immediate environment of the trail/path, although several items assessed the proximal neighborhood environment. Items were scaled either as yes/no for presence of amenities or an ordinal scale or for physical layout (Troped et al., 2006).

PEAT measures include 16 amenity items and additional sub-items that grade trails. Trail amenities included presence of lighting, telephones, emergency call boxes, rest rooms, benches, picnic tables, drinking fountains, garbage cans, signage, parking, bike racks, exercise or play areas, services (e.g., food), public transit stations, cultural or civic destinations, and commercial destinations.

Typically, sub-items involved a rating of the functioning, condition, and cleanliness of the amenity. Maintenance/aesthetics, included seven items that assessed trail conditions, such as the amount of glass, litter, graffiti, vandalism, odor, noise, and dog/animal droppings. These conditions were rated on a 4-point scale: “none,” “a little,” “some,” “a lot” (Troped et al., 2006).

PEAT would be an excellent tool to examine the built environment of Wolf Creek Bikeway in the James H. McGee Boulevard corridor. The high crime total along this trail may require a specialized assessment tool such as PEAT.
CPTED for Crime Protection for all Parks

As mentioned previously in this report Dayton has trained experts in Crime Prevention Through Environmental Design (CPTED) assessment. CPTED provides an encompassing method for inspecting parks. CPTED asserts that the community itself can play a greater role in protecting the community and themselves from crime by integrating CPTED principles and concepts into the design and management of the physical environment ("NCPC," 2003). The basis of CPTED is that proper design and effective use of the built environment can reduce the incidence and fear of crime ("NCPC," 2003). CPTED provides ten components that are important for design: sightlines, lightings, concealed or isolated routes, entrapment area, isolation, land use mix, activity generators, ownership/maintenance/management, signs and information and overall design.

CPTED is available in a checklist form that provides an inspector the ability to assess a built environment like a park (at http://www.popcenter.org/tools/cpted/PDFs/NCPC.pdf). Many of the components support the viewpoints of Cohen et al., Hilborn and NRPA providing the ability to measure their combined concepts of safe environments. Many of the experts’ mention programming as means to make parks safer.

CPTED describes these concepts as activity generators. Activity generators are uses or facilities that attract people, create activities and add life to the street or space and thus help reduce the opportunities for crime. A check list of activity generators includes everything from increasing recreational facilities in a park, adding programming to facilitate increased activity, and accessing rather the design reinforces activities. CPTED concept of isolation includes the NRPA safe park indicator of access to telephones ("Creating Safe Park Environments to Enhance Community Wellness,"”) and Hilborn’s need for natural surveillance (Hilborn 2009).
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