

Green spaces, greenways, and safety: A literature review

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Introduction:

Green spaces are areas in a community that are mindfully kept open and accessible to the public for travel, leisure, community activities, and other purposes (EPA, 2014). Green spaces can play a very important role in our lives. These areas, such as parks and bike trails, provide venues for physical activity and can help promote healthy lifestyles. In addition, access to green spaces is associated with increased physical activity and reduced prevalence of overweight individuals (Hartig, 2006, Coombes, et al, 2010), and it can also contribute to better mental health amongst community residents (Alcock, et al, 2014). However, creation of new green spaces can cause major changes to the landscape of an area. Community residents may be unsure of the potential impacts green spaces may have on their communities, especially regarding crime.

This literature review is an attempt to investigate residents' concerns about how a large greenway proposed in North Minneapolis would at all affect crime rates and resident safety in the area around the proposed route. Residents living in proximity to the greenway are also concerned about crime spillover and other safety issues. This type of concern is not necessarily a new idea among residents who are affected by changes in city planning, and is not unique to North Minneapolis. Residents in areas of major proposed changes have had these types of concerns before, and thus this topic has been the subject of many research studies. This paper is an attempt to accumulate the findings of various analyses on this topic of greenway safety and disseminate this information to any concerned parties.

Planners often make use of multiple tools and techniques to design greenways to promote safety. One such strategy in preventing crime is known as Crime Prevention through Environmental Design (CPTED) (Jeffery, 1977). Using this framework, planners can assess a variety of different environments and determine the attributes and characteristics that compromise or enhance safety (Zahm 2011). Planners can therefore determine what attributes and characteristics are conducive to safety, and they can design environments with those traits in mind. In the case of the proposed North Minneapolis greenway, a systematic process can be used to consider and implement safety features to build a safe greenway for the community to use.

In terms of crime rates, this review finds that previous studies and literature concerning greenways and safety suggest that crime levels are either unaffected or reduced following greenway implementation (Branas et al, 2011). In terms of safety, this review finds that greenways can be designed with safety in mind, making use of modern planning practices so as to provide the community a safe and welcoming venue for recreation. Although the findings of this review of the research cannot predict the impacts of a greenway in North Minneapolis, they show that creation of green space does not usually raise crime or create safety issues in a

community, and can often have a positive effect on these issues in part due to their design characteristics.

Potential Safety Concerns of Residents:

Community members raise a number of potential safety concerns regarding greenways, including perceptions that greenways are unsafe and may be conducive to criminal activity. According to an unpublished 2014 survey of residents with ties to the area near the proposed greenway, residents' concerns included questioning whether the area would be safe, both in the daytime and at night, for adults and children, and whether there were any mitigating design considerations to make the greenway safer and to discourage criminal activity (e.g., providing lighting at night, minimizing dense brush, emphasizing visibility). Studies of other greenspaces find that nearby residents are also concerned about the vulnerability of pedestrians and cyclists to criminal activity, the potential for crime spillover to residences near greenways, or that a greenway could serve as a route to escape and disappear in by criminals. Lastly, greenways may be perceived by community residences as an area where homeless individuals would gather in, possibly leading to increased criminal activity (Herzog, et al, 2000, Jorgensen et al, 2013,). While these safety concerns are understandable, planners have tools and techniques available to create a green space that enhances safety and addresses residents' concerns.

The most recent survey of safety concerns done of residents and community members of North Minneapolis is valuable, and the knowledge held by the community is extremely helpful in planning and implementing a greenway where people feel safe. These concerns are not necessarily unique despite the unique location and characteristics of the proposed North Minneapolis greenway. Concerns raised by community members are similar to safety concerns raised in other urban planning and have been well documented in environmental design (Zahm, 2011). For example, adequate lighting as a means of enhancing safety is a feature common to settings other than greenways. Therefore in designing a potential greenway, known and proven techniques to promote safety can be tailored for the unique setting of North Minneapolis.

This review looks at research and planning done in varying communities to find effective strategies and information to address community concerns. While the characteristics and neighborhood contexts of other greenways may vary from those of North Minneapolis, our research indicates that greenways in a variety of settings can successfully provide the community with a venue for recreation while promoting safety. By taking the lead from these existing greenways, plans for a North Minneapolis greenway can be tailored to promote both safety and physical activity for the community.

Safety in Green space:

Greenway planners can make use of modern techniques and design to construct greenways that are safe and accessible for use and that discourage criminal activity. These safety features include maintaining visibility around and throughout the greenway at all times,

controlling access of motor vehicles to the greenway, and including features intended to increase its use by the community. These safety features are not unique to greenways and have been successfully implemented both in greenways and other green spaces.

Visibility

When asked in an unpublished survey what could be done to make the proposed North Minneapolis greenway safer, residents most frequently recommended good lighting; they also recommended maintaining good visibility. Improving visibility is part of a multifaceted approach to improve safety when planning greenways and planners can make use of a number of tools and strategies to maintain visibility in and around a greenway. Although lighting is often used to promote pedestrian and traffic safety, it is also associated with reductions in crime (Welsh & Farrington, 2008). The area can also be landscaped so visibility is not impaired and crime is discouraged. Landscaping strategies include ensuring brush grows close to the ground, trees are pruned high, and foliage that might otherwise conceal illicit activity is removed (Wolfe and Mennis, 2012). These features make it easier for people to monitor greenways and report unusual activity, thereby discouraging criminal activity and promoting safety. Good lighting also suggests a higher degree of investment, which could improve social cohesion and deter illicit activity (Lyumes & Tamminga, 1995).

The “Eyes on the Street” model, where there is a high level of community monitoring of a space, suggests that more visibility of an area by surrounding people, houses, and buildings decreases crime (Jacobs, 1961). This theory has been reviewed and found to be valid many times (Wekerle, Gerda, 2000). This can be achieved by improving visibility throughout the green space through the use of lighting and landscaping in addition to implementing amenities to increase traffic on the green space. Features such as including a striped lane or separated path for bicyclists (Dill and Carr, 2007), installing benches and constructing the greenway closer to the community and business establishments can increase traffic and encourage the perception of safety (Schroeder, 1984). More visibility allows people to be more aware of their surroundings, eliminating the ability to hide or ambush, and encourages usage of the area (Gardner, 2004). Studies suggest that crime levels drop in areas with increased traffic (Dill and Carr, 2007) and one study showed an increase in safety with an increase in pedestrian and cycling traffic potentially because of motorist awareness and caution in known non-vehicle traffic areas (Jacobsen, 2003).

Signs and Access

Another safety feature planners can implement into greenway design involves controlling access into and out of the greenway (Zahm 2011). This includes the use of clearly marked areas such as parking lots and paths as well as the use of fences and other measures to guide pedestrians and motorists in and around the greenway as appropriate. Access control can also improve safety by limiting access of cars to greenways, thereby making it more difficult for potential criminals to quickly escape the scene with a getaway vehicle. In addition, the use of

barriers and other techniques to guide individuals through a greenway can double as restricting the movement of criminals. These access control features can discourage criminal activity by increasing the difficulty and risk of conducting illicit activity (Zahm, 2011).

Using signage to give users a clear idea of location within a greenway can increase safety and perceptions of safety. Signage should be clear, well lit, simple, visible from 20 feet away, and placed in intuitive places (such as intersections). Additionally, in areas where there is a multilingual presence, signs should be multilingual (Luymes & Tamminga, 1995).

Other Features and Benefits

The presence of greenery and a natural setting can also serve as a safety measure in and of themselves. Multiple studies suggest that trees have a calming effect, positively impacting mental health (Donovan et al, 2012). Specifically, one study found that the greener the surroundings of an urban space (Chicago), the lower the crime rate (Kuo & Sullivan, 2001). Vegetation and natural settings may therefore reduce the incidence of certain types of crime within the greenway and the surrounding community. Greenways may provide an outlet of stress through both physical activity and social interaction in a neighborhood. This reduction in stress may cause a drop in the crime by reducing the opportunity for stress-based violence, domestic violence, and other forms of assault (Donovan et al, 2012). Combined with landscaping to improve visibility, a maintained natural setting also suggests that such an area is supervised, possibly serving as a deterrent to criminals in addition to restorative mental effects (Wolfe and Mennis, 2012).

Crime and Green space:

The Association between Crime and Green space

The majority of the evidence suggests that the construction of green space in urban areas tends to reduce crime, though there is a small body of exceptions. Multiple studies have suggested that crime levels are either unaffected or are reduced following greenway construction and implementation. A study conducted in Philadelphia examining the greening of vacant lots and subsequent crime levels observed that gun assaults and vandalism consistently decreased following the greening of vacant spaces (Branas et al, 2011), while another found that apartment buildings with nearby green spaces had lower rates of crime (Kuo & Sullivan, 2001). Another study was done with a greater block radius, and two of the three greenways studied were associated with a reduction in crime with the third being associated with an increase; however, the investigator noted that a possible source of error was that the study areas were much larger than areas that would be expected to be affected by a greenway (Love, 2005). In general, this review finds that studies with stronger methodology and power most often conclude that greenways reduce crime.

Types of Crime

Crimes vary between greenways and their respective communities. However they often take place at night where lone cyclists and individuals are targeted for burglary. In addition, crime rates vary by season and type with certain types such as property crimes highest during summer months (McDowall et al, 2012). This could be due to patterns in behavior and circumstances involving increasing amounts of time individuals spend outside and potentially alone, thereby increasing their risk of being targeted for crimes. However, despite these crime types and trends, on average, greenways can be very safe. For example, Minneapolis' own Midtown Greenway sees "far less crime than other types of areas" (Midtown Greenway Coalition, 2014).

Spillover

Crime spillover is a phenomenon where crime from one area is displaced into the adjoining neighborhood. Residents who live near but not directly on the greenway may be concerned about this type of crime. A study in Boston examined crime spillover in proximity to linear parks and trails and found that there was no increase in crime in adjoining areas. In fact, there was a positive effect on crime in areas nearby (but not directly next to) the parks and trails compared with other locations, such as areas adjacent to busy streets (Crewe, 2001).

Another study in Jersey City, New Jersey examined the effect of crime control efforts and crime spillover. This study found that the effect of crime-reducing tactics, such as increased police patrols, diffused throughout nearby areas and improved crime in spillover areas (Weisburd et al, 2006). These results suggest that safety features implemented in greenways could have positive effects in promoting safety for the community and not just around the greenway itself. Perhaps unsurprisingly, examinations of greenways and crime levels corroborate these studies.

Policing

Another established safety measure that can be employed is the presence of local law enforcement in the community and greenway (Ratcliffe et al, 2011). This would involve police vehicle patrols around the greenway and in the community in addition to bicycle patrols in the greenway itself in areas deemed susceptible to crime. Increased presence of law enforcement can serve to deter illicit activity and would promote a sense of safety both in perception and reality. In addition, law enforcement personnel could assist and work in tandem with neighborhood watches to engage the community in order to promote cohesion and safety (Britt et al, 2014). Overall, law enforcement presence would function as an overt safety measure as compared to softer and subtler approaches involving shaping the physical environment.

The Midtown Greenway in South Minneapolis is one of many examples of greenways that promote both safety and personal health. The greenway makes use of safety features such as police patrols and overall experiences less crime compared to the rest of the city (Midtown Greenway Coalition, 2014). Overall, bicycle traffic has increased since counts began in 2007, and bicycle infrastructure like the Midtown Greenway is likely significantly responsible for this

increase (Bicyclist Counts, 2013). While the Midtown area is different from North Minneapolis, the experience of the Midtown Greenway and other greenways in the metro area suggests that is possible to successfully implement greenways that promote both safety and health.

In addition, the authors of this literature review contacted law enforcement personnel from the Minneapolis 4th Precinct (located in north Minneapolis) for their views on greenway safety in the area. While the officers were not able to provide an official statement, they felt that greenways were generally safe and that such spaces do not raise concerns for safety.

The low crime rates documented in many greenways are due to efforts by the city, law enforcement, and community. Therefore greenway projects can be an opportunity for these stakeholders to work together to promote safety. This has been the case for multiple greenways and can certainly be implemented in the unique context of North Minneapolis.

Community Engagement

Local neighborhood watch groups can be formed to further provide stewardship and eyes on the greenway. Social cohesion, defined as the ability of a group to work in unity towards a goal, in neighborhoods can be a crime deterrent by itself (Sampson, et al, 1997). A meta-analysis of multiple studies suggests that social cohesion and neighborhood watch groups are negatively associated with crime (Bennett et al, 2006). Watch groups are also an established technique for promoting safety in green spaces and can work in tandem with law enforcement (Britt et al, 2014). Criminals may view strong and cohesive neighborhoods as riskier targets to exploit and thus be deterred. These watch groups could function as a more subtle approach to safety as opposed to other more overt methods such as having a law enforcement presence on the green space and in the community. Finally, the Midtown Greenway partially attributes its low crime to the volunteer watch group “Trail Watch.” (Britt, 2014).

Conclusion:

In summary, greenways are a means to provide communities with options for physical activity and outdoor recreation, but residents naturally have safety concerns about greenways. These concerns must be addressed before a greenway can be implemented. Based on the experiences in Minneapolis and other communities, crime levels either do not change or are reduced following greenway implementation. There are many tools available that can be used to promote safety on greenways. These safety measures, such as increased lighting at night and landscaping to improve visibility, are proven techniques that can be applied in north Minneapolis. The community and the City can work collaboratively to ensure that a greenway, if implemented, will be a safe space for community members to be physically active.

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